

POLITICAL SECRECY AND THEATRICALITY
IN MARLOWE AND SHAKESPEARE

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“Political Secrecy and Theatricality in Marlowe and Shakespeare” traces the transformation of the concept of political secrecy in Early Modern Britain and Europe, focusing on the role of dramatic literature in shaping the modern category of “intelligence.” At the outset of Early Modernity, a concept of political secrecy rooted in a political theology conceived secrets as the mystical possession of the sovereign, his so-called *arcana imperii*. By the late 17th century, the heterodoxies of the Reformation, upheavals of Early Modern science, and economic imperatives of Empire together shifted that concept’s epistemological locus away from sovereign authority. Political secrecy now marked the efforts of state administrators, accountants, and intelligencers to oversee information networks involving quantifiable data, concrete facts, the calculation of probable outcomes. Accompanying this transition was a debate among scholars and law clerks about the ability of mathematics, in particular Euclidean ideas about data, to accurately represent reality – a debate whose relevance has persisted into the 21st century era of Big Data. Crucially, the thinkers who contributed to this discourse, ranging from Francis Bacon to Gottfried Wilhelm Leibniz, repeatedly resort to the language of poetics and drama to contend with political secrecy’s central conundrum: that the structures of political

secrecy are by definition inaccessible to public discourse and thus require mimetic modeling to be fathomed. Theater becomes a laboratory of choice for thinking through these epistemological reconfigurations.

My analyses are buttressed by the close interweaving of Early Modern theater with the stakeholders in the debates surrounding political secrecy. Bacon turns to playwrighting to address statesmen and legal scholars at the Inns of Court, themselves practitioners of political secrecy. Meanwhile, the dramatically expanded information and intelligence networks of the early Empire intensify intercultural exchanges with Northern Africa, a feedback loop that brings the Arabic mathematical texts fueling the debate surrounding data to Oxford. Similar forays into the Americas and Asia provide the impetus for Leibniz to invent binary mathematics, the basic structure of data computation, which he hopes to use as a diplomatic tool in negotiations with sovereigns globally, especially China. Inspired by Bacon, Leibniz declares the premier medium of political epistemology to be a species of *theatrum mundi*: the ever-shifting flood of intelligence is distilled into rows of data, which are carefully staged as tables on memorandum pages, presenting themselves like the scenes and acts of a play that allows the sovereign to “apperceive the whole realm, as if at one glance.”

I consequently assert that Early Modern British drama stages rituals of ceremony, processions, masques, and plays that both adjudicate and make visible the boundary between the concept of secrecy in theory and the hidden world of its implementation. In my analysis, I focus on the figure of the Absent King in the *Earl of Huntington* plays by Anthony Munday and the Coronation Procession of James I., on Marlowe’s *Doctor Faustus* with its emphasis on amassing knowledge at all costs and

the frailties of arcane knowledge; on the circulating, cryptic letter in *Edward II* that appears to implicate or kill everyone who handles it; and finally on the contrast between the Ghost's certainties and the prince's doubts in *Hamlet*, the former exemplifying the *arcana imperii*, and the latter typifying the constant weighing of probabilities inherent in the modern concept of intelligence. Ultimately, my analysis demonstrates that in the Early Modern period, literary modes of thought are not simply interpolated into debates in the emerging field of information science, but represent a quintessential feature of them.

BIOGRAPHICAL SKETCH

Jonathan Glenn Reinhardt is an alumnus of literature degree programs at Harding University, the University of Chicago, and Loyola University of Chicago. He holds a bachelor's degree in English language and literature (*summa cum laude*) and master's degrees in the science of education (*magna cum laude*) and in English literature (*with distinction*). Reinhardt enrolled in the in the doctoral program in Language and Literature at Cornell University in 2013, specializing in Early Modern British literature. His dissertation committee was comprised of Philip Lorenz (chair), Rayna Kalas, and Jenny Mann. As of 2019, Reinhardt's research and teaching interests include Early Modern British literature and culture, as well as philosophy, political theology and heterodoxy, the history of information science, and the Global Early Modern.

Fritz Karl Reinhardt
1924-1989

Opa, ich danke Dir.

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I am proud to have achieved a doctoral degree with this dissertation. It has been a long road, full of pitfalls of the mind and of life, and at times it has been a difficult one. It has also been exhilarating, gratifying, and the completion of a life's dream. This dissertation began as it ended, as a study in the history of political secrecy. It became, of course, something more. It is a partial history of data, the medium through which we fashion our realities in the early 21st Century. It is most of all a study in Munday's, Marlowe's, and Shakespeare's drama, and as such it owes a great deal more to the patient guidance of my capacious, generous, and brilliant dissertation committee than to my own quite limited intellectual imagination, Prussian stubbornness, and penchant for following rabbit holes much further than necessary.

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A NOTE ON THE TEXT

This dissertation takes seriously the need to engage not just with the British world, but with the Global Early Modern. One way to achieve this is a transnational approach, one that emphasizes the integration of peripheral voices, including those marginalized due to their identity, their beliefs, their bodies, their origin, their minority status, their socio-economic status, or their indigeneity. Accordingly, I have taken pains in this dissertation to identify, as far as possible, every person by a name they would have themselves used, to cite the original titles of their works alongside the Latinized or Anglicized versions perhaps more familiar to us, to identify their span of life in order to restore their temporal identity, and to designate their geographical and ethnic-linguistic origins, before using the familiar Anglonym for the sake of readability. I hope that this is understood as intended: a gesture of acknowledgement, recognition, and respect. I apologize for any inadvertent errors or oversights.

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INTRODUCTION

Political secrecy is not a matter of fact, and not even a matter of content. Rather, it is a way of seeking probable outcomes, of *getting at* plausible scenarios, and of deploying what has been conjectured for tactical purposes, in the interest of the body politic.

Political secrecy is an indispensable tool of governance, in any type of state. But political secrecy is more than just that. Like the Roman god Janus, like the double-headed eagle of so many European sovereigns' heraldry, like the Adam of the Jewish *Talmud*, political secrecy has two faces at once. One face is inward-looking, a medium of knowledge-making, accessible only to those authorized by the sovereign, to act on the sovereign's behalf. It is a question about what can be considered "given" in any situation, about the very nature of *data* as a medium for telling truths, and about interpreting them well, for the common good. The other face looks outward, at those who cannot read political secrecy because they are not authorized, not participants of the secret. For them, the face of political secrecy consists of a performance. It dramatizes the supposed existence of hidden knowledge, its inaccessibility, and the often grave consequences of seeking unauthorized access. Both these faces are equally necessary, and equally in need of description. Both faces are also matters of literature, of telling stories about otherwise quite literally unspeakable things.

This connection between political secrecy and literary production is no accident. Both frequently arise from the same source, are dramatized by the same set of actors. Particularly in the British literary tradition, the line of spies who are also successful authors dealing more or less explicitly with espionage is a long one,

ranging from Thomas Wyatt, Anthony Munday, and Christopher Marlowe in the Early Modern period to modern and contemporary figures like Roald Dahl, Graham Greene, Ian Fleming, Rudyard Kipling, John Le Carré, and Somerset Maugham, as well as Basil Bunting, Henri Coulette, Frederick Forsyth, John Hollander, and John Masterman. In the lead-up to World War II, even J.R.R. Tolkien received training in codebreaking for British intelligence and was earmarked to work at Bletchley Park. A similarly long list of authors and poets knew spies personally and drew on them as source material, including W.H. Auden, Elizabeth Bowen, John Buchan, Anthony Burgess, Joseph Conrad, and Lawrence Durrell. If one adds film and television series to the literary data set, the connection becomes exponential and explicit: intelligence agencies routinely consult on such productions, and those depictions play an essential part in suggesting to the public what the world of political secrecy might be truly like – even if these depictions may not, or only partly, align with that world’s realities.

Consequently, the undeniable intertwining of political secrecy and the literary world must be viewed as more than just a curiosity, a feature rather than a glitch or coincidence. One extends into the other. Of course, some of that has to do with parallel skillsets: like authors and playwrights, spies create “legends” and “cover stories,” close-read texts of intelligence reports, create scenes for characters play-acting someone they are not, fictionalize as a method counterintelligence, and so on. However, the interdependence between the literary and the politically secret evolved not least because it was Britain’s author-heavy MI6 that developed into *the* exemplary foreign intelligence agency after World War I, which all others attempted to emulate, including, another world war later, the fledgling CIA. Thus, on the one hand, modern

espionage-informed writers had an outsized role in shaping what the popular imagination perceives to be the world of political secrecy, through their genre-defining portrayals of espionage. On the other hand, the prevalent connection between the two fields suggests that literary minds may be also, conversely, particularly inclined towards successfully participating in the business of political secrecy. Authors and playwrights were always likely candidates for shaping some of political secrecy's techniques, expressions, and subsequently its epistemological structures. All of these are well-established observations, and much critical effort has been expended on exploring such avenues further.¹ The same can be said about the portrayals of state secrecy and surveillance in Early Modern fiction and drama, including Marlowe and Shakespeare.² This dissertation and its contexts thus stand on solid scholarly foundations.

What, then, is there left to say? In thinking about political secrecy and Early Modern drama, this dissertation seeks to depart from the well-worn, late 20th Century paths that focus on the interplay between power and surveillance, actual and epistemic

¹ Recently: Frederick P. Hitz, *The Great Game: the Myth and Reality of Espionage*. New York: Knopf, 2004; Allan Hepburn: *Intrigue: Espionage and Culture*. New Haven: Yale UP, 2005; Yumna Siddiqi, *Anxieties of Empire and the Fiction of Intrigue*. New York: Columbia UP, 2008; Brett F. Woods, *Neutral Ground: A Political History of Espionage Fiction*. New York: Algora, 2008; Timothy Melley, *The Covert Sphere*. Ithaca: Cornell UP, 2012; Erin G. Carlston, *Double Agents: Espionage, Literature, and Liminal Citizens*. New York : Columbia UP, 2013; Christopher Andrews, *The Secret World: A History of Intelligence*, New Haven: Yale UP, 2018; Duncan White, *Cold Warriors: Writers who Waged the Literary Cold War*. New York: Harper Collins, 2019; et al. mult.

² Recently: John Michael Archer, *Sovereignty and Intelligence: Spying and Court Culture in the English Renaissance*. Palo Alto: Stanford UP, 1993; Curtis C. Breight, *Surveillance, Militarism, and Drama in the Elizabethan Era*. Houndmills, Basingstoke, Hampshire: Macmillan, 1996; Robert W. Maslen, *Elizabethan Fictions: Espionage, Counter-espionage, and the Duplicity of Fiction in Early Elizabethan Prose Narratives*. New York: Clarendon Press, 1997; Rebecca Lemon, *Treason by Words: Literature, Law, and Rebellion in Shakespeare's England*. Ithaca: Cornell UP, 2006; Robyn Adams & Rosanna Cox, *Diplomacy and Early Modern Culture*. Basingstoke: Palgrave Macmillan, 2011; et al.

– although, of course, without dismissing what remains valid and interesting about those contributions. Instead, this dissertation will turn to theoretical and epistemological questions that seek answers more immediately relevant to the data-driven, media-defined “Information Age” of the 21st Century. This dissertation thus comprises a media history of both *intelligence* and *data*, since the current digital world makes it imperative that scholarship revisit and establish such intellectual contexts: In the words of Saxon-German media theorist Friedrich Adolf Kittler (1943-2011), “media determine our situation [*lage*], which – in spite or because of it – deserves a description.”³ Many recent and excellent examples of this genre of study exist already, albeit not of this dissertation’s particular constellation of issues and questions. Rather, the most successful literary-media theory bearing on governance and the question of political secrecy and transparency has focused on the file,⁴ the “spaces” of the judicial

³ Friedrich Kittler, *Grammophone, Film, Typewriter*, Geoffrey Winthrop-Young & Michael Wutz, transl. Palo Alto: Stanford UP, 1999. xxxix. The German original in Friedrich Kittler, *Grammophon, Film, Typewriter*. Berlin: Brinkmann & Bose, 1986. 3: “Medien bestimmen unsere Lage, die (trotzdem oder deshalb) eine Beschreibung verdient.”

⁴ Cornelia Vismann, *Akten: Medientechnik und Recht*. Frankfurt am Main: Fischer, 2000; Cornelia Vismann & Geoffrey Winthrop-Young, transl. & ed. *Files: Law and Media Technology*. Palo Alto, Calif.: Stanford University Press, 2008. The English translation is an abridged revision.

branch,⁵ bureaucratic writing,⁶ passports,⁷ postal networks,⁸ secretive secretaries,⁹ memory-enhancing technologies in an age where there is “too much to know,”¹⁰ robotics,¹¹ “liquid modernity,”¹² war games;¹³ the “transparency society” and its effects,¹⁴ the mathematization of knowledge,¹⁵ probability,¹⁶ swarm theories,¹⁷ and

⁵ Cornelia Vismann, *Das Recht und seine Mittel*. Frankfurt: Fischer, 2012; Cornelia Vismann, *Medien der Rechtsprechung*. Frankfurt: Fischer, 2011.

⁶ Ben Kafka, *The Demon of Writing: Powers and Failures of Paperwork*. Cambridge, Mass.: Zone, 2012.

⁷ Valentin Groebner, *Der Schein der Person*. München: Beck, 2004; Valentin Groebner, *Who Are You?: Identification, Deception, and Surveillance in Early Modern Europe*. Mark Kyburz & John Peck, transl. Brooklyn: Zone, 2007; John C. Torpey, *Invention of the Passport*. 2nd ed. Cambridge: Cambridge UP, 2018.

⁸ Bernhard Siegert, *Relais: Geschieke der Literatur als Epoche der Post, 1751-1913*. Berlin: Brinkmann & Bose, 1993; Bernhard Siegert, *Relays: Literature as an Epoch of the Postal System*. Kevin Repp, transl. Palo Alto: Stanford UP, 1999.

⁹ Richard Rambuss, *Spenser's Secret Career*. Cambridge: Cambridge UP, 1993; Friedrich Kittler, *Dracula's Vermächtnis*. Leipzig: Reclam, 1993. 11-57.

¹⁰ Markus Krajewski, *ZettelWirtschaft. Die Geburt der Kartei aus dem Geiste der Bibliothek*. Berlin: Kadmos, 2002; Markus Krajewski, *Paper Machines: About Cards & Catalogs, 1548-1929*. Updated edition. Markus Krajewski, ed. & Peter Krapp, transl. Cambridge, Mass.: MIT P, 2011; Ann Blair, *Too Much to Know: Managing Scholarly Information Before the Modern Age*. New Haven: Yale UP, 2010; Richard Yeo, *Notebooks, English Virtuosi, and Early Modern Science*. Chicago: U of Chicago P, 2014.

¹¹ Adrienne Mayor, *Gods and Robots: Myths, Machines, and Ancient Dreams of Technology*. Princeton: Princeton UP, 2018.

¹² Zygmunt Bauman, *Liquid Modernity*. Cambridge: Polity, 2000; David Lyon & Zygmunt Bauman, *Liquid Surveillance*. Cambridge: Polity, 2013.

¹³ Philipp von Hilgers, *Kriegsspiele: eine Geschichte der Ausnahmestände und Unberechenbarkeiten*. München: Fink, 2008; Philipp von Hilgers, *War Games: A History of War on Paper*. Ross Benjamin, transl. Cambridge, Mass.: MIT P, 2012.

¹⁴ Byung-Chul Han, *Transparenzgesellschaft*. Berlin: Matthes & Seitz, 2012; Byung-Chul Han, *The Transparency Society*. Erik Butler, transl. Palo Alto: Stanford UP, 2015; Byung-Chul Han, *Müdigkeitsgesellschaft*. Berlin: Matthes & Seitz, 2010; Byung-Chul Han, *The Burnout Society*. Erik Butler, transl. Palo Alto: Stanford UP, 2015.

¹⁵ David Glimp & Michelle R. Warren, eds. *Arts of Calculation: Quantifying Thought in Early Modern Europe*. New York: Palgrave Macmillan, 2004.

¹⁶ Rüdiger Campe, *The Game of Probability: Literature and Calculation from Pascal to Kleist*. Ellwood H. Wiggins, Jr., transl. Palo Alto: Stanford UP, 2012. The English translation is an edited version of the German original, *Spiel der Wahrscheinlichkeit: Literatur und Berechnung zwischen Pascal und Kleist*. Göttingen: Wallstein, 2002.

¹⁷ Eva Horn & Lucas Marcus Gisi, eds. *Schwärme, Kollektive ohne Zentrum*. Bielefeld: Transcript, 2009; Byung-Chul Han, *Im Schwarm*. Berlin: Matthes & Seitz, 2013; Byung-Chul Han, *In the Swarm: Digital Prospects*. Erik Butler, transl. Cambridge, Mass.: MIT P, 2017.

even on the nature of the digital as a form of knowledge.¹⁸ There have been superior studies of political secrecy as an epistemological question for literature,¹⁹ and of course biographical musings on the spy-and-writer species, sometimes even refreshingly self-ironic and autobiographical.²⁰ However, these studies tend, in the main, to locate the emergence of the information society and its core medium, *data*, in the 19th and 20th centuries. They also frequently tend to focus on other aspects of political secrecy than the *type of knowledge* it produces, especially as knowledge in digital contexts.

This dissertation seeks amend this genre of discourse, particularly regarding developments in the literature and science of the Early Modern period. Thus, this dissertation will delineate an Early Modern media history of the core medium of modern secret intelligence, *data*, using political secrecy as an exemplary form. It will also contain itself to Early Modern drama as an exemplary literary staging ground for best understanding this development, specifically the drama of William Shakespeare, Christopher Marlowe, and Anthony Munday. The dissertation will conclude that in the Early Modern period, literary modes of thought are not simply interpolated into debates in the emerging field of information science and the transforming concepts of political secrecy in that era, but represent a quintessential feature of them. My hope is

¹⁸ Andy Clark, *Mindware*. Oxford: Oxford UP, 2001; Andy Clark, *Natural-born Cyborgs: Minds, Technologies, and the Future of Human Intelligence*. Oxford: Oxford UP, 2003; Armin Nassehi, *Muster: Theorie der Digitalen Gesellschaft*. München: Beck, 2019.

¹⁹ Horn, *Der geheime Krieg: Verrat, Spionage und moderne Fiktion*. Frankfurt: Fischer, 2007; Eva Horn, *The Secret War: Treason, Espionage, and Modern Fiction*. Geoffrey Winthrop-Young, transl. Evanston: Northwestern UP, 2013; Luc Boltanski, *Mysteries and Conspiracies: Detective Stories, Spy Novels and the Making of Modern Societies*. Catherine Porter, transl. Cambridge: Polity, 2014.

²⁰ John le Carré, *The Pigeon Tunnel: Stories from My Life*. New York: Viking, 2016.

that this dissertation might thus contribute the strengths of the traditional humanities, especially literary studies, to the evolving cultural discourse of information science.

I. In the Beginning was the Secret

In the beginning was the Word. With this sentence, Yohanan ben Zavdi (John, Son of Zebedee, i.e. John the Evangelist, c. 15-c.100 CE), a Jewish fisherman from Lake Chinneret in the Levantine Roman client state of Galilea, opens his *Gospel of John*. John is writing in his second language, *koine* Greek, and so it would be accurate to say that he opens his gospel with a sentence whose literary-critical valences ought to be self-evident, “In the *arkhe* was the *logos*.”²¹ His opening is a gloss of the first chapter of the first of the five books of the Jewish *Torah* (תּוֹרָה, “Teaching, Law”)²² ascribed to the ancient Israelite prophet (מֹשֶׁה, Moses, 1391-1271 BCE),²³ *Genesis* (בְּרֵאשִׁית, “In the Beginning”). That book commences, “In the beginning God created the Heavens,

²¹ John the Evangelist, *Euangelion Kata Ioannin* (Εὐαγγέλιον κατὰ Ἰωάννην, *Gospel of John*) 1.1: “Ἐν ἀρχῇ ἦν ὁ λόγος.” The Latin *Vulgata* translation by the Illyrian-Latin scholar Eusebius Sophronius Hieronymus (Jerome, 347-420 CE) has, “In principio erat Verbum.” The 1611 *King James Bible* translation has the familiar English, “In the beginning was the Word.” John’s Hebrew name Yohanan (יְהוָנָן) was the name he would have used in his Aramaic-speaking everyday world; in Greek his name was adapted as the more familiar Ioannes (Ἰωάννης), from whence, ultimately, the English “John.” On the issue of *arche*, see particularly Jacques Derrida, *Mal d’archive: une impression freudienne* Paris: Galilée, 1995. 11 & 12; *Archive Fever: a Freudian Impression*, Eric Prenowitz, transl. Chicago: U of Chicago P, 1998. 1 & 2.

²² The first five books of the Hebrew scriptures, the *Tanakh*, are called the *Torah* (תּוֹרָה, “Teachings” or “Law,” Greek, πεντάτευχος, *Pentateuch*, “Five Books”), and are traditionally said to have been written by Moshe (מֹשֶׁה, Moses). The other sections of the *Tanakh* are the *Nevi'im* (נְבִיאִים, “Prophets”) and the *Ketuvim* (כְּתוּבִים, “Writings”). Together, they comprise 24 individual books. As Christianity began as a Jewish sect, the *Tanakh*, divided into 39 books, also forms the first set of canonical Christian holy scriptures, called the *Old Testament* (Ἡ Παλαιά Διαθήκη, *Vetus Testamentum*). Together the *Old Testament* and the *New Testament* form the *Christian Bible* (τὰ βιβλία, *biblos*, “the books”). Some Christian traditions add Deuterocanonical books, including the Roman Catholic and Orthodox versions.

²³ These are the traditional dates calculated by the Babylonian-Jewish Rabbinical scholar Yose ben Halafta (Rabbi Yose, 2nd Century CE) in his *Great Order of the World* (*Seder Olam Rabbah*), *passim*. & esp. §10. Unlike later biblical figures, most 21st Century scholars consider Moses to be a legendary-literary rather than historical figure.

and the Earth.”²⁴ How does he do this? He speaks (λέγειν, *legein*) the *cosmos* out of *chaos*, light and order out of *tohu va-bohu* (תְּהוֹ וְבוֹהוּ), “without forme, and voyd:”

And the earth was without forme, and voyd, and darknesse was upon the face of the deepe: and the Spirit of God mooued upon the face of the waters. And God said, Let there be light: and there was light. And God saw the light, that it was good: and God diuided the light from the darknesse. And God called the light, Day, and the darknesse he called Night: and the euening and the morning were the first day.²⁵

Eventually, on the Sixth Day of Creation, God makes a mist rise from the ground and so wets the ground. He molds the Human (אָדָם, *adam*) from “the dust of the ground,” noting that Human is made “in our Image, after our likenesse.” He breathes “into his nostrils the breath of life; and man became a liuing soule.” Finally, God installs the Human in the Garden of Pleasure (גַּן־עֵדֶן, *gan-Eden*) as his steward over his creation.²⁶

²⁴ *B'reshit* (בְּרֵאשִׁית, “In the Beginning,” *Genesis*) 1.1: “בְּרֵאשִׁית בְּרָא אֱלֹהִים אֶת הַשָּׁמַיִם וְאֶת הָאָרֶץ:” This is also the mechanism and *logos* behind the Greek creation *mythos*, in the *Theogonia* (Θεογονία, *Theogeny*) by the poet Hesiodos (Hesiod, 8th-7th Century BCE): “In truth at first Chaos came to be, but next wide-bosomed Earth, the ever-sure foundation of all the deathless ones who hold the peaks of snowy Olympus, and dim Tartarus in the depth of the wide-pathed Earth, and Eros, fairest among the deathless gods, who unnerves the limbs and overcomes the mind and wise counsels of all gods and all men within them. From Chaos came forth Erebus and black Night; but of Night were born Aether and Day.” Greek: ἦ τοι μὲν πρότιστα Χάος γέενετ', αὐτὰρ ἔπειτα / Γαῖ' εὐρύστερνος, πάντων ἕδος ἀσφαλὲς αἰεὶ / ἀθανάτων, οἳ ἔχουσι κάρη νιφόεντος Ὀλύμπου, / Τάρταρά τ' ἠερόεντα μυχῶ χθονὸς εὐρυοδείης, / ἦδ' Ἔρος, ὃς κάλλιστος ἐν ἀθανάτοισι θεοῖσι, / λυσιμελής, πάντων δὲ θεῶν πάντων τ' ἀνθρώπων / δάμναται ἐν στηθεσσι νόον καὶ ἐπίφρονα βουλήν. / ἐκ Χάεος δ' Ἐρεβός τε μέλαινα τε Νύξ ἐγένοντο: / Νυκτὸς δ' αὐτ' Αἰθήρ” (116-124).

²⁵ *Genesis* 1.2-5:

וְהָאָרֶץ הַיְתוּמָה תְהוֹ וְבוֹהוּ וַיְהִי רוּחַ אֱלֹהִים מְרַחֵף עַל־פְּנֵי הַמַּיִם:
וַיֵּאמֶר אֱלֹהִים יְהִי אוֹר וַיְהִי־אוֹר:
וַבַּרְא אֱלֹהִים אֶת־הָאוֹר כִּי־טוֹב וַיַּבְדֵּל אֱלֹהִים בֵּין הָאוֹר וּבֵין הַחֹשֶׁךְ:
וַיִּקְרָא אֱלֹהִים לְאוֹר יוֹם וּלְחֹשֶׁךְ קָרָא לַיְלָה וַיְהִי־עֶרֶב וַיְהִי־בֹקֶר יוֹם אֶחָד:

²⁶ *Genesis* 1.6-2.8.

These acts of cosmic *logos* are, of course, *mysteries* of a sort, although they are not what might in general parlance be referred to as “secrets” – in fact, they are the opposite: in the Abrahamic religious traditions, these texts are taken to be divine revelation, revealing rather than obscuring what is to have taken place.²⁷ Nevertheless, their original context *is* political, in these sense that these actions occur in a courtly environment. In this passage, the character of God is referred to not by his personal name, *Yahweh* (יהוה, “I Am That I Am”).²⁸ Rather, the word the English translators turn into “God” throughout *Genesis* is a royal title, *Elohim* (אלהים), which means “God of gods,” the divine equivalent to the title “King of kings” claimed by the Babylonian (*šar šarrāni*) and Persian (*xšâyathiya xšâyathiyânâm*) monarchs under whose imperial reign in the 6th century BCE the Jewish rabbis compiling *Genesis* appear to have edited the text into its traditional form. In those books of the Jewish *Tanakh* originating around this time, such as *Iyov* (איוב, *The Book of Job*),²⁹ God is often portrayed as the ruler holding court. *The Book of Job’s* frame narrative features “sons

²⁷ Cf. *Gospel of Luke* 1.1-2: “Forasmuch as many haue taken in hande to set foorth in order a declaration of those things which are most surely beleueed among us, / Euen as they deliuered them unto vs, which from the beginning were eye-witnesses, & ministers of the word [*logos*].” Greek original, *Euangelion kata Loukan*: “Ἐπειδὴ περ πολλοὶ ἐπεχείρησαν ἀνατάξασθαι διήγησιν περὶ τῶν πεπληροφορημένων ἐν ἡμῖν πραγμάτων, / καθὼς παρέδοσαν ἡμῖν οἱ ἀπ’ ἀρχῆς αὐτόπται καὶ ὑπηρέται γενόμενοι τοῦ λόγου.”

²⁸ יהוה. In Jewish tradition, this name of God is not spoken, and is usually replaced with “Lord.” Its etymological interpretation derives from the second of the books of Moses in the *Tanakh*, *Names* (שמות, *Shemot*, English *Exodus*) 3.13-14: “And Moses saide unto God, Behold, when I come unto the children of Israel, and shall say unto them, The God of your fathers hath sent me unto you; and they shall say to me, What is his name? what shall I say unto them? / And God saide unto Moses, I AM THAT I AM: And he said, Thus shalt thou say unto the children of Israel, I AM hath sent me unto you.” In Hebrew: וַיֹּאמֶר אֱלֹהִים אֶל־מֹשֶׁה אֲהַרְאֶה אֶת־אֲשֶׁר אֶהְיֶה וְיֹאמְרוּ לְךָ כִּי הָאֱלֹהִים אֲהַרְאֶה לְבָנֵי יִשְׂרָאֵל אֲהַרְאֶה שְׁלַתְנִי אֲלֵיכֶם: וַיֹּאמֶר עוֹד אֲלֹהִים אֶל־מֹשֶׁה כִּי־תֹאמַר אֶל־בְּנֵי יִשְׂרָאֵל יְהוָה אֲלֵהֶי אֲבַתְיָכֶם אֲלֵהֶי אֲבַרְכֶם אֲלֵהֶי יִצְתַק וְאֵלֵהֶי יִשָּׁקֵב שְׁלַתְנִי אֲלֵיכֶם: וְהֵשָׁמִי לְעֵלְמָ וְגַה זְכָרִי לְדָר דָּר:

²⁹ *Iyov* (איוב, “Job”) is one of the books – a historical fiction in the form of Wisdom Literature focusing on the question of theodicy – in the section of the *Tanakh* called the *Writings*. Current scholarship places its composition in Persian Babylonia, in the 6th Century BCE.

of the God of gods” (בְּנֵי הָאֱלֹהִים), among whom is the divine realm’s court prosecutor (שָׂטָן, *satan*, “accuser”), who is tasked with testing the authenticity of Job’s righteousness.³⁰ This explains why God speaks in the plural when he states, “Let *us* make man in *our* image, after *our* likeness.” Finally, the Garden of Eden itself is a version of the royal hunting gardens of the Sumerians (*edin*, “garden,” thus “Eden”) and the walled gardens of the Persian kings (*pairi daēza* in Avestan, whence the term “Paradise”).³¹ What happens in Eden, both literarily and philosophically, occurs at the very heart of the Kingdom of Heaven, in the private sphere of the divine king.

Nevertheless, soon afterwards we must add: *In the beginning was the secret*. Having given Human his place in the world, God performs another act of *logos*-making. The King of the Universe (*melekh ha’olam*, מֶלֶךְ הָעוֹלָם) creates the first secret: “And the Lord God commanded the man, saying, Of every tree of the garden thou mayest freely eat. / But of the tree of the knowledge of good and euill, thou shalt not eat of it: for in the day that thou eatest thereof, thou shalt surely die.”³² This secret contains two unknowables, from the perspective of Human, at whom this act of secret-making is directed. The first is the desirability of the “knowledge of good and evil,” which is not self-evident to someone who does not already have that knowledge. The

³⁰ *Book of Job* 1.6-12. On the judicial valence of the term, cf. *Book of Psalms* 109.6-7: “Set thou a wicked man over him: and let Satan [‘an accuser’] stand at his right hand. / When he shall be judged, let him be condemned.” Hebrew original:

הַפְקֵד עָלָיו רָשָׁע וְשָׂטָן יַעֲמֹד עַל־יְמִינוֹ:
בְּהִשָּׁפֵטוֹ יֵצֵא רָשָׁע וְתִפְלְתּוֹ תִּהְיֶה לְחֵט

³¹ Kavasji Edulji Kanga, *A Complete Dictionary of the Avesta Language*. Mumbai: Ed. Soc. Steam P, 1900. 309.

³² *Genesis* 2.16 & 17:

וַיִּצְוֶה יְהוָה אֱלֹהִים עַל־הָאָדָם לֵאמֹר מִכָּל עֵץ־הַגָּן אָכַל תֹּאכַל:
וּמֵעֵץ הַדְּעִית טוֹב וְרָע לֹא תֹאכַל מִמֶּנּוּ כִּי בְיוֹם אֲכָלְךָ מִמֶּנּוּ מוֹת תָּמוּת:

second is the nature of the consequence: the threat of death is meaningless to Human, who so far has only known the immortal world of Eden. The logic of this first secret, then, is unrelated to its content. It is the announcing of the secret as a secret to those prohibited from knowing it that creates the logic of secrecy. The secret takes the form of the *non-arkhe* (*anarkhia*, ἀναρχία), a lack of beginning or end or any other knowable structure, an unreadable *non-logos* (*alogos*, ἀλογος).

Inevitably, what follows the announcement of the secret is an attempt to read, know, and interpret it. The first reader of the first secret is not Human, but rather the Serpent, “more subtile than any beast of the field.”³³ In marked contrast to the later Western interpretative tradition exemplified by, say, John Milton’s *Paradise Lost*, the serpent in *Genesis* is not Satan. Nor does Satan

...to elude, thus wrapt in mist
Of midnight vapor glide obscure, and prie
In every Bush and Brake, where hap may finde
The Serpent sleeping, in whose mazine foulds
To hide me, and the dark intent I bring. [9.158-162]³⁴

The Serpent of *Genesis* is own, unpossessed self. He is an autonomous potential reader of God’s sovereign secrets.

The Serpent attempts to read these secrets indirectly, through a human agent. Moreover, he engages not Human, but rather Woman (הַשָּׂה, *ishah*), who has not yet

³³ *Genesis* 3.1. In Hebrew:

והַנְּחֵשׁ הִנֵּה עֲרוֹם מִכֹּל תַּגְּתַּת הַשָּׂדֶה אֲשֶׁר עָשָׂה יְהוָה אֱלֹהִים וַיֹּאמֶר אֶל־הַשָּׂה אַף כִּי־אָמַר אֱלֹהִים לֹא תֹאכְלוּ מִכֹּל עֵץ הַגָּן:

³⁴ John Milton, *Paradise Lost, A Poem*. London: Peter Parker, Robert Boulter, & Matthias Walker, 1667.

been re-named Eve (חַוָּה, *chavah*, “source of life”). The Serpent’s choice is crucial because Woman only knows about the secret regarding the Tree of Knowledge through hearsay. Woman did not yet exist when the King of Kings told Human about the secret. Human must have told her. The Serpent thus pitches his own speculative (mis)reading of the secret not against the word of the King of Kings, or even that of his first-hand witness Human, but against Woman’s own second-hand, narrative knowledge. This is because any act of reading requires a narrative to read. The Serpent has no other inroad into God’s secrets.

The Serpent takes advantage of Woman to test its own hypothesis: that God’s secret is, in fact, a jealous fiction. The Serpent’s rhetorical tactics to coax Woman into becoming the test subject are straightforward enough. First, the Serpent asks Woman, “Yea, hath God said, Ye shall not eat of euery tree of the garden?”³⁵ This is a cleverly deployed, self-evident overstatement. Predictably, Woman rushes to correct the Serpent: “Wee may eate of the fruite of the trees of the garden: / But of the fruit of the tree, which is in the midst of the garden, God hath said, Ye shal not eate of it, neither shall ye touch it, lest ye die.”³⁶ Notably, Woman’s rebuttal is inaccurate. Whether this is due to misremembering the facts, or to Human’s possibly inaccurate report of God’s original phrasing remains unresolved. The facts of the case are that there was no prohibition against touching the tree or the fruit, only against eating it. Perhaps,

³⁵ *Ibid.*

³⁶ *Genesis* 3.3. In Hebrew:

וּמִפְרֵי הָעֵץ אֲשֶׁר בְּתוֹךְ-הַגָּן אָמַר אֱלֹהִים לֹא תֹאכְלֶנּוּ מִמֶּנּוּ וְלֹא תִגְעֹנּוּ בּוֹ פֶן-תִּמְתּוּן:

Woman is attempting to overstate the prohibition of this *one* fruit in order to counter the Serpent's overstatement about *all* the fruit in Eden. Perhaps it is just an error.

Whatever Woman's reasons, the Serpent chooses to seize on her counterfactual overstatement to cast God's prohibition as unreasonable and self-interested, and the threatened consequence as a lie. It declares, "Ye shall not surely die. / For God doeth know, that in the day ye eate thereof, then your eyes shalbee opened: and yee shall bee as Gods, knowing good and euill."³⁷ Woman has no reply to give. After all, her knowledge of God's words, will, and intent is as circuitous as the Serpent's is. They are both speculating at an unknown content of God's sovereign secrets, and are both are also speculating at how to interpret its meaning. They are not discussing facts, but rather plausible scenarios. The imperative to speculate probabilistically is evidently part of even the earliest logics of sovereign secrecy.

The only means of finding out how accurate the various speculations about the sovereign secret are is to test their respective hypotheses experimentally. Consequently, Woman takes the only empirically rational action. Woman's justification for transgressing here is less foolhardy than it might sound in retrospect. Being immortal and having never seen or experienced any death at all, and being unable to distinguish good and evil, Woman understands the threatened consequences for her actions only in the most abstract of ways, if at all. Rather, she is being courageous, curious, and logical, and unlike the Serpent, she is willing to take the unpredictable risk. Thus, Woman decides to commit to the proposed experiment:

³⁷ *Genesis* 3.5. In Hebrew:

וְאָמַר הַנָּחֶשׁ אֶל-הָאִשָּׁה לְאִמּוֹת תִּמְתּוּן:

And when the woman saw, that the tree was good for food, and that it was pleasant to the eyes, and a tree to be desired to make one wise, she tooke of the fruit thereof, and did eate, and gaue also unto her husband with her, and hee did eate. / And the eyes of them both were opened.³⁸

Remarkably, the outcome of Woman's experiment appears to confirm the Serpent's prediction. Woman and Human do know good and evil after eating the Forbidden Fruit, just like the God of gods and his divine sons do. And Woman and Human do not die – at least not immediately. For a moment, it truly does appear like God was being a jealous liar imposing arbitrary rules, and Woman, Human, and Serpent had every right to distrust him. Woman and Human have every reason to fear God when they next encounter him in person, and to answer his probing questions evasively.

However, in the larger context, and as time passes, the Serpent's hypothesis proves to be incorrect after all, and God turns out to have been telling the truth. Lacking proper access, Woman and the Serpent were reading God's sovereign secret within an overly limited interpretive framework. The prohibition to eat the Forbidden Fruit was never about consuming a poison fruit *per se*, nor about gaining the knowledge of good and evil. When God finally confronts Woman and Human about their transgression, it becomes clear that the prohibition was against wishing to partake in *any* knowledge reserved for God, to disobey *any* divine command, whether or not it is fully intelligible: "Because thou hast hearkened unto the uoyce of thy wife, and hast eaten of the tree, of which I commaunded thee, saying, Thou shalt not eate of it:

³⁸ Genesis 3.6 & 7. In Hebrew:

ותרא האשה כי טוב העץ למאכל וכי תאוה הוא לעינים ונתתו העץ להשפיל ותקח מפריו ותאכל ותתן גם לאישה עמה ויאכל:
ותפקחנה עיני שניהם וידעו כי עירמם הם ויתפרו עליה תאנה ויעשו להם חגרת:

cursed is the ground for thy sake.”³⁹ In the world of *Genesis*, acting against the law of the divine sovereign is an evil in itself, and it disrupts the proper functioning of his domain, by contradicting the orderly *cosmos* he had created out of *chaos*. The “knowledge of good and evil” appears to include the knowledge that Woman and Human are more powerful than they might have previously thought. Being made “in God’s image,” their actions have consequences, not just for them, but for God and for the wider world. At least partially, the “knowledge of good and evil” is, in fact, human agency.

Meanwhile, Woman and Human’s future death is the consequence of a different set of circumstances. Woman and Human might survive the initial shift in knowledge from naïveté to an understanding of good and evil, and one suspects that placing the tree in the Garden points to God’s desire for them to discover their moral agency all along. However, evidently, having this knowledge *concurrently* with the fruit of the Tree of Life would be dangerous, more so for the two humans than for the God of gods:

And the Lord God said, Behold, the man is become as one of us, to know good & euill. And now lest hee put foorth his hand, and take also of the tree of life, and eate and liue for euer: / Therefore the LORD God sent him foorth from the garden of Eden, to till the ground, from whence he was taken.⁴⁰

³⁹ *Genesis* 3.17. In Hebrew:

וְלֹאֲדָם אָמַר כִּי־שָׁמַעְתָּ לְקוֹל אִשְׁתְּךָ וַתֹּאכַל מִן־הַעֵץ אֲשֶׁר צִוִּיתִיךָ לֵאמֹר לֹא תֹאכַל מִמֶּנּוּ אַרְוֶהָ הָאָדָמָה בְּעֵבוּרְךָ בְּעֵצְבוֹן תֹּאכְלֶנָּה
כֹּל יְמֵי חַיֶּיךָ:

⁴⁰ *Genesis* 3.22 & 23. In Hebrew:

וַיֹּאמֶר אֱלֹהִים הֵן הָאָדָם הָיָה כְּאֵתְד מִמֶּנּוּ לְדַעַת טוֹב וָרָע וְעַתָּה אֶפְרָאֵלְךָ יָדוֹ וְלִקְחָה־גַם מֵעֵץ הַחַיִּים וְאָכַל וַתִּי לַעֲלָם:

Under the new circumstances, immortality threatens Woman's and Human's wellbeing. Evidently, the secret of knowing good and evil was previously prohibited, and the fruit of the Tree of Life allowed to them, because humans can only bear one *or* the other, and not both. It appears God would have preferred that they live forever, at least until they learned to understand their own role and power within his *cosmos*. Now, they must forego immortality. Mortality becomes a blessing that sustains them. Subsequently, there appears to be a logic inherent in this original sovereign secret that requires the humans to become separated from that secret's source, and to speculate forever after *what could have been* had they stayed. The first sovereign secret thus remains forever a probabilistic secret. It can be guessed at and tested, but never read.

A slightly different version of beginnings related to this type of political secret – a secret shaping the interaction between a divine sovereign and a human subject – occurs in the *Metamorphoses* of Publius Ovidius Naso (Ovid, 43 BCE-18 CE). In Book 2, Ovid recounts the fate of Coronis, a princess of Haemonia, daughter of Phlegyas, and granddaughter of the Muse of Love Poetry, Erato, and the god of war, Mars. Coronis is a lover of the sun-god Phoebus, ruler over light and music.⁴¹ Like Woman and Human in *Genesis*, Coronis, too, seals her fate with the aid of an animal. In her case, that animal is Phoebus' own sacred bird, the Raven. To her ruin, “Apollon birde hir privie packing spide” with the young man Ischys, and intends to tell its

וְיִשְׁלַחְתֶּהוּ יְהוָה אֱלֹהִים מִגֹּרְעֵדוֹן לְעִבְדוֹ אֶת־תְּאֵדֹמָה אֲשֶׁר לָקַח מִשָּׂם:

⁴¹ Publius Ovidius Naso, “Corvus. Coronis. Cornyx. Ocyroe.” *Metamorphoses* 2.531-632. The English translation used here is the Early Modern one by Arthur Golding (1536-1606): *The XV. Bookes of P. Ouidius Naso, Entytuled Metamorphosis*. London: Willyam Seres, 1567.

master. Coronis pleads with the divine spy, but to no avail. The Raven informs on her anyway.⁴²

While on his way to carry his intelligence about Coronis to Apollo, the Raven is intercepted by “the pratling Crow.” The Crow warns the Raven to think twice about what it is about to do. It relates how it began her life as a princess named Cornix, who “leisurely / went jetting up and downe the shore upon the gravell drie, / As yet I customably doe,” when Neptune saw her and desired to sleep with her. When his seductions failed, Neptune attempted to rape Cornix, but Pallas Athena intervened and transformed Cornix into the Crow so she could escape. The Crow henceforth served Pallas Athena as one of her sacred birds.⁴³ In this capacity, Pallas Athena later asked the Crow to watch over her child Erichthonius (“Woolscrap-Earth”). Erichthonius had been born to the Virgin Goddess after she fended off an attempted sexual assault by Vulcan, wiped his semen wiped off her leg with a cloth, and threw the cloth to the ground, where Erichthonius germinated. Ashamed, Pallas Athena had ordered Erichthonius to be hidden in a wicker basket tied to an elm tree. She did not, however, wish to completely abandon her secret child.

In the Crow’s telling, Pallas Athena asked three princesses of Athens called Herse, Pandrosus, and Aglaurus to keep watch over the wicker basket in the tree, while Crow in turn keeps watch over the princesses, ensuring they obeyed Pallas Athena’s command to never look inside it. After some back and forth guessing what secret the wicker basket might hold, Aglaurus called her sisters cowards for not daring

⁴² Ovid *Metamorphoses* 2.531-547.

⁴³ Ovid *Metamorphoses* 2.569-588.

to look, and eventually untied the fastenings to the wicker basket. She found the infant Erichthonius, encoiled by his own divine creature, a snake (or in Golding's more fanciful translation, himself "a childe whose partes beneath were like a snake"). Like the Raven, the Crow hurried to tell Pallas Athena about Aglaurus' transgression. Instead of showing gratitude, however, Pallas Athena turned on the Crow, banished her, and replaced her with a different sacred bird. The Crow's place was taken by the Owl, "the fowle that flies not but by night." This rankles the Crow, not least because while the Crow was an innocent victim of an attempted rape, the Owl once was a girl named Nyctimine, famously punished with her own metamorphosis for committing incest with her own father.⁴⁴ Thus, the Crow concludes, the Raven should consider that their divine sovereigns do not always thank the messenger for bad news. Rather, she advises the Raven "to holde their tongues for being shent."⁴⁵

Predictably, the Raven does not listen. Equally predictably, Phoebus does not take the news of Coronis' cheating well. The god is beside himself with anger, "And cast his garlond from his head, and threw his violl downe. / His colour chaungde, his face lookt pale, and as the rage of yre / That boyled in his belking breast had set his heart on fyre." Without even a moment of second-guessing, Phoebus shoots an arrow across half of Greece into Coronis' breast, himself following after it in his chariot. Mortally wounded, Coronis cries out to the suddenly appearing Phoebus that he had committed a great crime. She had only been dallying with another man because she had already been pregnant with Phoebus' child. Terribly, "now in one body by thy

⁴⁴ Ovid *Metamorphoses* 2.547-568.

⁴⁵ Ovid *Metamorphoses* 2.559-564.

meanes a couple shall be dead.” Phoebus is immediately seized with regret. As the Crow had predicted, Phoebus then first turns on the messenger. Phoebus blames the Raven “bicause he did enforme / Him of his lovers naughtinesse that made him so to storme.” Phoebus attempts to heal Coronis “by plaister made of precious herbes,” but she dies nonetheless.⁴⁶

To honor the mother of his unborn child, Phoebus places Coronis on a funeral pyre. In this scene, Ovid makes an astounding comparison. Unable to weep because of his divinity, Phoebus moans instead,

as when a Cow beholdes the cruell butcher stand
With launching Axe embrewd with bloud and lifting up his hand
Aloft to snatch hir sucking Calfe that hangeth by the heeles
And of the Axe the deadly dint upon his forehead feeles.

Just like he had when he first heard the Raven’s message, Phoebus appears to disintegrate. In this moment, Phoebus, too, metamorphoses, turning into the metaphorical cow. The divine façade slips. He loses not just his composure, but also his gender identity, his divine standing, his invincibility, and his power to influence events. Almost immediately, however, he metamorphoses again, this time from the metaphorical cow into the butcher. Phoebus cuts the dead child from Coronis’ womb as one would cut a calf from a dying mother cow, and saves it from burning the flames. Later, Phoebus will deposit the child’s corpse with the “double-natured” Centaur, Chiron. There, the child will revive and will become the god of healing,

⁴⁶ Ovid *Metamorphoses* 2.599-618.

Asclepius, whose sacred animal, like that of Erichthonius, is the snake. Meanwhile, the Raven continues to await praise and a reward. Unforgiving, Apollo instead “the Raven... maketh blacke, forbidding him with whiter birdes to dwell.”⁴⁷ The Crow’s prediction as come true.

Ovid’s story of the Raven is no less instructive than *Genesis* in terms of the interplay between sovereign secrecy, a divine figure, divinely appointed stewards of said secret, and the complex dangers of revealing those secrets. The story the Crow tells of Erichthonius in fact parallels *Genesis* rather closely. Erichthonius, too, is a Forbidden Fruit, in his case, that of a barely disguised rape. Erichthonius, too, is not to be known by humans because that knowledge threatens to undermine the order of the *cosmos*, in which Pallas Athena plays her role as a *virgin* queen. Erichthonius, too, is hidden away in a tree, from which he dangles just as enticingly. Those the goddess has appointed as the stewards watching over the child are princesses of her own dominion, Attica, just like Woman and Human were stewards over Eden. Rather than the Serpent (who plays a different role in this story, fusing with, or wrapping itself around, the secret), it is the watch-woman Aglaurus who declares the others insufficiently bold. As in *Genesis*, all involved suffer the consequences when she “the knots undooe.”

As Yahweh does with Human and Woman, Pallas Athena banishes her trusted steward, the Crow. Like the two protagonists of *Genesis*, the Crow has failed in her duty to ensure that the secret remains un-accessed. Like the guilty parties in *Genesis*, the goddess punishes the transgressors, the princesses designated as watch-women,

⁴⁷ Ovid *Metamorphoses* 2.619-632.

with an eventual death: Depending on the version of the story, the three sisters are either bit by Erichthonius' poisonous snake itself, or they go insane and pitch themselves off the roof of the Acropolis.⁴⁸ Like Yahweh, his particular Creation, and the Knowledge of Good and Evil in *Genesis*, the sovereign goddess Pallas Athena, her Creation, and her secret can no longer remain as they were. Consequently, like Yahweh must expell those "made in our likeness" from his Garden, Pallas Athena, too, is forced to exile her child: Like Apollo's son Asclepius, Erichthonius ends up living in a cave with a centaur. Not coincidentally, in pursuant Greek texts, the figures of Asclepius and Erichthonius fuse to become one and the same god of healing. In this sense, too, *Genesis* and Ovid's account resemble each other: the children of Apollo, Pallas Athena, and Yahweh eventually all become vehicles for some salvific outcome. The uncovered divine and sovereign secret becomes the beginning point of a different cosmic narrative, one that reinforces the power of the sovereign over that cosmos.

The story of Coronis and Apollo proper, meanwhile, provides a different perspective on the betrayal of a divine secret. Here, *it appears* to Apollo that his Forbidden Fruit has been snatched – or rather, given away, since Coronis appears to define her own sexual choices. Indeed, Coronis *is* the Forbidden Fruit, but more so in her role as mother to his child than as a lover: The god, too, transgresses, and far more seriously than Coronis and Ischys, by plucking Coronis out of her life. The Raven, like the Serpent and the Crow, shares his misplaced hypothesis about the true nature of the secret, and in the end is punished for it. In a sense, in this tale, *all* characters are guilty

⁴⁸ Cf. Gaius Julius Hyginus, *Fabulae* [*Fables*] 166; Pausanias, *Hellados Periegesis* [*Description of Greece*] 1.18.2.

of misreading secrets they ought not be privy to. Coronis misreads her secret affair with Ischys as safe and tolerable to Apollo, since she is pregnant and therefore momentarily barren, and since Apollo would put up with her choices given her new-found status as mother of a demigod. The Raven, who cannot know that Coronis is pregnant, misreads that situation and delivers a half-truth to Apollo. Apollo, who also cannot know that Coronis is pregnant, bases his own misreading on the partial hearsay that constitutes his own hypothesis of Coronis' dispensability. The secret in question here additionally acquires novel, political valences when one considers who Ischys is. His name does not coincidentally translate into English as "strength, power."⁴⁹ Consequently, Coronis was betraying her own sovereign, Apollo, with quite literally another "power." As in cases of political secrecy, the logics that drive this plot are based on probability, plausibility, betrayal, loyalty, and an ever-shifting set of circumstances that shift definitions of right and wrong action depending on who knows what, when, why, and how.

Finally, the story of Apollo and Coronis introduces the question of the medium of political secrecy, and of how that medium is able or unable to reflect reality. In this story, the *data* of the case is gathered by the Raven. It is the Raven, too, who in the classical, rhetorical, and legal sense then goes on to *invent* the *facts* of the case, choosing what *data* is important, and how it might present it convincingly to Apollo. However, the Raven is a bad intelligencer, a corrupted medium, a poor inventor. It omits the most crucial *data* point of all: the existence of a divine child and heir, that

⁴⁹ "ἰσχύς." *Liddell-Scott*.

most precious vehicle for the maintenance of legitimacy in any sovereign structure. In this, the Raven stands in stark contrast to an example from the Christian mythology, where the divine “messenger” (ἄγγελος, *ángelos*, “angel”) Gabriel (גַּבְרִיאֵל, *Gavriel*, “God is Strength”) delivers *his* message about the existence of an unborn son and heir with the correct emphasis to the parent, the Virgin Miryam (מֵרִיָּם, Anglicized *Mary*). The delivery of a correct sovereign secret by an uncorrupted medium elicits the Magnificat and instigates the Life of Christ, the salvific tale of that mythology. Ovid’s Raven, meanwhile, nearly causes the death of the infant Asclepius, god of medicine and healing, and directly causes the death of Coronis. In matters of political secrecy, the stakes are high: Misreading a sovereign secret can kill, can irreversibly blacken one. Reading it correctly can save one’s *cosmos*. The political secret is, accordingly, another sort of *arkhe* and *logos*, too – that of the sovereign crisis of legitimacy and power, and of the resolution of that crisis.

II. The Logics of Political Secrecy

It should already have become clear even at this early stage of this dissertation’s argument that narratives of political secrecy appear to follow specific logics and a recognizable pattern of plots, and that it moreover employs a very particular type of knowledge delivery system, providing a particular type of contingent fact for a particular frame of interpretation. This dissertation will eventually argue that the development of the *means* of political secrecy parallels that of the *means* of empirical science, although neither its method nor its epistemological outcome is ever identical to scientific empiricism proper. Understanding this (often literary) overlap between

epistemology and the media of political secrecy requires more than just a discussion of *depictions*, or even of shared metaphors or historical coincidences. Instead, it requires a theoretical framework that can accommodate history, scientific epistemology, and the literary in a way that clarifies the *how* as much as the *what*.

The initial language for this theoretical framework emerges from the work of Prussian-American intellectual historian Ernst Hartwig Kantorowicz (1895-1963), a major contributor to 20th Century theories of political theology. Like political secrecy, Kantorowicz is a sort of hybrid, a figure who stretches conventional frames of historical belonging, a centaur of his own time. In the 1920s, Kantorowicz had been a young Jewish intellectual active in the German monarchist-nationalist movement, volunteering to fight in World War I and afterwards in the *freikorps* campaigns against the rebel Polish uprising in Posen Province and the Communist Spartacist risings in Munich and Berlin. Kantorowicz was also a member of the conservative literary circle headed by Hessian-German symbolist poet Stefan Anton George (1868-1933). Kantorowicz thus situated himself in the same milieu as the Prussian-German jurist and Catholic-nationalist political theorist Carl Schmitt (1888-1985), on whose work he would later heavily draw. When Kantorowicz took up an academic career around 1930, he entered the discourse of political theology made current by that thinker in his treatise on the subject,⁵⁰ engaging with Schmitt's thought alongside a diverse group of

⁵⁰ Carl Schmitt, *Politische Theologie: Vier Kapitel zur Lehre von der Souveränität*. München & Leipzig: Duncker & Humblot, 1922; Carl Schmitt, *Political Theology: Four Chapters on the Concept of Sovereignty*. Chicago: U of Chicago P, 2010. Kantorowicz' work particularly reflects Schmitt's idea that modern political concepts tend to be secularized versions of theological ancestor concepts, see *Political Theology* 36-52; *Politische Theologie* 35-46. For an excellent introduction to the interplay of ideas between Schmitt, Agamben, Arendt, Benjamin, and others, see Philip Lorenz, *The Tears of Sovereignty*. New York: Fordham UP, 2013. 6-32.

other members of Kantorowicz' scholarly generation, like the Prussian-German philosophers Walter Bendix Schönflies Benjamin (1892-1940),⁵¹ Johanna Cohn Arendt (1906-1975),⁵² and Ernst Alfred Cassirer (1874-1945).⁵³

In conversation with these thinkers, Kantorowicz developed his particular perspective on political theology. Despite his right wing-conservative political leanings and his decorated German military career, Kantorowicz was forced to leave his beloved Germany for the United States of America in 1938 to avoid persecution for his Jewish heritage by the antisemitic “brown rabble,” the National Socialists. In the United States, Kantorowicz published his seminal work *The King's Two Bodies*, in which he advances ideas he had previously introduced in his study of medieval royal acclamations, *Laudes Regiae*, and an article, “Mysteries of State.”⁵⁴ Kantorowicz' overarching argument in these texts seizes on the Early Modern legal distinction between the “body natural” and the “body politic,” first introduced to British discourse

⁵¹ Walter Benjamin, “Zur Kritik der Gewalt.” *Gesammelte Schriften* 2.1. Rolf Tiedemann & Hermann Schweppenhauser, eds. Frankfurt: Suhrkamp, 1999. 179-204; Walter Benjamin, “Critique of Violence.” *Walter Benjamin: Selected Writings, Vol. 1 1913-1926*, Marcus Bullock & Michael W. Jennings, eds. Cambridge, Mass.: Belknap / Harvard UP, 1996. 236-53; Horst Bredekamp, “Walter Benjamin's Esteem for Carl Schmitt.” *Oxford Handbook of Carl Schmitt*. Jens Meierhenrich & Oliver Simons, ed. Oxford: Oxford UP, 2017.

⁵² Hannah Arendt, “Religion and Politics.” *Essays in Understanding, 1930-1954*. Jerome Kohn, ed. New York: Harcourt, Brace, 1994. 380-384; Samuel Moyn, “Hannah Arendt on the Secular.” *New German Critique* 35.3 (Fall 2008), 71-96; Andreas Kalyvas, *Democracy and the Politics of the Extraordinary: Max Weber, Carl Schmitt, and Hannah Arendt*. Cambridge: Cambridge UP, 2008; Nathan van Camp, “Hannah Arendt and Political Theology: A Displaced Encounter.” *Revista Pléyade* 8 (July-Dec 2011), 19-35.

⁵³ Victoria Kahn, “Political Theology and Fiction in *The King's Two Bodies*.” *Representations* 106.1 (Spring 2009), 77-101; Montserrat Herrero, “On Political Theology: The Hidden Dialogue between C. Schmitt and Ernst H. Kantorowicz in *The King's Two Bodies*.” *History of European Ideas* 41.8 (Nov 2015), 1164-1177.

⁵⁴ Ernst H. Kantorowicz, *Laudes Regiae: A Study in Liturgical Acclamations and Mediaeval Ruler Worship*. Berkeley: U of California P, 1946; Ernst H. Kantorowicz, “Mysteries of State.” *Harvard Theological Review* 48 (1955), 65-91; Ernst H. Kantorowicz, *The King's Two Bodies: A Study in Mediaeval Political Theology*. Princeton: Princeton UP, 1957.

by the Tudor-era Shropshire jurist Edmund Plowden (1518-1585). In 1571, Plowden published his legal commentaries, which included the lines,

For the King has in him two Bodies, *viz.* a Body natural, and a Body politic. His Body natural (if it be considered in itself) is a Body mortal, subject to all Infirmities that come by Nature or Accident, to the Imbecillity of Infancy or old Age, and to the like Defects that happen to the natural Bodies of other People. But his Body politic is a Body that cannot be seen or handled, consisting of Policy and Government, and constituted for the Direction of the People, and the Management of the public-weal ... and for this Cause what the King does in his Body politic cannot be invalidated or frustrated by any Disability in his natural Body.⁵⁵

In his discussion of Plowden's legal theory, Kantorowicz identifies political theology with "the Mysteries of State," emphasizing that in the European tradition, the office of kingship relies on secrets of the type normally reserved for priests, and that the sovereign's titles can at times appear to equate him to divine figures, not least Christ.⁵⁶

⁵⁵ Edmund Plowden, *Les Commentaries ou Reports de Edmund Plowden*. London: Richard Tottell, 1588. 213: "Car le Roy ad en luy in deux corps. s. corps natural, & corps politike. Et son corps natural (si home respect ceo per loy mesme) est corps passible, subiect a tous infirmities prouenant per nature & per euent, & en ceoil ad le imbecilitie del infancie, & del senectute, & en ceo il ad autiel defects come auss homes ont en lour corps natural. Mes son corps politike est corps impassible, consistant de policie, & gouernement, constitute pur direction del people, & pur guide de le publike weale ... & pur ceo cause, ceo que il fait en son corps politike ne poi test emblemish, ou enfeeble per disabilitie en son corps natural." The English translation is the 1761 version, printed by Catharine Lintot and Samuel Richardson.

⁵⁶ "Under the impact of those exchanges between canon and civilian glossators and commentators — all but non-existent in the earlier Middle Ages — something came into being which then was called "Mysteries of State," and which today in a more generalizing sense is often termed 'Political Theology.' Felicitous as ever, Maitland once remarked that eventually 'the nation stepped into the shoes of the Prince.'" While fully agreeing, I yet feel that we should add: "Not before the Prince himself had stepped

He also distinguishes an explicitly political version of the theological *mysterium*, the *arcana imperii*. It is sacrilege for non-sovereigns to access either type of political-theological secret: “‘Sacrilege,’ to be sure, is a strong word which borders on the ‘zone of silence’ reserved for *mysteria* and *arcana*, for actions in church and in court.”⁵⁷ It is in this near-sacrilegious “zone of silence” that this dissertation locates the structures, logics, and media of contemporary political secrecy.

Next arises the question of *what matter of thing* political secrets ought to be taken to be. This, firstly, requires a turn to the work of the Badenser-German philosopher Martin Heidegger (1889-1976), his conceptions of *gestell* (often translated as “enframing”), and his closely related views on *techne*. The seminal text in this regard is Heidegger’s essay “The Question Concerning Technology” (*Die Frage nach der Technik*).⁵⁸ Heidegger argues that traditionally technology is seen as both “a means to an end” and “a human activity,” and that the two are inextricably linked: “for to posit ends and procure and utilize the means to them is a human activity.”⁵⁹ However, to Heidegger, technology is a way of “revealing” (*entbergen*),⁶⁰ and indeed

into the pontifical shoes of Pope and Bishop.” Kantorowicz, “Mysteries of State,” 67. For a late medieval, Early Modern, and modern context, see esp. Kantorowicz, *Laudes Regiae*, 180-184.

⁵⁷ Kantorowicz, “Mysteries of State,” 69.

⁵⁸ Martin Heidegger, “Die Frage nach der Technik.” *Vorträge und Aufsätze*, Vol. 1. Pfullingen: Günther Neske, 1954. 5-36.

⁵⁹ Heidegger, “Frage,” 5-6: “Als das Wesen von etwas gilt nach alter Lehre jenes, was etwas ist. Wir fragen nach der Technik, wenn wir fragen, was sie sei. Jedermann kennt die beiden Aussagen, die unsere Frage beantworten. Die eine sagt: Technik ist ein Mittel für Zwecke. Die andere sagt: Technik ist ein Tun des Menschen. Beide Bestimmungen der Technik gehören zusammen. Denn Zwecke setzen, die Mittel dafür beschaffen und benützen, ist ein menschliches Tun.” English transl. William Lovitt.

⁶⁰ Heidegger, “Frage,” 12: “Die Technik ist also nicht bloß ein Mittel. Die Technik ist eine Weise des Entbergens. Achten wir darauf, dann öffnet sich uns ein ganz anderer Bereich für das Wesen der Technik. Es ist der Bereich der Entbergung, d. h. der Wahr-heit.” The German *entbergen* is a rarely used antonym of the far more common term *verbergen*, “to hide, to obscure.”

this is the meaning of the word *techne*: “*Techne* belongs to bringing-forth, to *poiesis*; it is something poetic.”⁶¹ In that sense, *techne* often goes hand in hand with the *episteme*, although its function for knowledge differs: “*Techne* is a mode of *aletheuein*. It reveals whatever does not bring itself forth and does not yet lie here before us, whatever can look and turn out now one way and now another.”⁶² Any *techne* thus has a *poetic* function, one that reveals ends and means. It is in this sense that this dissertation will employ the term *techne*.

In the modern era, Heidegger argues next, the technological mode of thinking has reduced nature – and indeed, also humans – to a resource: the River Rhine, that mighty stream so central to the poetry, music, and mythology of an entire people, has been reduced to a resource (*bestand*, often translated as “standing-in-reserve”) that provides the force to generate, say, hydroelectricity, or one on which a tourism industry can thrive that sells it to visitors as a landscape to be viewed and experienced.⁶³ This “gathering” of all phenomena as resource for technologies is what Heidegger calls the *gestell*.⁶⁴ The modern version of the technological *gestell* can be, for example, understood through the example of a natural science like physics:

Man’s ordering attitude and behavior display themselves first in the rise of modern physics as an exact science. Modern science’s way of

⁶¹ Heidegger, “Frage,” 12: “Die τέχνη gehört zum Hervor-bringen, zur ποίησις; sie ist etwas Poietisches.“

⁶² Heidegger, “Frage,” 13: “Die τέχνη ist eine Weise des *aletheuein*. Sie entbirgt solches, was sich nicht selber her-vor-bringt und noch nicht vorliegt, was deshalb bald so, bald anders aussehen und ausfallen kann.” Transl. Lovitt.

⁶³ Heidegger, “Frage,” 15-16.

⁶⁴ Heidegger, “Frage,” 19: “Wir nennen jetzt jenen herausfordernden Anspruch, der den Menschen dahin versammelt, das Sichtenbergende als Bestand zu bestellen - das *Ge-stell*.”

representing pursues and entraps nature as a calculable coherence of forces. Modern physics is not experimental physics because it applies apparatus to the questioning of nature. Rather the reverse is true. Because physics, indeed already as pure theory, sets nature up to exhibit itself as a coherence of forces calculable in advance, it therefore orders its experiments precisely for the purpose of asking whether and how nature reports itself when set up in this way.⁶⁵

The consequence is that within such a mode of thought, only that can be considered “true” which can be measured mathematically, and turned into calculable *data* and *information*.⁶⁶ In the information age, the political secret is administered by just such a *gestell*, just such a *techne*, and just such a mode of thought: namely the calculation of probabilities based on *data*, in the form of secret today referred to as *intelligence* (see Chapter 3). How, then, did it end up there? How can such a type of political secret be brought into alignment with Kantorowicz’ *mysterium* and *arcana imperii*?

One avenue might be found in the work of Lazio-Italian philosopher Giorgio Agamben (b. 1942), particularly his concept of *oikonomia*. For Agamben, the lineage

⁶⁵ Heidegger, “Frage,” 21: “Dementsprechend zeigt sich das bestellende Verhalten des Menschen zuerst im Aufkommen der neuzeitlichen exakten Naturwissenschaft. Ihre Art des Vorstellens stellt der Natur als einem berechenbaren Kräftezusammenhang nach. Die neuzeitliche Physik ist nicht deshalb Experimentalphysik, weil sie Apparaturen zur Befragung der Natur ansetzt, sondern umgekehrt: weil die Physik und zwar schon als reine Theorie die Natur daraufhin stellt, sich als einen vorausberechenbaren Zusammenhang von Kräften darzustellen, deshalb wird das Experiment bestellt, nämlich zur Befragung, ob sich die so gestellte Natur und wie sie sich meldet.” Transl. Lovitt.

⁶⁶ Heidegger, “Frage,” 22: “Wenn die moderne Physik in zunehmendem Maße sich damit abfinden muß, daß ihr Vorstellungsbereich unanschaulich bleibt, dann ist dieser Verzicht nicht von irgendeiner Kommission von Forschern diktiert. Er ist vom Walten des *Ge-stells* herausgefordert, das die Bestellbarkeit der Natur als Bestand verlangt. Darum kann die Physik bei allem Rückzug aus dem bis vor kurzem allein maßgebenden, nur den Gegenständen zugewandten Vorstellen auf eines niemals verzichten: daß sich die Natur in irgendeiner rechnerisch feststellbaren Weise meldet und als ein System von Informationen bestellbar bleibt.”

is a conscious one. In his *What is an Apparatus?*,⁶⁷ Agamben draws a direct line between his own *oikonomia* and Heidegger's *gestell* (alongside Hegel's *positivität* and Foucault's *dispositif*).⁶⁸ Chapter 2 of this dissertation will treat Agamben's idea of *oikonomia* at some depth, especially its own connections to political-theological thought. The other route is to engage aspects of a complementary (and in some ways, derivative) concept to Heidegger's, namely the idea of a "mythological core" opposite Heidegger's "technological core" of culture, as advanced by Masovian-Polish philosopher Leszek Kołakowski (1927-2009) in his *The Presence of Myth*.⁶⁹ Kołakowski distinguishes between "two different sources of energy active in man's conscious relation to the world: the technological and the mythical."⁷⁰ Kołakowski views the technological sphere much the same as Heidegger does, as a product of *gestell*, an attitude towards the *cosmos* that aims at manipulation and control, that forms "the data of experience." The technological "represents an understanding

⁶⁷ Giorgio Agamben, *What is an Apparatus?* David Kishik & Stefan Pedatella, transl. Palo Alto: Stanford UP, 2009; Giorgio Agamben, *Che cos'è un Dispositivo?* Roma: Nottetempo, 2006.

⁶⁸ "Il termine latino *dispositio*, da cui deriva il nostro termine 'dispositivo,' viene dunque ad assumere su di sé tutta la complessa sfera semantica dell'*oikonomia* teologica. ... Alla luce di questa genealogica, id dispositivi foucauldiani acquistano una pregnanza ancora più decisiva, in un contesto in cui essi incrociano non soltanto la 'positività' del giovane Hegel, ma anche il *Gestell* dell'ultimo Heidegger, la cui etimologia è affine a quella di *dis-positio*, *dis-ponere* (il tedesco *stellen* corrisponde al latino *ponere*). Quando Heidegger, in *Die Technik und die Kehre* (La tecnica e la svolta), scrive che *Ge-stell*, significa comunemente 'apparato' (*Gerät*), ma che egli intende con questo termine 'il raccogliersi die quel (dis)porre (*Stellen*), che (dis)pone dell'uomo, cioè esige da lui lo svelamento del reale sul modo dell'ordinare (*Bestellen*),' la prossimità di questo termine con la *dispositio* dei teologi e con i dispositivi di Foucault è evidente." 19-20.

⁶⁹ Leszek Kołakowski, *The Presence of Myth*. Adam Czerniawski, transl. Chicago: U of Chicago P, 1989; Leszek Kołakowski, *Obecność Mitu*. Paris: Institute Litteraire, 1972.

⁷⁰ Kołakowski, *Presence*, 2. Kołakowski, *Obecność*, 8: "Idea dowodu wprowadzona do metafizyki powstaje z konfuzji dwóch różnorodzących źródeł energii czynnych w świadomym odniesieniu ludzkim do świata: technologicznej i mitycznej."

interpretation of these data.”⁷¹ However, Kołakowski observes, “A mythical organization of the world (that is, the rules of understanding empirical realities as meaningful) is permanently present in culture.”⁷² Kołakowski is not being nostalgic for religion here; his main philosophical work is on Hume and on Marxist thought.⁷³

What, then, is the relationship between the technological *gestell* and this mythical, yet secular organization of the world? Kołakowski argues that it does not particularly matter whether the mythical is religious or nonreligious, since they – and here the parallel to Schmitt and Agamben becomes clearer – function in much the same fashion. For one, they represent

the desire to arrest physical time by imposing upon it a mythical form of time; that is, one which allows us to see in the mutability of things not only *change*, but also *accumulation*, or allows us to believe that what is past is retained – as far as values are concerned – in what endures; the facts are not merely facts, but are building blocks of a universe of values which it is possible to salvage despite the irreversible flow of events.⁷⁴

⁷¹ Kołakowski, *Presence*, 2. Kołakowski, *Obecność*, 8: “Ład celowy świata nie może być wywiedziony dedukcyjnie z tego, co prawomocnie może uchodzić za doświadczalne tworzywo myślenia naukowego; nie może też tworzyć prawomocnej hipotezy tłumaczącej dane doświadczenia. Afirmacja tego ładu jest tych danych interpretacją rozumiejącą.”

⁷² Kołakowski, *Presence*, 2-3. Kołakowski, *Obecność*, 9: “Mityczna organizacja świata (tj. reguły rozumienia rzeczywistości empirycznych jako sensownych) jest w kulturze trwale obecna.”

⁷³ E.g. Leszek Kołakowski, *The Alienation of Reason*. Norbert Guterman, transl. New York: Doubleday, 1968; Leszek Kołakowski, *Filozofia pozytywistyczna (od Hume'a do Koła Wiedeńskiego)*. Warszawa: Państwowe Wydawnictwo Naukowe, 1966; Leszek Kołakowski, *Main Currents of Marxism*, 3 vols. P.S. Falla, transl. London: Oxford UP, 1978; Leszek Kołakowski, *Główne nurty marksizmu. Powstanie, rozwój, rozkład*, 3 vols. Paris: Institute Litteraire, 1976-1978.

⁷⁴ Kołakowski, *Presence*, 4-5. Kołakowski, *Obecność*, 10-11: “Pragnienie unieruchomienia czasu fizycznego przez nałożenie nań mitycznej formy czasu, tj. takiej, która pozwala w przepływie rzeczy dopatrywać się nie przemiany tylko, lecz kumulacji, albo pozwala wierzyć, że to, co minione,

More importantly:

From a functional point of view, they are the same and reveal the labors of the same stratum of mind. They are an attempt in language to transcend the contingency of experience, the contingency of the world. They attempt to describe something that will give a noncontingent value to our perception and our practical contact with the world; they attempt to convey what cannot be literally conveyed, since our linguistic instruments are incapable of freeing themselves from the practical employment which summoned them to life. They therefore speak mainly through successive negations, doggedly and infinitely circling round the kernel of mythical intuition which cannot be reached with words. They are not subject to conversion into rationalized structures, nor can they be replaced by such structures.⁷⁵

Consequently, in the “zone of silence” of political secrecy, there must be an ongoing negotiation between the political (here, the sovereign), the technological (here, the secret), and the *muthos*-logical (here, political theology and poetics, specifically Early Modern drama).

przechowuje się – co do wartości – w tym, co trwa; że fakty nie są faktami tylko, lecz cegiełkami świata wartości, które można ocalić bez względu na nieodwracalność zdarzeń.”

⁷⁵ Kołakowski, *Presence*, 131-132. Kołakowski, *Obecność*, 148-149: “Ale z funkcjonalnego punktu widzenia są one tym samym i objawiają prace tego samego złoza świadomości. Są próbą przekroczenia w słowie przypadkowości doświadczenia, przypadkowości świata. Usiłują opowiedzieć coś, co naszej percepcji i naszej praktycznej styczności ze światem nada wartość nieprzypadkowa; usiłują opowiedzieć to, co się opowiedzieć dosłownie nie daje, albowiem nasze narzędzia słowne nie mogą uniezależnić się od praktycznego użytku, który je do życia powołał. Mówią tedy głównie przez kolejne negacje, uporczywie i nieskończenie krążąc wokół ośrodka mitycznej intuicji, w który słowo nie trafia. Nie poddają się konwersji w zracjonalizowane struktury i nie mogą być także przez takie struktury zastąpione.”

Within these frameworks, then, this dissertation can turn to its own theoretical core: the evolving logic of the political secret. This dissertation builds on intellectual predecessors here, too. In her study of political secrecy and literary theory in the modern period, *Secret War*, Hessian-German literary theorist Eva Horn (b. 1965) identifies the three types of political secrecy this dissertation will adapt, and “that are best illustrated by the various Latin words for ‘secret’”: the *mysterium*, the *arcanum*, and the *secretum*.⁷⁶ Each of these, so Horn, represents a different form of secrecy, each follows its own logic, and each plays an important role in shaping the modern concept of political secrecy, particularly in its form as *intelligence*.

Horn draws on two main sources to develop these distinctions: the Dauphinois-French cultural critic Louis Marin (1931-1992) and Kantorowicz. Horn takes up the term *logiques de secret*, or “logic (or logics) of the secret,” from Marin’s chapter “The Logic of Secrecy” in his *Lectures Traversières (Cross-Readings)*.⁷⁷ There, Marin’s argument begins with the observation that the root of the Latin word for “secret,” *secretum*, is *se-cernere*, “something set apart . . . , separated, reserved.”⁷⁸ Lexically, Marin argues, at its core the logic of the secret is thus based on taking something away, or isolating it, from a larger set or whole: “This setting apart is the primitive gesture of secrecy: sifting, straining, filtering, sorting; discerning, distinguishing,

⁷⁶ Eva Horn, *The Secret War: Treason, Espionage, and Modern Fiction*, Geoffrey Winthrop-Young, transl. Evanston: Northwestern UP, 2013. 85-88; Eva Horn, *Der geheime Krieg: Verrat, Spionage und moderne Fiktion*. Frankfurt: Fischer, 2007. 105-108.

⁷⁷ Louis Marin, *Cross-Readings*. Jane Marie Todd, transl. Atlantic Highlands, N.J.: Humanities P International, 1998; Louis Marin, *Lectures Traversières*. Paris: Albin Michel, 1992.

⁷⁸ Marin, *Cross-Readings*, 195. Marin, *Lectures*, 247: “C’est ce qui est mis à part . . . , ce qui est séparé, ce qui est réservé.”

separating the wheat from the chaff, the nugget from the sand, the idea from the train of thought, genius from a group of mediocre minds.”⁷⁹

To Marin, however, the logic of secrecy is not limited to making a qualitative selection of one thing over other things. It also appears to require that thing to remain among the other things, hidden and undiscovered: “It is when the wheat was mixed with the chaff, the nugget with the sand, the idea with a train of thoughts, genius with mediocrity that the wheat, nugget, idea, and genius were secrets. It was then that they were secreted away – in a mixture, in confusion, indistinction.”⁸⁰ Indeed, the secret, so Marin, *must* be mixed in with the non-secret and with the indistinct so effectively that those who normally handle the thing that is secret cannot perceive it as qualitatively different: “But who knew it at the time, who saw it, who perceived it? The farmer, the prospector, the thinker? Not so.”⁸¹

This does not mean, Marin explains, that secrets ought not be discovered; indeed, *someone* must discover them, in order for them to be secrets at all. Marin explains: “Secrecy does not consist of holding back what is [qualitatively] different, and only what is different, but rather in identifying it, in order to allow for its identification in the end.”⁸² Otherwise, one assumes, it would not be a secret; it would

⁷⁹ *ibid.* “Geste primitif du secret, cette mise à l’écart; criblage; le tamis, la passoire, le filtre; discernement, distinction; le grain, de la balle; la pépite, du sable; l’idée, du train de pensées; le génie, du groupe des médiocres.”

⁸⁰ *ibid.* “C’est quand le grain était mêlé à la balle, la pépite au sable, l’idée aux pensées, le génie aux médiocres que grain, pépite, idée, génies étaient secrets: c’est alors qu’ils étaient au secret: mélange, confusion, indistinction.”

⁸¹ *ibid.* “Mais qui donc le savait, le voyait, the percevait alors ? Le paysan, le chercheur d’or, le penseur ? Non pas.”

⁸² Marin, *Cross-Readings*, 196. Marin, *Lectures*, 248: “Le secret, non pas réserver le différent, le seul différent, mais l’identifier pour, en fin de compte, en permettre l’identification.”

simply be something overlooked, irrelevant, forgotten. What makes it a secret is that marking for eventual identification, and the temporal delay of that identification: “It is only that they have appeared, once they have been found, discovered, or revealed to be secrets, or rather, to have been secreted away in the mixture and the confusion. The secret: a deferred action of revelation.”⁸³ This entire process is, Marin concludes, the identifying marker of secrecy, its process of self-revelation, and thus of its power and effect: “The secret is not a setting apart but an act of mixing together *in order to set apart*.”⁸⁴ Or, in other words, “dissimulation of the unique by assimilation to all the others that are part of the set.”⁸⁵ Ergo, “the secret is an incorporeality, a simulacrum, a nothing. ... It is always *as if*.”⁸⁶

Subsequently, so Marin, there develops a sort of “great game” inherent in the logics of secrecy themselves:

The game can now begin, the secrecy game, the truth game: It consists in recognizing, in that individual similar to all, the feature that makes him singular – or in marking him with that feature – so that, in exhibiting those features that relate him or assimilate him to all, the secret that sets him apart will be forgotten, and, hence, he will remain

⁸³ Marin, *Cross-Readings*, 195. Marin, *Lectures*, 247: “C’est une fois apparus, trouvés, découverts, révélés secrets ou plutôt l’avoir été dans le secret du mélange et de la confusion: le secret ou l’après-coup de sa révélation.”

⁸⁴ Marin, *Cross-Readings*, 196. Marin, *Lectures*, 248: “Le secret: non pas mettre à part, mais confondre, *pour que soit mis à part*.”

⁸⁵ Marin, *Cross-Readings*, 196. Marin, *Lectures*, 248: “Dissimulation de l’unique par assimilation à tous les autres qui peuplent l’ensemble.”

⁸⁶ Marin, *Cross-Readings*, 196. Marin, *Lectures*, 248: “Le secret, un incorporel, un simulacre, un rien. ... Toute se passe *comme si*.”

hidden. But exhibiting the sameness of what is different – and there will always be, at least in the discourse of secrecy, in its fiction, a moment of display, even an ostentation of sameness, of the identical, a display of in-difference – showing it, in order to dissimulate what is different in this sameness, will always amount to indicating the difference of that sameness (upon the foundation of sameness).”⁸⁷

It is in this paradox that the logic of secrecy becomes a literary problem. As Horn puts it, “Secrets generate conjectures; they trigger narratives designed to make sense of events that are removed from knowledge. When we are unable (or unqualified) to know what ‘really’ happened, the only thing left to do is to construct plausible versions.”⁸⁸ The most plausible versions are probable scenarios, and probable scenarios are best understood narratively. Thus, “Fiction... is the most lucid way to shed light onto the structure of the ... political secret. Since fictions do not, like works of journalism or history, claim to offer *one* historical truth of any event, they are better suited to analyzing how secrecy functions; they can explore *possible* versions of an event but refrain from settling in an ‘ultimate’ solution.”⁸⁹ That, so Horn, is the

⁸⁷ Marin, *Cross-Readings*, 197. Marin, *Lectures*, 249: “Le je peut alors commencer, celui du secret et de la vérité: reconnaître, dans cet individu semblable à tous, soit oublié celui qui le met à part, et ainsi le dissimuler. Mais exhiber le même du différent – et il y aura toujours, au moins dans le discours du secret, dans sa fiction, un moment d’ostension, voire d’ostentation du semblable, de l’identique, une parade de l’indifférence – le montrer, pour dissimuler le différent du même, reviendra toujours, en quelque façon, à indiquer la différence de cette similarité (dans ou sur le fond de cette similarité).”

⁸⁸ Horn, *Secret War*, 25. Horn, *Der geheime Krieg*, 10: “Geheimnisse generieren Vermutungen, mehr noch: Erzählungen, die versuchen, das dem Wissen Entzogene in eine nachvollziehbare Abfolge von Ereignissen zu bringen. Gerade wenn man nicht wissen kann (oder soll), was ‚wirklich geschehen‘ ist, bleibt nichts anderes, als möglichst plausible Versionen davon zu konstruieren.“

⁸⁹ Horn, *Secret War*, 25. Horn, *Der geheime Krieg*, 10-11: “Fiktionen sind ... die luzideste Möglichkeit, ... über das politische Geheimnis zu sprechen. Gerade weil Fiktionen den Anspruch von Historikern oder Journalisten aufgibt, die *eine* historische Wahrheit über ein Ereignis vortragen zu können, ist sie besser als alle anderen Diskursformen geeignet, von Geheimnissen zu sprechen, ihre Form zu erläutern

case because they can maintain the “moment of display” (Marin) while mimicking secrecy’s ever-contingent reliance on probability and tactical circumstance:

Fictions illuminate secrecy’s structure because they reconstruct its logic, its subtle and mysterious economy of light and dark, truths and lies, presence and absence. Unlike memoirs or historical accounts, fiction is able to circumvent the legal interdictions that necessarily surround state secrets, whether gag orders and secrecy clauses imposed on insiders or the classification of certain types of information.⁹⁰

Horn’s assessment lends itself particularly well to an Early Modern topic, especially one that focuses on the poetics of drama, with its close affinity to the performative rhetorical arts. Horn specifically evokes aspects of both:

“‘Invention’ has always been a mask to reveal otherwise ‘unspeakable’ truths. But the main reason for fiction’s lucidity lies in its poetic structure: through the form of its narrative, its subtle play of allusion and mysteriousness, implication and explication, the literary narrative can make the secret ‘readable,’ decipherable without explicitly solving it, thereby rendering visible the structure of a type of knowledge inextricably entangled with nonknowledge, truth blended with lie.”⁹¹

– ohne diese Geheimnisse endgültig lüften zu können oder zu wollen. Sie exploriert mögliche Versionen eines Ereignisses, aber verfällt nicht der Illusion einer abschließenden Lösung.“

⁹⁰ Horn, *Secret War*, 25. Horn, *Der geheime Krieg*, 11: “Fiktion analysiert Geheimnisse, sie ist fähig, ihre Struktur zu durchleuchten, gerade weil sie deren Logik, ihre diffizile und rätselhafte Ökonomie von Hell und Dunkel, Präsentiertem und Verborgenen nicht aufbricht, sondern nachvollzieht. Nicht zuletzt verstrickt sie sich darum auch nicht in jene Verbote, die das Staatsgeheimnis notwendig umgeben: Seien es die Schweigeverpflichtungen von Insidern oder die Klassifikation bestimmter Informationen.“

⁹¹ Horn, *Secret War*, 25. Horn, *Der geheime Krieg*, 11: “Fiktion analysiert Geheimnisse, sie ist fähig, ihre Struktur zu durchleuchten, gerade weil sie deren Logik, ihre diffizile und rätselhafte Ökonomie von

This focus on *invention* in regards to political secrecy is useful because, as Californian-American Early Modern literary critic Roland Greene (b. 1957) observes in his study *Five Words*, “*Invention* is perhaps the signal concept of early modernity.”⁹² Greene, too, touches on the way in which political secrecy and invention share a particular approach to identifying facts: “In western European and transatlantic societies after the Middle Ages, *invention* is not only what it seems to be, a rhetorical process received from classical antiquity, but a figure that represents the confrontation between two factors: the human capacity to touch reality and that reality itself.”⁹³ These factors manifest themselves as modes of thought, simultaneously both as the process and as its result, “as discovery and as conception.”⁹⁴

Hell und Dunkel, Präsentiertem und Verborgenen nicht aufbricht, sondern nachvollzieht. Nicht zuletzt verstrickt sie sich darum auch nicht in jene Verbote, die das Staatsgeheimnis notwendig umgeben: Seien es die Schweigeverpflichtungen von Insidern oder die Klassifikation bestimmter Informationen. Literarisches Erzählen ist in der Lage, das Rätsel, um das die ganze Erzählung kreist, in seiner Rätselhaftigkeit zu lesen zu geben und genau damit eine Einsicht in das Funktionieren des Geheimnisses zu ermöglichen, ohne es zu lösen. Erst in einer solchen Lektüre erschließt sich die Struktur einer Wissensform, die Wissen und Unwissen, Wahrheit und Lüge in eine unauflöslliche Verbindung bringt.“

⁹² Roland Greene, “Invention,” in *Five Words: Critical Semantics in the Age of Shakespeare and Cervantes*. Chicago: U of Chicago P, 2013, 15-40. 18. Greene refers to the Early Modern concept of invention as “a sort of figure that I call a palimpsest... the word carries within it the history of its changes as well as its present balance of factors” (19). Greene provides a series of excellent sources to illustrate that claim, which, after further investigation, I cannot much improve upon: Murray W. Bundy, “‘Invention’ and ‘Imagination’ in the Renaissance.” *Journal of English and Germanic Philology* 29 (1930), 535-545; Grahame Castor, *Pléiade Poetics*. Cambridge: Cambridge UP, 1964. 86-136 & 168-183; Ulrich Langer, “Invention.” *The Cambridge History of Literary Criticism*, Vol. 3. Glyn P. Norton, ed. Cambridge: Cambridge UP, 1999. 136-144; and Rayna Kalas, *Frame, Glass, Verse*. Ithaca: Cornell UP, 2007. 54-81. Given the content of this dissertation, from among reasonably recent studies, I might add Thomas M. McCogg, “From Inspiration to Invention: Rhetoric in the Constitutions of the Society of Jesus.” *Catholic Historical Review* 98.3 (July 2012), 568-570; and Lorna Hutson, *The Invention of Suspicion*. Oxford: Oxford UP, 2007. *passim*; and Barbara J. Shapiro, *A Culture of Fact*. Ithaca: Cornell UP, 2000. *passim*.

⁹³ Greene, *Five Words*, 19.

⁹⁴ Greene, *Five Words*, 20.

A study of Early Modern political secrecy in a literary and medial context consequently inheres distinct shades of rhetorical *inventio*. Indeed, Greene's argument begins with Cicero's conception of *inventio*, one of the five canons of rhetoric, as spelled out in *Rhetorica ad Herennium*: "*Inventio* is the excogitation of true things or seemingly true things to render one's cause probable."⁹⁵ This conception of *inventio* provides the basis of that developed further by the Lincolnshire rhetorician, jurist, and Secretary of State (and thus, incidentally, spymaster), Thomas Wilson (1524-1581). Wilson's best-known work is probably *The Arte of Rhetorique*, published in 1553 for an audience of aspiring barristers, and considered the first English work on rhetoric. In it, Wilson defines *inventio* as "The fyndyng out of apte matter, called otherwise Inuencion, is a searchyng out of thynges true, or thynges likely, which may reasonably sette furth a matter, and make it appere probable."⁹⁶ The constructive steps of *inventio* thus resemble those of political secrecy: the finding of "apte matter" and the "searching out of thynges true, or thynges likely," that "reasonably sette furth a matter" and that suggest an answer whose defining characteristic is that "it appere probable."

While Wilson's definition of *inventio* is relatively standard fare, more or less also to be found in other rhetorical manuals of the time, Wilson is unique in choosing striking imagery in a related, earlier, and lesser-known work, his 1551 *Rule of Reason*,

⁹⁵ "Inventio est excogitatio rerum verarum aut veri similium quae causam probabilem reddant." Cicero, *Rhetorica ad Herenniam* 1.3, Loeb Classical Library 403, H. Caplan, ed. Cambridge, Mass.: Harvard UP, 1954. The *Rhetorica* is no longer believed to be written by Cicero himself, but was widely believed to be his work in the Early Modern period and does seem to echo Ciceronian concepts of *inventio* closely.

⁹⁶ Thomas Wilson, *The Arte of Rhetorique*. London: Richard Grafton, 1553. A3v, next to the margin note, "Inuencion, what it is."

a treatise on logic. Here, not unlike Marin's secrecy "game," Wilson compares *inventio* with the hunt, and the knowledge sought by that method of cognition to the quarry, a living thing that attempts to evade the inventor and must be captured. Wilson's description of *inventio* as akin to hunting in *Rule of Reason* is entirely his own innovation. None of his sources use that imagery, and none of his contemporary rhetoricians do, either.⁹⁷ The connection between knowledge-seeking and hunting may be one particularly informed by Wilson's own experience. As a gentleman at court and one-time Elizabethan Secretary of State, Wilson would have himself gone on hunts socially, of course, and would have been familiar with basic hunting techniques and perhaps a hunting handbook or two.

Moreover, Wilson knew a thing or two about applying the logic of the hunt to the realm of human beings, including the game of hunting out of elusive facts. Wilson was for a time a member of the Star Chamber and throughout his political life an associate of Elizabeth I.'s spymaster Francis Walsingham. Wilson was known for his skill at interrogating suspects,⁹⁸ and involved in tracking down and interrogating suspects involved in the 1549 Norfolk rebellion, the 1571 Ridolfi Plot, and others, and was the author of "a discourse touching on the kingdom's perils with their remedies."⁹⁹ A common preoccupation of this sort of work during the period was of

⁹⁷ None of the ancient texts use it, and neither do Leonard Cox in his 1531 *Art of Rhetoryke* or Richard Sherry in his 1550 *Treatise of Schemes and Tropes*.

⁹⁸ Florence M. Greir Evans, *The Principal Secretary of State: A Survey of the Office from 1558 to 1680*. Manchester: Manchester UP, 1923. 8 n1.

⁹⁹ Evans, *Principal Secretary*, 49.

course, hunting priests out of their “secret chambers and hiding-places.”¹⁰⁰ Finally, Wilson would naturally have connected *inventio* with the problem of knowledge production from elusive information during a time period where there was “too much to know”¹⁰¹ and knowledge had to be dug out from under “file mountains” kept in dark chambers and tunnels rather than found in neatly ordered *thesauri* of memory and elegant *topoi*,¹⁰² since Wilson also established the first English working archive of governance,¹⁰³ a form of knowledge whose guiding purpose Gottfried Wilhelm Leibniz would later epitomize as the place from which to “drive facts into a tight corner” and make knowledge of them by making them “eye-perceivable” and “hand-graspable.”¹⁰⁴ Wilson’s conception had imaginative legs: Both the *Arte of Logique* (at least eight editions between 1553 and 1585) and the *Rule of Reason* (at least six editions between 1551 and 1584) went through many printings, so we can assume that Wilson’s descriptions of invention were quite influential in shaping the rhetorical lexicon of his time.

Wilson’s use of the hunting metaphor occurs in *Rule of Reason* when Wilson parses the fundamental “diuision of Logique.” He differentiates between *iudicium*, or judgement, and *inventio*, the process and result of knowledge-making. The former consists of “framing of thinges aptlye together, in knitting woordes, for the purpose

¹⁰⁰ For a relatively complete treatment of this type of chase, see Allan Fea, *Secret Chambers and Hiding Places*. London: Methuen, 1901.

¹⁰¹ Cf. Blair, *Too Much To Know*, see above.

¹⁰² Cf. Vismann, *Files*; Vismann, *Akten.*, see above.

¹⁰³ Evans, *Principal Secretary*, 187.

¹⁰⁴ See Chapter 4.

accordingly,” the latter “consisteth in finding out matter, and searching stuffe agreeable to the cause.”¹⁰⁵ Wilson frames both in the language of what today we might call intelligence gathering or, of course, scouting during a hunt: Whereas *iuditium* is “skill, to declare the nature of euery worde seuerallie ... to knitte them up in argument, so that hereby we might with ease *espie*, the right frame in matters,” *inventio* is the process “whereby we maie finde arguments, and reasons, mete to proue euery matter” in “the store house of places wherein arguments rest.”¹⁰⁶ It is in the characterization of this storehouse, with its *topoi* or “places,” that Wilson introduces the imagery of the hunt:

A Place is the restyng corner of an argument, or els a marke whiche giueth warnyng to our memory what we maie speake probablie, either in the one parte, or the other, upon all causes that fall in question. Those that be good hare finders will sone finde the hare by her fourme. For when they se the grounde beaten flatte round about, & faire to the sight: thei haue a narrow gesse by al likelihod that the hare was there a litle before. Likewise the hontesman in huntyng y^e foxe, wil sone *espie* [!] when he seeth a hose, whether it be a foxe borough, or not. So he y^t will take profite in this parte of logique [i.e. *inventio*], must be like a hunter, and learne by labour to knowe the boroughes. For these places

¹⁰⁵ Thomas Wilson, *The Rule of Reason, Conteyning the Arte of Logique*. London: Richard Grafton, 1551. B1r.

¹⁰⁶ Wilson, *Rule of Reason*, I4v.

be nothyng elles but couertes or boroughes, wherein if any one searche diligentlie, he maie fynde game at pleasure.¹⁰⁷

In other words, the process of *inventio* can be likened to the techniques of hunting, the person searching his “storehouse” to hunter, and the thoughts, facts, and arguments that can be retrieved through *inventio* to hares or foxes, which are not dead and still, placed in the storehouse like gem stones and waiting to be recovered, but rather hiding in fear like live animals, attempting always to escape when they are about to be retrieved. Facts and the *data* from which they are made are not found *things*. They are, in their own specific way, very much alive, that is to say, contingent.

This brings us to one of the plays central to this dissertation, namely William Shakespeare’s *Hamlet* (Chapter 4). In that play, the usurper Claudius feels racked with guilt after having witnessed the Mouse Trap, the play within the play that Prince Hamlet stages in order to “catch the Conscience of the king.” Claudius, once alone, falls to his knees and delivers his prayer-speech, “Thankes deere my Lord. / Oh my offence is ranke, it smels to heauen” (1.3.2317-2354). Turning to the possibility of repentance, Claudius ends that speech with the lines, “Oh limed soule, that struggling to be free, / Art more ingag’d: Helpe Angels, make assay: Bow stubborne knees, and heart with strings of Steele, / Be soft as sinews of the new-borne Babe, / All may be well.” It is at that very moment that Prince Hamlet appears behind Claudius, ready to strike him dead. While Prince Hamlet of course changes his mind so as not to murder

¹⁰⁷ Wilson, *Rule of Reason*, 15v.

his uncle mid-prayer and send him to heaven, the moment is meant to be fraught with danger. It is also loaded with meaning in terms of political secrecy and *invention*.

How much danger Shakespeare conjures here for his Early Modern audience becomes clear when considering what Claudius means with a “limed soule... struggling to be free.” Claudius is speaking of birdlime, a technique of hunting that now strikes us as barbaric, but that was quite common in Early Modern England. Francis Bacon explains in *Sylva Sylvarum* that the main ingredient of birdlime is “*Holly*; Which is of so *Viscous* a *Iuyce*, as they make *Bird-lime* of the *Barke* of it.”¹⁰⁸ That birdlime was then painted on tree branches or specially constructed “lime-trees” placed in fields, to trap songbirds. In his 1621 bird-hunting manual *Hungers Prevention, Or the Whole Art of Fowling*, Gervase Markham explains that the hunter would conceal himself nearby and with “lippes and Tongue beginne to chirrpe” to attract the birds. Once the quarry has become stuck in the birdlime, the hunter would “rise up and take all such as are intangled, and either nip them in the heads, or put them aliue into a bagge.”¹⁰⁹ The “nip in the heads” is, of course, a crushing of the bird’s skull. As this passive hunting technique took relatively little effort and came at practically no cost, songbirds became a common source of nutrition in late medieval

¹⁰⁸ Francis Bacon, *Sylva Sylvarum, or a Natural History*. London: John Haviland and Augustine Mathewes, 1627. 148.

¹⁰⁹ Gervase Markham, *Hungers Prevention, Or the Whole Art of Fowling by Water and Land*. London: Augustine Mathewes, 1621. 124-133. If the chirping fails, Markham somewhat oddly suggests employing “liue Battes or a liue Oule” placed nearby to attract the birds because “euery Byrde will come to gaze and wonder at them,” owls being better “by reason that she is less stirring and more melancholy then the Batte” – although if a living specimen is unavailable, “you can get but the skins of either and stoppe them with woole or flockes, they will serue as well as if they were alive.” One assumes this also cures the owl of its melancholy.

and Early Modern England, especially among the poor.¹¹⁰ Shakespeare was intimately familiar with the technique; he mentions it repeatedly throughout his work.

Shakespeare may also have been surrounded by impoverished actors and playwrights who supplemented their diet this way: his collaborator on *Titus Andronicus*,¹¹¹ George Peele, is portrayed in the *Merry Conceited Jestes of George Peele* as so poor that a gentleman concerned for his health finds him in his Southwark home “his wife plucking of larkes... and George pin’d up in a blanket at his translation.”¹¹²

Elsewhere, Shakespeare uses hunting with birdlime as imagery for seduction (*All’s Well That Ends Well*, *Two Gentlemen of Verona*, *Rape of Lucrece*), political intrigue or murder (*Othello*, *Henry VI, Pt. 2*; *Henry VI, Pt. 3*, *Macbeth*), an endangered soul (*Henry VI, Pt. 2*), and social conniving (*Much Ado About Nothing*), and so it is tempting to read Claudius’ reference to birdliming as a characterization of Hamlet’s designs on Claudius’ life. However, in the context of this dissertation and the metaphorical connections between *invention* and political secrecy, it might be more useful to consider Claudius’ limed tree-branch to be the thing he can neither reveal nor conceal: his own political secret, the murder of his brother King Hamlet. This secret is what is soul sticks to, what he cannot escape, the place where he (and the facts and *data* of his case) are trapped. As part of the origin of his own sovereignty, as the

¹¹⁰ D.J. Stone, “The Consumption and Supply of Birds in Late Medieval England.” *Food in Medieval England: Diet and Nutrition*, C.M. Woolgar, D. Serjeantson, & T. Waldron, eds. Oxford: Oxford UP, 2006, 148-161.

¹¹¹ Brian Vickers, “Titus Andronicus with George Peele.” *Shakespeare, Co-Author*. Oxford: Oxford UP, 2002. 148-243.

¹¹² George Peele. *Merrie Conceited Iests of George Peele, Gentleman, Sometimes a Student in Oxford*. London: Nicholas Okes, 1607. 21.

genealogical source of his own power, Claudius can no more let go of his secret than it can ever let go of him. The result would be (and indeed, will be) infamy, a fall from power, and death.

Thus, this Introduction arrives at its final theoretical point before delving into the evidence and argument presented throughout its four chapters. This final point concerns the question of origins, and the relationship of genealogy to sovereign legitimacy, media history, and literary criticism. As method, etymology and genealogy will recur, and at times even obsess the chapters of the dissertation. Apart from providing a historical *and* literary stage on which to play out the history of a subject, etymologies and the genealogies of concepts legitimize their subjects in the same way that origins and descent legitimate sovereigns. They have a biography of their own, they carry older meanings within them, and those meanings are essential. Without questions of descent, of genealogy and etymology and the concerns they help raise, we would, to stick with the recent example, have no author, no Shakespeare, no *Hamlet*, and frankly no text at all. Without them *as method*, there would be no Early Modern literary period to speak of – one need only think of the central role etymologies played in early Renaissance humanist thought, and as late into the period as the *New Science* of the Neapolitan-Italian philosopher Giambattista Vico (1668-1744).¹¹³ Whatever objections might be raised to the use of the history of a word or concept in contemporary criticism, attempting to write about the Early Modern period *without* emphasizing etymologies and genealogies is in more urgent need of a defense against

¹¹³ Davide del Bello, *Forgotten Paths: Etymology & the Allegorical Mindset*. Washington, D.C.: Catholic U of America P, 2007. 135-155.

the charge of a potentially ahistorical treatment of its texts than including both methods does. In fact, the idea that the meaning of concepts, terms, and the lexicon is ahistorically confined entirely to the present is the only justification for *not* using this method, and that particular caricature of poststructuralist thought has thankfully long been consigned to the critical trash bin – ironically enough – of history.

However, there remains a possible objection that ought not be quite so quickly dismissed. For instance, in his essay “Faith and Knowledge,”¹¹⁴ Algerian-French philosopher Jacques Derrida (1930-2004) points out the fundamental problem with the etymological method: “etymology never provides a law and only provides material for thinking on the condition that it allows itself to be thought as well.”¹¹⁵ Yet, Derrida also provides the answers to that objection, or perhaps better put, that doubt. For one, “the search for historico-semantic filiations or genealogies would determine an immense field with which the meaning of the word is put to the test of historical transformations and of institutional structures.”¹¹⁶ This, in turn proves to be an advantage:

An analysis above all concerned with pragmatic and functional effects, more structural and also more political, would not hesitate to investigate the usages or applications of the lexical resources, where, in

¹¹⁴ Jacques Derrida, “Faith and Knowledge.” Samuel Weber, transl. *Acts of Religion*. Gil Andijar, ed. New York: Routledge, 2002. 40-101; Jacques Derrida, “Foi et savoir.” Gianni Vattimo & Jacques Derrida, ed. *La Religion*. Paris: Seuil, 1996. 9-86.

¹¹⁵ Derrida, “Faith and Knowledge,” 71; Derrida, “Foi et savoir,” 54: “L’étymologie ne fait jamais la loi et ne donne à penser qu’à la condition de se laisser penser elle-même.”

¹¹⁶ Derrida, “Faith and Knowledge,” 71; Derrida, “Foi et savoir,” 54: “La recherche des filiations ou des genealogies historico-sémantiques déterminerait un champ immense, celui dans lequel le sens du mot est mis à l’épreuve des mutations historiques et des structures institutionnelles.”

the face of new regularities, of unusual recurrences, of unprecedented contexts, discourse liberates words and meaning from all archaic memory and from all supposed origins.¹¹⁷

One might even say, in the spirit of this dissertation, that etymologies and genealogies suggest *plausible* rather than *definitive* versions of whatever meaning exists at the secret lexical heart of words, complex biographies and lineages rather than unstable lexicons that forget language is as *invented* from its historically grounded “apte matter” as any other type of discursive fact.

However, perhaps the answer to the question is more readily understood through a literary image than a theoretical treatment. For narrative and historical depth, what provides a more convincing and more plausible story of a concept than the biography enciphered and hidden in its long intellectual and literary history? What allows more room for the innovations of future readings than taking seriously the readings of the past? Ask any mariner who, like the ship engraved on the frontispiece of Francis Bacon’s *Instauratio Magna* has passed the Pillars of Hercules into the *nec plus ultra* of the tossing, freewheeling seas beyond the previously known. What is means more, the rolling waves and blustering winds of the ever-shifting ocean, or the solid ground on which he will once again stand on the shore behind the horizon?

¹¹⁷ Derrida, “Faith and Knowledge,” 71; Derrida, “Foi et savoir,” 54-55: “D’abord soucieuse des effets pragmatiques et fonctionnels, une analyse alors plus structurale, plus politique aussi, n’hésiterait pas à analyser des usages ou des mises en oeuvre du lexique, là où, devant des régularités Nouvelles, des recurrences inédites, des contextes sans précédent, le discours affranchit mots et significations de toute mémoire archaïque ou de toute origine supposée.”

Choosing one over the other, one without the other is either fanatical or naïve. To the well-ordered mind, the answer is always both.

III. Roadmap

In the following chapters, this dissertation traces the transformation of the concept of political secrecy in Early Modern Britain and Europe, focusing on the role of dramatic literature in shaping the modern category of “intelligence.” The following chapters will demonstrate that at the outset of Early Modernity, a concept of political secrecy rooted in political theology conceived secrets as the mystical attributes or possessions of the sovereign, the *mysterium* and his so-called *arcana imperii*. By the late 17th and early 18th Century, the heterodoxies of the Reformation, upheavals of Early Modern science, and economic imperatives of Empire together shifted that concept’s epistemological locus away from sovereign authority. Political secrecy now marked the efforts of state administrators, accountants, and intelligencers to oversee information networks involving quantifiable data, concrete facts, the calculation of probable outcomes.

Accompanying this transition was a debate among scholars and law clerks about the ability of mathematics, in particular Euclidean ideas about data, to accurately represent reality – a debate whose relevance has persisted into the 21st century era of Big Data. Crucially, the thinkers who contributed to this discourse, ranging from Francis Bacon to Gottfried Wilhelm Leibniz, repeatedly resort to the language of poetics and drama to contend with political secrecy’s central conundrum: that the structures of political secrecy are by definition inaccessible to public discourse

and thus require mimetic modeling to be fathomed. Theater becomes a laboratory of choice for thinking through these epistemological reconfigurations.

Meanwhile, the dramatically expanded information and intelligence networks of the early Empire intensify intercultural exchanges with Northern Africa, a feedback loop that brings the Arabic mathematical texts fueling the debate surrounding data to Oxford. Similar forays into the Americas and Asia provide the impetus for Leibniz to invent binary mathematics, the basic structure of data computation, which he hopes to use as a diplomatic tool in negotiations with sovereigns globally, especially China. Inspired by Bacon, who turns to playwrighting in order to perform the otherwise quite literally unspeakable logics of political secrecy, Leibniz declares the premier medium of political epistemology to be a species of *theatrum mundi*: the ever-shifting flood of intelligence is distilled into rows of data, which are carefully staged as tables on memorandum pages, presenting themselves like the scenes and acts of a play that allows the sovereign to “apperceive the whole realm, as if at one glance.”

I consequently assert that Early Modern British drama stages rituals of ceremony, processions, masques, and plays that both adjudicate and make visible the boundary between the concept of secrecy in theory and the hidden world of its implementation. Chapter 1 (*Mysterium*) focuses on the theological procession and the medial processing of the legendary king Richard Lionheart, the figure of the Absent King in the *Earl of Huntington* plays by Anthony Munday, Bacon’s *Night of the Revels* play performed at Gray’s Inn, and the coronation procession of James I. with its attendant spectacle and theater, authored by Thomas Dekker, Thomas Middleton, and Ben Jonson. Chapter 2 (*Arcana Imperii*) explores the early narrative history of the

arcana imperii in Tacitus alongside the development of “targeting plots” by example of the *Odyssey*, and then turns to the circulating, cryptic letter in Christopher Marlowe’s *Edward II* that appears to implicate or kill everyone who handles it. Chapter 3 (*Arcana Imperii to Intelligence*) explores the concept of *data* under a *cosmos* subject to the “givenness” of the geometrical *logos* and the emergence of mathematical probability vis-à-vis Marlowe’s *Doctor Faustus*, with its emphasis on amassing knowledge at all costs, and on the frailties of arcane knowledge. Chapter 4 (*Intelligence as Secretum*) traces the emergence of the modern, computational *logos* and its attendant *data* concept alongside the final evolution of the modern intelligence concept in order to explicate the contrast between the Ghost’s certainties and the prince’s doubts in *Hamlet*, the former exemplifying the *arcana imperii*, and the latter typifying the constant weighing of probabilities inherent in the modern concept of *intelligence*. Ultimately, my analysis demonstrates that in the Early Modern period, literary modes of thought – and especially drama – are not simply interpolated into debates in the emerging field of information science, but represent a quintessential feature of them.

CHAPTER 1: *MYSTERIUM*

The “Introduction” to this dissertation presented Louis Marin’s distinction between three different *logiques de secret*, “logics of the secret,” namely *mysterium*, *arcanum*, and *secretum*. This first chapter of the dissertation will elaborate on the first, whereas the *arcanum* will play a central role, in the form of the *arcana imperii*, in Chapters 2 and 3, and the *secretum*, in the form of modern *intelligence* and *data*, will dominate Chapters 3 and 4. In order to set the stage for the Early Modern reconfigurations of the political secret and the theatrical and critical components of that evolution, Chapter 1 traces theological aspects of Ernst Kantorowicz’s theory of the King’s Two Bodies (Introduction) through a number of texts featuring the absence of a god-ordained king, Richard Lionheart, who is simultaneously present as an object of desire and devotion, and absent as a man. This includes the *Earl of Huntington* dramas by Anthony Munday, playwright, mentor to Shakespeare, and intelligencer employed by Elizabeth I.’s spymaster, Francis Walsingham. The chapter then turns to dramatic performances of the *mysterium* through diplomatic and royal processions, such as in the *Night of the Revels* play at Gray’s Inn penned by Francis Bacon, and various station masques performed during the coronation procession for King James I. The latter’s absolutist tendencies usher in the crisis (and indeed, *krisis*) of the sacramental model of sovereignty, with its final act staged against the backdrop of the conflagrations of the British Civil War. The chapter concludes that by the Seventeenth Century, the type of sovereign secrecy that derives from the sacramental embodiment of sovereignty had frayed, as it evokes absence rather than presence at the center of

the body politic. The *mysterium* thus acts as an ancestor concept for the forms of political secrecy at play in the following chapters.

I. **Mysterium, Ministerium, Magisterium, Procession**

To begin with some essential notes on etymologies. The English word *mystery* has not one, but two roots. One is the Greek *mysterion* (μυστήριον), meaning “secret, or secret rite,” and it enters English via the Latin *mysterium*, which means the same thing. Passing through Old French, *mistere*, “something of mystical significance” or “religious truth,” the *mysterium* became associated with the Holy Sacraments, even in English, where it also acquired the sense “enigma.” The other root is the Latin *ministerium*, “office, agency, ecclesiastical service,” which became contracted to *misterium* and frequently confused with *mysterium*, primarily in the context of Christian priests administering the Holy Sacraments.¹¹⁸ By the medieval period, the term *mysterium* applied to two realms concurrently: that of the church (*mysterium fidei*) and that of law (*mysterium Iustitiae*).¹¹⁹ This etymological connection between the divine “secret” behind the order of the *cosmos* and the authority of the state is important to note because the conceptual conflation of the *mysterium* with the actions

¹¹⁸ “mystery, n.1” *OED Online*. September 2019. Oxford University Press. <https://www.oed.com/view/Entry/124644?rskey=VP21zP&result=1&isAdvanced=false>.

¹¹⁹ Ernst Kantorowicz, “Mysteries of State.” *Harvard Theological Review* 48 (1955), 65-91. 70-72: “Mysteries of State ... derived obviously from that orbit which the jurists of the twelfth and thirteenth centuries ... termed *religio iuris*, ‘Religion of Law,’ and ... was termed sometimes *mysterium Iustitiae*, ... The two words — *ministerium* and *mysterium* — were almost interchangeable since early Christian times, and they were perpetually confused in mediaeval times There seems, therefore, little doubt that it was from the stratum of the “Mysteries of Justice” — “Justice” standing in that period for “Government” or “State” — that [the] concept of Mysteries of State arose. And it was from the same stratum that the Pontificalism of absolute kings originated.”

of the person administering that same *mysterium* as part of his *ministerium* underlies the Western concept of kingship in a crucial way.

Finally, the third intertwined etymology at play in this discussion is that of the *magisterium*. That term will be useful because it, too, has a history as a type of *mysterium*. Specifically, the term began its career in Latin, from the same meaning as the title *magister*, “one of higher standing, one is who more complete,” where *magisterium* denoted the office of someone in a position of oversight, such as at a feast¹²⁰ or a hunt,¹²¹ or within a military structure¹²² or in pedagogy.¹²³ By the Early Modern period, its post-classical Latin meaning had evolved to denote, specifically, the alchemical characteristics of the Philosopher’s Stone, namely its inherent structuring influence over all other forms of matter, which it could gild, both in terms of substance and in terms of extending the lifespan.¹²⁴ In that sense, the *magisterium* became, simultaneously, an *auctoritas*, a *cosmos*-structuring entity, and a cornucopian

¹²⁰ Marcus Tullius Cicero, *Cato the Elder*, 46: “Me vero et magisteria delectant a maioribus instituta et is sermo, qui more maiorum a summo adhibetur in poculo, et pocula, sicut in Symposio Xenophontis est, minuta atque rorantia, et refrigeratio aestate et vicissim aut sol aut ignis hibernus.”

¹²¹ Pliny the Elder, *Natural History*, 8.148: “Hoc idem e lupis Galli, quorum greges suum quisque ductorem e canibus et ducem habent: illum in venatu comitantur, illi parent; namque inter se exercent etiam magisteria.”

¹²² Sextus Aurelius Victor, *Book of the Caesars*, 42.15: “Is namque Silvanus in Gallia ortus barbaris parentibus ordine militiae, simul a Magnentio ad Constantium transgressu pedestre ad magisterium adolescentior meruerat.”

¹²³ Plautus, *The Two Bacchises*, 145: “Iam excessit mi aetas ex magisterio tuo.”

¹²⁴ Cf. Gabriel Harvey, *Pierces Superrogation*. London: John Wolfe, 1593. 29-30: “Agrippa, one of the uniuersallest schollars ... Socraticallie declameth against the uanitie of sciences, and for my comforte penneth the Apology of the Asse. Neuer any of these prating uagabundes had the uertuous Elixir, or other important secret: (yet who such monarches for Phisique, Chirurgery, Spagirique, Astrology, Palmastry, naturall & supernaturall Magique, Necromancy, Familiar-spiritshipp, and all profound cunninge, as some of these arrant Impostours?) hee is a Pythagorean, and a close fellow of his tongue, & pen, that hath the right *magisterium* indeede; & can dispatch with the finger of Art, that they promis with the mouth of cosenage.”

techne. Meanwhile, in the theology of the Catholic Church, the *magisterium* evolved from one of the ancient senses, “teacher,” into the authority which both interprets the *mysterium fidei* and authorizes the ritual *ministerium* of the Sacraments.¹²⁵ In a sense, therefore, the *magisterium* is the keeper of the *mysterium*, and the source of the *ministerium*, with the same attributes alchemists attributed to the Philosopher’s Stone: *auctoritas*, a *cosmos*-structuring entity, and a cornucopian *techne*, the source of eternal life. As noted in the “Introduction,” these various senses of *magisterium*, *ministerium*, and *mysterium* thus function as a type of *gestell* (Heidegger), as both the “technological core” and the “mythical core” that sustain the “two different sources of energy active in man’s conscious relation to the world” (Kołakowski), at least in terms of a political-theological form of secrecy.

Finally, the *procession*. The *mysterium* has a distinct theatrical component: since the *mysterium* is a religious form of the pre-anthropological type – “cultic terms referring primarily to the careful performance of ritual obligations”¹²⁶ – it inheres the logics of those types, namely that it must be performed in front of an audience by authorized actors in order for the community it structures to become, and remain, aware of it, thus sustaining the *logos* of that community. Like the muttered prayers occasioning the turning bread and wine into the body and blood of the Christ at the

¹²⁵ E.g. Paul VI, *Mysterium fidei*, encyclical. 3 September 1965, *passim*.

¹²⁶ Jonathan Zittel Smith, “Religion, Religions, Religious.” *Critical Terms for Religious Studies*. Ed., Mark Taylor. Chicago: Chicago UP, 1998. 269-284. 269-270: “In both Roman and early Christian Latin usage, the noun forms *religio* / *religiones* and, most especially, the adjective *religiosus* and the adverb *religiose* were cultic terms referring primarily to the careful performance of ritual obligations. ... The only distinctively Christian usage was the fifth-century extension of this cultic sense to the totality of an individual’s life in monasticism: ‘religion,’ a life bound by monastic vows; ‘religious,’ a monk; ‘to enter religion,’ to join a monastery.”

Eucharist, the King's *mysterium* must be performed, seen, and experienced – but by definition, its content cannot be revealed. The point is to show and to declare that the *mysterium* exists, and to simultaneously show, also, that it is a secret that the lay public cannot replicate, practice, evoke, or lay claim to. What is shown is that it remains hidden. Simultaneously, that audience must assume that it has no access to the essence of the *mysterium*, which is reserved for ordained functionaries, and can only participate in a derivative theatrical form of the *mysterium* through sovereign grace, presence, and demonstrations of incarnation, one that evokes rather than demonstrates. That is, the *mysterium* functions theatrically at the level of *sacramental ritual*, specifically ritual in its Orthodox, Coptic, Syriac, and Pre-Tridentine Catholic forms, the *usus antiquor*.¹²⁷ (For theological reasons, there can be no Calvinist and only a limited Lutheran or Anglican framework for the *mysterium*.¹²⁸)

In this analysis of the King's *mysterium* and its relationship to procession, *sacramental ritual* carries the theological valences of both terms. Again, this has etymological, historical, and political-theological reasons rooted in the concept's history in performance aimed at a public: in Ancient Rome, the Latin term *sacramentum* refers to the military oath of allegiance to the emperor;¹²⁹ in the Latin Christian *New Testament*, it is frequently used to translate the Greek *mysterion*

¹²⁷ See e.g. Benedict XVI, *Summorum Pontificum* (2007), Article 10: "Fas est Ordinario loci, si opportunum iudicaverit, paroeciam personalem ad normam canonis 518 pro celebrationibus iuxta formam antiquiorem ritus romani erigere aut rectorem vel cappellanum nominare, servatis de iure servandis."

¹²⁸ Cf. Jean Calvin, *Institutes* 4.17.10 & 11, et al.

¹²⁹ Cf. Gaius Iulius Caesar, *Commentarii de Bello Civili* 1.23: "Milites Domitianos sacramentum apud se dicere iubet atque eo die castra movet."

(μυστήριον), “the secret divine counsels,” which the *Gospel* reveals to all believers,¹³⁰ and the Carthaginian-Roman theologian Quintus Septimius Florens Tertullianus (Tertullian, 155-240 CE) connects the two through the ritual purpose they both serve as a *techne*: participating in them publicly announces the end of one kind of life, and the beginning of a new, consecrated purpose.¹³¹ In current Catholic theology, *sacrament* refers to the instantiations when “Christ is always present in His Church, especially in her liturgical celebrations,”¹³² they are “efficacious signs of grace, instituted by Christ and entrusted to the Church, by which divine life is dispensed,” and whose purpose is “to sanctify men, to build up the body of Christ, and, finally, to give worship to God;” “moreover, *because [the sacraments] are signs*, they also instruct.”¹³³ The traditional, shared sacraments of the major Christian churches are the rituals of baptism and the Eucharist (Anglicans,¹³⁴ Calvinists,¹³⁵ Lutherans¹³⁶), with the pre-Protestant traditions also adding chrismation/confirmation, confession, marriage, anointing of the sick, and the ordination of clerics, all of which are

¹³⁰ E.g. *Pros Korinthious A* (Α΄ Ἐπιστολὴ πρὸς Κορινθίους, *I Epistle to the Corinthians*) 13.2: “κἂν ἔχω προφητείαν καὶ εἰδῶ τὰ μυστήρια πάντα καὶ πᾶσαν τὴν γνῶσιν, κἂν ἔχω πᾶσαν τὴν πίστιν ὥστε ὄρη μεθιστάνειν, ἀγάπην δὲ μὴ ἔχω, οὐθέν εἰμι.” In Jerome’s Latin *Vulgata*, *I ad Corinthios* 13.2: “Et si habuero prophetiam et noverim mysteria omnia et omnem scientiam et habuero omnem fidem ita ut montes transferam caritatem autem non habuero nihil sum.” English (KJV): “And though I haue the gift of prophesie, and understand all mysteries and all knowledge: and though I haue all faith, so that I could remooue mountaines, and haue no charitie, I am nothing.” Also, e.g. *ibid.* 14.2, & *First Letter of Paul to Timothy* 3.9 & 16, et al.

¹³¹ T.J. Lang, “Mystery, Scriptural Meaning, and the Unity of God in Tertullian and his *Against Marcion*.” *Mystery and the Making of a Christian Historical Consciousness*. T.J. Lang, ed. Berlin: De Gruyter, 2015. 221-248.

¹³² Catholic Church. *Catechism*. 2.1.1.2.1088.

¹³³ Catholic Church. *Catechism*. 2.1.1.3.1123 & 2.1.1.5.1130.

¹³⁴ Anglican Church. *Thirty-Nine Articles*. §25.

¹³⁵ Calvin, *Institutes*. §14.

¹³⁶ Martin Luther, *Small Catechism*. §§4, 5, & 6.

conducted exclusively by ordained clerics (Roman Catholics,¹³⁷ Copts,¹³⁸ Orthodox,¹³⁹ Syriacs¹⁴⁰).

The procession is not a sacrament. It is a *sacramental sign*. A *sacramental sign* is a more minor type of related cultic, ritual activity, one that is used to *mark* or *evoke* a real presence experienced in the sacraments: “They signify effects, particularly of a spiritual kind, which are obtained through the Church's intercession.”¹⁴¹ However, while the *auctoritas* of the sacramental signs derives from the *mysterium, ministerium, and magisterium* of the Church, sacramental signs themselves can be interacted with by the faithful themselves, who thus “are disposed to receive the chief effect of the sacraments, and various occasions in life are rendered holy.”¹⁴²

In terms of political secrecy and theatricality, this dissertation will focus on this particular (and in terms of sovereignty, essential) sacramental sign: the *procession*. In most Christian practice, a procession consists of a migratory, public veneration of either a relic, a statue of a saint or the Christ, or the consecrated host of the Eucharist, the bread and wine that represent a “real presence” of the Christ (“body and blood”).¹⁴³ Such processions consist of the theatrical spectacle of a public presentation of the *locus* of the *mysterium fidei* even on the smallest scale; on a large

¹³⁷ Catholic Church, *Catechism*. 2.2.1210 & 1211.

¹³⁸ Mettaous, *Sacramental Rites in the Coptic Orthodox Church*.

¹³⁹ Philip Gialopsos, *The Seven Sacraments of the Greek Orthodox Church*. 6th ed. Boston: Greek Orthodox Metropolis, 2004.

¹⁴⁰ Severios Zakka & Ishak Saka, *The Seven Living Sacraments*.

¹⁴¹ Catholic Church, *Constitution on the Sacred Liturgy*. §60.

¹⁴² *Ibid.*

¹⁴³ Sabine Felbecker, *Die Prozession*. Altenberge : Oros, 1995. 193-216.

scale they may involve theatrical performances by members of the procession, who may be in costume, may act out narratives of central their local religious tradition, or conduct elaborate ritual performances beginning, surrounding, augmenting, interrupting, and concluding the procession. The sacramental “sign” of the procession will provide the inroad into understanding the *mysterium* – that is, the political *mysterium* – of the sovereign. That *mysterium*, too, will turn out to be intimately linked to a “real presence” of the King, theatricality, veneration, and it, and the dispensing of a chief effect of a sacrament. In the political-theological sense, the performance of the King’s *mysterium* in theatrical processions, too, serves to “render holy” (from the Germanic root **hailo*, “healthy, inviolable, and to be preserved whole”) important moments in life – the life of the subjects, the sovereign, and the State. The King’s *mysterium* and the procession function as sacramentals of the Body Politic.

Finally, a brief explication of the *ritual* aspect of this sort of theater. In many literary approaches to that topic, the prevailing interlocutor for that concept is the Wallonian-French anthropologist Claude Lévi-Strauss (1908-2009), whose structuralist theories derive from his anthropological work on “primitive” ritual, which he then interprets as symbolic systems of communication.¹⁴⁴ In this analysis, that perspective will play a less prominent role. Rather, rituals such as the procession of the King will be interpreted *within* the discourse of theology, and of political theology, specifically that of the Catholic Occident and its Protestant offshoots in the Early

¹⁴⁴ E.g. Claude Lévi-Strauss, “The Effectiveness of Symbols.” *Structural Anthropology*. Claire Jacobson & Brooke Grundfest Schoepf, transl. 186-205; Claude Lévi-Strauss, “L’Efficacité Symbolique.” *Revue de l’Histoire des Religions* 135.1 (1949), 5-27.

Modern period. Thus, the starting point of this analysis will recall that ritual is defined by its etymological history: the Latin *ritus* was the performance of the *mos* (“tradition, accepted way”), its correct and proper performance, a restricted, rule-governed code of an invariable sequence of actions taken to maintain the lawful order of the normal.¹⁴⁵ To a degree, accordingly, this analysis will hue more closely to the perspectives of Californian-American anthropologist Clifford James Geertz (1926-2006)¹⁴⁶ and (less so) Poitevin-French social theorist Paul-Michel Foucault (1926-1984).¹⁴⁷ Those perspectives posit that ritual performance constructs the reality it claims to merely represent. Specifically, in different ways, Geertz and Foucault note that political power is held by those who can prove their ability to create and theatrically perform rituals that suggest a continuous “nature of things” that the public accepts, submits to, and takes as the “given” paradigm for interpreting their political circumstances. However, none of these anthropological theories *per se* will provide the specific insight about drama and political secrecy that illuminates the logic of the *mysterium*.

Rather, this chapter will rely on a particular political-theological perspective that allows more room for a narrative component, one that can make room for the secrecy of the *mysterium* in a fuller form that might approach a medieval or Early Modern understanding of it. This perspective is, in the first instance, taken from three French thinkers – the Dauphinois philosopher Paul Gustave Ricoeur (1913-2005), his

¹⁴⁵ Sextus Pompeius Festus, “Ritus.” *De verborum significatu quae supersunt cum Pauli epitome*: “Mos vel consuetudo. Rite autem significat bene ac recte.”

¹⁴⁶ E.g. Clifford Geertz, *Negara*. Princeton: Princeton UP, 1980. 11-18 & 98-120.

¹⁴⁷ E.g. Michel Foucault, *Discipline and Punish*. New York: Pantheon, 1977; Michel Foucault, *Surveiller et Punir*. Paris: Gallimard, 1975. *Passim*. Cf. also Stuart Elden, “Foucault and Shakespeare: Ceremony, Theatre, Politics.” *Southern Journal of Philosophy* 55.S1 (Sep 2017), 153-172.

Girondin colleague Jean-Luc Nancy (b. 1940), and the Francilian philosopher-theologian Jean-Luc Marion (b. 1946). In the second instance, aspects will also be derived from Kittler (whose specific contribution will enter the conversation in Section II of this chapter).

Ricoeur will provide an insight into how the King's *mysterium* in its theatrical form can address both of the King's Two Bodies, the body natural and the body politic. Ricoeur notes in *Time and Narrative*¹⁴⁸ that the narrative construction of identity is not reserved exclusively for characters in fiction or in historiography. Rather, personal identity is also a narrative identity.¹⁴⁹ There is a poetics of the self. Ricoeur expands this understanding in *Oneself as Another*¹⁵⁰ to include not just identity generally but specifically the phenomenological Self, differentiating in Descartes' *Cogito ergo sum* between the overly strong Self, which assumes a Self that is too certain about itself and about its own existence, and a weak Self, one that is a philosophical abstraction with no counterpart in the Real, a "shattered" Self.¹⁵¹

Ricoeur's counterproposal is the "wounded" Self, one that does without either extreme and understands itself as a thing acting and acted upon, which recounts itself to itself narratively, and which, ideally, takes responsibility for its actions, reactions, and the authorship of its narrative.¹⁵² Ricoeur differentiates between two such

¹⁴⁸ Paul Ricoeur, *Time and Narrative*. 3 vols. Kathleen McLaughlin & David Pellauer, transl. Chicago: U of Chicago P, 1984-1988; Paul Ricoeur, *Temps et Récit*. 3 vols. Paris: Le Seuil, 1983-1985.

¹⁴⁹ See especially Ricoeur, *Time and Narrative*, Vol. 1, 74 & Vol. 3, 274.

¹⁵⁰ Paul Ricoeur, *Oneself as Another*. Kathleen Blamey, transl. Chicago: U of Chicago P, 1992; Paul Ricoeur, *Soi-même Comme un Autre*. Paris: Le Seuil, 1990.

¹⁵¹ Ricoeur, *Oneself as Another*, 1-25, 113-168.

¹⁵² Paul Ricoeur, *Freedom and Nature*. Erazim Kohak, transl. Evanston: Northwestern UP, 1966. 140-141 & 412-413; Paul Ricoeur, *Philosophie de la Volonté*, Vol. 1. Paris: Aubier, 1949.

narrative, “wounded” Selves, or “Self-identities:” an identity that assumes it is always the same in the moment, that never changes, and maintains its coherence, which Ricoeur calls this the *idem* identity (Lat. “the same”); and an identity that perceives itself to remain the same across time and experiences, but which continuously develops through those experiences and factors such as aging, health, and outside circumstances, which Ricoeur calls the *ipse* identity (Lat. “itself, very”). The *idem* identity answers the question “what?” and the *ipse* identity answers the question “who?”¹⁵³

In *Memory, History, Forgetting*,¹⁵⁴ finally, Ricoeur develops these strains into a theory of recognition, which is based in narrative action that can only be remembered, recounted, forgotten, and forgiven in a version of the *idem* self, and can only be understood as actual when it finds itself recognized, in the version of the *ipse* self.¹⁵⁵ In this sense, Ricoeur argues, forgiving is a form of ritual gift that depends on mutual recognition of these selves and other selves. This “lightens the weight of obligation to give in return and reorients this towards a generosity [*générosité*] equal to the one that led to the ... gift.”¹⁵⁶ This idea of recognition and being recognized parallels the precondition and consequences of ritual action; the “gift” in the one case is a sense of personal coherence, and in the second case, a sense of political-theoretical coherence. The placing of the source of the subsequent chain of *générosité* in the

¹⁵³ Ricoeur, *Oneself as Another*, *passim*.

¹⁵⁴ Paul Ricoeur, *Memory, History, Forgetting*. Kathleen Blamey & David Pellauer, transl. U of Chicago P, 2004; Paul Ricoeur, *La Mémoire, l'Histoire, l'Oubli*. Paris: Le Seuil, 2003.

¹⁵⁵ Ricoeur, *Memory, History, Forgetting*, 80-86.

¹⁵⁶ Ricoeur, *Memory, History, Forgetting*, 478-486.

recognized self will be Ricoeur's primary contribution to this analysis of the *mysterium*, particularly keeping in mind the secondary valences of *générosité* in Ricoeur's French:¹⁵⁷ the word's Latin root *generositas* denotes "nobility of stock," an intensified form of *genus*, "birth, source, beginning."¹⁵⁸ The most "generous," the most coherency-affirming "self" in the body politic is the King. The key to that coherence is narrative construction, a sense of continuity, and mutual recognition between the characters taking on the role of structured and the structurer, who *idem* and *ipse* is also structured by this process. This dissertation will thus hold that the theatrical procession of the King performs the sovereign secret that is the *mysterium*, and the poetics of that processing creates that same *mysterium* and the *logos* of the *cosmos* it posits.

Holding this thought in the mind for the time being, we can turn to Jean-Luc Nancy, whose perspective on sovereignty will raise the question that the *mysterium* as political secret ostensibly answers. In *The Creation of the World*, Nancy observes that

The sovereign is the existent who depends upon nothing – no finality, no order of production or subjection, whether it concerns the agent or the patient or the cause or the effect. Dependent on nothing, it is entirely delivered over to itself, insofar as precisely, the 'itself' neither precedes nor founds it but is the *nothing*, the very thing from which it is suspended.¹⁵⁹

¹⁵⁷ "générosité." *Trésor de la Langue Française*.

¹⁵⁸ "generositas." Lewis & Short; "generosus." *Ibid*.

¹⁵⁹ Jean-Luc Nancy, *The Creation of the World, or, Globalization*. François Raffoul & David Pettigrew, transl. Albany: SUNY P, 2007. 103; Jean-Luc Nancy, *La Création du Monde ou la Mondialisation*.

Subsequently, “sovereign essentially eludes the sovereign” because “if sovereignty did not elude it, the sovereign would no way [*en rien*] be sovereign.”¹⁶⁰ How does this complexity arise? Because

the same condition that ensures that sovereignty receive its concept also deprives it of its power: that is, the absence of superior or foundational authority. For the sovereign authority must be essentially occupied with founding itself or with overcoming itself in order to legislate prior to or in excess of any law. In a rigorous sense, the sovereign foundation is infinite, or rather sovereignty is never founded.¹⁶¹

Nancy here transfers a view much like Ricoeur’s onto the sovereign power, imbuing the office of the King in his body politic (which is tantamount to sovereignty in the Early Modern period) with the very same lack of inherent foundation as the Self in his body physical and the bodies physical of the King’s subjects, in its two senses of object (*idem*) and subject (*ipse*) to a narrative concerning its own existence. At least in part, then, the *mysterium* as a theatrically performed political secret linked to the very foundations of authority is a question of *author*-ity. Coupled with the *genus* of *générosité*, any ritual instantiation of such a narrative is also *generative*, an act of

Paris: Galilée, 2002. 160: “Souverain est l'existant qui ne dépend de rien – d’aucune finalité, d’aucun ordre de production ni de sujétion, que ce soit du côté de l’agent ou du côté du patient, du côté de la cause ou du côté de l’effet. Dépendant de rien, il est tout entier remis à lui-même en tant, précisément, que ‘lui-même’ ne le précède ni ne le fonde, mais est le rien, la chose même à laquelle il est suspendu.”

¹⁶⁰ Nancy, *Creation*, 103; Nancy, *Création*, 160: “Le souverain, si sa souveraineté ne lui échappait pas, ne serait en rien souverain.”

¹⁶¹ Nancy, *Creation*, 103; Nancy, *Création*, 160-161: “La même condition qui fait que la souveraineté reçoit son concept lui ôte son exercice: à savoir, l’absence d’autorité supérieure ou fondatrice. Car l’autorité souveraine doit être essentiellement occupée à se fonder elle-même ou à se dépasser elle-même pour légiférer en amont ou en excès de toute loi. En un sens rigoureux, la fondation souveraine est infinie, ou bien la souveraineté n’est jamais fondée.”

“ordering the normal” into the shape of a very particular *cosmos*. Only in this way, in reference to a secret *mysterium*, can sovereignty both elude and establish itself, much like Ricoeur’s Self does.

This brings us, finally, to Jean-Luc Marion, who will provide a theory for the “how” of this process – both how the political secret operating as theatrical *mysterium* differs from any other performative discursive structure, and also how the cultic, ritual *mysterium* achieves its power to order a civil world whose logics function as *secular*, not as mystically grounded in the *auctoritas* of the *religious*. The theatrical procession of the King’s *mysterium* provides an appropriate test case. Its effect helps answer the question of what creates the *energeia* of such a secular sacramental. In poetic terms, a processional does not cause *katharsis*, and takes neither tragic, nor comedic, nor historical forms, although it might allude to narratives that do. It is not fear of the sovereign or of the law, nor fear of the disciplining power of potential social disapproval, nor sentimentality or nostalgia, nor the desire for fame, fortune, admiration, nor for the mere pleasure of spectacle, that crowds of royal subjects line streets, country lanes, plazas, churches, and courts during royal processions – or, for that matter, most religious processions. Nor is the *thymos* (θυμός, “spiritedness,”¹⁶² “the desire of recognition”¹⁶³) of the mass experience during such processions,

¹⁶² “θυμός.” *Liddell-Scott-Jones Greek-English Lexicon*.

¹⁶³ Francis Fukuyama, *Identity*. New York: Farrar, Straus & Giroux, 2019. xiii : “*Thymos* is the part of the soul that craves recognition of dignity; *isothymia* is the demand to be respected on an equal basis with other people; while *megalothymia* is the desire to be recognized as superior.” For another, thorough introduction to *thymos* in political philosophy, see Peter Sloterdijk, *Rage and Time*. Mario Wenning, transl. New York: Columbia UP, 2010; Peter Sloterdijk, *Zorn und Zeit*. Berlin: Suhrkamp, 2006.

predictably in Plato's terms, entirely subject to reason or appetite;¹⁶⁴ it is something in between the two, just as it is something between, in the terms of the Wiltshire philosopher Thomas Hobbes (1588-1679), between desire and will. The dominant quality of this *thymos*, this "desire of recognition," which motivates crowds of subjects (or adorants) to view the theatrical procession of the *mysterium* as it processes, performs, speaks, and parades before it – and yet, ultimately withholds itself. Insofar as a sacramental procession is a "sign" that "instructs," it does so in the sense of *res significans* identified by Berber-Latin theologian Aurelius Augustinus Hipponensis (Augustine of Hippo, 354-430 CE).¹⁶⁵ That which it reveals is a near-visceral attraction to, even obsession with, and desire to recognize and be recognized in the object of veneration: nothing less than an erotics of the secret.

This observation is hardly shocking. The erotics of this "sign" that "instructs" a form of desire is common in discussions of the concept of the *mystical*, and it is no particularly novel point of view to suggest that the line between mystical experience and the erotic is evidently fluid. Examples like Plotinus, Richard of St. Victor, Hildegard von Bingen, Margery Kempe, Teresa of Ávila, Blaise Pascal, Jonathan Edwards, and the Islamic Sufis suffice as illustrations. Jean-Luc Marion can aid in properly understanding this erotic phenomenon. He does so in three steps: his idea of

¹⁶⁴ Plato, *Republic* 4.439.

¹⁶⁵ Augustine, *Of Christian Doctrine* 3.9.13: "Sub signo enim servit qui operatur aut veneratur aliquam rem significantem, nesciens quid significet. Qui vero aut operatur aut veneratur utile signum divinitus institutum, cuius vim significationemque intellegit, non hoc veneratur quod videtur et transit, sed illud potius quo talia cuncta referenda sunt. ... Quae unusquisque cum percipit, quo referantur imbutus agnoscit, ut ea non carnali servitute, sed spiritali potius libertate veneretur. Ut autem litteram sequi et signa pro rebus quae his significantur accipere, servilis infirmitatis est; ita inutiliter signa interpretari, male vagantis erroris est."

“givenness” in *Being Given*,¹⁶⁶ his theory of “saturated phenomena” in *In Excess*,¹⁶⁷ and his exploration of a saturated phenomenon that signifies a type of love, in the *Erotic Phenomenon*.¹⁶⁸ Ultimately, paired with Ricoeur and with Nancy, these insights help explain the narrative structure underlying the secretive logic of the *mysterium*, one which both grounds and eludes the sovereign.

Marion, a phenomenologist, builds on his predecessors in order to formulate his theory of “givenness.” His thesis is that “the phenomenon is defined as what *shows itself* in and from itself (Heidegger), instead of as what admits constitution (Husserl), this *self* can be attested only inasmuch as the phenomenon first *gives itself*.”¹⁶⁹ The underlying logic here is that “without going back to that through which the phenomenon gives itself, we cannot conceive that it could show itself.”¹⁷⁰ Consequently, “what *shows itself* first *gives itself*.”¹⁷¹ Marion was a student of Ricoeur’s, and in a sense this “givenness” clearly corresponds to certain aspects of Ricoeur’s ideas of “recognition,” of a narrative identity (or in Marion’s case, an episodic sequence), and of the double meaning of *générosité*.

¹⁶⁶ Jean-Luc Marion, *Being Given*. Palo Alto: Stanford UP, 2002; Jean-Luc Marion, *Étant donné*. Paris: Presses Universitaires de France, 1997.

¹⁶⁷ Jean-Luc Marion, *In Excess: Studies of Saturated Phenomena*. Fordham UP, 2002; Jean-Luc Marion, *De surcroît: études sur les phénomènes saturés*. Paris: Presses Universitaires de France, 2001.

¹⁶⁸ Jean-Luc Marion, *The Erotic Phenomenon: Six Meditations*. U of Chicago P, 2007; Jean-Luc Marion, *Le phénomène érotique: Six méditations*. Paris: Grasset, 2003.

¹⁶⁹ Marion, *Being Given*, 4; Marion, *Étant donné*, 9: “Le phénomène se définit comme ce qui se montre en et de soi (Heidegger), au lieu de se laisser constituer (Husserl), ce soi ne peut s’attester qu’autant que le phénomène d’abord se donne.”

¹⁷⁰ Marion, *Being Given*, 4; Marion, *Étant donné*, 9: “Faute de remonter à ce par quoi le phénomène d’abord se donne, on ne conçoit plus qu’il puisse se montrer.”

¹⁷¹ Marion, *Being Given*, 5; Marion, *Étant donné*, 10: “Ce qui se montre, d’abord se donne.”

Recalling Nancy's locating of sovereignty on an "infinite foundation," we then note Marion's second step. In *Being Given*, Marion had introduced the idea of "saturated phenomena" [*phénomènes saturés*], a type of phenomenon that overwhelms in its givenness so that any intentional attempt to act towards that phenomenon is "saturated" to the point of becoming overwhelming; such a phenomenon is "infinite" in the sense that it is "invisible," "cannot be aimed at," cannot be "foreseen," and the intuitive response to it is "amazement."¹⁷² The relationship of the "saturated phenomenon" to the experience of the religious and secular sacramental, and to the mystical should be obvious: they elude their viewers, and themselves, in the moment they present themselves, resulting in a *thymos* that appears simultaneously intensely personal and validating, and on the other hand completely eviscerating.

Marion employs evolved versions of Kant's categories of quantity, quality, relation, and modality to define corresponding "types" of saturated phenomena that overwhelm these categories through excess: event (irreducible to individual instances, an event creates an overwhelming sense of "blocks of time" or "epochs" that appear self-defining), idol ("the unbearable and bedazzlement" of an artistic moment, which blocks out the intentionality of the observer like "an invisible obstacle – or a mirror"), flesh ("gives me to myself" through experiences of pain and pleasure), and icon ("the gaze which weighs on my gaze like a weight, a burden"), leaving the self in some sense both unconstituted and thus able to perceive an Other.¹⁷³ In interacting with "saturated phenomena," there is a point, to return to Ricoeur, that no Self can

¹⁷² Marion, *Being Given*, 219-236; Marion, *Étant donné*, 307-328.

¹⁷³ Marion, *Being Given*, 228-233; Marion, *Étant donné*, 316-325.

narratively tell itself to itself because it has become not just “wounded” but rather routed, on the brink of obliteration. Yet, this moment of non-constitution is necessary in order to properly perceive itself more realistically than it could under the paradigms of the *ipse* and *idem* Selves. Accordingly, Nancy’s point that there is an ever-elusive sovereignty of the sovereign, which overwhelms the sovereign in its infinite foundation on itself, can quite easily be read alongside Marion’s “saturated phenomena” – they are versions of each other. This insight opens a door to better understanding the visceral erotics of the sacramental, including the theater of sovereign processions surrounding the secret *mysterium*.

Marion’s answer to the oblitative quality of “saturated phenomena” is that the Self makes sense of these through the “erotic phenomenon.” Marion points out that Descartes “Do I exist?” does not properly establish the Self. Rather, what truly establishes the Self, its world, and the place of the Self in that world, is the question, “Does anybody love me?”¹⁷⁴ This is the “question that delivers me to myself.”¹⁷⁵ Extrapolating from this, a version of that particular question about the erotic phenomenon ought also be what delivers the sovereign to the sovereign, the ruler to the ruled, the ruled to themselves.

Marion asserts that this erotic point has been neglected in philosophical discourse primarily because it requires philosophy to admit its own powerlessness to assess love as anything but the function of power, drive, contract, or exchange. In

¹⁷⁴ Marion, *Erotic Phenomenon*, 19-40 & *passim*.; Marion, *Phénomène érotique*, 37-70 & *passim*.

¹⁷⁵ Marion, *Erotic Phenomenon*, 112; Marion, *Phénomène érotique*, 178: “...m’assigne à moi-même et me délivre comme tel...”

most philosophical traditions, love is primarily described through the lens of metaphors or desires that have nothing to do with love *per se*, such as sentimentality or sensuality. But none of these are able to account for this particular saturated phenomenon *as it is*. Thus,

[E]very concept of love is weakened and compromised as soon as one allows oneself to distinguish competing divergent, or indeed irreconcilable, meanings for example, by opposing from the outset, as if it were unquestionable evidence, love and charity (*eros* and *agape*), supposedly possessive desire and supposedly gratuitous benevolence, rational love (of the moral law) and irrational passion. A serious concept of love distinguishes itself by its unity, or rather by its power to keep together significations that nonerotic thought cuts apart, stretches, and tears according to the measure of its prejudices.¹⁷⁶

Marion instead argues that an “erotic rationality” and articulation of “love without being” is necessary.¹⁷⁷ Again, a version of this concept that could be termed “sovereign rationality” and “sovereignty without being,” and “narrative” or “theatrical identity,” and “narrative” or “theatricality without being,” suggest themselves for analysis.

Love, so Marion, means “loving utterly, without return,”¹⁷⁸ in order to achieve a shared signification, “Here I am!”¹⁷⁹ This love that speaks with one voice is

¹⁷⁶ Marion, *Erotic Phenomenon*, 4; Marion, *Phénomène érotique*, 14-15.

¹⁷⁷ Marion, *Erotic Phenomenon*, 5-6; Marion, *Phénomène érotique*, 16-17.

¹⁷⁸ Marion, *Erotic Phenomenon*, 72; Marion, *Phénomène érotique*, 118-119.

¹⁷⁹ Marion, *Erotic Phenomenon*, 189; Marion, *Phénomène érotique*, 292-293.

comprised of a balance between both *eros* and *agape*, which indeed are not so different from each other:

The lover, he or she who preeminently renounces possession and reciprocity by taking his or her advance, nevertheless does enjoy, does eroticize through speech, jealously demands, too, and sometimes runs away. . . . One must have a good deal of naïveté or blindness, or rather know nothing of the lover and of erotic logic, not to see that [agape] possesses and consumes as much as [eros] gives up and abandons.¹⁸⁰

Love, so Marion, thus rests on a reciprocity of a sense of “givenness.” One cannot give oneself completely unless one also gives completely, becomes caught up in the logic of the erotic phenomenon. Marion applies this to God himself, insofar as that “when God loves (And indeed he never ceases to love), he simply loves infinitely better than do we . . . [H]e loves us infinitely better than we love, and than we love him. God surpasses us as the best lover.”¹⁸¹ God overwhelms the Self with “saturated” *eros* in the very same way that Sovereignty overwhelms the sovereign with “saturated” *auctoritas* – another quality that rests squarely with God, the divine king and *logos* that both creates and structures the *cosmos*. In this sense, the erotics of divine *agape* become transferable to an erotics of sovereignty. This is the effect that performances of the religious and secular sacramentals aim to achieve, including the theatrical procession of the *mysterium* of kings.

¹⁸⁰ Marion, *Erotic Phenomenon*, 221; Marion, *Phénomène érotique*, 340.

¹⁸¹ Marion, *Erotic Phenomenon*, 222; Marion, *Phénomène érotique*, 342.

Such a parallel is hardly far-fetched. In Early Modern political-theological contexts, the *mysterium* of kingship on earth mirrors indeed the *mysterium* of God's kingship in heaven. This is inherent in the concept of kingship itself: the Catageno Hispano-Roman scholar and cleric Isidorus Hispalensis (Isidore of Seville, 560-636 CE), for example, makes a point that the *logos* of the one must also structure the other: Since the Latin term *rex* derives from "rectus," (upright, correct), "king is, who acts correctly; if he does not, he is none."¹⁸² Isidore also claims that "in the same way that a priest is the sacrificing one, the king is the ruling one."¹⁸³ The court scholar at the court of Charlemagne, Northumbrian Alcuin of York (735-804 CE) would add to this that a good king is granted wisdom directly from God, and that the king is *anointed* by God in the same way that the ancient kings of Israel, David and Solomon, were,¹⁸⁴ since they were, as Isidore had put it, "kings by the grace of God" (*rex dei gratia*)¹⁸⁵ – indeed, by the *générosité* of the King of Heaven. This is, at least, the narrative identity that the sovereign makes of himself.

This point of anointing is important for understanding the processing sacramentals mentioned earlier and their secular counterpart in the king because "anointed one" is not just an arbitrary title. It is the meaning of the Hebrew title *mashiah* (מָשִׁיחַ, messiah), which the Greek Septuagint had translated as *christos* (χριστός): the Christ. Insofar as the love of God for the world, and his sovereignty

¹⁸² Isidore, *Etymologiae* 9.3.4: "Rex eris, si recte facias: si non facias, non eris."

¹⁸³ *Ibid* "Sicut enim sacerdos a sacrificando, ita et rex a regendo."

¹⁸⁴ E.g. Alcuin, *Epistolae* 309.

¹⁸⁵ Isidore, *Gotthorum Historia* 36: "gratia divina Regni suscepit scepra."

over it, are thus expressed in the Christian sacraments, with Christ, the *logos* of the world, as the “gift” and “saturated phenomenon” that overwhelms the Self in the ecstasies of the erotic phenomenon of devotion, the King is an echo of that same Christ, and encounters with the processed king are echoes of the same ecstasy. The King is not an arbitrary relic: He is *the* relic of God’s power on earth. Like Christ is the “high priest” of the Kingdom of Heaven, the king is an echo of that priest in his own kingdom. Alcuin then goes so far as to draw a direct parallel between the divine, the secular, and the individual soul: The soul is naturally predisposed to love God, which is identical to loving the Good. The soul loves God with its rational part, which makes this the superior aspect of the soul, which must govern the Self and the body “as if from a throne of royal power.”¹⁸⁶ The god-ordained, *cosmos*-dispensing nature of kings consequently derives from the ideal of *rex et sacerdos*, king and priest.¹⁸⁷ That secret of sovereignty must be processed. That is the poetics of the King’s narrative self. Given these interchangeabilities, it is no time to turn to the form of the procession as sacramental, as *mysterium*, *ministerium*, and *magisterium* of the secrets of the divine and, inextricably, of the secular King.

II. Theatrical Poetics of the *Mysterium*

¹⁸⁶ J. J. M. Curry, “Alcuin, *De Ratione Animae*: A Text with Introduction, Critical Apparatus, and Translation.” Unpublished PhD thesis, Cornell University, 1966. 74 & 95.

¹⁸⁷ Kantorowicz, “Mysteries of State,” 72: “To be sure, the ‘king-priest,’ the *rex et sacerdos*, was an early medieaval ideal of many facets, though always inseparable from the Christ-centered kingship of that age; or, if you prefer, from the liturgical kingship linked to the altar, which finally gave way to a legalistic kingship by divine right. This legalism was legitimized exclusively as an effluence of unction and altar, but as an effluence of the gravity of Roman Law which styled judges and lawyers *sacerdotes iustitiae*, ‘Priests of Justice.’”

The sacramental of the procession, both divine and secular, in the Christian Occident, naturally owes a large debt to the public rituals of Imperial Rome. Occidental political theology is Christianity-derived, and Christianity evolved in the Hellenistic and Greco-Roman world. Consequently, it would be a glaring omission to discuss the sacramental of the *mysterium* without mentioning the Greco-Roman processions that contributed to the poetics of the form, particularly since processions of either type are usually focused on a version of the *polis* and the *res publica*. (When procession-like performances take place in the countryside, they are not processions, but rather *progresses* from one staging locale to another, serving to cover a distance between two nodes in the web of the *imperium* along its edges.) Both Greeks and Romans staged religious processions throughout their cultural spheres, often with an object representative of their devotion carried in their midst, and accompanied by both civil and priestly authorities.

In terms of the sovereignty of the *divi* Emperors, the key procession is, of course, the Triumph. This procession was explicitly an act of both declaring the *générosité* of the *triumphator* and by creating the narrative identity of the celebrated *vir triumphalis* that made him exemplary of the memory and history of the Roman state.¹⁸⁸ Already in Republican times, the *triumphator* wore the royal clothes and laurel crown ascribed to the pre-republican, long-deposed kings of Rome, which, crucially, had been continued to be worn by the statue of the supreme god Jupiter in the temple on the Capitoline Hill, Rome's oldest religious site.¹⁸⁹ The *triumphator*

¹⁸⁸ H.S. Versnel, *Triumphus*. Leiden: Brill, 1970. 56-93.

¹⁸⁹ *Ibid.*

concluded his procession through the crowd-packed streets of Rome by entering that temple, and meeting Jupiter as, in a sense, an equal and living echo of that god. The *triumphator* then took on the role of a *sacerdos* or priest, sacrificing pure white oxen to the deity, and symbolically laying representative spoils of war at the god's feet.¹⁹⁰

Such Triumphs no doubt influenced Christian religious expression from the very start. The Jewish community from which Christianity emerged during the First Century CE would have been painfully aware of this; to this day, the Arch of Titus displays the Triumph of its namesake after his 71 CE defeat of the Jewish uprising in the Roman province of Iudea, with its final and traumatic destruction of the Jewish temple in Hierosalyma, the origin of millennia of *diaspora*. The items (and prisoners of war) depicted on that Arch were those placed at Jupiter's feet: the priests of this Jewish center of worship and identity, the pure golden Great Menorah of the Temple, the consecrated altar implements and the altar itself, and the contents of the Holy of Holies – the dwelling place of God himself among his people. Since at that time, Christianity was still a decidedly Jewish sect, the symbolic power of such an act would have imprinted itself quite clearly in the minds of Christian scholars and authorities, who after all eventually also found their center in Rome. As point of comparison in the history of the Christian evolution, the *Gospel of John* – the gospel of the *logos* – is thought to have been written by the aged disciple or his school *after* this event.¹⁹¹

¹⁹⁰ *Ibid.*

¹⁹¹ Udo Schnelle, *Einleitung in das Neue Testament*. 4th ed. Göttingen: Vandenhoeck & Ruprecht, 2002. 520.

Another fact that would have imprinted itself on early Christian consciousness would have been the fact that the *triumphator* was taken not only to be an echo of Jupiter, but also of that god's son Hercules, whom Roman literary and ritual traditions considered to have unselfishly conducted his Twelve Labors (and freed Prometheus, no less) on behalf of human kind.¹⁹² In the same way that the early Christians may have wished to inverse the roles of Jupiter and the Judeo-Christian God in future Triumphs – and indeed, did so when the Christian Byzantine general Narses (478–573 CE) dismantled the temple's statues in 571, as the consequence of the last of the Roman Triumphs that he received during the Eastern Roman reconquest of Italy from the Goths and Franks –,¹⁹³ they would have found it imperative to replace Hercules' patronage of the *triumphator* with their Christ, who, too, was a Son of God who sacrificed himself selflessly for the human kind's well-being. Such revisions were necessary because during the Imperial period, the *imperator* himself had become the *triumphator* in almost all Triumphs, and there was no Christian king in medieval or Early Modern Europe who did not wish to attach the logics of his own royal processions to that ancient counterpart.

However, while the formal poetics of the sacramental procession may owe debts to the rituals of the Roman and Hellenistic worlds, its theology of course could not. It needed to be founded on exemplars from the Jewish and Christian traditions. The literature of that tradition obliged, although somewhat grudgingly in the case of the former. The idea that a king could be *rex et sacerdos* took its cue from one of the

¹⁹² Karl Galinsky, *The Herakles Theme*. Totowa, N.J.: Rowman and Littlefield, 1972. 106 & 126-149.

¹⁹³ Edward Gibbon, *History and Decline of the Roman Empire*. Vol. 5. London: Pickering, 1828. 326.

canonical letters of the Christian *New Testament* (εὐαγγέλιον, *euangelion*). In the Jewish-Christian theological *Epistle to the Hebrews* (Πρὸς Ἑβραίους, *Pros Hebraious*), the author refers to the Christ as “a priest for ever after the order of Melchisedec.”¹⁹⁴ This is a reference to a figure in the Jewish *Tanakh* (תנ"ך), the *Old Testament* of the Christians. The character Malki-Tsedeq (מלְכִי־צֶדֶק, Melchizedek, “king of righteousness”) appears in the first of the five books of the *Torah* (תורה, Law) ascribed to Moshe (מֹשֶׁה, Moses), *In the Beginning* (בְּרֵאשִׁית, *Genesis*). The first patriarch of the Jewish people, 'Avram (אַבְרָם, Abram), later renamed by God as 'Avraham (אַבְרָהָם, Abraham), has just launched a military raid to free his nephew Lot (לוֹט), who had been abducted by a local petty king. As they return to Lot's hometown, S'dom (סְדוֹם, Sodom), they pass the city of Shalem (שָׁלֵם, Salem). *Genesis* reports:

And Melchizedek king of Salem brought forth bread and wine: and he was the priest of the most high God. And he blessed him, and said, Blessed be Abram of the most high God, possessor of heaven and earth: And blessed be the most high God, which hath delivered thine enemies into thy hand. And he gave him tithes of all.¹⁹⁵

Because in later Jewish texts Salem is taken to be identical with the later Yerushalayim (יְרוּשָׁלַיִם, Jerusalem), and the “Most High God” (אֱלֹהֵי עֵלְיוֹן, El Elyon) of Melchizedek is taken to be version of the Jewish god, Yahweh (יְהוָה), Melchizedek

¹⁹⁴ *Epistle to the Hebrews* 7.11-12: “Εἰ μὲν οὖν τελείωσις διὰ τῆς Λευειτικῆς ἱερωσύνης ἦν, ὁ λαὸς γὰρ ἐπ’ αὐτῆς νενομοθέτηται, τίς ἔτι χρεία ‘κατὰ τὴν τάξιν Μελχισεδέκ’ ἕτερον ἀνίστασθαι ‘ἱερέα’ καὶ οὐ ‘κατὰ τὴν τάξιν’ Ἀαρὼν λέγεσθαι; μετατιθεμένης γὰρ τῆς ἱερωσύνης ἐξ ἀνάγκης καὶ νόμου μετάθεσις γίνεται.”

¹⁹⁵ *Genesis* 14.18 & 19. In Hebrew:

ומלְכִי־צֶדֶק מֶלֶךְ שָׁלֵם הוֹצִיא לֶחֶם וְיַיִן וְהוּא כֹהֵן לֵאלֹהֵי עֵלְיוֹן:
וַיְבָרְכֵהוּ וַיֹּאמֶר בְּרִיךְ אֱבְרָם לֵאלֹהֵי עֵלְיוֹן קִנְיָה שְׂמִימִים וְאֶרֶץ:

becomes the first king and the first priest of the cult of Yahweh on Jerusalem's temple mount, Tsiyyon (תִּיּוֹן, Zion). He thus becomes the direct predecessor of the Jewish secular kings of the Davidic line, and of the Levite priests who form the later Jewish clergy at Jerusalem: a *rex et sacerdos* of exactly the required type.

The component of ordination as king can also be traced to the same Jewish text. Throughout the story of the Jewish Patriarchs, the "election" by Yahweh of Abraham is treated as an inheritable source of authority. Conflicts arise immediately between different claimants. For instance, Abraham's wife Sara (סָרָה, Sarah) ensures that Abraham disowns his firstborn son Yi'shmael (יִשְׁמָעֵאל, Ishmael), whom he had conceived with Sarah's handmaid, Hagar (חַגָּר) at Sarah's suggestion, during a period when Sarah thought she was barren. The disowning essentially amounts to a filicide: Abraham "frees" the slave Hagar and sends mother and child into the desert, where they nearly die of thirst before Yahweh intercedes and shows them a way to a well.¹⁹⁶ This places Abraham's younger son with Sarah, Yishaq (יִצְחָק, Isaac), in the position to inherit the status as elect by God, although only after he survives Abraham's famous "leap of faith."¹⁹⁷ Isaac, meanwhile, has two sons with his wife Rivqah (רִבְקָה, Rebecca), the younger born clinging to the heel of his older and stronger brother Esav (עֵשָׂו, Esau); the younger son's name Ya'aqov (יַעֲקֹב, Jacob) thus means "heel-clinger" (derived from יַעֲקֹב, *aqeb*, "cling to the heel, restrain"). The trickster-figure Jacob cheats the hunter-warrior Esau out of his birthright not once, but twice: first, he

¹⁹⁶ *Genesis* 16-21.

¹⁹⁷ *Genesis* 22.1-18.

manipulates a hungry Esau into flippantly swapping his birthright for lentil stew,¹⁹⁸ and later, with Rebecca’s help, Jacob successfully dupes his now-blind father Isaac into blessing him as the first-born by pretending to be Esau when his older brother is away hunting.¹⁹⁹ Even Jewish proto-kingship is very much a matter of *générosité* and of the narrative self one claimant manages to assert over the other.

Jacob has another encounter important for this derivation of the *mysterium* of the King, and it is quite theatrical. This evolution of god-election, with its consequence for the Jewish concept of kingship, takes place at a place called Beit El (בֵּית אֵל, Bethel, “House of God”), a town in Kena’an (כְּנָעַן, Canaan). Jacob is fleeing his elder brother Esau and spends a night in the wilderness, where he is assaulted by an anonymous man-like being (variously, a “man,” “angel,” or “god”) and wrestles with it until day-break. The being finally defeats Jacob by touching him at the hip so that Jacob’s “thigh was out of joint, as he wrestled with him.”²⁰⁰ It is in this moment when Jacob’s body is being overwhelmed by what is arguably a “saturated phenomenon” linked to divine sovereignty, he becomes a “wounded self,” disassembling his own bodily Self in order to recognize the Other. Despite his consequent limp, Jacob stubbornly refuses to let go of the being unless it tells him its name and blesses him. The being reveals itself to be none other than Elohim (אֱלֹהִים, “god of gods”), another alternate name for Yahweh. Elohim blesses Jacob and gives him the nickname Yisra’el (יִשְׂרָאֵל, Israel), meaning “Elohim contends for us.” Elohim

¹⁹⁸ *Genesis* 25.21-34.

¹⁹⁹ *Genesis* 27.

²⁰⁰ *Genesis* 32.24-30.

explains, to quote a close translation of the Hebrew, “For you have struggled with Elohim, and with men, and have prevailed.”²⁰¹ In other words, the *mysterium* of divine election of kings is a form of Triumph.

On the one hand, this episode reads like a complimentary metaphor for Jacob’s personal growth, for some sort of philosophical or religious maturation: in terms of the Hebrew equivalent for the Greek δαίμων, *daimon*, wrestling his own מַלְאָךְ, *mal’akh*, in his “dark night of the soul.”²⁰² But in the Jewish scriptures, the patriarchs are a vehicle for the election of the Israelites as the Chosen People of Yahweh, and Jacob’s name becomes the name for an entire people. This wrestling match can thus also be read as a moment of Jacob’s royal elevation. It is clear that the translators of the *King James Version* of the Bible thought this to be the emphasis of the passage in their translation: “For as a prince hast thou power with God and with men,” echoing Christian readings of the patriarchs as proto-monarchs.²⁰³ Indeed, Jacob’s son Yosef (יוֹסֵף, Joseph), who likewise outcompetes his many older brothers in vying for the right to be Jacob’s primary heir eventually participates in the politics and governance of Egypt, even marrying ’Asenat (אֲסֵנַת, Asenath), the daughter of Poti Pherah (פּוֹטִיפָר, Potipherah), the Egyptian prince-priest of On (וֹן, later Ἡλιούπολις, Heliopolis), by order of the Pharaoh.²⁰⁴ These are princes, indeed.

²⁰¹ *Genesis* 32.28.

²⁰² San Juan de la Cruz (John of the Cross, 1542-1591) coined the phrase in the eponymous “La noche oscura del alma” (1577-1579). This interpretation reoccurs throughout Catholic theology, cf. e.g. John of Salisbury (1120-1180), *Policraticus* 7.13.669d-670c. For echoes of this reading in later Protestant theology, see e.g. Gottfried Daniel Krummacher (1774-1837), *Jacobs Kampf und Sieg, betrachtet in elf Frühpredigten in den Jahren 1816-1817*. Elberfeld: Wilhelm Hassel, 1838.

²⁰³ *Genesis* 32.28.

²⁰⁴ *Genesis* 41.

The *Tanakh*'s kingdom of Israel does not formally have kings until much later, after the Israelites have eventually become enslaved in Egypt, freed themselves by drowning the Pharaoh's army in the Red Sea, and conquered and resettled in the Promised Land. The next component that plays a central role in the *mysterium* of kingship is first administered by a character called Sh'muel (שְׁמוּאֵל, Samuel), one of the *nevi'im* (נְבִיאִים, "spokespersons, prophets") and a *chozeh* (חֹזֶה, "seer") in Israel, who occurs in the second and third sections of the *Tanakh*, specifically the *Books of Samuel* and the *Matters of Days* (דְּבָרֵי יְהוֹיָאָחָז, *Book of Chronicles*). After being governed as a loose confederation of tribes by sporadically emerging "judges" (שֹׁפְטִים, *shoftim*), the Israelites ask Samuel to crown them a king, despite his warnings that kings tend to turn into tyrants.²⁰⁵

When Samuel encounters a young warrior named Sha'ul (שָׁאֻל, Saul) who is looking for his father's lost donkeys, Yaweh points him out to Samuel as his choice to become the first king of Yisra'el. Samuel privately anoints Saul by pouring aromatic oil over his head, and then puts him through a public selection process in which oracular lots are used to divine him by tribe and family. This combination of anointing and being publicly pointed out as anointed by a divine act ritually confirms Saul's sovereignty. Saul's crowning and acceptance by his subjects has to wait until after a first major military victory and a subsequent Triumph, which he soon achieves.²⁰⁶

When Saul eventually strays from divine pleasure and sinks into madness, Yahweh points out the young shepherd and musician David (דָּוִד), son of Yishay (יִשַׁי),

²⁰⁵ *1 Samuel* 8.5-22.

²⁰⁶ *1 Samuel* 11.

Jesse) of Bet Lechem (בֵּית לֶחֶם, Bethlehem, “House of Bread”), to Samuel as Saul’s successor, rather than Saul’s own son, Yonatan (יוֹנָתָן, Jonathan). As he had done with Saul, Samuel privately anoints David by pouring fragrant oil over his head, even though Saul and Jonathan are both still living.²⁰⁷ Because his music can soothe Saul’s bouts of madness, David becomes a courtier,²⁰⁸ the king’s armor bearer,²⁰⁹ and himself wins a major battle against the arch-enemy of Israel, the P’lishtim (פלשתים, Philistines). To achieve this feat, David defeats the Philistine hero and giant Golyat (גִּלְיָת, Goliath), which results in a Triumph during which the people of Israel line the streets “singing and dancing” and declare, “Saul hath slain his thousands, and David his ten thousands.”²¹⁰ Subsequently, David marries Saul’s daughter, becomes fast friends with Jonathan (“the soul of Jonathan was knit with the soul of David, and Jonathan loved him as his own soul”²¹¹), is exiled by Saul out of jealousy, evades Saul’s militant pursuits, and finally reconciles with Saul.

This reconciliation ushers in the next contributions to the narrative poetics of the King’s *mysterium*. Before his final battle against the Philistines, Saul consults a necromancer, the Witch of Endor. The witch cries out that she sees “gods rising from the pit” but then recognizes the spirit of the since-deceased Samuel. Samuel’s spirit informs Saul that Yahweh has rejected Saul, that he will die in the upcoming battle

²⁰⁷ *1 Samuel* 16.

²⁰⁸ *1 Samuel* 16.23.

²⁰⁹ *1 Samuel* 16.21.

²¹⁰ *1 Samuel* 18.7. In Hebrew:

בִּרְבֻבְתֵייוֹ: וְדָגַד [בְּאַלְפֵייוֹ] בְּאַלְפֵי שְׂאוֹל הִקְהָה וַתֹּאמֶר הַמְשַׁחֲקוֹת הַנְּשִׂים וַיַּעֲגִינָה

²¹¹ *1 Samuel* 18.1. In Hebrew:

בְּנִפְשׁוֹ: יְהוֹנָתָן [וַיִּצְאֵהָבוֹ] וַיֹּאמְרוּ דָגַד בְּנִפְשׁ נִקְשְׁרָה יְהוֹנָתָן וַיִּפְּשׁ אֶל־שְׂאוֹל לְדַבֵּר כְּכַלְתּוֹ וַיְהִי

alongside his sons, and that David is the rightful King of Israel. The battle is duly catastrophic, and Saul falls on his own sword to avoid capture. David is anointed a second time, this time by the High Priests of Yahweh at Hebron (הֶבְרֹן, Hebron), where the Yahweh's Tabernacle stands, a large tent that has served as Israel's mobile temple since their time with Moses in the Desert of Sinai (סִינַי).²¹² David then conquers Jerusalem from the indigenous inhabitants to build a permanent temple there.²¹³ During the procession into Jerusalem, David has the Levite priests carry the Ark of the Covenant (אָרוֹן הַבְּרִית, *Aron Ha'bret*), considered the Seat of Yahweh, an item so imbued with holiness that when it threatens to slide off to the side during the procession, the man who pushes back into place is struck dead on the spot.²¹⁴ The experience of processing to Jerusalem with the Ark becomes so overwhelming to David's body (and mind) that he "danced before Yahweh with all his might" in a state of undress and in a sort of ecstatic trance, a moment of erotic phenomenon so intense that when Saul's daughter Michal sees him, she despises him,²¹⁵ rebuking him, "How glorious was the king of Israel to day, who uncovered himself to day in the eyes of the handmaids of his servants, as one of the vain fellows shamelessly uncovereth himself!"²¹⁶ David retorts in no uncertain terms,

²¹² 2 Samuel 5.3.

²¹³ 2 Samuel 5.

²¹⁴ 2 Samuel 6.1-7.

²¹⁵ 2 Samuel 6.16. In Hebrew:

בְּלִבָּהּ: לוֹ וּתְבוּ וְהִנֵּה לִפְנֵי וּמְכַרְפֵּר מִפְּנֵי דָוִד אֶת־הַמֶּלֶךְ וּמֵרָא הַסֵּלִוֹן בְּעַד ׀ נִשְׁקָפָה בַת־שָׂאוֹל וּמִיכָל דָּגְדָה עֵיר בָּא וְהִנֵּה אֲרוֹן וְהִנֵּה

²¹⁶ 2 Samuel 6.20. In Hebrew:

אֲמָהוֹת לְעֵינַי הַיּוֹם נִגְלָה אֲשֶׁר יִשְׂרָאֵל מֶלֶךְ הַיּוֹם מֵהַנִּכְבֵּד וּתְאֻמָּר דָּוִד לְקִרְאָת בַת־שָׂאוֹל מִיכָל וּתֵצֵא אֶת־בֵּיתוֹ לְבָרָךְ דָּוִד וַיִּשָּׁב הַרְקִיּוֹם: אֶתֵּד נִגְלוֹת כְּהַגְלוֹת עַבְדֵּי

It was before the Lord, which chose me before thy father, and before all his house, to appoint me ruler over the people of the Lord, over Israel: therefore will I play before the Lord. And I will yet be more vile than thus, and will be base in mine own sight: and of the maidservants which thou hast spoken of, of them shall I be had in honour.²¹⁷

In case the point of this moment is lost on the reader, the narrator points out that those who fail to access the sacramental procession and submit to its effects, like Michal, will subsequently experience the inverse of life-giving: “Therefore Michal the daughter of Saul had no child unto the day of her death.”²¹⁸ David does not end up building the Temple in Jerusalem; Yahweh forbids it: “You shall not build a house for My name, because you have been a man of war and have shed blood.”²¹⁹ That honor is reserved for David’s son Shlomoh (שְׁלֹמֹה, Solomon). The two are the kings of the Israelite Golden Age, personifying sovereignty, piety, and the arts, in the father, and wisdom, erotic theology, and wealth in the son.

Of course, the theological derivation of the royal procession culminates in the figure Yeshua (יֵשׁוּעַ, Ἰησοῦς, *Iesous*, Jesus) of Natzrat (נַצְרַת, Nazareth) as recounted in the Christian Gospels. Jesus arguably undergoes two processions of his *mysterium*.

²¹⁷ 2 Samuel 6.21-22. In Hebrew:

יהוה: לפני ושחקתי עלי-ישׁראל יהוה עלי-עם נגיד אתי לצות ומפל-ביתו מאביה בסר-כי אשר יהוה לפני אלי-מיכל דוד בנאמר אפבדה: עמם אמרת אשר ועם-האמהות בעיני שפל והייתי מזאת עוד ונקלתי

²¹⁸ 2 Samuel 6.23. In Hebrew:

מותה: יום עד גלד לה לא-תנה בת-שאול ולמיכל

²¹⁹ 1 Chronicles 28.3. In Hebrew:

שפכת: ודמים אתה מלחמות איש כי לשמי בית לא-תבנה לי אומר והאלהים

The first, his Entry into Jerusalem on Palm Sunday, is explicitly tied to his role as the Son of the King of Heaven, i.e. the cosmic body politic. The second, the Passion of the Christ, threatens to obliterate of his “wounded Self,” but in fact becomes his moment of “giving up his spirit” to vacate his body physical, and merging with the quintessence of all saturated phenomena, the Sovereign *Logos* itself. Accordingly, Christ’s processions represent a doubling gesture. On the one hand, they verify that Jesus is the Christ (“anointed one”), who replaces any ethnarch the Roman *imperium* has imposed as nominal king over Israel – a Triumph over the *imperium*, that leads Jesus through thronged streets in royal trappings that ends at the Temple of Yahweh. This is the “sign” intended by Palm Sunday, which elevates a *rabbi* with healing powers to rightful heir of the line of David. On the other hand, the “sign” of the Passion reveals the existence of another *mysterium* of the King, namely the power of vacating oneself and entering a full communion with Sovereignty itself, the source of power the king requires but that always eludes him – except in this moment of surrendering to a saturated phenomenon, specifically the erotic phenomenon. Importantly, both of these processions reveal another logic inherent to the *mysterium* that is visible in a sacramental like a procession. The King does not process. In both cases, he *is* processed. He is in control of his actions, but neither of his body politic, nor of his body physical.

Let us consider the Triumphal Entry.²²⁰ This act is the first in the series of events that ends in the story of Easter. At the outset, Jesus is staying in a rural area just

²²⁰ *Gospel of Matthew* 21.1-11, *Gospel of Mark* 11.1-11, *Gospel of Luke* 19.28-44, *Gospel of John* 12.12-19.

outside Jerusalem, in Bethania (Βηθανία, Bethany, “House of Figs”), near one of his preferred locales for preaching and healing, the Mount of Olives (הר הזיתים, Har ha-Zeitim).²²¹ Jesus is there clearly as a *rabbi* in a private environment, accompanied only by his disciples, and, as so often, staying with his personal friends, the siblings Miryam (מִרְיָם, Mary of Bethany), Marta (מַרְתָּא, Martha), and Eleazer (אֵלְעָזָר, Lazarus).²²² One evening, Mary performs an extraordinary and controversial gesture of devotion: She takes a precious ointment and anoints Jesus’ feet, afterwards wiping them with her hair.²²³ Jesus aims to celebrate the upcoming Pesach (פֶּסַח, Passover) in Jerusalem, and sends two unnamed disciples ahead to a neighboring village of Bethphage (Βηθφαγή, “House of Unripe Figs”). There, they are to confiscate a donkey and a colt on his behalf, which they drape with their overcoats.²²⁴ Both of these gestures are evocative of an “anointed king,” since the minor Jewish prophet Zekharyah (זְכַרְיָה, Zechariah) had written about 500 years earlier, “Lo, your king comes to you; / triumphant and victorious is he, / humble and riding on a donkey, on a colt, the foal of a donkey.”²²⁵

Jesus mounts the donkey and begins riding it into Jerusalem, his disciples walking alongside him. On the way, the street lines with crowds watching the procession. The crowd lays its own cloaks onto the road so that the donkey might walk

²²¹ *Gospel of Matthew* 21.1.

²²² *Gospel of John* 11.1-16.

²²³ *Gospel of John* 12.1-8.

²²⁴ *Gospel of Mark* 11.7-8; *Gospel of Luke* 19.35-36.

²²⁵ *Book of the Prophet Zechariah* 9.9. In Hebrew:

גִּילִי מְאֹד בַּת־צִיּוֹן הַרְיַעֲלִי בֵּת יְרוּשָׁלַם הִנֵּה מֶלֶכְךָ יָבוֹא לְךָ צָדִיק וְנוֹשֵׁעַ הוּא עָנִי וְרֹכֵב עַל־חֲמֹר וְעַל־עִיר בְּרֻאֲתָנֹת:

on them, wave palm branches, cheer, and sing part of a Psalm announcing the arrival of an “anointed one.”²²⁶ Within Jerusalem, the crowd grows exponentially, so that the entire city “quakes,” and the jubilant crowd acknowledges Jesus as not just a rabbi, but a “prophet.”²²⁷ The image of a “quaking” crowd becomes particularly vivid when one remembers that the narrow streets of Jerusalem are packed to the hilt with pilgrims intending to celebrate Passover at the Temple of Yahweh. The procession ends at the Temple, where Jesus dismounts and regains control over his two bodies: he makes a whip out of cords and drives the money lenders out of the temple courtyard, overthrowing their tables, and famously declaring, “It is written, My house shall be called the house of prayer; but ye have made it a den of thieves.”²²⁸ It is these two actions that spark the final plot by a faction of Jerusalem’s religious council (Συνέδριον, Sanhedrin) to have Jesus killed; a “quaking” city in response to a processed prophet entering a packed and jubilant city in the manner of a king who then cleanses religious sites they are nominally in charge of is too evocative for their comfort of the *messiah*, the anointed king in the line of Abraham and David who they fear will spark an insurrection against the *imperium* that guarantees their positions.

At the Last Supper, a private Passover meal, Jesus then institutes what Christians consider the Eucharist as the highest of the sacraments, the *mysterium fidei* of divine incarnation ritually re-enacted during every Christian worship service.

²²⁶ *Book of Psalms* 118.25-26.

²²⁷ *Gospel of Matthew* 21.11

²²⁸ *Gospel of Matthew* 21.12-16 & *Gospel of Mark* 11.15-19. Jesus is quoting the *Book of the Prophet Jeremiah* 7.11 (here in the Greek of the Septuagint and in Hebrew): “μη σπήλαιον ληιστων ο οικος μου ου επικεκληται το ονομα μου επ’ αυτω εκει ενωπιον υμων και εγω ιδου εωρακα λεγει κυριος.”

הַמְעַרְתָּ פְּרָצִים הַהָהּ הַבְּנִית הַהָהּ אֲשֶׁר-נִקְרָא שְׁמִי עָלָיו בְּעֵינֵיכֶם גַּם אֲנֹכִי הִנֵּה רֹאֵתִי נְאֻם-יְהוָה:

However, even this episode occurs within rather than outside the ongoing logic of procession. Jesus turns to his disciple Yehudah (יהודה, Judas), the man from the town of Qriyot (אִישׁ־קַרְיֹוֹת, Iscariot), and tells him to “do what he must do.”²²⁹ Once again, the events unfold in a way that appears to put Jesus’ two bodies out of his own hands. In the Garden Gat Shmanim (גַּת שְׁמָנִים, Gethsemane, “Garden of the Oil Press”), Jesus asks the sovereign of the universe, addressing Yahweh as “my father” and asking to “let this cup pass by ... If this cup cannot pass by, but I must drink it, Your will be done.” He is met with an overwhelming silence.²³⁰

Shortly thereafter, Judas Iscariot identifies Jesus to the guards who are coming to arrest him with the Judas Kiss.²³¹ From now on, Jesus is no longer just part of an inevitable process, but also literally bound. Jesus is beaten by the guards and then brought before the Sanhedrin, where he is asked about his teachings. Jesus replies with a non-answer, implying that anyone interested in his actual teachings would already know them: “I have spoken openly to the world; I ever taught in synagogues, and in the temple, where all the Jews come together; and in secret spake I nothing.”²³² The Sanhedrin then asks Jesus point blank whether he claims to be “the Christ [“anointed

²²⁹ *Gospel of John* 13.21-30.

²³⁰ *Gospel of Matthew* 26.36-50. 39: “καὶ προελθὼν μικρὸν ἔπεσεν ἐπὶ πρόσωπον αὐτοῦ προσευχόμενος καὶ λέγων· Πάτερ μου, εἰ δυνατόν ἐστιν, παρελθάτω ἀπ’ ἐμοῦ τὸ ποτήριον τοῦτο· πλὴν οὐχ ὡς ἐγὼ θέλω ἀλλ’ ὡς σύ.”

²³¹ *Gospel of Matthew* 26.47-50; *Gospel of Mark* 14.43-45.

²³² *Gospel of John* 18.20: “ἀπεκρίθη αὐτῷ Ἰησοῦς Ἐγὼ παρρησία λελάληκα τῷ κόσμῳ: ἐγὼ πάντοτε ἐδίδαξα ἐν συναγωγῇ καὶ ἐν τῷ ἱερῷ, ὅπου πάντες οἱ Ἰουδαῖοι συνέρχονται, καὶ ἐν κρυπτῷ ἐλάλησα οὐδέν”. One notes that John uses the term *kryptos* for “secret,” i.e. a normally freely legible thing concealed or disguised through a code or technique of some sort. Meanwhile, Jerome’s Latin uses *occultus*, i.e. a thing “buried” so that it can never be legible to anyone but the person who knows where to find it: “respondit ei Iesus ego palam locutus sum mundo ego semper docui in synagoga et in templo quo omnes Iudaei conveniunt et in occulto locutus sum nihil.”

one’], the Son of God.” Jesus’ response makes clear that he is being processed: “Thou hast said.”²³³ Jesus is then beaten by a member of the Sanhedrin, which declares him “guilty of death” for blasphemy. Since the Jewish authorities cannot execute anyone, they send Jesus on to the Roman governor of Judea, Pontius Pilatus (Pilate).²³⁴

A similar exchange repeats itself. The Sanhedrin in the end brings three charges against Jesus: subverting the values of the Jewish people, forbidding his followers from paying tribute to the authorities, and sedition against the *imperium*. As only the last of these is of concern to the Roman governor, Pilate examines Jesus with the relevant question, “Art thou the King of the Jews?” Again, Jesus’ response confirms that he is being processed: “Thou sayest.” He refuses to answer any other questions. He does declare that “was born and have come into the world, to testify to the truth. Everyone who belongs to the truth listens to My voice.” This time, it is Pilate who replies, “What is truth?”²³⁵ Having found no reason to condemn Jesus, Pilate reduces him further, this time to an item in a bartering game with the angry mob outside: should he let the harmless Jesus go, or should he release a dangerous criminal Barabbas? The crowd pushes Pilate to condemn Jesus, which he then does, more to close the case than anything else. The trial ends with a scourging for Jesus, and the order to crucify him.²³⁶

²³³ *Gospel of Matthew* 26.64a: “λέγει αὐτῷ ὁ Ἰησοῦς Σὺ εἶπας: πλὴν λέγω ὑμῖν,” where Jesus uses the verbal form of *logos* for said, i.e., in a way, “you have made it so.” This is less well reflected in the *dicere* of Jerome’s *Vulgate*, “dicit illi Iesus tu dixisti,” although there is an echo of it in our use of “dictum.”

²³⁴ *Gospel of Matthew* 27; *Gospel of Mark* 15; *Gospel of Luke* 23; *Gospel of John* 18-19.

²³⁵ *Gospel of John* 18.38a: “λέγει αὐτῷ ὁ Πειλᾶτος Τί ἐστὶν ἀλήθεια [*aletheia*].” In the *Vulgate*: “dicit ei Pilatus quid est veritas.”

²³⁶ *Gospel of Mark* 15.

In some of the versions of the story, Pilate interrupts the trial when he finds out that Jesus is a Jew from Nazareth, which technically puts him in the jurisdiction of the local ethnarch Herodes Antipatros (Ἡρώδης Ἀντίπατρος, Herod Antipater). Herod appears delighted to have Jesus presented to him, evidently expecting to be entertained with a miracle. When no such entertainment is forthcoming, Herod questions Jesus about the accusations leveled against him by the Sanhedrin, but once again Jesus simply accepts that he is being processed. Herod's soldiers mockingly declare Jesus "King of the Jews," cover him in a precious robe fit for a king, and beat him. He is then processed by the guards back to Pilate.²³⁷

In either case, the question of Jesus' body politic now gone unanswered, the dissolution of Jesus' "wounded" body escalates throughout the inversed procession from Jerusalem to the cross on the hill used for executions, Golgolet (גולגולת, Golgatha, "skull"). The Roman soldiers place a purple gown and mock thorn crown on Jesus' head, mimicking the costume of the *triumphator*, and beat him once again.²³⁸ Again, they call him "King of the Jews." Finally, Jesus drags his own method of execution to Golgatha, the crossbeam of the cross from which he will hang until he suffocates or dies of exposure.²³⁹ When he is nailed to the cross, Jesus has fallen completely silent; his clothes are divided among his executioners, determined by

²³⁷ *Gospel of Matthew* 23.1-12.

²³⁸ *Gospel of John* 19.1-5.

²³⁹ *Gospel of Matthew* 27.31-33, *Gospel of Mark* 15.20-22, *Gospel of Luke* 23.26-32 and *Gospel of John* 19.16-18.

gambling. The question of the king, too, is no longer spoken: a mute label stating “King of the Jews” is attached over his head.²⁴⁰

The execution of Jesus is accompanied by a complete dissolution of the fabric of the *cosmos*. When Jesus cries out “My God, my God, why have you forsaken me?” and gives up his spirit, a nearby centurion ends whatever suffering might have been left by stabbing Jesus with his spear, an act intended as a mercy killing, although it comes too late. At that moment, the world falls dark in the middle of the day; the veil in front of the Holy of Holies in the Temple, meant to shield the priests from the eviscerating presence of God, tears in two; the earth quakes; rocks crumble so that the tombs beneath them open, and time and death invert from their regular course: “Many bodies of the saints that had fallen asleep were raised; and coming forth out of the tombs after his resurrection they entered into the holy city and appeared unto many.”²⁴¹ The narrative closes on Easter, when Jesus is said to resurrect from his own tomb,²⁴² re-enter the world in his form as a simple rabbi (albeit with powers to apparate and disapparate at will) for a short time, and eventually is “received up into heaven, and sat down at the right hand of God.”²⁴³

Initially, the behavior of Jesus, the “anointed one” (*Christos*), during these proceedings appears difficult to square with reasonable expectations about those who inhere the King’s *mysterium*. Strong sovereigns tend to be viewed as persons of

²⁴⁰ *Gospel of Luke* 23.32-38.

²⁴¹ *Gospel of Matthew* 27.45-56.

²⁴² *Gospel of Mark* 16, *Gospel of Matthew* 28, *Gospel of Luke* 24, *Gospel of John* 20.

²⁴³ *Gospel of Mark* 16.19: “Ο μὲν οὖν κύριος μετὰ τὸ λαλῆσαι αὐτοῖς ἀνελήμφθη εἰς τὸν οὐρανὸν καὶ ἑκάθισεν ἐκ δεξιῶν τοῦ θεοῦ.” In the *Vulgate*: “et Dominus quidem postquam locutus est eis adsumptus est in caelum et sedit a dextris Dei.”

strength, cunning, conviction, and action: Alexandros the Great, Octavianus Augustus, Charles the Great, Henry V. of England, Mary and Elizabeth Tudor. Had Jesus not once declared himself, “Think not that I am come to send peace on earth: I came not to send peace, but a sword?”²⁴⁴ (as well as the active inverse, “Blessed are the peacemakers”).²⁴⁵ There are flashes of that “anointed one” in the Cleansing of the Temple, perhaps, or in the heroic silence with which Jesus undergoes his extensive torture and his execution. But overall, during his processions, *prozess*, and processing, this ostensible Son of God appears to be largely passive. Therein lies the key, however. What makes the King inhere the *mysterium* is not ambition or force of personality: There are plenty of humans with *that* attribute.

What makes the King is his dissolution as a body physical into the processes of the body politic. The theatrical performance of kingship reveals the secret *mysterium* of sovereignty precisely in those moments when the person is eviscerated in favor of the form, since only the form can rise to the level of a saturated phenomenon that can share itself erotically with the audience, and the audience submit to it in return. The overwhelming infinity of the *logos* on which the ever-elusive sovereignty rests can come to the fore only in such instances. In fact, then, what Jesus is doing is not to be less kingly, but rather *more kingly than any other king could bear*. By giving himself over entirely to the procession, *prozess*, and processing, by erasing his body physical both in terms of initiative and, arguably, in terms of bodily integrity, the ordering

²⁴⁴ *Gospel of Matthew* 10.34: “Μὴ νομίσητε ὅτι ἦλθον βαλεῖν εἰρήνην ἐπὶ τὴν γῆν: οὐκ ἦλθον βαλεῖν εἰρήνην ἀλλὰ μάχαιραν.” In the *Vulgate*: “nolite arbitrari quia venerim mittere pacem in terram non veni pacem mittere sed gladium.”

²⁴⁵ *Gospel of Matthew* 5.

power, the *cosmos*-making of the *logos* can reveal itself. Only thus can Sovereignty fully inscribe itself into the world, to the point where it begins to tear at the fabric of reality itself, quaking the earth, inverting day and night, revoking death. This moment of full inscription is, of course, a unique event: there is no other “anointed one” who raises to the level of the Christ. But it is this moment that the *mysterium* of the King evokes: the king’s power derives not from his presence or his might, but from his theatrical processing.

This sequence of events represents the *mysterium fidei* at the very heart of the Christian *mythos*, the procession and process of the type of ideal, divine king that no other human could realistically attempt. Nevertheless, the same elements of the procession of the *mysterium* of the king are present here also. The processions of Jesus are public events, and are, in a sense, based on the authority of Jesus himself as a divine figure. The theatricality of both the Triumphal Entry and the Passion of the Christ need hardly be detailed any further, and both have been the template of many a liturgical drama and passion play since. However, insofar as the kingship of secular kings rests on the *mysterium* that they are “God’s anointed,” the procession of kings is also the processing of the king, at least in his body politic. It is the echo of the Kingdom of God, the model for the King’s narrative Self, the evisceration of his “wounded” Self in order to give himself as a type of erotic phenomenon to his kingdom. So much, in any case, for the ideal.

III. Processing Richard Lionheart

At this point, this dissertation finally turns to fate of the *mysterium* in medieval

and Early Modern Europe, and it does so with a map of that world. It is the Peutinger Map, *Tabula Peutingeriana*, and is best seen before it is described – or at least a representative part of it, as the original is rather large:

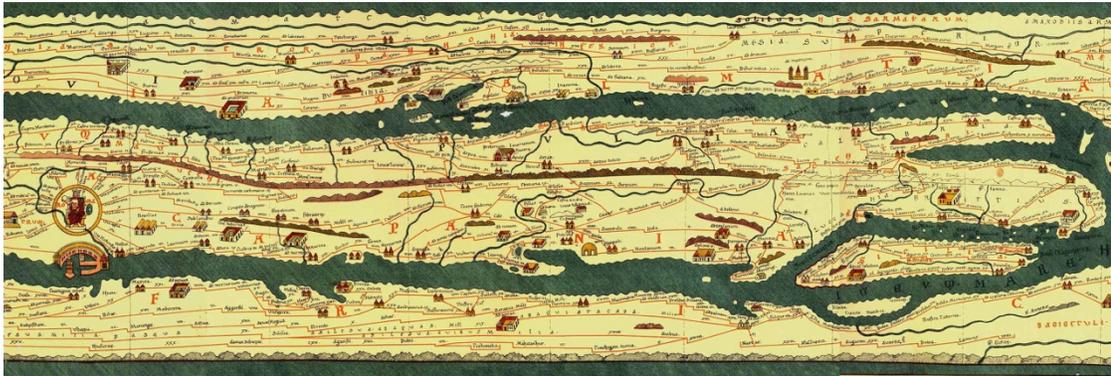


Figure 1: Tabula Peutingeriana of the Roman Empire ca. 300 CE, copy made ca. 1200 CE. Codex 324, Sammlung von Handschriften und alten Drucken, Austrian National Library, Vienna, Austria. Image in the public domain.

The image shows the full height of this map, but not its full length: that stretches several meters and depicts the entire Roman Empire from Britain to North Africa, from Hispania to India and China. The section excerpted here depicts the most visually recognizable geographical landscape included in the map, southern Italy. Rome is designated by the circle on the left, a king sitting in it. Jerusalem and Constantinople are the only other cities thus depicted on the map. The heel and boot of the peninsula are to the very right. Sicily is the island beneath it. The Adriatic is represented by the thin sliver of water between the top thirds of the map, the Tyrrhenian by its counterpart between the bottom thirds. The bottom piece of land

represents the coastline of northern Africa. The very top piece of land represents Dalmatia, the Adriatic coast of the Balkans.

The unusual representation of the geographical space is intentional. This map is an *itinerarium*, which is uninterested in an accurate “bird’s eye view”-representation of the areas it shows. After all, premodern humans do not travel the world “as the crow flies.” Rather, an *itinerarium* is a tool to calculate the amount of *time* it takes to travel the network of Roman roads between various cities, resulting in shortened space where travel is easy and fast, such as flat plains, and in elongated space where travel is difficult and slow, such as mountain ranges. The *itinerarium* represents the entire *cursus publicus* of roads that covered the *imperium* and the known world.²⁴⁶ Since this is how goods, armies, communications, and even emperors travel, it is a map of the *processes* of the *imperium*, defining its underlying executable structure. In a sense, the Tabula Peutingeriana thus depicts the *imperium* more accurately than a geographical one-to-one representation would.

Predictably, the central node of the network, on which all processes converge, are the capitals secular and spiritual of the Christianized empire: Rome, Constantinople, Jerusalem. This is where, finally, Kittler enters the discussion of the processed *mysterium* of the King. In his essay, “The City is a Medium,”²⁴⁷ Kittler draws attention to the body politic in a specific way:

²⁴⁶ Cf. esp. the explanatory materials in Otto Cuntz, ed. *Itineraria Romana*, Vol. 1. Leipzig: B.G. Teubner, 1929.

²⁴⁷ Friedrich Kittler, “The City is a Medium.” *New Literary History* 27.4 (Autumn 1996), 717-729; Friedrich Kittler, “Die Stadt ist ein Medium,” *Mythos Metropole*, Gotthard Fuchs, Bernhard Moltmann, & Walter Prigge, eds. Frankfurt am Main: Suhrkamp, 1995. 228-240.

Capital. The name already says it: Capitals are named after the human body. The state (since the Greeks) has been conceived of as an organism, whose head is its capital. This capital, in turn, is ruled by a chief, whose name once more means just that, the head.²⁴⁸

Kittler's head-metaphor is less interesting as a representative of anyone in particular, chief, king or other sovereign, but rather because it evokes the neural networks that run throughout a human body, transmitting information. To Kittler, their parallel is the information infrastructure of the body politic, and of the capital:

A network made up of intersecting networks dissects and connects the city – in particular its fringes, peripheries, and tangents. Regardless of whether these networks transmit information (telephone, radio, television) or energy (water supply, electricity, highway), they all represent forms of information. (If only because every modern energy flow requires a parallel control network.)²⁴⁹

According to Kittler, what sounds like a modern observation is in fact just as applicable to ancient equivalents:

²⁴⁸ Kittler, "City," 717; Kittler, "Die Stadt," 228: "Hauptstadt. Der Name sagt es schon: Hauptstädte oder Kapitalen sind vom menschlichen Körper her benannt. Der Staat (seit den Griechen) heißt Organismus, die Hauptstadt sein Kopf. Sie gehört folglich zu einem Chef, dessen Name ja wieder nur Kopf besagt."

²⁴⁹ Kittler, "City," 718; Kittler, "Die Stadt," 229: "Seitdem Städte nicht mehr vom Münsterturm oder Schloß aus zu überblicken und nicht mehr von den Mauern oder Befestigungen eingeschlossen sind, durchzieht und verschaltet sie ein Netz aus lauter Netzen — auch und gerade an Rändern, Tangenten und Fransen. Gleichviel, ob diese Netze Information oder Energie übertragen, also Telephon, Radio, Fernsehen oder Wasserversorgung, Elektrizität, Autobahn heißen — Information sind sie allemal. (Schon weil jeder moderne Energiefluß parallel dazu ein Steuernetz braucht.)"

Even in those unthinkable times when energy still needed beasts of burden like Sinbad and information required messengers like the first marathon runner, networks existed. They just hadn't been built yet or, in technician's jargon, implemented. The narrow, rugged mule trail was replaced by the railway and the highway, which in turn have been replaced by no less transient copper and fiber optic cables.²⁵⁰

Interestingly, such paths tend to be best understood not through their delimiting structures, but rather their inherent absences:

To best reconstruct the way out of a labyrinth (as the Greeks were said to have done in reading the ruined foundations of Knossos, Phaistos, or Gournia), one doesn't need to sketch the still visible connecting walls, rather their inverse: the invisible passages between path and door. Thus (in mathematical terminology) a "tree" takes shape, whose bifurcations distinguish the dead ends from the exits.²⁵¹

Thus, such a labyrinth of absences and paths, of dead ends and exits, is the true instantiation of the information structure: dead ends are its limits, exits its possibilities. (If this does not sound overly applicable to the theatrical *mysterium* of the king, note

²⁵⁰ Kittler, "City," 718; Kittler, "Die Stadt," 229: "Aber auch in jenen unvordenklichen Zeiten, als Energie noch Lastenträger wie Sinbad und Information Boten wie bei Marathon brauchte, gab es diese Netze nicht. Sie waren nur noch nicht alle gebaut oder implementiert, wie der Technikerjargon sagt. Die dürftige Spur eines Eselpfades im Gestein ersetzte Schienen oder Autobahnen, die nicht minder flüchtige des Boten Kupfer- oder Glasfaserkabel."

²⁵¹ Kittler, "City," 718; Kittler, "Die Stadt," 229: "Um den Weg aus einem Labyrinth (wie die Griechen es aus den verfallenen Stadtgrundrissen von Knossos, Phaistos, oder Gournia abgelesen haben sollen) zu rekonstruieren, tut man gut, statt der sichtbar verbundenen Mauern gerade das Umgekehrte: die unsichtbaren Verbindungen zwischen Wegen und Toren aufzuzeichnen. Woraufhin (im mathematischen Wortsinn) ein Baum entsteht, dessen Gabelungen die Sackgassen von den Ausgängen kenntlich unterscheiden."

that the episode of Jesus also includes a sovereign structure being superimposed on a tree, the cross, and that according to those narratives, the labyrinthine paths available to that sovereign of the *cosmos* end not in the dead ends of death, but in the exit to life – a process achieved by following the absences to their fullest expression, in this case, the vacating of the body physical in favor of the cosmic body politic.)

It is in this context that Kittler, too, turns to the *Tabula Peutingeriana*. After discussing the role of the Austrian city of St. Pölten as a node in the communication networks of the Napoleonic Wars, Kittler observes:

On the *Tabula Peutingeriana*, which maps out early St. Pölten [the Roman settlement of Aelium Cetium] as a relay station within the Roman postal system, the north-south boundaries (probably to better transport the medium "map" across country) have become so frayed that land, sea, and mountain formations are barely discernible. An empire, the Roman empire, vanishing into a pure media landscape.²⁵²

That media landscape is interested only in *processing* items and bodies through a system, and that system becomes a self-sufficient structure in itself:

Roads between cities are, nevertheless, the single connection which the *Peutingeriana* maps out. The Roman postal system ignored other arteries of life, such as aqueducts and, as Hölderlin wrote, the

²⁵² Kittler, "City," 719; Kittler, "Die Stadt," 231: "Was damit, nach der topographischen Leidenschaft des 19. Jahrhunderts und das heißt der Generalstäbe, wiederkehrt, gleicht den ältesten Landkarten: Auf der *Tabula Peutingeriana*, die ja das nachmalige St. Pölten als Relaisstation der römischen Staatspost verzeichnete, waren die Nord-Süd-Abstände (wohl um das Medium Landkarte selbst leichter über Land zu transportieren) so sehr gestaucht, daß vom Land, Meer und Gebirge kaum Spuren blieben. Ein Imperium, das römische, als reine Medienlandschaft."

“shadowless streets” of the sea. Border towns were coordinate points along a line, relay stations created the tangents, while Rome, where all roads proverbially met, formed the axis of an entire system of intersections. Because no other system intersected or crossed the road system, one level sufficed to represent the graph.²⁵³

This makes complete sense from Kittler’s point of view: “Media exist to process, record, and transmit.”²⁵⁴ They need not legibly represent, only functionally.

This observation about media, then, is the crux where theatricality and the *mysterium* of the sovereign connect to the Tabula Peutingeriana. New York-American literary theorist Samuel Weber (b. 1940) has asserted that like any other media, “theatricality is a medium.” Weber defines theatricality by its ability to transform any given space into the scene of a performance. In that space, an event, situation, action, or idea exposes itself to an audience. For example, using Plato’s Cave as his defining illustration, Weber notes that the cave qualifies as a theater, due to two traits: “First, the reader is invited to ‘picture’ a defined, limited place. ... This is the first characteristic of a theater: the events it depicts are not indifferent to their placement.”²⁵⁵ And, secondly: “A theatrical scene is one that plays to others, called

²⁵³ Kittler, “City,” 719; Kittler, “Die Stadt,” 231-232: “Kreuzungen. Immerhin, Straßen zwischen Städten waren die einzige Verbindung, die die Peutingeriana verzeichnete. Von anderen Lebensadern wie Aquädukten oder gar den ‘schattenlosen Straßen’ der See, wie Hölderlin schrieb, konnte die römische Staatspost absehen. Grenzstädte blieben also Ecken einer Karte, Relaisstationen Ecken von zwei Kanten, während Rom, wohin alle Straßen ja sprichwörtlich führten, die Ecke eines ganzen Kreuzungssystems bildete. Aber weil das Straßensystem von keinem anderen geschnitten wurde, reichte eine Ebene zur Darstellung des Graphen.”

²⁵⁴ Kittler, “City,” 720; Kittler, “Die Stadt,” 235: “Medien. Speicherung, Übertragung und Verarbeitung von Information – nichts anderes ist die elementare Definition von Medien überhaupt.”

²⁵⁵ Samuel Weber, *Theatricality as Medium*. New York: Fordham UP, 2004. 4.

variously ‘spectators’ or, in this case, more properly ‘audience,’ since in the cave ‘vision’ and ‘visibility’ are by no means the only media of perception involved.”²⁵⁶ Indeed, “When an event or series of events *takes place* without reducing the place it has ‘taken’ to a purely neutral site, then that place reveals itself to be a ‘stage,’ and those events become theatrical happenings.”²⁵⁷

Moreover, theatricality functions through time, as a process:

Such happenings never take place once and for all but are ongoing.

This in turn suggests that they can neither be contained within the place where they unfold nor entirely separated from it. They can be said, then, in quite a literal sense, to *come to pass*. They take place, which means in a particular place, and yet simultaneously also *pass away* — not simply to disappear, but to happen somewhere *else*.²⁵⁸

Finally, “out of the dislocations of its repetitions emerges nothing more or less than the *singularity of the theatrical event*. Such theatrical singularity haunts and taunts the Western dream of self-identity.”²⁵⁹ It is evident that the theater of the *mysterium*, particularly the procession, fit Weber’s definition very closely. It, too, stages itself by “taking place.” It, too, “comes to pass.” It, too, as already discussed in the previous section, “haunts and taunts the Western dream of self-identity.”

²⁵⁶ *Ibid.*

²⁵⁷ Weber, *Theatricality*, 7.

²⁵⁸ *Ibid.*

²⁵⁹ *Ibid.*

The method through which this section will read the *mysterium* will propose to imaginatively overlay the media system of the Tabula Peutingeriana with the medium that is the theatricality of the *mysterium* of the sovereign. This prepares the stage for tracing how the *mysterium* might function *in the absence* of a king in his body physical, because, say, the King in his body physical is trapped in a labyrinth of processing. Can the body politic survive this absence and replace the King with something else, or, does this absence strain and finally disperse the body politic as well? Answering that question will illuminate more of the logics of the political secret that is the *mysterium*.

The example employed here is a king whose existence, crucially, is as literary and theatrical as it is historical: Richard I. Lionheart (1157-1199), King of England and Duke of Normandy, Aquitaine, and Gascony, crusader and ruler over the Angevin Empire. Using the literary and historical case of Richard, this section will demonstrate that in cases where the *mysterium* cannot be processed properly because the king physical is absent, it is not the King political who dissolves. Rather, the theatrical process does, losing the place and audience it requires in order to function. In these circumstances, the *mysterium* turns from a performed secular sacramental with phenomenologically erotic properties into an undisclosable political secret, one that can lead to a *krisis* of the kingdom. The only solution is the return of the king physical – or his functional replacement, *which has to be acclaimed by the subject audience as genuinely interacting with the sovereign mysterium*.

Richard Lionheart is a historical figure, but also literary king, a theatrical king. That is, his various literary and anecdotal afterlives have eclipsed his historical

biography. In Early Modern literary studies, this is not a rare case. The same thing can be said of certain Danish and English kings, which are now barely recognizable apart from their characterizations by William Shakespeare. The Danish prince Amleth would be a forgotten footnote in the *Gesta Danorum*, yet thanks to *Hamlet* he is one of the best-known royal sons of all time (Chapter 4). Henry V. is barely distinguishable from heroic speeches he never gave, from “once more unto the breach” to “upon St. Crispian’s Day.” Richard III. will forever be the hunchbacked, cowardly conniver, “rudely stamp’d” and “determined to prove a villain” the Bard turned him into in order to please the tastes of an audience devoted to the Tudors, who relished seeing their royal line’s final enemy whine “my kingdom for a horse” — a reputation so lingering and consuming that there is a Richard III. Society for historians still attempting to clear that unfortunate king’s name 500 years later. Even in 2016, Bostonian-American literary scholar Stephen Jay Greenblatt (b. 1943) saw Shakespeare’s Richard III. fit as an apt comparison to a politician he despised who was elected to the American presidency.²⁶⁰ About the actual man Richard III., we know next to nothing: until 2012, even his grave was unknown, until it was discovered under a car park in Leicester.²⁶¹ And who would know much at all about Edward II. if Christopher Marlowe had not had him murdered in such spectacular fashion by Lightborne on the public stage? (Chapter 2). The stage preserves their memories, and only the stage reminds us of their

²⁶⁰ Stephen Greenblatt, “Tyrant: Shakespeare on Power.” *Guardian*, 1 July 2018. Online. <https://www.theguardian.com/books/2018/jul/01/tyrant-shakespeare-on-power-by-stephen-greenblatt-book-review-robert-mccrum>.

²⁶¹ “A ‘car park king’ timeline: the discovery of Richard III.” *BBC History Magazine*. 4 Feb 2019. Online. <https://www.historyextra.com/period/medieval/richard-iii-plantagenet-car-park-king-timeline-discovery-leicester-reburial-key-dates/>

names. In such cases, not history, but rather the “play’s the thing.” Richard Lionheart presents a better test case for the *mysterium* than any of these other royals, because he is less totally captive to a single literary or dramatic representation. Rather, he is a character of processions and of processes.

Richard Lionheart’s discursive existence indecisively straddles the historical and multiple literary versions of his *personae*, making both equally available for this analysis as what Eva Horn calls “plausible versions” – the versions that can depict logics of political secrecy (Introduction). Richard Lionheart’s contemporary, the poet Jehan Bodel from Arras near Calais (1165-1210),²⁶² was the first to divide medieval legends into nations in his *Song of the Saxons: the Matter of Rome* (*matière de Rome*, Greek and Roman legend), the Matter of France (*matière de France*, concerning Charlemagne and his paladins), and the Matter of Britain (*matière de Bretagne*, concerning King Arthur Pendragon and the knights of Camelot).²⁶³ Later scholars would add to this the Matter of England (English stories of Germanic origin),²⁶⁴ which

²⁶² The town of Arras has recently gained some minor fame among medievalist literary critics for the role it plays in Carol Symes’ seminal *A Common Stage: Theater and Public Life in Medieval Arras*. Ithaca, NY: Cornell UP, 2007.

²⁶³ “Ne sont que III matieres a nul home antandant / De France et de Bretagne et de Rome la grant / Et de cez III matieres n’i a nule samblant. / Li conte de Bretagne sont si vain et plaisant, / Cil de Rome sont sage et de san aprenant, / Cil de France de voir chascun jor aparant” (lines 6-11). Jehan Bodel, *Le Chanson de Saisnes*, Vol. 1, Annette Brasseur, ed. Geneva: Droze, 1989. 3. Jehan Bodel then assigns each their content by telling corresponding tales. Dennis H. Green has pointed out that accepting Jehan Bodel’s taxonomy has always been an odd choice from an English perspective, given that he characterizes the French matter as “voir” (true), the Roman matter as “sage” (wise), and the British matter as “vain et plaisant” (frivolous). D.H. Green, *The Beginnings of Medieval Romance*. Cambridge: Cambridge UP, 2002. 138-139.

²⁶⁴ As used here, the term Matter of England was first introduced as a literature-historical term by William Henry Schofield in his *English Literature from the Norman Conquest to Chaucer*. London: Macmillan, 1906. 258-282. For one recent historical overview of the concept of a Matter of England, see “The Curious History of the Matter of England” by Rosalind Field in *Boundaries in Medieval Romance*, Neil Cartlidge, ed. London: D.S. Brewer, 2008. 29-42.

includes both the legends of Robin Hood in which Richard features and the 13th century Middle English romance *Richard Coer de Lyon*.

As a figure of several major traditions, then, the French-British-English Richard Lionheart plays an outsized role in the Early Modern English legendarium. He is connected to the Matter of Britain through his mother Eleanor of Aquitaine, to whom the Norman poet Wace dedicated his Arthurian *Roman de Brut*.²⁶⁵ He is further connected to the Matter of Britain through his father King Henry II. Curtmantle, who laid great stock in his discovery of Arthur Pendragon's and Guinevere's tombs in Glastonbury.²⁶⁶ In March 1191, Richard Lionheart would himself (ostensibly) present the legendary sword Excalibur to King Tancred of Sicily and declared his young nephew, not coincidentally named Arthur of Brittany, as his presumptive heir.²⁶⁷ He is connected to the Matter of France through the Trial of Ganelon in the *Chanson de Roland*.²⁶⁸ He is, of course, the good but absent king of the Matter of England, in which the antagonists are inevitably usurpers of his authority.

Richard Lionheart's role in this analysis begins, however, not in Britain or France, but in Denmark and Spain. The relevant stories concern an *open secret*, which is an ostensible secret about the King political which cannot be spoken due to the

²⁶⁵ "A Frenchis clerik, / Wace wes ihoten / þe wel coupe writen / & he hoe 3ef þare aedelen / Ælienor þe wes Henries quene / þes he3es kinges." *Le Roman de Brut de Wace*. Paris: Societé des Anciens Textes Français, 1938. 3.

²⁶⁶ This detail is reported by the Cambro-Norman cleric Gerallt Gymro (1146-1223), known as Gerald of Wales, *De principis instructione* 1.

²⁶⁷ "Rex autem Angliae dedit ei gladium optimum Arcturi, nobilis quondam regis Britonum, quem Britones vocaverunt Caliburnum." / "The king of England gave [Tancred] the great sword of Arthur, most noble king of Britain, which the Britons called Excalibur." William Stubbs, *Chronica Magistri Rogeri de Houedene Rerum Britannicarum medii aevi scriptores*. Vol. 2. London: Longmans, Green, Reader, and Dyer, 1867. 159.

²⁶⁸ *Le Chanson de Roland* §270-289.

mysterium of the king, but which is in fact widely known. It is a mute secret, a legal secret, but not a discursive secret. Consequently, the open secret emphasizes the logics of secrecy particularly aptly, especially the logics of a ritual, sacramental secret, whose existence rests entirely in its performance, not in its content. The quintessential tale for the concept of an open political secret is Hans Christian Andersen's "The Emperor's New Clothes."²⁶⁹ In it, the unnamed emperor is so vain that rather than saying, "The king is in council," his subjects would say, "the king is in his dressing room," since he had a coat for every hour of the day, and for every occasion. Two swindlers come to town, claiming they made cloth so wonderful it would become invisible to anyone who was unfit for his office, or uncommonly stupid. Wanting to use this as a tactic to evaluate his royal appointees, the emperor orders a coat. As no one wants to be found lacking or stupid, nobody, including the emperor, wishes to admit that they can neither see nor feel the miraculous garment. It is only after the swindlers have absconded with the money that the emperor goes naked on a procession through town. A child cries out the truth, the open secret soon echoed by many of the commoners. The emperor, knowing they are right but unable to break with the sovereign secret, carries on as if nothing out of the ordinary has occurred, because "this procession must go on."

Andersen's story is based on a medieval Spanish original by Juan Manuel, Prince of Villena (1282-1348), nephew of Alfonso X of Castile. Like his uncle, Juan Manuel wrote a number of books, all of them, unusually, in the vernacular rather than

²⁶⁹ Hans Christian Andersen, "Kejserens nye Klæder." *Eventyr, fortalte for Børn, Tredie Hefte*. Copenhagen: C.A. Reitzel, 1837.

in Latin that would have been expected for learned works. Perhaps his most famous, *El Conde Lucanor*, was written between 1328 and 1335 and is sometimes characterized as a predecessor to Boccaccio's tales.²⁷⁰ In "Ejemplo XXXIIº," the tale is about a king.²⁷¹ The king is deceived by his chamberlain, his alguacil ("al-wazir," vizier, minister, or sheriff),²⁷² and a handful of *picaros*.²⁷³ Rather than about intellect, as in Andersen's story, the stakes in the original tale are about legitimacy: Those who cannot see the king's wonderful cloth supposedly reveal themselves to be bastards by birth.²⁷⁴ It is not a child, but a Moor (*un negro*), who cuts straight to the truth: "Sire, to

²⁷⁰ E.g. James Fitzmaurice-Kelly, "Juan Manuel, Don," *Encyclopædia Britannica*, Vol. 11. Cambridge UP, 1911. 530.

²⁷¹ Andersen identifies this as the source in his preface to *Eventyr*, "Til de ældre Læsere": "Det kortere Eventyr: "Keiserens nye Klæder" som slutter Heftet, er af spansk Oprindelse. Hele den morsomme Idee skyldte vi Prinds *Don Juan Manuel*, født 1277, død 1347." Andersen, Hans Christian, *Eventyr: fortalte for Børn*, Erik Dal, ed. Copenhagen: Hans Reitzels Forlag, 1963. 19. Andersen's biographer Elias Bredsdorff notes that "Andersen did not know the Spanish work but had read one of the stories in a German translation entitled 'So ist der Lauf der Welt.'" Elias Bredsdorff, *Hans Christian Andersen: the story of his life and work, 1805-75* New York: Scribner, 1975. 312. The German story occurs in (Karl) Eduard von Bülow, *Das Novellenbuch, 4. Teil* Leipzig: Brockhaus, 1836. 40-44. If this genealogy is accurate (and Bredsdorff does not cite a source for the detail about the German story), then this would have left Andersen a single year to acquire von Bülow's book, read the story, decide to translate and include it, see it to the publisher, and for the publisher to set and publish it. Andersen's version changes the ending: Rather than accepting that he has been duped as he does in the original, the king merely suspects it, but carries on as if nothing had happened.

²⁷² "Alguacil," *Diccionario de La Lengua Española*, Edición del Tricentenario, <http://dle.rae.es/?id=1ny83D5>. From the Arabic *wazar*, "to bear a burden." In the *Qur'an*, Aaron is referred to as the *wazir*, or helper, of Moses (20:29, 25:35, & 94:02).

²⁷³ "Ejemplo XXXIIº – Lo que sucedió a un rey con los picaros que hicieron la tela," English: "Of that which happened to a King and three impostors," from *Count Lucanor; of the Fifty Pleasant Stories of Patronio, written by the Prince Don Juan Manuel*, James York, transl. London: Gibbings, 1868. 52-59.

²⁷⁴ This device is echoed by Manuel Cervantes in "El retablo de las maravillas" (English: "The Marvelous Puppet Show"), where two *picaros*, Chanfalla and Chrinos, put on a puppet show that supposedly can only be seen by those who are not of illegitimate birth and who are Old Christians, i.e. not descended from formerly Jewish *conversos*. The entire town pretends to be able to see the marvelous performance, until the quartermaster (*el furrier*) arrives and tells them they have been taken for fools. Instead of believing him, they accuse him of being "one of them" ("*ex illis es!*"), resulting in a violent fight. Once again, the *picaros* escape. This presents, of course, the third possible outcome: In Andersen's tale, the open secret remains functional though acknowledged, in Juan Manuel's it is turned into public knowledge and thus ends, and in Cervantes' it retains its original form.

me it matters not whose son I am, therefore I tell you that you are riding without any clothes.” The Moor earns himself a beating at the king’s hand, but once everyone realizes that the truth can be spoken as it is, they do, and even the king relents, seeing “the trick with which these impostors had made them victims.”²⁷⁵ Rather than carry on because the acts of state must be carried on, as in Andersen’s tale, Juan Manuel’s king sends out a search party out for their arrest. The characters of the frame narrative of the tale, Count Lucanor and Patronio, close the story with a brief dialogue about not trusting those who wish to take advantage, to which the author himself adds, “And Don Juan, also seeing that it was a good example, wrote in his book, and made this lines, which say as follows: ‘Who counsels thee to secrecy with friends / Seeks to entrap thee for his own base ends’” (viz. the *arcana imperii*, Chapter 2).²⁷⁶

Juan Manuel’s *El Conde Lucanor* features another story, about another king, one also best known for stories featuring the deceit of his steward (that is, his usurping brother John Lackland, whom Shakespeare has so aptly self-characterize: “How oft the sight of means to do ill deeds / Make deeds ill done,” *King John* 4.2.236-237), a sheriff, and a handful of merry men: our very Richard I. Lionheart, King of England. In “Ejemplo III,” “Of the leap made by King Richard of England into the sea against the Moors,”²⁷⁷ a holy hermit has been promised admittance to paradise. Elated and

²⁷⁵ “Señor, a mí non me enpeçe que me tengades por fijo de aquel padre que yo digo, nin de otro, et por ende, dígovos que yo só çiego, o vós desnuyo ides.”

²⁷⁶ “Et veyendo don Johan que éste era buen exiemplo, fizolo escribir en este libro, et fezo estos viessos que dizen assí: Quien te conseja encobrir de tus amigos, / sabe que más te quiere engañar que dos figos.”

²⁷⁷ “Ejemplo tercero - Del salto que fizo el rey Richalte de Inglaterra en la mar contra los moros,” English: “Of a Hermit who fought to know whom he should have for his companion in Paradise, and of the leap made by King Richard of England,” from *Count Lucanor; of the Fifty Pleasant Stories of Patronio, written by the Prince Don Juan Manuel*, James York, transl. London: Gibbings, 1868. 21-28.

curious, the hermit asks who his companion in paradise might be. After first being rebuffed by God for unwarranted curiosity, the hermit finally moves God with his earnest prayers, and an angel is sent to the hermit to tell him his companion will be Richard Lionheart. This surprises the hermit, since Richard Lionheart was a man of violence and war. How does he, a holy man, the hermit asks, come to share that particular king's company in heaven? Are they truly the product of the same *mysterium fidei*?

The angel explains. When the kings of England, France, and Navarre arrived at the port in Outremer where they intended to disembark, they were met by a coast lined with a Moorish army. The kings of France and Navarre were intimidated, and asked Richard Lionheart to join them on their ship, to decide whether to still attempt the landing. Richard, in turn, had already climbed on horseback. After listening to the French envoy, Richard proclaimed that he had gone on crusade to repent for his sins; now, should he die, he was assured of God's forgiveness, and should he be victorious, he would render God a service. Thus, he spurred on his horse, which jumped into the depths of the sea. Miraculously, the horse did not sink. In fact, for his act of faith, recalling that of St. Peter stepping out of his boat to join Christ walking on water across the surface across the Sea of Galilee in the Christian gospels, God enabled Richard to ride across the waters, followed closely by his emboldened English army.²⁷⁸ Embarrassed, the French and Navarrais followed suit. The terrified Moors, in turn, fled for their lives. The hermit praises God for his good fortune, to have Richard

²⁷⁸ *Gospel of Matthew* 14.22-34; *Gospel of Mark* 6.45-53; *Gospel of John* 6.15-21.

at his companion, given this leap of faith. As already established, the sovereign *mysterium* always requires a theatrical *krisis*, and a leap of faith.

As a descendant of the Counts of Anjou and the Dukes of Normandy, the Angevin king Richard Lionheart had inherited not just England, but also roughly half of France. Military tensions between the Angevins and the French royal house of Capet had already been high under Richard's father Henry II. Curtmantle, "the Lion in Winter" (1133-1189), whose conflicts with Louis VII. the Fat (1120-1180) were constant, and who had continued this bellicose attitude with the latter's successor, Philip II. Augustus of France (1165-1223). In 1187, however, Jerusalem fell to the Kurdish-Syrian sultan An-Nasir Salah ad-Din Yusuf ibn Ayyub (Saladin, 1137-1193), and Henry Curtmantle and Philip Augustus pledged to jointly lead their armies on a Third Crusade. After Henry Curtmantle died in the midst of the preparations in 1189, Richard Lionheart became his successor, both as king and as a major military commander in the Third Crusade, the "Kings' Crusade" of 1191 and 1192.²⁷⁹ The crusading kings' arrival in Outremer was not nearly as spectacular as Juan Manuel described in *El Conde Lucanor*, but the Third Crusade did turn out to be a military success, re-establishing the Kingdom of Jerusalem as a viable state with its capital in

²⁷⁹ The events that follow are the consensus shared by most historians of the Third Crusade. The most important sources on Richard Lionheart's involvement are included in a broad set of documentary collections: William Stubbs, ed. *Chronicles and Memorials of the Reign of Richard I.* 2 vols. London: Longman, 1864-1865; Stubbs, ed. *Chronica Magistri Rogeri de Houedene*, 4 vols. London: Longman, 1868-1871; Helen J. Nicholson, *Chronicle of the Third Crusade*. Aldershot: Ashgate, 1997; Baha al-Din Ibn Shaddad, *The Rare and Excellent History of Saladin*. D.S. Richards, transl. Aldershot: Ashgate, 2001; James A. Brundage, *The Crusades: A Documentary Survey*. Milwaukee: Marquette UP, 1962; Peter W. Edbury, ed. *The Conquest of Jerusalem and the Third Crusade: Sources in Translation*. Aldershot: Ashgate, 1998; F. Gabrieli, ed. & transl. *Arab Historians of the Crusades*. Berkeley: U of California P, 1969; Ambrose, *The Crusade of Richard Lion-Heart: L'Estoire de la Guerre Sainte*. M.J. Hubert & J. La Monte, transl. New York Columbia UP, 1941; etc.

the flourishing port of Acre and returning to it and to its allies all the strategically vital coastal towns of the Levant (albeit without the militarily unimportant but symbolically essential Holy City of Jerusalem itself).

The relationship between the Richard Lionheart and the French king Philip Augustus had suffered heavily during this military expedition to Outremer. After the Battle of Hattin in 1187, in which Saladin had wiped out most of the Latin armies, only the wealthy Levantine trading ports at Tyre, Tripoli, and Antioch repelled Saladin's forces and remained in the hands of the Crusaders. The resistance at Tyre had been particularly fiercely and brilliantly conducted. Saladin's chronicler and eyewitness, the Arab-Kurdish historian Ali ibn Al-Athir (1160-1233), in his *Complete History* (الكامل في التاريخ, *al-Kāmil fit-Tārīkh*), refers to the lord commander of Tyre, the Piedmontese nobleman Conrà ëd Monfrà (Conrad, Marquis of Montferat, d. 1192) as *al-Markis*. This character "was the devil incarnate in his ability to govern and defend a town, and a man of extraordinary courage."²⁸⁰ Having turned south and having conquered the rest of the Kingdom of Jerusalem, including the city itself, Saladin released the now landless nominal king, the Poitevin-French crusader Guy of Lusignan (1150-1194), from prison. Guy of Lusignan marched to Tyre to re-establish his reign. Conrad of Montferat, however, refused to let him enter, declaring that his own paternal-line claim to the throne through the will of Jerusalem's last true Angevin

²⁸⁰ For details on Roger of Howden (or Hoveden), his remarkable career and various historical works, see "Howden, Roger of (d. 1201/2)," David Corner in *DNB*, <http://www.oxforddnb.com/view/article/13880> (accessed January 18, 2017), as well as Barlow, Frank. "Roger of Howden." *The English Historical Review* 65, no. 256 (1950): 352-60, and the preface to volume 1 of William Stubbs, *Chronica Magistri Rogeri de Houedene (Rerum Britannicarum medii aevi scriptores / Rolls Series no. 51)* London: Longmans, Green, Reader, and Dyer, 1868. ix-cix.

ruler, the Leper King Badouin IV. (Baldwin, 1161-1185), was stronger than Guy of Lusignan's claim through marriage to Baldwin IV.'s sister, Sybilla of Jerusalem (1160-1190). He would wait for kings from the West to arrive to make their choice between them.

Frustrated, Guy of Lusignan turned south, to lay siege to Acre. Here, Guy of Lusignan attracted a large number of Crusader reinforcements arriving from Europe, enough to repel attacks by Saladin and to continue the siege while being himself besieged. As was common, illness decimated parts of Guy of Lusignan's camp, killing his two daughters and his wife, Sybilla. This death canceled Guy of Lusignan's legitimate claim to the throne of Jerusalem: It was Sybilla who was the keeper of the sovereign *mysterium*. After a number of small battles, skirmishes, and futile attempts by the Crusaders to take Acre and by Saladin to relieve it, the Crusader forces were demoralized, sick, and near collapse. But by winter 1191, there was a turn of the tide.

European reinforcements began to arrive in growing numbers. The German Imperial Crusader army had set out under Emperor Friedrich I. Barbarossa (Frederick the Red-Bearded, 1122-1190) with a reported force of 100,000 men, including 20,000 knights, had crossed the Bosphorus at Constantinople and defeated a larger Turkish force at the Battle of Iconium in the Sulatanate of Rum in May 1190. The troops had passed into the Armenian Christian Kingdom of Cilicia on the coast of the Mediterranean when in June 1190, Frederick Barbarossa drowned in the River Saleph near the Castle of Selefkia. Believing their Emperor's death to be a sign from God, many of the German troops returned home, leaving Frederick Barbarossa's son Friedrich VI. of Swabia (Frederick, 1167-1191) with a much smaller force to reinforce

the siege at Acre, which arrived in October 1190. Sickness took Frederick of Swabia in January 1191. However, Leopold V., Duke of Austria (1157-1194) and descendant of the Byzantine Emperors, arrived in March and vigorously took control of the siege. His reputation as a warrior still reverberates in today's Austrian flag. Leopold was said to wear a white tunic into battle, and by end of day it was stained red with the blood of his enemies. When he took off his broad leather belt, the stripe beneath it was still white; the new Holy Roman Emperor Heinrich VI. (Henry, 1165-1197) is said to have granted Leopold the red-white-red banner to honor this commitment to the cause.

Shortly thereafter, in April 1191, Philip Augustus arrived at Acre by ship, landing his large French force. Richard Lionheart took a few months longer, having first freed his sister Joan of England (1165-1199) from imprisonment by Guillaume II. of Sicily (1153-1189); becoming affianced to Berengela of Navarre (Berengaria, 1165-1230) in an affront to Philip Augustus' half-sister Alys, Countess of Vexin (1160-1220), his previous fiancée; and conquering Cyprus, whose Duke Isaakios Komnenos (Isaac, 1155-1196) had abducted both Joan and Berengaria and stolen much of Richard Lionheart's treasure after part of his fleet shipwrecked on the island in a storm. Guy of Lusignan, meanwhile, had sailed to Cyprus as Richard Lionheart's former vassal in France, attending the king's wedding to Berengaria of Navarre and supporting him in his war against Isaac of Cyprus in return for Richard Lionheart's support against Conrad of Montferrat in Guy of Lusignan's claim to the crown of Jerusalem. By June, Richard Lionheart's troops disembarked at Acre as well. By 12 July 1191, Acre had surrendered. Immediately, the commanders vied for credit. Famously, Conrad of Montferrat had raised the banners of the Kingdom of Jerusalem,

France, England, and Austria over the city. Richard Lionheart, however, was enraged at being treated as the equal of a mere duke. He had Leopold of Austria's banners torn from the ramparts and thrown into the muck below. The insult would come back to haunt him.

Rather than resolve the conflict, Leopold of Austria departed from Outremer, now too gravely insulted to bear the presence of Richard, and many of the German, Bohemian, and Hungarian soldiers went with him. Shortly afterwards, on 31 July, Philip Augustus boarded his ships to return home to France, after just three months in Outremer and precious little to show for it militarily. Unlike Richard Lionheart, he had not led his men in battle and, worse, he had fallen severely ill, and so had a number of his most important noblemen, whose subsequent death set off a grave succession crisis in his dominions in Flanders. Rightly or not, Philip Augustus felt that leaving several thousand French troops behind in Outremer would fulfill his duty as a Christian king and Crusader. Besides, while Richard Lionheart was preoccupied with the Crusades, Philip Augustus could — and did — immediately ally himself to Richard Lionheart's brother, Prince John (1166-1216), in an attempt to gain control over Richard Lionheart's Angevin holdings in the Kingdom of France. Wasting no time, Philip Augustus seized as many of Richard Lionheart's French possessions as time and military strength allowed. John, in turn, proclaimed that his brother would not return alive from the Crusades and declared himself king apparent in England, with Philip Augustus' support.

Back in Acre, Richard Lionheart was the only Western king left in charge of the Crusader forces, and he was bent on dominating the campaign in terms of battle

and prestige. Intending to liberate Jerusalem, Richard Lionheart turned to the strategic port of Jaffa. He defeated Saladin at Arsuf near Jaffa in September 1191 and set up headquarters in the port itself after conquering it shortly thereafter. Richard Lionheart sent several embassies to Saladin in an attempt to meet his opponent face to face, but Saladin refused, claiming kings should only meet once they had made peace. Instead, Richard Lionheart met with Saladin's brother, Al-Adil Sayf ad-Din (Saphadin, 1145-1281), to exchange gifts and conduct negotiations. At one point, Richard Lionheart offered his sister Joan's hand in marriage to Saphadin, who declined.

The Crusade went on. By November 1191, Richard Lionheart's army had pushed through Ascalon and onwards, to within 12 miles of Jerusalem, which was weakly garrisoned and would have been an easy conquest. However, Richard Lionheart decided against the attempt. Bad weather, spreading disease, and lack of a secure supply chain were excellent reasons to hold off. Moreover, there were strategic problems: Although Saladin had been forced by his emirs to largely disband his army, Richard Lionheart feared that Saladin might muster a sufficient relief force to attack the Crusader armies in the midst of a siege of Jerusalem. Moreover, Conrad of Montferrat had refused committing his crucially needed troops in support, citing Richard Lionheart's support for Guy of Lusignan's claim to the Kingdom of Jerusalem. Worse, Richard Lionheart, too, had fallen ill with malaria. Frustrated and knowing full well that he would fail to reach the most coveted prize of the Crusades, the Holy City, Richard Lionheart retreated to the coast.

In the spring of 1192, Richard Lionheart found himself at the heart of the dispute over who should rule the Kingdom of Jerusalem in future. Leopold of Austria

and Philip Augustus supported Conrad of Montferrat, whereas Richard Lionheart remained firm in the support of Guy de Lusignan. When the barons of the Kingdom of Jerusalem brought the issue to a vote in April of 1192, they unanimously elected Conrad of Montferrat, against Richard Lionheart's objections. Meanwhile, Richard had begun his journey home, still ill with malaria. He had begun the journey late in the year, which was highly dangerous because of the Mediterranean's winter storms. Since his enemy Ramon of Toulouse (Raymond, 1134-1194) had laid traps to capture Richard along the coast of southern France, Richard decided to risk a journey in disguise through the territories of the German Emperor Henry VI and of Leopold V, Duke of Austria.

This route's chances of success were only marginally higher. Richard had reason to fear Leopold. Not only had Richard insulted Leopold at Acre. Worse, after Leopold's kinsman Conrad had been unanimously elected king by the barons of the Kingdom of Jerusalem over Richard's kinsman Guy in early April 1192, Conrad had been stabbed to death in a street in Tyre on 28 April 1192 by two members of the Nizari Ismaili sect, the *Hashashin*, or Assassins. While their name supposedly derived from their use of *hashish* in religious ceremonies, the Assassins were feared by Crusaders and Muslim rulers alike for their fearlessness and their skill in asymmetric warfare, which included the frequent, strategic, and usually secret murder of important political figures they considered enemies. One of the Assassins who had stabbed Conrad had been captured, however. Under torture, the captive claimed that the leader of his order, the mysterious "Old Man of the Mountain" in the Syrian high castle of Masyaf, a Mesopotamian-Arab cleric named Rashid ad-Din Sinan (c. 1132-1193), had

ordered the murder on Richard's behalf. Richard denied it. He even wrote to Rashid ad-Din Sinan to ask him to confirm his innocence. But it was too late. Richard's enemies had decided to believe the tale, including Leopold.

Consequently, Richard's covert journey into Austria itself reads like a story straight out of an espionage thriller. First, he and his small group of confidantes and his equally small guard of Knights Templar had to make their way up the Adriatic Sea. Almost immediately, his ship was approached by two pirate galleys. Just before the pirates clashed with Richard's ship, however, they desisted. It remains unclear why, though explanations range from the possibility that the pirates recognized Richard and did not want to risk their venture in a fight against such a famous battle commander, to a legend that Richard's ship cook happened to recognize the commanding pirate as his cousin, just in the nick of time. The pirate ships decided to act as Richard's security escort instead. However, a storm damaged Richard's galley and forced him ashore far south of his port of choice, Trieste. The galley was repaired in Ragusa, today's Dubrovnik, a free city in a larger geographical area disputed between Richard's various enemies in the Byzantine Empire, Venice, and the Holy Roman Empire. The independent-minded Ragusans, who knew exactly who Richard was, welcomed the king with open arms. The Ragusan banks, at the time rivaling those of Venice in many respects, lent him money, in part so he could help Ragusa rebuild its dilapidated cathedral, in thanks for their hospitality. Having been left with no real choice, Richard did.

Richard and his entourage of twenty men now needed to decide how to best proceed. They could sail south and west, and try their luck in France after all. Or they

could go north and aim for Germany on the other side of the Alps. The king settled on entering Germany rather than France. However, Richard could not take the most direct path, crossing the High Alps through Tyrol into Bavaria, because those passes had now turned deadly in winter. He headed instead for the milder and much lower Semmering Pass at the Alps' eastern end. This was an exceedingly risky choice. The roads running through the Semmering Pass led to nearby Vienna. Richard's success would hinge on his ability to evade Leopold's notice as he passed directly outside the duke's capital on his way to nearby Bohemia. That area was under the control of Otakar I. (Ottokar, 1155-1230) duke and later king of Bohemia, who was fighting the Holy Roman Emperor and might accordingly welcome Richard as an ally. From Bohemia, Richard hoped to make his way to the adjacent lands of Heinrich the Lion (Henry, 1129-1195), Welf Duke of Saxony, who was the husband of Richard's sister Matilda (Maud, 1156-1189). Henry's realm ended close to the independent-minded Hanseatic city states active on the North and Baltic Seas, such as Lübeck or Köln, who sailed to England frequently. (It may be of interest for literary historians that Henry the Lion was also the sponsor of a 1172 German version of the *Chanson de Roland* by Priest Conrad, and of Eilhart of Oberg's ca. 1180 influential verse romance *Tristrant*, like Richard himself parts of the Matter of France and the Matter of Britain)

Even this plan was an enormous gamble. After the increasingly powerful Henry the Lion had been found guilty of treasonous behavior against the *honor imperii* and the interests of the Holy Roman Emperor Frederick II. Barbarossa in 1180, Henry had lost his Bavarian holdings to the Wittelsbach Otto I. the Redhead (1117-1183), whose family would continue to hold those lands until 1918. Henry had also been

exiled from the Empire. Richard's father Henry Plantagenet had hosted Henry the Lion in Normandy from 1182 to 1185 and had negotiated Henry the Lion's return to the Empire, to much reduced holdings centered on the northern city of Brunswick. Asked to join the Emperor Barbarossa on the Third Crusade or else return into exile, Henry the Lion chose the latter in 1189, and had gone to England.

When news reached Henry the Lion that the Emperor Barbarossa had drowned, Henry the Lion returned to Germany, where he waged war against the young and soon-to-be-distracted Emperor Henry VI. to reclaim his other Saxon territories. Henry the Lion would not be officially pardoned until 1194, however. While Henry the Lion's grandson would later himself become Holy Roman Emperor as Otto IV. (1175-1218), partially due to his English connections, Henry the Lion was a hunted and harried man in 1192, when Richard was looking for aid. Perhaps Richard had no choice but to take the chance. Perhaps, too, he knew that while Henry the Lion had still been ruler of Bavaria, that duchy had stretched all the way to the March of Styria, south and west of Vienna, and he hoped that he might find local nobles there with lingering loyalties, sealed lips, and fresh horses.

Richard's entourage included his most trusted Crusader knights: the Norman Guillaume of Wendenal (William of L'Étang, dates unknown), the Kentish Robert of Thornham (d. 1211), and the Artois-French Baudouin of Béthune (1158-1212), Anselm his chaplain, Philippe of Poitou (d. 1208) his clerk and later bishop of Durham, his German-speaking servant boy from Maine, Ioldan of La Pommeraye, and a bodyguard of unnamed Knights Templar. The group hired another boat, and hoped to make it to one of the ports further up the coast then under Hungarian control, such

as Pula or Zadar. The king of Hungary was Béla III. (1148-1196), who had Byzantine affinities, was famously resistant to Western European influence, and defiant of the Pope in Rome. Béla was also one of the wealthiest monarchs in Europe, and thus impervious to the need to ransom Richard to the French. Moreover, Béla had recently pursued an English marriage to Richard's niece, was at war with Leopold of Austria, and had married to Richard's former sister-in-law, Marguerite of France (Margaret, 1158-1197). Another storm blew Richard and his ship past the Hungarian ports, however, and instead stranded him in the Gulf of Trieste, an area disputed between his enemies in Venice and Austria. Local hermits rescued the party and guided them through a maze of swamps to safety, to the ruins of Aquileia, once among the largest cities in the Roman world, and six centuries earlier laid in ruins by Attila the Hun (406-453).

It was now nearing Christmas, and most travelers either spent the season resting in quarters or had already returned home, making any foreign travelers in a hurry automatically suspicious. The donation at Ragusa had alerted local nobles to Richard's presence in the Adriatic, so Richard's party decided to disguise themselves as pilgrims returning from Palestine. Unfortunately, the area where the group had landed was held by a nephew of Conrad of Montferrat, Count Meinhard II. of Görz (1160-1231). The party was arrested by a guard, and when they were presented to the count, Richard, claiming to be a merchant named Hugo, attempted to buy the count's goodwill with a ruby ring. The ring was far more expensive than anything a common merchant might have possessed. Because of an oath he had sworn not to arrest pilgrims and to harass them for bribes, as was often the custom at the time, Meinhard

returned the ring and had Richard told to be on his way. However, suspicions aroused, Meinhard alerted his nearby brother Friedrich of Betestowe (Frederick, dates unknown), who set a Poitevin spy called Roger of Argentan on Richard's trail.

Though Roger tracked down the English king and Richard admitted to him who he was, Roger was also a native Norman, and refused to betray his hereditary Angevin lord. He gave Frederick a false report, claiming the king was Baldwin of Béthune. However, Frederick had set spies on the spy, and believed that the real Baldwin was actually Richard. Frederick's men ambushed the party, and while the false Baldwin – Richard – escaped, they mistakenly arrested the real Baldwin, inadvertently confirming Roger's ruse. Subsequent ambushes cost Richard most of his Templar bodyguard, including some killed, and eight captured near Udine.

After a furious ride, with next to no sleep, resting only under trees far from villages or taverns where they might be recognized, weakened by malaria, avoiding questions at the monastery at Moggio, the abbey at Gerlitz, the walled towns of Feldkirchen and St. Veit, and covering an almost impossible stretch in just a few days, Richard's party made for Friesach in Carinthia. At the time, Friesach was a chaotic melting pot, a silver-mining town that had recently been subject to a rush of prospectors from all over Europe, with the attendant prostitutes, gambling houses, taverns, and petty criminals that prosper in such places. They reasonably hoped to blend in. Yet again, the Austrian authorities were waiting for them, in the form of a baron named Frederic III. of Pettau. Richard once more changed places with Baldwin of Béthune, who purposely attracted attention and let himself be seized, while Richard

slipped out of town. The troupe had dwindled to Richard, his servant boy Ioldan of La Pommeraye, and William of l'Étang.

Once again Richard rode day and night, this time past Forchtenstein Castle, Teufenbach, Judenberg, Knittelfeld, and through Burck an der Mur. He finally passed within sight of Vienna to the River Danube. They made for a ferry at the end of the old Roman road. Had they crossed then, they would have been within fifty miles of Moravia, a vassal state of their safe-haven Bohemia. However, Richard was now too ill from malaria to continue without rest, so he and the servant boy made their way just a little further, to the hamlet of Erdberg (sometimes also called Ganina), and to an inn there. The hamlet was a common resting ground for traders from places as far-flung as Russia, Byzantium, and Hungary, so they might have hoped to evade notice, posing as a Templar and his servant. In a supreme twist of irony, the inn was adjacent to Leopold of Austria's *rüdenhaus*, the kennel where he kept his hunting hounds.

It was the servant boy Ioldan of La Pommeraye who finally cost the king his freedom. Richard sent him to the nearby market for supplies. Apart from speaking German in a strange accent, the boy attempted to exchange Byzantine currency from the Levant, *bezants*, for local coins. This, as well as the youth's repeated purchase of luxury items, raised the suspicions of the villagers. For a while, the explanation that his master was a very rich merchant sufficed to assuage them, but they henceforth kept a watchful eye on these two travelers.

In the end, the king's luck ran out entirely. On 21 December, Ioldan appears to have committed his final folly, walking around the market with a pair of the Richard's monogrammed gloves on his belt. The village officers arrested Ioldan and brought him

to Vienna, where he was tortured and threatened with having his tongue cut out. He appears to have given in, a perhaps understandable act of disloyalty, but one that would later see him tried and convicted of treason against the king at Winchester. Soon after, Leopold's men surrounded the tavern where Richard was hiding, clamoring for him. When they finally searched the tavern, the innkeeper told them that there was nobody staying there who fit their physical description of the king — except perhaps, with squinted eyes and some imagination, the pale, gaunt, and helpful Knight Templar in the kitchen. Leopold's men found Richard dressed like a kitchen servant, turning a spit of poultry over the fire. Searching for a Templar, they only realized that he must be the knight because in his hurried change of clothes, he had neglected to remove one of his golden rings.

One of Leopold's men had been at Acre, and managed to positively identify Richard as the King of England. Apparently, Richard asked for the privilege to surrender not to common soldiers, but to Duke Leopold in person. The duke had interrupted his Christmastide celebrations and arrived moments later to receive Richard's sword. Evidently elated and smugly informing Richard that the relatives of Conrad of Montferrat were plotting to kill him, Leopold put Richard under constant armed guard and had him travel past the city of Krems two day's ride into the Wachau valley, to Dürnstein Castle. Leopold called it protective custody. It was, in fact, kidnap for a very steep ransom.

Having chanced everything on a real leap of faith, Richard was now experiencing a profound moment of *krisis*. For all he knew, his royal line might end here. Abandoned by everyone in the end, nobody in England knew where he had gone.

He was in his enemies' hands. He had himself become, after being shuttled through all these places like a piece of top secret express cargo, a profoundly kept state secret. He might die, and no one would be the wiser. Richard's journey would not end this way, however. Tradition has it that Richard's queen Berengia of Navarre was in Rome in half a year later, in the winter of 1193, when she came across a belt of jewels for sale at market that she knew had belonged to Richard in Acre. She immediately borrowed money to purchase it, now sure that Richard had fallen into the wrong hands.

If this entire sequence sounds highly literary, that is because it is. If it also sounds a great deal like an itinerary, that is because it is also meant to be that. This recounting of stops along the way is meant to emphasize that in a very direct sense, Richard is traveling from city to city as if from node to node along the very system of Roman roads drawn 800 years earlier on the Tabula Peutingeria. The sovereign and his *mysterium* enter an information network (Kittler) that delineates the limits and possibilities of the old *imperium*, the original stages of the Occidental sovereign *mysterium* – Rome, the Second Rome Byzantium, and Jerusalem. Richard traverses a labyrinth in whose corridors his own sovereign *mysterium* butts up against the sovereign *mysterium* of other Kings, with their own bodies physical and politic. This network of imperial power, now a network of competing kings, processes Richard, reducing him from King to peer. At every branch in the tree of his possible routes, Richard makes decisions dictated by that process. Richard does this to survive – to remain king, and to retain the *mysterium* of kingship that authors and authorizes his sovereignty in England. But he has been displaced from his native stage. On the

theatrical stage that is Europe, he is one of many actors, not the unique presentation of the *mysterium*.

It is at this moment that the account of Richard Lionheart's journey home turns from the product of cobbled manuscript sources, letters, and later chronicles into something that is made – *factum*, “invented into a fact” – entirely through literature. Like the kings of the Jewish and Christian origin texts for the *mysterium*, the border between person, royal role, and character blur to the point of indistinguishability. History turns to stage. But literary texts are treacherous (treasonous?) texts. They take the known and enlarge it. Often, they scatter stories across a map, attaching them to any place that offers them a setting. They are, in a way, misinformation. In another way, they are conceptual and perhaps technical transfers, taking the form of a narrative, and testing it out on other locales. They displace the King in their own way.

This is what happens to Richard. Historically speaking, Richard's whereabouts were not actually a secret to his contemporaries for very long. This is partly due to Berengaria's discovery, partly because Leopold offered him to an increasing number of princes in exchange for a ransom, and partly due to Richard's determination not to lose his kingship. More under house arrest than locked in a dungeon, Richard attempted to rule his Angevin Empire *in absentia*, per courier and letter. A small group of courtiers arrived, advised him, and saw to his needs. This was possible because now that he was exceedingly valuable, Richard would not have gotten far had he attempted escape from these well-watched quarters. The conditions of his imprisonment were only made more severe when English visitors were resisting the excessively high ransom Leopold asked for, 100 000 *marks*.

This is not how the story was made into its legend, however, a legend that has largely superceded historical accuracy. The story that has fused with Richard's narrative identity centers on a Picard knight and troubadour, Jean of Nesle, better known as Blondel (d. 1241). As told in the *Stories of a Minstrel from Reims*²⁸¹ and other sources, Blondel sets out on a chivalric quest to find his absent king on behest of Richard's mother, the patron of all troubadours, Eleanor of Aquitaine. Sources differ about where Richard was held at this time, either at Leopold's fortress of Dürnstein ["Barren Rocks"] on the Danube in Austria, or in Trifels ["Three Rocks"], a *reichsburg* or imperial fortress on the Rhine in the Palatinate, where Richard was transferred after the pope excommunicated Leopold for imprisoning a crusader and Leopold decided to sell Richard onwards to another enemy of the English king, the Holy Roman Emperor, Henry VI. That second imprisonment, the story goes, was a battle between two sovereigns who believed to have the superior form of the *mysterium* on their side: When Henry VI. declared that Richard should bow before him in deference, Richard is said to have replied, in the unmistakable voice of one who believes himself God "anointed:" "I am born in a rank which recognizes no superior but God, to whom alone I am responsible for my actions; but they are so pure and honorable that I voluntarily and cheerfully render an account of them to the whole world."²⁸²

The legend goes that Blondel was lingering outside one of the two castles, hoping to find Richard. Blondel had disguised himself as a minstrel and sang the first

²⁸¹ *Récits d'un ménestrel de Reims au Treizième Siècle*. Paris: Libraire Renouard, 1876.

²⁸² Jonathan Duncan, *The Dukes of Normandy*. London: Rickerby, Harvey, & Darton, 1839. 290-291.

verses of songs that Richard knew well, within earshot of the castle. This was his tactic for locating Richard, and he had tried many other castles before he found the correct one. That day, Blondel sang the opening verse of the Occitan chivalric song, “Your beauty, Lady Fair:”

Your beauty, lady fair
None views without delight;
But still so cold an air
No passion can excite;
Yet this I patient see
While all are shunn’d like me.²⁸³

When Richard sang back the second verse from the high castle tower, Blondel knew he had found the King:

No nymph my heart can wound
If favor she divide,
And smiles on all around
Unwilling to decide;
I’d rather hatred bear
Than love with others’ share.²⁸⁴

Blondel enters the castle in his disguise and entertains the castellan there through the winter, hoping to catch a glimpse of Richard. Eventually he does. Blondel wishes to

²⁸³ Thomas Percy, *Reliques of Ancient Poetry*, Vol. 1. J.V. Prichard, ed. London: George Bell & Sons, 1876. xxxii.

²⁸⁴ *Ibid.*

make for England immediately. When the castellan is unwilling to allow Blondel to leave and locks him up, Blondel sings to the jailor's beautiful daughter until she falls in love with him and helps him escape. This, the legend goes, is how the English court heard where Richard was held and could pay the ransom to free him. The English court was "overjoyed, for the king was the most generous man who ever spurred a horse."²⁸⁵ Freed, Richard can once again bestow his *générosité* as the rightful king on England, which in turn is restored as an orderly *cosmos* under the auspices of his *mysterium*.

So much for the story. Historical sources inform us that Richard's ransom was indeed paid, nearly bankrupting the Angevins. The French king attempted to bribe the Emperor to hold Richard longer, but to no avail. Philip Augustus quickly sent a message to his ally, Richard's brother John: "Look to yourself; the devil is loose." Richard forgave John, however, and in a clearly tactical move to reunite his barons, declared John his heir rather than the current candidate, Richard's nephew Arthur I., Duke of Brittany (1187-1203). (John would later murder Arthur, to ensure there could be no change of mind.) Richard was formally re-crowned, theatrically reinstating his access to the sovereign *mysterium* through a sacramental process.

Finally, Richard attacked Philip Augustus in order to regain his lost lands in France. Richard succeeded, at one point even capturing Philip Augustus' "treasure and *thesaurus*," the king's personal riches and the chests containing all the documents of state, the "memory of the kingdom." However, during a militarily easy siege at the

²⁸⁵ David Boyle, *Troubadour's Song*. New York: Walker, 2005. 168.

castle Châlus-Chabrol, Richard was shot with a crossbow. The culprit was a teenage cook who had fled to the castle after his father and brother had been killed by Richard's men and had been reassigned to guard duty. Supposedly, Richard had mocked the boy for using a frying pan as a shield, prompting the youth to take a random shot that happened to hit its target. Richard's field surgeon butchered the extraction of the dart, the wound turned gangrenous, and while the castle did fall soon after, Richard died a short time later in his mother Eleanor's arms. The legend has it that when his men brought the young cook to Richard so he could order him executed, Richard performed an echo of Christ's absolution of the criminal hanging from a neighboring cross, "Live on, and by my bounty behold the light of day." Tradition holds that the episode resulted in the saying, "The Lion by the Ant was slain."²⁸⁶

This is not the necessary chain of events, however, and certainly not the only one available to the British imaginary. For instance, in the 13th Century Middle English romance, *Richard Coer de Lyon*, the king never makes it home. Instead, on his journey from Outremer back to England, Richard stops to rest outside what is (historically) his own northern French castle Château Gaillard ("Gaylarde"), but which in the verse romance appears to be under the control of the Duke of Austria ("Estryche"), located somewhat indeterminably somewhere on the continent:

And syth he came, I unerstonde
The waye towarde Englonde;
And through treason was shotte, alas,

²⁸⁶ Stubbs, *Chronica*, Vol. 4, 84., quoting Howeden: "In huius morte perimit formica Leonem."

... The Duke of Estryche in the castell
With his hoost was dyght full well.
Rycharde thought there to abyde;
The weder was hote in somer tyde.
At Gaylarde under the castell,
He wende he myght have keled hym well.
His helme he abbated thare,
And Made his vysage all bare.
A spye there was in the castell
That espyed Rycharde ryght well,
And toke an arblaste swythe stronge,
And a quarell that was well longe,
And smote kynge Rycharde in tene
In the heed, without wene.²⁸⁷

This version is less charming, but it had its fans: it is the manner of Richard's death evoked in Shakespeare's *King John*, for instance.

On the one hand, it is clear that the theater of the *mysterium* in this legend is far more complex than the initial theory suggests. Kings and their *mysterium* may function in the hoped-for way within their kingdoms, when they are in power and when they are accepted by the audience of nobles, clerics, and commoners. However, when they are abroad, the *mysterium* of other kings and dukes provides them with

²⁸⁷ *Richard Coer de Lyon*, 7187-7204.

rivals, not adorants. The King in his body physical becomes imperiled. The King in his body politic becomes subject to the labyrinth of information to which he is indistinguishable to anyone else traversing it. And, as in Richard's case, the Absent King is soon reduced to a memory in his home kingdom, and usurpers attempt to claim the King's *mysterium* for their own. Thus, to understand the logic of the *mysterium*, it is crucial to consider not just what happens to the body physical of an Absent King, but also what happens to his vacated body politic at home.

IV. The Absent King

There are three Early Modern British plays that offer some insight into the theatrical absence of the sovereign *mysterium* in Richard's case: the two *Earl of Huntington* plays by Anthony Munday, and the lost play *The Funeral of Richard Coeur-de-Lion*. This reading will focus on those instances in these plays when the Absent King fulfills a theatrical purpose, in which his residual and vacated body politic appears to act without him present, or even because of his absence. The readings will form a sequence through which the King and his *mysterium* appear to fade and his theatrical presence continues to work by dissolving the King altogether.

As anyone who has read the Robin Hood stories that are now largely relegated to children's literature knows, the stories of the Merry Men in Nottingham Forest takes place against the backdrop of Richard's absence from England, their exploits a form of subversion aimed at the tyranny of the usurper John, especially the sheriff John has installed in Nottingham. This is, however, the Victorian version of these tales. The extant record of Robin Hood stories begins first in the chronicles and legal

texts of England; the earliest mention currently known is dated 1226 and occurs in the assizes of York.²⁸⁸ He reappears as a reference to outlaws who decide to live in forests rather than face justice in Reading in 1261 and 1262.²⁸⁹ Later chronicles referring to Robin Hood include Andrew of Wyntoun's 1420 *Orygynale Chronicle*,²⁹⁰ Walter Bower's 1440 *Continuation of the Scotchchronicon* of John of Fordun, and others. By 1439, law clerks were referencing the figure as a commonplace character: "[Piers Venables of Aston] gadered and assembled unto hym many misdoers beyng of his clothinge and, in manere of insurrection, wente into the wodes in that contre, like as it hadde be Robyn Hode and his meyne."²⁹¹ In the 1400s, Robin Hood also begins to appear in ballads, the earliest one being "Robin Hood and the Monk" of ca. 1450, in which Robin Hood leaves behind in Sherwood so he can secretly pray in a church, even though as an outlaw he is excommunicated.²⁹² A monk recognizes him and calls the sheriff, resulting in a skirmish. Other such ballads include "Robin Hood and the Potter,"²⁹³ "A Gest of Robin Hood,"²⁹⁴ "Robin Hood and Guy of Gisborne,"²⁹⁵ and many others. Shortly thereafter, Robin Hood first makes his way into English drama, in the play titled *Robyn Hod and the Shryff off Notyngham* from ca. 1475, for

²⁸⁸ "Idem vicecomes debet xxxij. s. et. vj. d. de catallis Roberti Hod fugitivi." L.V.D. Owen, "Robin Hood in the Light of Research." *The Times, Trade and Engineering Supplement* 38.864 (February 1936), xxix.

²⁸⁹ Thomas Hahn, ed. *Robin Hood in Popular Culture*. Cambridge: D.S. Brewer, 2000. 73.

²⁹⁰ Stephen Knight & Thomas Ohlgren, eds. *Robin Hood and Other Outlaw Tales*. Kalamazoo: Medieval Institute Publications, 1997. 25-26.

²⁹¹ Child Ballad 119.

²⁹² Robert Jamieson, ed. *Popular Ballads and Songs*, Vol. 2. Edinburgh: Constable, 1806. 54-72.

²⁹³ Child Ballad 121.

²⁹⁴ Child Ballad 117.

²⁹⁵ Child Ballad 118.

example.²⁹⁶ Importantly, details within this tradition tend to vary widely. In some stories, Robin Hood is a yeoman, either fighting cruel authorities or else playing tricks on them. In others, he remains a commoner, but his behavior is chivalric, putting the true nobles to shame. In others still, Robin Hood is a fallen nobleman. Likewise with the king. In some of these stories, the king goes unnamed, in others he is called Henry, and in the best known examples, he is Richard Lionheart. Importantly, the king and his justice are absent, and it is Robin Hood and his men who have to restore justice. Therefore, when Munday eventually composed his two *Earl of Huntingdon* plays, he had a broad variety of competing materials to choose from, and chose deliberately.

The *Downfall of Robert Earl of Huntington*²⁹⁷ and *The Death of Robert Earl of Huntington*²⁹⁸ are sequential plays, written by Munday in 1598. Munday was a playwright with the Admiral's Men, a competitor theater company of Shakespeare's Lord Chamberlain's Men during a time when that group was performing plays like *Julius Caesar*, *Henry V*, and *Hamlet*, alongside the non-Shakespearean *Warning for Fair Women* and *Thomas Lord Cromwell*. The Admiral's Men, on the other hand, were associated with Philip Henslowe, whose *Diary* and *Inventory* will feature later in this argument, and included the famed actor Edward Alleyn, who would eventually marry one of the daughters of John Donne.²⁹⁹ The Admiral's Men performed most of

²⁹⁶ John Marshall, "Goon in-to Bernysdale': The Trail of the Paston Robin Hood Play." *Leeds Studies in English* 29 (1985), 185-217.

²⁹⁷ Anthony Munday, *The Downfall of Robert, Earle of Huntington*. London: R. Bradock, 1601.

²⁹⁸ Anthony Munday, *The Death of Robert, Earle of Huntington Otherwise called Robin Hood of Merrie Sherwodde*. London: R. Bradock, 1601.

²⁹⁹ Hugh Chisholm, ed. "Alleyn, Edward." *Encyclopædia Britannica*, Vol. 1. Cambridge: Cambridge UP, 1911. 694.

Christopher Marlowe's plays, including *Doctor Faustus*, *The Jew of Malta*, and *The Massacre at Paris*.

It bears pointing out in a dissertation dealing with political secrecy that the Admiral's Men and their circle were particularly prone to double as spies on their circuits as a traveling theatre company, which took them throughout Britain and the northern Continent. The most famous example is, of course, Christopher Marlowe himself, who had worked for Elizabeth I.'s notorious spymaster Francis Walsingham,³⁰⁰ and whose eventual stabbing to death occurred under the watchful eye of the known intelligencers Robert Poley,³⁰¹ Nicholas Skeres,³⁰² and Ingram Frizer,³⁰³ who wielded the knife. The Admiral's Men actor (and later co-owner of the Globe Theater), Robert Browne doubled as an English spy while traveling the Continent with other actors,³⁰⁴ performing, for instance, "pieces and patches of English plays" Fynes Morrison witnessed in the Franconian city of Frankfurt-on-Main.³⁰⁵ Munday himself had been an undercover agent for Walsingham at the English College in Rome during

³⁰⁰ John Cooper, *The Queen's Agent: Francis Walsingham at the Court of Elizabeth I*. London: Faber & Faber, 2011. 179; Robert Hutchinson, *Elizabeth's Spy Master: Francis Walsingham and the Secret War that Saved England*. London: Weidenfeld & Nicolson, 2007. 111 & 285.

³⁰¹ Charles Nicholl, *The Reckoning: The Murder of Christopher Marlowe*. 2nd ed. London: Vintage, 2002. 157-158.

³⁰² Nicholl, *The Reckoning*, 32-33 & 139.

³⁰³ Park Honan, *Christopher Marlowe: Poet & Spy*. Oxford: Oxford UP, 2005. 325.

³⁰⁴ Browne was "an old friend" of William Davison, English agent in the Netherlands and frequent correspondent with Walsingham. Cf. Arthur John Butler, ed. *Calendar of State Papers*, Vol. 13. London: Stationery Office, 1903. 564.

³⁰⁵ Charles Hughes, *Shakespeare's Europe: Unpublished Chapters of Fynes Moryson's Itinerary*. London: Sherratt & Hughes, 1903. 304.

the Thomas Campion plot,³⁰⁶ and it was not without irony that his colleagues referred to him as “our best plotter.”³⁰⁷ Munday was friendly with Shakespeare, and he is one of the co-authors with the Bard of the play *Sir Thomas More*.³⁰⁸

Robin Hood plays were not at all uncommon when Munday wrote his plays about the *Earl of Huntington*.³⁰⁹ Around the same time, in 1594, a now-lost play titled *Robin Hood and Little John* was entered in the Stationer’s Register,³¹⁰ followed by *George a Greene* in 1595,³¹¹ and a Robin Hood play titled *Look About You* in 1599.³¹² Munday’s plays are notable, however, for a number of reasons. The first, *The Downfall of the Earl of Huntington*,³¹³ begins with a scene set at the English court early in Richard Lionheart’s reign. Robert, Earl of Huntingdon, who is frequently called “Robin,” and his love Matilda, daughter of Lord Fitzwater and usually called

³⁰⁶ Hutchinson, *Elizabeth’s Spymaster*, 286. Richard Simpson, *Edmund Campion: A Definitive Biography*. Charlotte, N.C.: TAN Books, 2013. 170, 522-523, et al; Julia Celeste Turner, *Anthony Mundy*. Berkeley: U of California P, 1928. 53.

³⁰⁷ I.A. Shapiro, “Shakespeare and Mundy.” Catherine M.S. Alexander, ed. *Cambridge Shakespeare Library: Vol. 1, Shakespeare’s Times, Texts, and Stages*. Cambridge: Cambridge UP, 2003. 358-365; Celeste Turner, *Anthony Mundy: An Elizabethan Man of Letters*. Berkeley: California UP, 1928. 53; Mark Eccles, “Brief Lives: Tudor and Stuart Authors.” *Studies in Philology* 79 (1982), 1-135. 99.

³⁰⁸ Scott McMillin, *The Elizabethan Theatre and the “Book of Sir Thomas More.”* Ithaca: Cornell UP, 1987. *passim*.

³⁰⁹ Tales of Robin Hood even made their way into the rhetorical manuals of the time. Cf. Jenny Mann, *Outlaw Rhetoric: Figuring Vernacular Eloquence in Shakespeare’s England*. Ithaca: Cornell UP, 2012. 1-20, 33, & 53. Recent work on Munday’s *Huntington* plays, specifically, has been comparatively sparse, and often only glancing: Meredith Skur, “Anthony Munday’s ‘Gentrification’ of Robin Hood.” *English Literary Renaissance* 33.2 (Spring 2003), 155-180; Joshua Phillips, “Chronicles of Wasted Time: Anthony Munday, Tudor Romance, and Literary Labor.” *English Literary History* 73.4 (Winter 2006), 781-803. 794-796; Igor Djordjevic, *King John (Mis)Remembered: The Dunmow Chronicle, the Lord Admiral’s Men, and the Formation of Cultural Memory*. Burlington: Ashgate, 2015. 61-94.

³¹⁰ Martin Wiggins & Catherine Richardson, eds. *British Drama 1533-1642: A Catalogue*, Vol. 3 (1590-1597). Oxford: Oxford UP, 2012. 57.

³¹¹ Wiggins & Richardson, *British Drama* Vol. 3, 109-112.

³¹² Martin Wiggins & Catherine Richardson, eds. *British Drama 1533-1642: A Catalogue*, Vol. 4 (1598-1602). Oxford: Oxford UP, 2014. 106-110.

³¹³ Wiggins & Richardson, *British Drama* Vol. 4, 7-13.

“Marian,” are present when “Richard calde Cor de Lyon takes his leave / Like the Lords Champion, gainst the Pagan foes / That spoyle Judea and rich Palestine” (1.63-65). The rest of the play takes place under the rule of the Absent King. Munday makes Robin Hood a noble from the start: “This youth that leads yon virgin by the hand / (As doth the Sunne, the morning richly clad) / Is our Earle Robert, or your Robin Hoode, / That in those daies was Earle of Huntington” (1.1.86-89). Munday’s plays thus are natural candidates for the analysis this section of the dissertation endeavors: they feature the correct king, Richard Lionheart, and the main character’s fall from the highest nobility in the land to yeoman outlaw will parallel the disintegration of the *cosmos* ordered by the sovereign *mysterium* that must inevitably take place when the king is absent.

The *Downfall* revolves around several types of usurpation. Prince John temporarily usurps Richard’s crown, and also attempts to force said “Sunne, the morning richly clad,” Marian, away from Robert of Huntington. Meanwhile, one of the heroines of the legend of Richard Lionheart, his mother Queen Elinor, is a cynical villain in this play, who in turn hopes to seduce the Huntington:

Those two that seeke to part these lovely friends
Are Elenor the Queene and John the Prince;
She loves Earle Robert, he Maide Marian,
But vainely: for their deare affect is such,
As only death can sunder their true loves. (1.1.95-99)

Meanwhile, third inversion of the sovereign order under the Absent King centers on the character called Warman, a servant of Huntingdon’s who conspires with the

latter's uncle Gilbert de Hood, the prior of York, and the Sheriff to ensure Huntington's declaration as an outlaw. As Huntington falls, Warman rises: He becomes Justice in Nottingham, that is, a lay magistrate, a position that the historical Richard Lionheart had instituted as "keepers of the peace," an office supposedly reserved for "good and lawful men."³¹⁴ Even the return of Richard at the very end of the play only manages to temporarily restore the old and just order before Richard dies, and a much worse catastrophe ensues, in the sequel play.

The Downfall uses language throughout that underscores a sense of order dissolving and the natural and just order of things inverting under the Absent King. When Huntington learns he has been outlawed without cause, he declares that Prince John has turned the court into a mimicry or parody of its previous, legitimate version:

I had bespoken quaint Comedians:

But greate John, John the Prince, my lieges brother,

My rivall, Marian, he that crost our love,

Hath crost mee in this jest, and at the court,

Imployes the Players, should have made us sport. (1.3.238-2420)

Worse, this counterfeiting affects the entire kingdom, which can no longer speak truthfully. Thus, Huntington cannot express his own emotions, having to defer to the dramatically invisible Chorus in order to give them voice:

the Chorus shalt

Expresse the meaning of my silent grieffe,

³¹⁴ David Charles Douglas, ed. *English Historical Documents*, Vol. 4 (1327-1485). 532.

Which is no more but this: I only meane
(The more to honour our right noble friends)
Myselſe in perſon to preſent ſome Sceanes
Of tragick matter, or perchance of mirth,
Even ſuch as firſt ſhall jumpe with my conceipt. (1.3.247-253)

Similarly, when Huntingdon confronts his treasonous steward Warman, he employs language that suggests that what seems true and what seems false can no longer be properly distinguished: “Judas ſpeakes firſt, with ‘Maſter, is it I?’ / No, my falſe Steward, your accounts are true.” In a final twist of irony, Warman’s promotion to Juſtice follows ſhortly thereafter, while Huntingdon muſt flee to Sherwood and take on the perſona of a peaſant yeoman.

Marian experiences a ſimilar diſlocation from the regular order of the kingdom. Queen Elinor convinces Marian to exchange clothes with her ſo that Prince John and his men will not harm her as an aſſociate to Huntingdon while they are out looking for the diſgraced Earl.

Marian, thou ſhalt go with him clad in my attire,
And for a ſhift, Ile put thy garments on,
It is not mee, my ſonne John doth deſire;
But Marian it is thee he doteth on.
...
Thee in my roabes they dare not once approach:
So while with mee a reaſoning they ſtay,
At pleaſure thou with him maiſt ride away. (1.3.398-407)

Elinor's intent for the inversion of her and Marian, of course, is the opposite: She hopes to deliver Marian to Prince John, and Elinor will meet Huntington in Marian's guise, now able to seduce him. This ploy not only inverts the women's clothes and beloveds. It also inverts their identities as mother and as unwed woman, and their age.

This kingdom, where the remaining royals falsify and invert what they can rather than uphold the *cosmos* established by their brother and son, the Absent King, begins to seem increasingly surreal. Tellingly, Elinor seems to be aware of what she is doing, as if it is a compulsion that she cannot control. When Elinor finds out that she has herself been deceived, and that Prince John wishes to kill Huntington and so rob her of her own prize, she declares:

I, in mine owne deceit, have met deceit.

In briefe, the manner thus I will repeate;

I knewe, with malice that the Prior of Yorke

Pursu'd Earle Robert; and I furdred it,

Though God can tell, for love of Huntington.

...

But now I see they both of them agreed,

In my deceit, I might myselfe deceive. (1.5.644-647 & 657-658)

The control over the disintegration of the King's body politic and its rightful order gets away even from the cunning and experienced Elinor.

Soon the entire kingdom spirals out of the realm of law into the realm of lawlessness, inversion heaping ever more quickly on inversion. Richard had installed the Bishop of Ely as regent in his absence, but Prince John defies him, declaring "Tell

the proude prelate I am not dispos'd, / Nor in estate to come at his commaunde” and beating Ely’s messenger bloody. Next, Prince John murders the knight Hugh Lacy, Marian’s uncle, essentially because he is in a bad mood about Marian’s escape. When the Bishop of Ely, Lacy’s liege-lord, appears and finds his friend and steward dead, he asks, “What murdrous hand hath kild this gentle knight, / Good Sir Hugh Lacy, steward of my lands?” Prince John does not even feel the need to hide his crime: “Ely, he died by this princely hand” (1.5.731). Ely, who assumes the rules of the sovereign body politic ordered by the divine *mysterium* still applies, calls for Prince John’s arrest. The prince laughs off the threat, accusing the goodly bishop of inventing the circumstances of the killing he had just confessed to: “Holy Lord, you lye” (1.5.741). Surprisingly, the nobles of the court witnessing the exchange defy the evidence of their own eyes and ears, and side with Prince John.

Accordingly, rather than being arrested and tried for murder, Prince John makes his move to unseat the Bishop from the regency. He produces counterfeit evidence, ostensibly

... letters from his Majesty,
 Sent out of Joppa, in the holy land,
 To you, to these, to mee, to all the State,
 Containing a repeale of that large graunt,
 And free authoritie to take the seale. (1.5.744-748)

Unless the Bishop of Ely and his fellow “Lords temporall” hand over the king’s seal of office to Prince John, Prince John threatens to kill them also: “Hee shall yelde it, or as Lacy lies, / Desertfully, for pride and treason stabd, / He shall ere long lye” (1.5.752-

753). With the help of Elinor and a handful of nobles, Prince John succeeds in declaring Ely a traitor, and attempts to have himself declared king in Richard's stead. This ploy fails, and the nobles insist he can only be regent, but only when Marian's father Fitzwater reminds Elinor, "minde King Richards love: / As you will answer't, doe the King no wrong" (1.8.1081-1082). Meanwhile, the Bishop of Ely realizes that he is in mortal danger, and attempts to escape. In another inversion, the churchman disguises himself as a woman. He is caught by two colliers, who turn him over to the court, declaring "A monster, a monster! A woman with a bearde, / a man in a petticote!" (1.5.122-123). This leads to Ely's humiliation before the court, and banishment for treason. Another steady lord turns into a peasant on the run.

Still, the fraying of the regular order of things does not end. Next, Prince John asks Marian's father Fitzwater to hand over his daughter. Fitzwater knows what kind of chaotic state the kingdom is in:

My deare, my kinde affect, when God can tell,
A sodaine puffe of winde, a lightning flash,
A bubble on the streame doth longer dure,
Than doth the purpose of their promise bide.
A shame upon this peevish apish age,
These crouching hypocrite dissembling times.

Nevertheless, Fitzwater attempts to reason with Prince John. Marian has married Huntigton, he claims. Prince John retorts that outlaws are excommunicates, and excommunicates cannot bindingly marry, so Marian is free for him to have. Next, Fitzwater, reminds Prince John that the prince is already married: "Earle Clepstowes

daughter is thy married wife.” Prince John appears unbothered by this detail. Fitzwater understands that Prince John intends to make Marian his mistress, not his wife.

Angered, he charges at Prince John. In the ensuing duel, Prince John is knocked to the ground, which by the English law of Trial by Combat *should* mean that Fitzwater has won. Instead, the nobles intervene once more, and Fitzwater is banished also.

Meanwhile, the Huntington and the yeomen he has gathered in Sherwood, too, invert the established political and social order. They declare the authority and standing of the nobility null and void, and Huntington officially changes his name to Robin Hood. They swear to also upend the economic order: “You never shall the poore man wrong, / Nor spare a priest, a usurer, or a clarke” (1.9.1354-1355). They also commit to restoring safety to the land, normally the charge of the gentry: “You shall defend with all your power, / Maids, widowes, orphants, and distressed men.” This is not an act of revolution, but rather a desperate attempt to restore the *logos* of a kingdom ruled by a present, intact king. In the words of Friar Tuck, “O foule corruption of base palliardize, / When idiots witlesse travell to be wise. / Age barbarous, times impious, men vitious” (1.5.843-845). The sanity they wish to restore goes beyond pity and includes mercy: When Ely flees into Sherwood, Robin forgives him for his role in Robin’s outlawing and welcomes him into the troupe. The outlaws act more in accordance with the *mysterium* of a just and merciful king than the shell of the king’s body politic can under the misrule of the unauthorized Prince John.

At the level of the nobility, meanwhile, the viciousness ends up eating its own. Warman is banished because Prince John suspects he helped Ely escape. Abandoned by his patron and, upon return to Nottingham, cursed by his family and friends,

Warman despairs, intending to hang himself in Sherwood: “Ile chuse this way, /
Wherein she saith my master hath his walke. / There will I offer life for trechery, /
And hang, a wonder to all goers by” (1.14.2361-2364). Fitzwater and Robin Hood
intervene just in time, and comfort Warman, whom, too, they forgive and accept into
their midst. Warman’s co-conspirator, the Prior of York is banished on the basis of
slandorous letters Warman wrote before his fall, and he also ends up forgiven in
Sherwood. In fact, when it is announced that Richard Lionheart has returned from the
Crusade, John himself becomes the victim of his own chaos – and flees to Sherwood.
Expecting hatred, Prince John, too, is forgiven and protected by the outlaws. Robin
Hood and his men have created their own process for processing those who traverse
the labyrinth of Sherwood. Or rather, they have maintained it: This is no brave new
world outside the law, but rather, being out of reach of the court, in Sherwood the old
rules of the *mysterium*-based *logos* still operate. (Such hidden spaces outside the law
where the sovereign remains intact but where the kingdom’s dark secrets can be buried
out of reach of the criminal system will become a central aspect of the *arcana imperii*,
discussed further in Chapter 2.)

Eventually, Richard Lionheart also enters Sherwood, in search of his
treasonous brother. When he encounters Robin, Richard’s first act is to restore Robin
to his proper rank and titles. Since this restoration comes from the rightful king, Robin
accepts, and he once more becomes Robert, Earl of Huntington. Huntington then
promises Richard jewels and riches. These jewels turn out to be the people hiding in
Sherwood, first the ever-faithful, and then the forgiven servants, each of whom
Richard also restores to a lawful state. In terms of the *mysterium* tied to the

sacramentals and most perfectly embodied by Christ the *logos*, it is evident that this is also an evocation of that *logos*: namely, the resurrection of the saints and the forgiveness of those who have repented in purgatory that also ends the long story arc of the Christian mythos. Finally, instead of handing Prince John over as a criminal, Huntington declares

The next faire jewell that I will presente
Is richer than both these, yet in the foyle,
My gracious Lord, it hath a foule default,
Which if you pardon, boldly I protest,
It will in value farre exceede the rest. (1.15.2749-2753)

Instead of asking for justice or revenge, Huntingdon turns to the returned king and requests a pardon for Prince John. Richard replies, “Wel, good Huntington, / For thy sake pardon’d is our brother John, / And welcome to us in all heartie love” (15.2762-2764). The play ends with the restoration of the rightful place, farms, and legal status of all the commoners who had been bereft of it in the chaotic time of the Absent King. Chivalric and fair-minded to the end, Huntington asks for his own personal favor last: to be allowed to formally marry Marian, now he is no longer excommunicate. In the presence of the rightful king, who theatrically presents the political secret of the sovereign *mysterium* in a just manner, the former *cosmos* is restored: “With all my heart. Then as combined friends, / Goe we together; here all quarrelles ends.”

However, this moment of hope is a temporary. Once the rightful king has been absent, once the sacramental *mysterium* has been discontinued for a time, it is not so easy to repair and reinstate permanently. In Munday’s sequel, *The Death of Robert*,

Earle of Huntington, the tears and frayed edges caused by the chaotic interim of the Absent King continue to take their toll. Huntington's death occurs early in the play, as does King Richard's. The rest of the play tells of how John becomes king and backslides into his wickedness. His elusive object of affection is, once again, Marian.

Marian is in fact at the center of most of the play, and it might more aptly be titled, *The Relentless Pestering of Matilda, Lady of Huntington*. Once Huntington dies, Marian wishes to live peacefully in a nearby nunnery, and has no desire to remarry. She turns down her family's urgings to reconsider, but this does not deter various suitors from arriving at the nunnery, hoping to marry Marian for her legendary good looks and her dead husband's wealth. While John is not the only man who plots to persuade Marian against her wishes, he certainly goes furthest. At one point in the play, John even bribes a monk in the nunnery to threaten Marian with poisoning if she does not give in, and when she remains unimpressed, the monk teams up with the abbot to tell her that since she has been married before, she is too unchaste to ever live among nuns, and besides, if she at least would consider giving in to John's sexual advances without marrying him, it would not be a serious sin, since she would be doing it out of Christian charity. Marian replies by asking her fellow nuns to sprinkle holy water on the "two damned spirits" to shut them up.

The most clear narrative concerning the *mysterium*, however, is that describing Huntington and Richard Lionheart's demise. The *Death* opens with a hunt. King Richard Lionheart's arrow misses a magnificent stag that wears a strange "copper ring about his necke / With letters on it, which hee would haue read," and sends some of Huntington's men to chase after it, including Little John and Scarlet. Scarlet

eventually manages to kill the stag. Meanwhile, Huntington reprises his role as Good Samaritan and interrupts his hunt to ensure the wellbeing of two injured members of the party, Doncaster and the Prior of York. The two men are jealous of Huntington's popularity at court, and hope to kill him. When Huntington arrives, he interrupts them discussing a plot to poison and disgrace him, but does not know it. Instead he tells them they should "be more carefull of your health." He also attempts to cheer up Warman, who appears to have fallen into a depression: "I aduise you to more mirth. Sun solitary walkes, keepe company, forget your fault." After Huntington leaves, Doncaster and the Prior attempt to convince Warman to join their murder plot. When Warman refuses, Doncaster stabs him to death. Huntington returns shortly afterwards. The Prior claims that Warman "did stab himself" and Huntington concludes that the despondent Warman had become a "wretch despaird, and slewe himself."

The Prior sees his chance to proceed with the assassination of Huntington. He suggests that he give Huntington a tonic that would help him "let goe this grieffe." He tells Huntington that he will add "a pretious drinke / of colour rich, and red" which includes medical ingredients such as "Syrian Balsamum." The Prior invents a story claiming that thieves attacked him and Doncaster the previous day and took all their valuables, but had stupidly thrown the bottle of this medicine into the bushes, thinking it was worthless. Huntington is thus fortunate to have this opportunity at all. The Prior says he recovered the bottle, as "it keeps fresh youth, restores diseased sight, / Helps natures weakenesse, smotheres the scar of wounds, / And cooles the intrals." But the Prior has overplayed his hand. Given all these miraculous effects, Huntington suggests that the Prior should give the tonic to King Richard, not Huntingto. Adjusting

strategies, the Prior plays along, declaring that “When [Richard Lionheart] drinkes, be bold to say he drinkes / A richer draught than that dissolued pearle, / Which Cleopatra dranke to Antonie.” Huntington is excited at the prospect, and leave. Doncaster spell out that they now hope that Huntington will be blamed for the King’s inevitable death by poisoning and executed.

King Richard returns from the hunt. As he and his hunting party process along the wood and village paths, they discuss the outcome of the hunt with various members of the court, praising Scarlet and his assistant Scathlock for their hunting prowess. Acting with the full *générosité* of his office, Richard bestows a pension on the two men that should help them “liue like honest men.” Richard next produces the ring that had earlier been around the stag’s neck, but cannot read it – like many medieval aristocrats, he may be illiterate. The King asks Friar Tuck to decipher it. Their investigations are interrupted by a peasant named Much, who asks Richard to grant him a village mill so that he will have enough income to marry. Once again, Richard grants the request gladly. Friar Tuck then reads the inscription on the copper ring, “When Harold Harefoot raigned king, / About my necke he put this ring.” If the inscription tells the truth, this would make the stag hundreds of years old. Marian’s father Fitzwater tells a legend that Harold Harefoot could outrun the fastest stag. Chester adds that Julius Caesar “many years before, / Tooke such a Stag, and such a Poesie writ.” The collared stag reference should by now be clear to any reader of Early Modern poetry; it is the same that serves as the conceit in the poem “Whoso List To Hunt” by Kentish poet and courtier Thomas Wyatt (1503-1542).

Wyatt's poem serves as a strong augmentation to illustrate how this moment develops the logic of the sovereign's *mysterium* in Munday's play. Wyatt's poem is thought to be occasioned by his loss of his one-time lover Anne Boleyn to Henry VIII. The first stanza sets the scene: "Who so list to hount : I know where is an hynd." The next lines, however, set the tone, which is wearied and tired: "But, as for me : helas, I may no more. / The vayne travail hath werid me so sore, / I ame of theim, that farthest cometh behind." What is only implied in the *Death* is here made more explicit: The one who initially hunts the deer "knows" his quarry, and sends others after it, but is himself too weary to pursue. In Munday's play, this is true about Richard Lionheart, too: He must send commoners to bring down the stag that he himself missed, and Huntington thinks Richard would be in need of a healing tonic. Clearly, all is not well with this famously martial and athletic king.

Wyatt's poem also suggests a subtle clue for the cause of the fatigue. It is not that the hunter is tired of hunting *per se*. He very much desires that he would be able to catch his quarry. But he has learned that it will ever elude him, lacking the proper equipment and stamina:

Yet, may I by no means, my weried mynde
Drawe from the Der; but as she fleeth afore
Faynting I folowe. I leve of therefore :
Sins in a nett I seeke to hold the wynde.

Richard, too, has netted the wind, certainly when compared to his fellow kings.

Whereas Richard is too slow and tired to follow the stag on horseback, Harold Harefoot, a more ancient body physical inhabiting the same body politic as Richard,

had no trouble catching the stag *on foot*. Something the authority of the sovereign *mysterium* had allowed the King to achieve in the past has been lost.

Finally, Wyatt arrives at his direct parallel with Munday's play. The reason, so Wyatt, why anyone hunting this deer "may spend his time in vain" is that this is no ordinary deer:

And graven with Diamonds in letters plain :

There is written, her faier neck rounde abowte :

Noli me tangere for Cesars I ame

And wylde for to hold : though I seme tame.

The reference to Caesar in both texts refers to a story told by Pliny the Elder (23-79 CE) in his *Natural History*. Pliny describes an instance related to Alexander the Great, whom the Romans considered the first emperor, or Caesar: "The stag is generally admitted to be very long lived; some were captured at the end of one hundred years with the golden collars which Alexander had put upon them."³¹⁵

The line Wyatt adds that Munday's version does not have, "*noli me tangere, for Cesars I ame,*" carries a triple meaning, two of which also operate in regard to the sovereign *mysterium* of Richard Lionheart. The first is the supposed reference to losing a lover to the king; this is Wyatt's entirely. The second is that the phrase "*noli me tangere* [do not touch me], for Cesars I ame." This is a legal statement, in one sense: All deer in Britain throughout the medieval and Early Modern periods belonged to the King. Hunting by anyone but the king or persons he authorized was forbidden,

³¹⁵ Pliny the Elder, *Natural History* 8.50: "Vita cervis in confesso longa, post c annos aliquibus denuo captis cum torquibus aureis, quos alexander magnus addiderat."

and poachers were frequently hanged. Both Munday's audience and the characters within the play would have been aware that the hunt in *Death* can *only* take place because the King is present. The third is the Latin phrase itself. The line *noli me tangere* occurs in the story of the resurrection of the Christ. When Mary Magdalene comes to the tomb of Jesus three days after he is buried to wash and rewrap the body, as was the custom, she finds the tomb empty. Assuming that the body had been robbed, Mary begins to cry. A figure approaches her, and through her tears she at first assumes it must be the gardener, but then recognizes Christ by his voice when he says her name, "Mary." Grasping that the Christ must have been resurrected, Mary reaches out to touch him, but "Jesus saith unto her, Touch me not [Latin: *noli me tangere*]; for I am not yet ascended to my Father."³¹⁶ That is, the phrase is intimately connected with the *mysterium* of the divine king from which the *mysterium* of earthly kings derives. In its fullest, triumphal form, sovereignty cannot be touched. Rather, he can only be watched as something that processes, must remain entirely a theatrical moment, one that, as Weber puts it, *passes on*. The fact that Richard's stag *can* be touched, *can* be slain by someone who is not Caesar – the peasant Scarlet – implies that some strength of the prohibition to touch sovereignty itself has faded. Or rather, because sovereignty's overwhelming power cannot fade, the *mysterium* has faded in Richard, whose power is fraying, fading, slipping away. He, too, must soon pass on.

³¹⁶ *Gospel of John* 20.17: "λέγει αὐτῇ Ἰησοῦς Μή μου ἅπτου, οὐπω γὰρ ἀναβέβηκα πρὸς τὸν πατέρα: πορεύου δὲ πρὸς τοὺς ἀδελφούς μου καὶ εἰπὲ αὐτοῖς Ἀναβαίνω πρὸς τὸν πατέρα μου καὶ πατέρα ὑμῶν καὶ θεὸν μου καὶ θεὸν ὑμῶν." In the *Vulgate*: "dicit ei Iesus noli me tangere nondum enim ascendi ad Patrem meum vade autem ad fratres meos et dic eis ascendo ad Patrem meum et Patrem vestrum et Deum meum et Deum vestrum."

The end game for Richard and for Huntington thus begins. Huntington finds the royal hunting procession and tells the king that he can be restored: "I haue a drinke within my bower, / Of pleasing taste, *and soueraigne power.*" The King arrives at Huntington's house, where Marian is cooking a meal for the guests and asks for the "drinke" that Huntington had promised him, "for I am very hot and passing dry." But disaster has already struck the household. When Huntington returns, he drags Doncaster and the Prior along, calling them "murderous." Huntington declares he is about to die "by poison, and the Priors treachery." Richard's Queen Berengaria steps forward and offers Huntington a powder, making the same illusory promise Huntington had inadvertently made earlier to the King: "Why, take *this soueraigne powder* at my hands, / Take it and liue in spite of poysons power." Doncaster mocks the alchemists' feeble remedies, "I, set him forward Powders quoth ye! nah, / I am a foole then, if a little dust, / The shauing of a horne, a Bezars stone, / Or any Antidote haue power to stay / The execution of my hearts resolute." Huntington dutifully takes the antidote anyway, but the poison has begun to do its work. Claiming that he "must sleepe," Huntington collapses in Marian's lap, who sings to soothe him.

One of the present knights, Chester, steps forward. He recognizes Doncaster as a notorious rapist and murderer, and those present curse Doncaster for murdering Huntington. Huntington reawakens, but knows he will die in Marian's arms. The Prior, meanwhile, admits to Richard that he and Doncaster had planned to assassinate the King: "For sure we did intend / King Richards poisoning, Soueraigne of this land." Overcome with remorse or puffed up by villainous braggadocio, the Prior also admits responsibility for Warman's and Huntington's deaths. However, as clergy, he suggests

that he does not fall under the law of the king, but rather that of the church, which punishes wrongdoers much more leniently. After some back and forth with the Bishop of Ely, the Prior does finally have to concede that crimes like “treason, or murder, or false felonie / should like a seculer be punished.” Richard condemns the Prior to death by hanging, and Doncaster to “hang aliue in chaines.” Doncaster’s laconic response is, “Thank you, my Lord.” The evil that has infiltrated the realm under Richard’s fading rule does not even pretend to be impressed by the once-overwhelming sense of sovereignty exuded by the King in the flesh.

Hoping to cheer up the dying Huntington and prevent harm from coming to his estate, Richard promotes Marian to duchess and bestows on her both the Prior’s and Huntington’s inheritance, turning her instantly very wealthy. Grateful that his wife will be looked after, Huntington asks that “at Robins burial let no blacke be seene, / Let no hand giue for him a mourning gowne: / For in his death, his king hath giuen him life, / By this large gift, giuen to his maiden wife.” Huntington entreats all those present to love each other, asks to be buried next to Warman, whom he has come once more to love, bestows the loyalty of his yeomen “upon my Soueraigne, Richard,” and in his last breath asks Marian to close his eyes once he is dead. In a heart-wrenching moment, Marian can barely bring herself to do so. Huntington’s tale is done.

So, evidently, is the tale of Richard Lionheart. As the mourners exit, Friar Tuck interrupts the play for a dumb show. Tuck narrates the events of the years following Huntington’s death in quick summaries. Almost in passing, he declares “You must suppose king Richard now is deade.” As far as the play is concerned, once the drama of the competing sovereignties over life and death fails in respect to

Huntington, the king whose kingdom he lived to uphold is also of the past. King John becomes king, and soon returns to his wicked ways, showing no interest in law and justice, and in the end losing his crown and becoming John Lackland. The Absent King remains absent. The *mysterium* that had sustained rightful sovereignty is closed off. It can no longer be read.

There is a third play ascribed to Munday about an absent Richard Lionheart, and it is fittingly emblematic for the dispersal of the *mysterium* of that king that has already begun in the other two plays. Like Richard Lionheart's sovereign *mysterium*, the play is, in fact, lost. The only existing references to it are, for instance, in Henslowe's *Diary*,³¹⁷ as the entry following shortly after that for *The Downefall of Earll Huntyngton Surnamed Roben Hoode Part I and Part II, the Death*.³¹⁸ The entry for the lost play is titled *Richard Cordeliones Funeralle*.³¹⁹ Henslowe records that he paid Chettle, Drayton, Munday, and Wilson for that play in 1598. The play is also mentioned in the extant documents of the Master of the Revels, as *Richard Cordelion*. There is no summary of its contents anywhere. It has been performed, but as a quintessentially theatrical moment, in Samuel Weber's words, it has moved off-stage, "passed on."

But this circumstance does not mean that the play is entirely unreadable. It is not a closed secret. The content of this play about the once more (and this time, permanently and completely) Absent King Richard Lionheart can be inferred from

³¹⁷ Wiggins & Richardson, *British Drama* Vol. 4, 44-45.

³¹⁸ Walter W. Greg, ed. *Henslowe's Diary: Part 1. Text*. London: Bullen, 1904. 84.

³¹⁹ Greg, *Henslowe's Diary*, 88.

scattered hints. In Henslowe's inventory of props for the Admiral's Men from 10 March 1598, for instance, an entry reads, "i. shelde with iii lyones,"³²⁰ which is Richard Lionheart's shield, and would have been part of the *Funeral*. Moreover, the type of play that the *Funeral* is likely to have been can also be reasonably guessed. As it deals with a state funeral and nothing else, the play is likely to have been heavy on theatrical pomp, processions, and elegies – much like Shakespeare's *Henry VIII*, which features no less than four such theatrical entries, and was an audience-pleaser in its time. Like *Henry VIII*, the *Funeral* is likely to have contained highly detailed instructions for the order in which characters were to arrive, what finery they were to wear, and props they were to carry.

This circumstance of inference and conjecture is represents a fitting ending to the procession and processing of Richard the Lionheart. In the end, the theatricality no doubt convincingly expressed Richard's royal *apotheosis*, the moment he ascends to heaven and joins that quintessential paragon of the sovereign *mystery* and its *logos*, the Christ. Inaccessible to us non-Kings, it is appropriate that in our understanding, the play representing such a moment can only be evoked by a handful of inventory notes and a vague memory. Of course, the *Funeral*, this disintegrated play of Richard Lionheart, is at a far remove from the overwhelming experience of Marion's saturated phenomenon. But even procession plays can be dangerous: When canons were fired during the first recorded production of *Henry VIII* at the Globe Theater on 29 June 1613, the theater caught on fire and burnt to the ground.³²¹

³²⁰ J. Payne Collier, ed. *Henslowe and Alleyn: being the diary of Philip Henslowe, from 1591 to 1609*, Vol. 1. London: Shakespeare Society, 1853. 273.

³²¹ Gordon McMullan, ed., *King Henry VIII*. 3rd ed. London: Arden Shakespeare, 2000. 57-60.

V. Coda: Francis Bacon and Coronation Procession of James I.

In 1594, the London philosopher and English courtier Francis Bacon (1561-1626) busied himself with matters of political secrecy. At the time the Member of Parliament for Middlesex, Bacon earlier that year had lost a bid for the office of Attorney General to the Norfolk jurist Edward Coke (1552-1634). Instead, Bacon wrote two short texts, “The First Copy of my Discourse Touching the Safety of the Queen’s Person” and “The First Fragments of a Discourse Touching Intelligence and the Safety of the Queen’s Person,” in the latter of which he advocates “that her majesty hath much secret intelligence, and that all is full of spies,” a practice that, Bacon thinks, “is not done with that glory and note of the world, which was in Mr. Secretary Walsingham’s time.”³²² (It ought to be noted that Francis Bacon’s brother Andrew Bacon [1558-1601] worked as an intelligencer for Walsingham in France from 1579 to 1592.³²³) In the fall of that year, Bacon participated in the interrogations of the Catholic conspirators Captain Edmund Yorke (d.1595) and Richard Williams (d.1595), who confessed to having intended to kill Elizabeth I. “by poisoned arrow, pistol, or rapier” on suggestion of the English defector to the Spanish, the Cheshire

³²² Basil Montagu, ed. *The Works of Francis Bacon*, Vol. 2. Philadelphia: Parry & McMillan, 1859. 532.

³²³ Alan Stewart, “Bacon, Anthony (1558-1601), spy.” *Oxford Dictionary of National Biography*. 23 Sep 2004 & 3 Jan 2008. Online. <http://oxforddnb.com>.

military officer Sir William Stanley (1548-1630), and his circle of militant Catholic clerics and officers.³²⁴

During Christmastide of 1594 and 1595, around the same time Munday wrote his Huntington plays, Francis Bacon took part in organizing the Christmas revels at Gray's Inn, one of the Inns of Court in London.³²⁵ On the first day of the revels, the students of the inn invested a fictional Prince of Purpoole in ceremonies parodying those of Elizabeth's court.³²⁶ On a second night, rival revelers from the Inner Temple sent a mock ambassador with a parodically immense train of attendants, who wrecked the Gray's Inn revels.³²⁷ The evening was capped with a performance of *Comedy of Errors*, which Shakespeare possibly wrote for the occasion, so the affair was referred to as the *Night of Errors*, an enormous embarrassment to the Gray's Inn leadership,

³²⁴ The building case against Yorke and Williams is recorded in various entries from 15 April 1594 to August 1594 in Mary Anne Everett Green, ed. *Calendar of State Papers, Domestic Series, of the Reign of Elizabeth, 1591-1594*. London: Stationery Office, 1867. 485-553. Here, 548.

³²⁵ *British Drama 1533-1642: A Catalogue*, Vol. 3, 264-265. Alan H. Nelson & John R. Elliott Jr., "Drama, Entertainment, and Music," *Records of Early English Drama: Inns of Court*. Cambridge: D. S. Brewer, 2010. xvii-xlvii & 405-414; Brian Vickers, *Francis Bacon*. London: Longman, 1996. 52-60. This occurred to the worry of Bacon's mother, Anne (1527-1610), who had written to Francis' Bacon's brother Anthony Bacon on 5 December 1594, evoking Christ's repeated warnings that "the first shall be last:" "I trust they wyll not mum nor mask nor synfully revel at Grayes Inn. Who were sometime cownted first, God graunt they waxe not dayly and deprove to be cownted last." Anne Cooke Bacon, *The Letters of Lady Anne Bacon*. Gemma Allen, ed. Cambridge: Cambridge UP, 2014. 198.

³²⁶ Francis Davison, *Gesta Grayorum*. London: W. Canning, 1688. 1-20. For other recent perspectives on this text, see e.g. Adhaar Noor Desai, "Scientific Misrule: Francis Bacon at Gray's Inn." *Philological Quarterly* 98.1-2 (2019), 119-136; Harumi Takemura, "Gesta Grayorum and Le Prince d'Amour: The Inns of Cour Revels in the 1590s." *Cahiers Élisabéthians* 94.1 (Nov 2017), 21-36; Martin Butler, "The Legal Masque: Humanity and Liberty at the Inns of Court." *Oxford Handbook of English Law and Literature, 1500-1700*. Lorna Hutson, ed. Oxford: Oxford UP, 2017. DOI: 10.1093/oxfordhb/9780199660889.013.32; Elizabeth Rivlin, "Theatrical Literacy in The Comedy of Errors and the Gesta Grayorum." *Critical Survey* 14.1 (2002), 64-79.

³²⁷ Davison, *Gesta Grayorum*, 20-22.

including Bacon.³²⁸ On the third night of revels, a sorcerer-apprentice was mock-tried for using “sorceries and enchantments,” causing a “Stage to be built,” and having foisted “a Company of base and common Fellows” on the Inn – namely, the Lord Chamberlain’s Men.³²⁹ The jury absolved the sorcerer and instead convicted the Prince of Purpoole’s Privy Council, asking that the next night “the Prince’s Council should be reformed, and some graver conceipts should have their places, to advise upon the things that were propounded to be done.”³³⁰

These “graver conceipts” took the form of two plays. One was a masque, *The Amity of Graius and Templarius*, in which pairs of friends sacrifice to the goddess Amity, and Graius (standing for Gray’s Inn) and Templarius (standing for the Inner Temple) once again became “true and perfect friends.”³³¹ Next, the Prince of Purpoole invested the Templerian Ambassador into a mock chivalric order called the Collar of the Knighthood of the Helmet, invoking the idea of the body politic: “in regard that as the helmet defendeth the chiefest part of the body, the head, so did [the Knighthood of the Helmet] then defend the head of the state.”³³² The Orders’ rules included injunctions against using grammar in duels and advocated that members should add “experience to reading,” by not just sticking to Plutarch and his ilk, but also “frequent

³²⁸ Davison, *Gesta Grayorum*, 22.

³²⁹ Davison, *Gesta Grayorum*, 22-24.

³³⁰ Davison, *Gesta Grayorum*, 24.

³³¹ Wiggins & Richardson, *British Drama 1533-1642: A Catalogue*, Vol. 3, 263-264; Davison, *Gesta Grayorum*, 25-26.

³³² Davison, *Gesta Grayorum*, 27.

the Theatre, and such like places of Experience; and resort to the better sort of Ord'naries for Conference."³³³

Evidently, turning to “graver conceipts” also meant wresting control of the stage from the apprentices and turning it over to a master: The second play of the evening was written by Bacon himself. The play text in question is attributed to Bacon in the Northumberland Manuscript as “Orations at Graies Inne Revels”³³⁴ and is included in the *Gesta Grayorum*, a 1688 edition.³³⁵ Bacon’s orations are delivered by six mock counsellors, each advocating for different ways to attain good government. The first counsellor discusses war, urging the prince to gain fame through conquest.³³⁶ The second urges the prince to study philosophy and assemble books and specimens from across the globe, to make him wise.³³⁷ The third suggests the prince build “works and monuments” that rival those of antiquity.³³⁸ The fourth argues that the prince should “strain up your Sovereignty.”³³⁹ The fifth advises the prince to pursue virtue and justice.³⁴⁰ The sixth proposes that the prince should devote himself to “variety and solace” in “pass-times and sports.”³⁴¹ The effort was a success: “The Performance of which Nights work being carefully and orderly handled, did so delight and please the

³³³ Davison, *Gesta Grayorum*, 27-31.

³³⁴ Wiggins & Richardson, *British Drama 1533-1642: A Catalogue*, Vol. 3, 265.

³³⁵ See n205.

³³⁶ Davison, *Gesta Grayorum*, 32-33.

³³⁷ Davison, *Gesta Grayorum*, 34-35.

³³⁸ Davison, *Gesta Grayorum*, 35-37.

³³⁹ Davison, *Gesta Grayorum*, 37-38.

³⁴⁰ Davison, *Gesta Grayorum*, 39-40.

³⁴¹ Davison, *Gesta Grayorum*, 40-41.

Nobles, and the other Auditory, that thereby Grays-Inn did ... quite take away all the Disgrace that the former Night of Errors had incurred; but got instead thereof, ... great Honour and Applause.”³⁴²

The important part of that citation is not the “great Honour and Applause,” although I am sure there is something clever to be said about Bacon fixing a mess made by Shakespeare. It is, rather, about the identities of the pleased “Nobles, and the other Auditory.” Gray’s Inn counted the most important Elizabethan courtiers among its members, the queen herself acting as its Patron Lady.³⁴³ Walsingham had been a member.³⁴⁴ So was, naturally, Bacon.³⁴⁵ Accordingly, the audience on 3 January 1595 encompassed an impressive set of persons. There was, by *some* accounts, Queen Elizabeth herself, and by *all* accounts much of the Privy Council and other influential lords: Sir John Puckering, the Lord Keeper; William Cecil, Lord Burghley, who was at the time Lord High Treasurer and Lord Privy Seal as well as acting Principal Secretary of State; Charles Howard, Earl of Effingham, the Lord High Admiral and patron of the Lord Admiral’s Men; Thomas Sackville, Lord Buckhurst, an accomplished diplomat and then Chancellor of Oxford University; Sir Thomas Heneage, friend of Walsingham, diplomat, and member of the Privy Council as Chancellor of the Duchy

³⁴² Davison, *Gesta Grayorum*, 42.

³⁴³ Harold Bloom & Janyce Marson, ed. *Bloom’s Shakespeare Through the Ages: The Comedy of Errors*. New York: Bloom’s Literary Criticism, 2010. 51.

³⁴⁴ Simon Adams, Alan Bryson, & Mitchell Leimon. “Walsingham, Sir Francis (c. 1532–1590), principal secretary.” *Oxford Dictionary of National Biography*. 23 Sep 2004 & 21 May 2009. Online. <http://oxforddnb.com>.

³⁴⁵ Simon Adams, Alan Bryson, & Mitchell Leimon. “Walsingham, Sir Francis (c. 1532–1590), principal secretary.” *Oxford Dictionary of National Biography*. 23 Sep 2004 & 21 May 2009. Online. <http://oxforddnb.com>.

of Lancaster; Sir Robert Cecil, Bacon's first cousin and soon-to-be successor of Walsingham as Principal Secretary of State; Charles Blount, Baron Mountjoy, a diplomat and later Lord Lieutenant of Ireland; George Clifford, Earl of Cumberland, a naval commander and associate of Sir Walter Raleigh; Sir William Compton, Baron Compton, later Lord Lieutenant of Warwickshire, Gloucestershire, and President of the Marches and Wales; Robert Devereux, Earl of Essex, member of the Privy Council, associate of Sir Walter Raleigh, naval commander, later Lord Lieutenant of Ireland, and eventually leader of the Essex Rebellion; Thomas Howard de Walden, later Earl of Suffolk, a naval commander and later Lord Chamberlain; William Parker, Baron Monteagle, a courtier on the fringes of the Gunpowder Plot and an early imperial venture capitalist; Henry Percy, Earl of Northumberland, the so-called "Wizard Earl," alchemist and scholar as well as naval commander, diplomat, and friend of Sir Walter Raleigh; Sir Robert Rich, Baron Rich, later Earl of Warwick, a parliamentarian (and the cuckold of Sir Philip Sidney's *Astrophil and Stella* as the husband of Penelope Devereux); Sir Edmund Sheffield, Baron Sheffield, later Lord Mulgrave and Lord Lieutenant of Yorkshire; Gilbert Talbot, Earl of Shrewsbury, former gaoler of Mary Queen of Scots and husband to Mary Cavendish; Henry Windsor, Lord Windsor, hereditary warden of that castle; and Henry Wriothesley, Earl of Southampton, Shakespeare's patron; as well as a number of other knights and ladies.³⁴⁶

³⁴⁶ *Ibid.*

If this list sounds exhaustive, that is because it is meant to be. The audience of Bacon's play included the most powerful guardians of sovereignty in the land. Bacon knew whom his orations would be performed for, holding his audience's attention in a forum where they were willing to entertain any sort of notion for an evening. He did not waste the opportunity. Bacon's "Orations at Graies Innes Revels" are the source text, the "first draft," of the most famous passages in perhaps his most widely read work, those describing the House of Salomon in *New Atlantis*.³⁴⁷ The House of Salomon was the explicit blueprint for the Royal Society founded in 1660, one of the models for the modern scientific research university.³⁴⁸ Its success on that front masks the fact that it could also be seen as the model for other state institutions depending on the collection of knowledge: intelligence agencies. These orations are policy proscriptions, performed theatrically in an imitation of courtly invention, a theatrical medium of thought, in front of those with the power to implement them.

For the question of political secrecy and the *mysterium*, two of the speeches are particularly relevant. The first of them is theoretical. The Fourth Counsellor's oration is titled, "Advising Absoluteness of State and Treasure." Discourses on absolutism always touch on the *arcana imperii*, but the *mysterium* also plays its role. The Fourth

³⁴⁷ Francis Bacon, "New Atlantis." *Sylva Sylvarum*. London: William Rawley & William Lee, 1628. a1r-f6r [1-44]. *passim*.

³⁴⁸ Thus the Oxfordshire clergyman and philosopher Joseph Glanvil (1636-1680), member of the Royal Society, proclaimed in the "Address to the Royal Society" prefacing the 1665 edition of his *Scepsis Scientifica*: "And how great a benefit such a Natural History as may be confined in, will prove to the whole stock of learned Mankind, those that understand the interest of the inquiring World may conjecture. Doubtless, the success of those your great and Catholick Endeavours will promote the Empire of Man over Nature, and bring plentiful acceßion of Glory to your Nation; making Britain more justly famous then the once celebrated Greece; and London the wiser than Athens. For You really are what former Ages could contrive but in wish and Romances; and Solomons House in the *New Atlantis*, was a Prophetick Schem of the Royal Society." Joseph Glanvil, *Scepsis Scientifica*. London: Henry Eversden, 1665. C1r-v.

Counsellor considers “the Order of Nature,” which is “to make the most of that you possess, before you purchase more.”³⁴⁹ The Fourth Counsellor uses wise investments as a metaphor for wise exercise of political capital: “You are to conquer here at home the overgrowing of your Grandees in Factions, and too great Liberties of your People, the great Reverence and Formalities given to your Laws and Customs, in derogation of your absolute Prerogatives; these and such like be Conquests of State, though not of War.”³⁵⁰ The means of achieving these conquests of state are subject to state secrecy. In fact, the Fourth Counsellor performs almost perfectly the theatrical nature of how state secrecy functions, by an ostentatious display of withholding – that is, in imitation of the King’s public evocation of the *mysterium* in the sacramental rituals. The Fourth Counsellor declares: “The Means to strain up your Sovereignty . . . , they are the Secrets of your State: I will not enter into them at this place; I wish your Excellency as ready to them, as I know the means ready to perform them.”³⁵¹ Instead of divulging the means, the Counsellor announces that they exist, that he is in possession of that information and no one else, that it must be disclosed in a secure and secret place, that the sovereign must take a leap of faith, and that by implication all but the Fourth Counsellor and the prince are potentially adversely affected by it, or potentially saved by it, but in either case will never know what the content of the secret is. Thus, Bacon performs a theory of state secrecy before those meant to realize it.

³⁴⁹ Davison, *Gesta Grayorum*, 38.

³⁵⁰ *Ibid.*

³⁵¹ *Ibid.*

The second is institutional. As noted, the Second Counsellor's oration is a direct antecedent to the House of Salomon passage in *New Atlantis*. The Second Counsellor advises the "Conquest of the Works of Nature." The wording draws a clear distinction between the Fourth Counsellor's *Order* of Nature, which is the function of the *mysterium*, and the Second Counsellor's *Conquest* of the *Works* of Nature, which functions more like the theatrical processing of the *mysterium*. The latter reifies and simultaneously safeguards the former. The Second Counsellor continues his request "that you bend the Excellency of your Spirits to the searching out, inventing, and discovering of all whatsoever is hid in secret in the World, that your Excellency be not as a Lamp that shineth to others, and yet seeth not it self; but as the Eye of the World, that both carrieth and useth Light."³⁵² Bacon advises collecting all possible written knowledge into a library, establishing a garden with plant samples, a collection of animal and fish, and an experimental lab. As a result, the prince "may have, in a small Compass, a Model of Universal Nature made private" to the prince, a secret microcosm of the world "all at one glance."³⁵³ This, as we shall see in Chapter 4, presages a new, modern form of political secret altogether: the *secretum*, specifically as *information* in the form of *secret intelligence*. The result of availing oneself of several types of political secrecy is a superior sovereignty: "When all other Miracles and Wonders shall cease, by reason that you shall have discovered their natural Causes, your self shall be left the only Miracle and Wonder of the World."³⁵⁴

³⁵² Davison, *Gesta Grayorum*, 34.

³⁵³ Davison, *Gesta Grayorum*, 35.

³⁵⁴ *Ibid.*

Read in light of this ancestor passage, the House of Salomon passage in *New Atlantis* more clearly crosses the line from academic curiosity to espionage: the Brethren of Salomon's House go abroad as "merchants of light," in disguise, pretending to be citizens of other nations, covertly collecting what is to their nation's advantage, and without disclosing what they have learned to anyone except their government at home.³⁵⁵ The House of Salomon is nothing less than a theoretical blueprint for any government structure that exists for the purpose of gathering intelligence – that is, knowledge for the purpose of political and strategic decision making – in addition to knowledge for the sake of it. When the legal students step onto the theater stage at Gray's Inn that night, and speak Bacon's words to those in power, the political secret theatrically "takes place" on stage, and in the applause that follows, in its "passing," lies an overlooked future. The research university and intelligence agencies share an origin story in Salomon's House, "which house, or college (my good brethren) is the very eye of this kingdom."³⁵⁶ And we share its creed: "But thus you see we maintain a trade, not for gold, silver, or jewels; nor for silks; nor for spices; nor any other commodity of matter; but only for God's first creature, which was *Light*: to have *light* (I say) of the growth of all parts of the world."³⁵⁷

Around the year 1600, then, we see the conceptual confluences that mark beginning of a turn in the concept of political secrecy as represented by the *mysterium*. The 17th Century moves towards new means of conceiving the secrets of the King: the

³⁵⁵ Bacon, *New Atlantis*, 19 & 42-43.

³⁵⁶ Bacon, *New Atlantis*, 10.

³⁵⁷ Bacon, *New Atlantis*, 19.

arcana imperii and eventually the form of the *secretum* today referred to as *information* or *intelligence*. As it happens, there exists an actual moment when this change becomes evident during a procession. The coronation of James I., which was accompanied by a series of an emerging type of theater, masques. For this, too, Bacon provides a framework. Bacon was familiar with the format: Apart from the speeches already discussed, Bacon was also the “chief contriver” of at least five additional masques, two for Queen Elizabeth’s entertainment, two more at Gray’s Inn, and a production of *The Marriage of the Thames and the Rhine* at the marriage of Princess Elizabeth (1596-1662) to Friedrich V. (Frederick, 1596-1632), Elector Palatinate, in 1613. Bacon opens his essay “Of Masques and Triumphs” with the pronouncement, “These things are but toys, to come amongst such serious observations. But yet, *since prices will have such things*, it is better they should be graced with elegance.”³⁵⁸ In a line evocative of the effects of the *mysterium*, Bacon posits that the performance should “naturally take the sense” and “draw the eye strangely, and makes it with great pleasure to desire to see that it cannot perfectly discern.”³⁵⁹ Yet, a performance that is “but toys” has clearly lost most of its *mysterium*, reduced to an imitation of the narrative sovereign Self the older type of secret could evoke.

Indeed, this is the problem faced by James I. Already in 1598, when James was still only James VI. of Scotland, James had set out a theory of governance highly reliant on the logics of the sovereign *mysterium*. In his *Trew Law of Free Monarchies*, James had asserted that monarchy was a “forme of gouernment, as resembling the

³⁵⁸ Mary Augusta Scott, ed. *The Essays of Francis Bacon*. New York: Scribner’s Sons, 1908. 174.

³⁵⁹ Scott, *Essays*, 176.

Diunitie, approacheth nearest to perfection, as all the learned and wise men from the beginning haue agreed upon; Unitie being the perfection of all things.”³⁶⁰ This is so because of the very biblical predecessors on whose mythos the idea of a sovereign is based: “Kings are called Gods by the propheticall King Dauid, because they sit upon GOD his Throne in the earth, and haue the count of their administration to giue unto him.”³⁶¹ This *count* the sovereign owes to the divine *logos* is not just a particularly construction of the king’s narrative Self, but also a mathematics of sovereignty, which tallies the degree to which the king has managed “to minister Iustice and Iudgment to the people,” “to establish good Lawes to his people and procure obedience to the same,” and “to procure the peace of the people.”³⁶² Consequently, James declares,

since the erection of this Kingdome and Monarchie among the Iewes, and the law thereof may, and ought to bee a paterne to all Chri|stian and well founded Monarchies, as beeing founded by God himselfe, who by his Oracle, and out of his owne mouth gaue the law thereof: what liberty can broiling spirits, and rebellious minds claime iustly to against any Christian Monarchie?³⁶³

For, being made quite directly in the image of god, kings “before any estates or rankes of men within the same, before any Parliaments were holden, or lawes made: and by them was the land distributed (which at the first was whole theirs) states erected and

³⁶⁰ James I., *The Workes of the Most High and Mightie Prince*, 193-. 193.

³⁶¹ James, *Workes*, 194.

³⁶² *Ibid.*

³⁶³ James, *Workes*, 199.

decerned, and formes of gouvernement deuised and e|stablished: And so it followes of necessitie, that the kings were the authors and makers of the Lawes, and not the Lawes of the kings.”³⁶⁴ The King is the undisputed *paterfamilias* of the kingdom, “The King towards his people is rightly compared to a father of children and to a head of a body composed of diuers members ... the stile of *Pater patriae* was euer, and is common|ly vsed to Kings.”³⁶⁵ Presaging Kittler’s point about the role of the capital in the information network that makes the kingdom, James continues,

For from the head, being the seate of Iudgement, proceedeth the care and foresight of guiding, and preuenting all euill that may come to the body or any part thereof. The head cares for the body, so doeth the King for his people.³⁶⁶

Like God distributed the *cosmos* to his stewards, human kind, and just as he bestowed the Promised Land on the people of Israel, the King precedes the kingdom, being a font from which the *mysterium* of the sovereign, a sacramental beyond the comprehension of the subjects, structures an orderly *cosmos*. However, James I.’s subjects, particularly the parliament, no longer extended such a theological authority to the King.

The contradiction and its reasons were not lost on James. A year later, he wrote in his handbook for princes, *Basilikon Doron*, James therefore advises that the King be aware of the theatrical imperative inherent in the *mysterium*: “It is a true olde saying,

³⁶⁴ James, *Workes*, 201.

³⁶⁵ James, *Workes*, 204.

³⁶⁶ *Ibid.*

That a King is as one set on a skaffold [or in later editions, ‘stage’], whose smallest actions & gestures, all the people gazingly do behold.”³⁶⁷ Accepting this imperative is a means to restore the proper relationship between the divine *logos* and the King:

It is one of the golden Sentences, which Christ our Saviour uttered to his Apostles, that there *is nothing so covered, that shal not be revealed, neither so hidde, that shall not be knowen: and whatsoever they have spoken in darkenesse, should be heard in the light: and that which they had spoken in the eare in secret place, should be publikely preached on the tops of the houses:* And since he hath said it, most trew must it be, since the authour thereof is the fountaine and very being of trewth: which should moove all godly and honest men, to be very warie in all their secretest actions.³⁶⁸

Consequently,

But as this is generallie true in the actions of all men, so is it more speciallie true in the affaires of Kings: for Kings being publike persons, by reason of their office and authoritie, are as it were set (as it was said of olde) upon a publicke stage, in the sight of all the people; where all the beholders eyes are attentiuellie bent, to look and pry in the least circumstance of their secretest driftes.³⁶⁹

³⁶⁷ James I., *Basilikon Doron*. Edinburgh: Robert Waldgrave, 1599. 121.

³⁶⁸ James I., *Basilikon Doron*. Edinburgh: Robert Waldgrave, 1603. B1r.

³⁶⁹ James I., *Basilikon Doron* (1603), B1v.

When it comes to this “publike stage,” then, the King must attempt to assert his access to the *mysterium* of kingship by constantly performing – that is, reminding of its existence – this overwhelming sovereignty, so that he becomes an exemplar of it:

Which should make Kings the more carefull not to harbour the secretest thought in their minde, but as suche as in the owne time they shall not be ashamed openlie to avouche; assuring themselves that time the mother of verity, will in the dewe season bring her owne daughter to perfection.³⁷⁰

In this, James remains perfectly orthodox. It was Tertullian, after all, the great patristic enemy of the *spectaculis* of the theater, who had formulated the single context in which the theater was appropriate for Christians:

What nobler than to tread underfoot the gods of the nations, to exorcise evil spirits, to perform cures, to seek divine revealings, to live to God? These are the pleasures, these the spectacles that befit Christian men-holy, everlasting, free. Count of these as your circus games, fix your eyes on the courses of the world, the gliding seasons, reckon up the periods of time, long for the goal of the final consummation, defend the societies of the churches, be startled at God's signal, be roused up at the angel's trump.³⁷¹

³⁷⁰ *Ibid.*

³⁷¹ Alexander Roberts & James Donaldson, ed. “De Spectaculis.” *Ante-Nicene Christian Library: The Writings of Tertullian*, Vol. 11. Edinburgh: T. & T. Clark, 1869. 8-35. 33. In Latin, *De Spectaculis* 29: “Quod calcas deos nationum, quod daemonia expellis, quod medicinas facis, quod revelationes petis, quod deo vivis? Haec voluptates, haec spectacula Christianorum sancta perpetua gratuita; in his tibi circenses ludos interpretare, cursus saeculi intueri, tempora labentia, spatia peracta dinumera, metas

This, in the end was what James felt was require of him: to reinstate the *mysterium* of kingship in the minds of his people, so that his kingdom could “live to God.” But how could this be achieved when the sacramental processional, the Triumphs of the Sovereign, had become “trifles?”

The demise and closing off of the *mysterium* during Stuart rule would eventually cause James to cast about for other models of political secrecy aligned with his sovereignty, such as the *arcana imperii* (Chapter 2). We may see a final flash of the older concept of the King’s *mysterium*, however, in the “Magnificent Entertainment” held for James in London to celebrate his coronation 1603. The celebration consisted of a procession through the City of London, from one station to the next, evoking the medieval religious overtone of processing the king.³⁷² The arches, meanwhile, were stage-sets made *to appear like* seven ancient Roman triumphal arches, as best as they could be conjured by an Early Modern imaginarium. Like Richard Lionheart had been processed along the ancient Roman roads of the network represented by the Tabula Peutingeriana, so James was processed according to the street plans of his own capital, to a schedule set not by him, but by the theater professionals in charge of the content, including Ben Jonson and Thomas Dekker, who would later publish thorough, well-illustrated accounts.

The performance of the procession was beset with contradictions to the supposed presentation of the *mysterium* of the king. The 1603 procession had to be

consummationis exspecta, societates ecclesiarum defende, ad signum dei suscitare, ad tubam angeli erigere.”

³⁷² Edmund Howes, *Annales*. London: Thomas Adams, 1615. 836-837; Ben Jonson, *His Part of King James His Royall and Magnificent Entertainment*. London: Edward Blount, 1604.

canceled because the plague was ravaging London; the pestilence began right as James first entered the city. It finally came to pass in March 1604. Before the procession began, James toured the Tower of London and asked about the breeding of the lions kept in its menagerie; after all, the triple lion of Richard Lionheart was now the royal sigil of England, an ancient “sign” of his own sovereignty. He was told that these lions were imports, for “in England there were bred no such fierce Beasts, whereunto was answered, that no mention is made in *any* record of Lions braeding here.”³⁷³ But not to worry: “Neuerthelesse Abraham Ortelius, and other foraine writers do affirme that there are in Englande beasts of as great courage as the Lion, namely the Mastiffe Dog.”³⁷⁴ Sensing the double meaning, James asked the actor Edward Alleyn of the Admiral’s Men “to fetch secretly 3. of the fellest dogs in the Garden” and then have “the lustiest Lion to be separated from his mate” and pitched it against the dogs in the Tower’s “Lions den.”³⁷⁵ The King “perceiuing the Lion greatly to exceede the Dog in strength” added additional dogs to the fight, all of whom the lion easily fought off. Soon, the dogs began fighting amongst themselves, “whereupon the King caused the Lyon to be driuen downe, thinking the Lyon would haue parted them, but when hee saw he must needs come by them he leapt cleane ouer them both, and contrary to the Kings expectation, the Lyon fled into an inward den.”³⁷⁶ None of this augured an

³⁷³ Howes, *Annales*, 835.

³⁷⁴ *Ibid.*

³⁷⁵ *Ibid.*

³⁷⁶ Howes, *Annales*, 835-836.

orderly *cosmos*, in which even nature is filled with “quaking” and “signs” that confirm the sovereign’s *mysterium* and the god-ordained *logos* of the kingdom.

In his semiotic study of processions, Louis Marin points out that the beginnings and ending points of these processions have the potential of becoming fraught with risk, as they “represent borders between the law of ‘normal’ everyday space and places and the law of the parade and its route. They can also be thought of as passages from one law to another; they are themselves outside either law and therefore dangerous.”³⁷⁷ In James’ case, the order of the procession was disrupted from the start: for instance, the pageant Dekker had written to welcome the king at the outset, showing the Scottish patron saint Andrew and the English patron saint George walking “hand in hand” and accompanied by a female Genius of the City tasked with ushering in the processing, was simply canceled.³⁷⁸ Whereas the coronation processions of Queen Mary and Queen Elizabeth had ended at the Tower, the royal residence in the City of London, that of James I., contradictorily, began there.

James was processed from node to node along the *itinerarium* of the parade route predetermined by his subjects, moving along Barking and Mark Street, turning at

³⁷⁷ Louis Marin, “Notes on a Semiotic Approach to Parade, Cortege, and Procession.” Fae Korsmo, transl. *Time Out of Time*. Alessandro Falassi, ed. Albuquerque: U of New Mexico P, 1987. 220-228. 224; Louis Marin, “Une mise en signification de l’espace social: manifestation, cortège, défilé, procession. Notes sémiotiques.” *Sociologie du Sud-Est* 37-38 (Fall 1983), 13-27. 17: “On peut également noter que les points de départ et d’arrivée peuvent constituer des lieux ‘dangereux’ ... ces lieux de rassemblement et de dispersion sont des lieux limites, les points de frontières que le défilé franchit, soit pour se constituer, soit pour disparaître, où il y a passage, dans un sens ou dans l’autre, de la loi et de ses règles de l’existence, des lieux et des espaces quotidiens ‘normaux,’ à la loi et à ses règles du défilé, à l’espace de son parcours et aux lieux que ce parcours articule.”

³⁷⁸ Thomas Dekker & Thomas Middleton, *The Magnificent Entertainment*. London: Thomas Man the Younger, 1604. A4r-B2r. B2r: “This should haue beene the first Offring of the Citties Loue: But his Maiestie not making his Entrance (according to expectation) It was (not utterly throwne from the Alter) but layd by.”

the church of All Hallows Staining and entering the east end of Fenchurch. There he found the first triumphal arch, depicting “the true likenesse of the notable houses, Towers, and Staeples within the City of London,”³⁷⁹ an *imago* of the very place where he already was. Under the inscription “LONDINIUM” was added a line reading “CAMERA REGIA,” the king’s chamber. The implication was, rather clearly, that the entire City of London considered itself owed access to the King’s privy chamber, his secrets and counsels.³⁸⁰

Next, the procession moved along Fenchurch and encountered the second arch at Gracechurch Street, this one created by the Italian merchant guild in London. Unwittingly, this arch evoked the episode of the tower, having placed a magnificent lion at its top, over which was the pointedly truncated label “IACOBI REGI MAGN.” The surrounding pageant evoked the triumphs of antiquity, including a painted figure of Peace, extending an olive branch, this time an *imago* forever out of the king’s reach. The rest of the arch was decorated with “wild” scenes of Poseidon surrounded by nude women and palm trees, and inscribed with mottos taken from ancient poets. At its top stood “a Person carued out to the life (a woman) her left hand leaning on a sword” and “reaching foorth a Diadem, which shee seemde by bowing of her knee and head, to bestow upon his Maiestie.”³⁸¹ Matching this figure on the other side of the arch “a wreathe of Lawrell seem’d to be ready to be let fall on his Maiesties head, as he went under it, being held between two naked Antique women.” The arch hinted at

³⁷⁹ Robert Lindsay, *The History of Scotland*. Edinburgh: Baskett, 1728. 233. Dekker himself has: “the true moddells of all the notable Houses, Turrets, and Steeples, within the Citie” (B4r).

³⁸⁰ Dekker, *Entertainment*, C4v.

³⁸¹ Dekker, *Entertainment*, C3r-C3v.

the possibility of legitimacy and greatness, but the acts confirming it were left suspended in the air.³⁸²

From there, James turned at the church of St. Denis onto Gracechurch, turned again at St. Peter-upon-Cornhill and followed Cornhill to the third arch, erected by the Dutch merchants, from which statues looked down that represented the seventeen provinces of the Netherlands, from which the English had been expelled only a few years earlier, in 1588.³⁸³ The image may therefore have been indicators of powerlessness as much as praise. Further down Cornhill, there followed an oversized portrait of James, and allegorical figures including a lion chasing a serpent, “the Lion scornfully casting his head backe, to behold the violence of a black storme, that heauen powred down.”³⁸⁴ This image, as well as the motto, *sequitur grauis Ira feroces*, “there follows a grave and ferocious Ire,” can, once again, be read in a pointed fashion, both as a compliment and as a threat.³⁸⁵ The images were surrounded by scenes of Dutch country people “busie at other workes: the men weauing, the women Spinning, the children at their Hand-loomes,” as well as Dutch market scenes and scenes of seafaring.³⁸⁶ These figures appear unimpressed by the roaring lion.

The procession next passed a performance of Danish music for the Queen outside St Mildred Church in the Poultry,³⁸⁷ merged onto Stokes, and arrived at Soper

³⁸² Dekker, *Entertainment*, C3v.

³⁸³ Dekker, *Entertainment*, C4r.

³⁸⁴ Dekker, *Entertainment*, D2v.

³⁸⁵ *Ibid.*

³⁸⁶ Dekker, *Entertainment*, D4v.

³⁸⁷ Dekker, *Entertainment*, E2r.

Lane, where the fourth arch stood. It was fashioned as “Nova Felix Arabia,” dominated by a figure called Arabia Britannica draped in “markes of Chastetie and Youth” and holding “badges of Soueraigntie.” This figure who was accompanied by Fame, the Five Senses, and the three Graces, and nearby was a Fountain of Virtue, from which Detraction and Oblivion were drinking. These figures then performed a masque, in which Arabia Britannica and the King himself chase off the two vices, and “Milke, Wine, and Balme” flow from the fountain.³⁸⁸ The person assigned to “deliuer to his Maiestie the interpretation of this dumbe Mysterie” was a “Boy, one of the Choristers, belonging to Paules,” who proclaimed that

Thou being that sacred Phoenix, that doest rise,
From th'ashes of the first: Beames from thine eyes
So vertually shining, that they bring,
To Englands new Arabia, a new Spring:
For ioy whereof, Nimphes, Sences, Houres, & Fame,
Eccho loud Hymnes to his imperiall name.³⁸⁹

The explanation was no Christian allegory pointing at the *mysterium* except in the veiled allusion of the phoenix, an attribute of the “anoointed one,” Christ,³⁹⁰ with whom James was accordingly being compared. Yet, this arch with its Roman and Arabian themes evoked the grand empires of Antiquity and of James’ present, and might be

³⁸⁸ Dekker, *Entertainment*, E3r-F1v.

³⁸⁹ Dekker, *Entertainment*, F2r.

³⁹⁰ Cf. Dante Alighieri, *Inferno*, Canto 24.

said to finally have represented the sort of moment in this procession and this process that James had been hoping for.

The procession then passed to the Great Cross on Cheapside. There, they listened to an oration by the Recorder of City, declaring that “here at this Crosse was proclaimed your true succession to the crown,” and presenting him “with a little Cup of gold,” once again returning to a tone hardly dominated by the deference a god-anointed king might expect.³⁹¹ There followed another play, this time featuring Sylvanus and Apollo, in which Sylvanus explains that he is a “Messenger sent from the Lady Eirene my Mistresse, to / deliuer an errand to the best of all these Worthies, / your royall selfe.” He then narrates a masque, which Destiny is pursued by Envy who “shootes his impoisoned stings at her heart,” but then is poisoned by his own snakes. Plenty enters the masque, and the two allegorical figures lead the king’s party into a “Garden” identified as the home of the Hesperides, the guardians of the mythical Golden Apples.³⁹²

The procession entered the churchyard of St. Paul’s Cathedral, through an arbor-like fifth arch covered in artificial fruit of all kinds, accompanied by the church choir’s songs echoing down from the cathedral’s battlements. Rather than the saints one might expect, they are joined by Chrusos and Argurion, representing gold and silver, Pomona and Ceres, representing fruitfulness, and finally the Nine Muses and the Seven Liberal Arts. Sending the King on to “a more glorious bower, to which he is now going,” the figures plead with him not to forget “this poore Arbor of his Lady

³⁹¹ Dekker, *Entertainment*, F3r-F3v.

³⁹² Dekker, *Entertainment*, F4r.

Musicke” and pray for his “happie reigne.”³⁹³ Meanwhile, the chorus sings a lengthy hymn that ends of a decidedly ambiguous note: “Make heauen ring ... For Heauen it selfe looks proudly, / Theat earth such a King,” to which the chorus replies, “Earth has *not* such a King.”³⁹⁴ Following this, the Suffolk-born Dean of St. Paul, John Overall (1559-1619), delivered a lengthy Latin sermon for the king’s edification.³⁹⁵

The procession exited the St. Paul Churchyard and passed through Ludgate onto Fleet Street, leaving the City of London. There, the sixth arch stood. It took the appearance of “some enchanted Castle guarded by tenne thousand harmelesse spirits” featuring a Tower of Pleasure.³⁹⁶ At its very top was a globe of the world, for the King to marvel at, but well out of reach.³⁹⁷ On the arch sat the Four Cardinal Virtues next to “his Maiesties foure kingdomes:” England, Scotland, France, and Ireland.³⁹⁸ The Four Elements circled the globe, maintaining its perfect harmony, and next to it sat figures representing “all the states of the land, from the Nobleman to the Ploughman.”³⁹⁹ The figure of Zeale explains the allegory, and finally, here there is a hint of the *mysterium* as we have come to know it:

See at the peacefull presence of their King,
How quietly they moude, without their sting:
Earth not deuouring, Fire not defacing,

³⁹³ Dekker, *Entertainment*, G4r.

³⁹⁴ Dekker, *Entertainment*, G4r-H1r.

³⁹⁵ Dekker, *Entertainment*, H1r-H2v.

³⁹⁶ Dekker, *Entertainment*, H3r.

³⁹⁷ *Ibid.*

³⁹⁸ Dekker, *Entertainment*, H3v.

³⁹⁹ Dekker, *Entertainment*, H4r.

Water not drowning, & the Ayre not chasing:
But propping the queint Fabrick that heere stands,
Without the violence of their wrathfull hands.⁴⁰⁰

The presence of the king and his sovereign *mysterium* upholds the fabric and order of the world in the face of threatening chaos. This goes for the other allegories also, “these foure maine vertues figured all in you,” and “all Estates, whose proper Arts, / Liue by the breath of Majestie.”⁴⁰¹ The chorus sings lines that explicitly confirm James’ theory of sovereignty, with the king god-like and parliament subservient:

Behold where Ioue and all the States,
Of Heau'n, through Heau'ns seauen siluer gates,
All in glory riding ...
The Deities conuent,
In Ioues high Court of Parliament.
Rumor thou doest loose thine aymes,
This is not Ioue, but One, *as great*, King IAMES.⁴⁰²

One can almost hear the sigh of the king’s satisfaction of a procession that finally functions as he believes it should. There is just one problem: This performance only occurs once – perhaps unnoticed amongst all the pomp and circumstance – the people of London have shuttled the King *out* of his capital. His idea of sovereignty might have been lauded, but he is in spatial exile, on the wrong side of the city walls.

⁴⁰⁰ *Ibid.*

⁴⁰¹ *Ibid.*

⁴⁰² Dekker, *Entertainment*, IIv.

Thus, James finds himself once again in a “dangerous” place, one where he is shuttled off according to similar logics that had defined Richard Lionheart’s long journey.

The King’s procession moves on, further down the Strand to the Temple Bar, where the seventh arch was made to look like a Temple of Janus, the god who is neither here nor there.⁴⁰³ There, the king “was upon the point of giuing a gracious and Princely farewell to the Lord Mayor, and the City.”⁴⁰⁴ James now found himself at the wrong end of the route to the heart of the city that his Tudor predecessors had traversed, and his only way forward was in the wrong direction. The remaining length of the Strand featured “a Raine-bow, the Moone, Sunne, and Starres, called the *Pleiades*, aduanced between two Pyramides,”⁴⁰⁵ suggesting that James had reached the far reaches of the heavens, but also that he was leaving the orbit of his sovereign sphere. There, well before reaching Charing Cross, much less Westminster Cathedral, the procession ended. Appropriately for a sovereign who had been bid farewell in the temple of the two-faced Janus, the king’s great sacramental of his *mysterium* left him quite literally in limbo, stranded between the capital and the site of where his coronation would take place.

Like his long process and procession had been for Richard Lionheart, the great triumphal procession of James had turned into an indication that the supposed powers of coherence ascribed to the sovereign *mysterium* were slipping away. In the streets of London, James has traversed a labyrinth of empty signs, and found only the absence of

⁴⁰³ Dekker, *Entertainment*, I2r.

⁴⁰⁴ *Ibid.*

⁴⁰⁵ Dekker, *Entertainment*, I3r.

a sovereign secret, which, like all theatrical events, has “passed on.” James’ many conflicts with an openly defiant Parliament during his subsequent realm certainly suggest that his supposed sacramental *mysterium* had lost its hold on his people. Once lost, the *mysterium* closes off and becomes illegible, impossible to restore. It would take a mere three decades until James’ son and successor Charles I. found himself fighting a rebellion that no longer believed in any divine power of princes, losing not just his throne and his capital, but also his head.

A final side-note, demonstrating a last irony regarding the *mysterium*: When the House of Stuart was briefly restored to the monarchy in Britain in 1660 and Charles II. took the throne, his formal coronation followed in early 1661. The town of Nottingham staged a play to honor the king. It’s title: *Robin Hood and His Crew of Soldiers: A Comedy, Acted at Nottingham on the Day of His Sacred Majesty’s Coronation*.⁴⁰⁶

⁴⁰⁶ Anonymous, *Robin Hood and His Crew of Souldiers*. London: James Davis, 1661.

CHAPTER 2: *ARCANA IMPERII*

The Economy of Targeting: *Arcana Imperii* in *Edward II*

The introduction of this dissertation outlined the three Early Modern political-theological forms of secrecy that each function as contributing ancestor concepts of modern political “intelligence:” the liturgical *mysterium*, the political *arcana imperii*, and the administrative *secretum*. It also suggests the epistemological relationships between each of those concepts and Early Modern literature, particularly drama. Finally, it claims that an Early Modern debate about the ability of mathematics to accurately capture reality in the form of “data” precipitated the emergence of “intelligence” as a category of secret political information, an evolution likewise present in Early Modern dramatic depictions of secrecy.

The first chapter of this dissertation establishes the close interweaving of Early Modern British theater with the stakeholders in the debates surrounding political secrecy, particularly spymasters and their theatrical patronage networks, spanning Britain and the Continent. The second chapter considers the relationship between the late medieval liturgical *mysterium* – that is, the performative secret of the sacraments, including sacramental kingship – and the masques and ceremonial theater associated with the royal processions of King James I., whose absolutist tendencies ushered in the crisis (and indeed, *krisis*) of the sacramental model of sovereignty, with its final act staged against the backdrop of the conflagrations of the British Civil War.

Both chapters demonstrate that in this period theatrical staging served to model structures of political secrecy that are by definition inaccessible to public discourse

and therefore require mimetic modeling to be fathomed. Before turning, in Chapter 4, to the final shift in the epistemological locus of political secrecy away from the sovereign and towards the efforts of state administrators, accountants, and intelligencers overseeing information networks involving quantifiable data, concrete facts, and the calculation of probable outcomes, it is necessary, in this chapter, to examine the form of political secrecy whose transformation in Early Modernity makes that shift possible, by removing agency over secrets from the person of the sovereign and relocating it in the executive structures of the state. In the terms of the medieval political theology of the Two Swords as formulated by Peter Damian (1007-1070),⁴⁰⁷ the ritually performed secrets of the *mysterium* derive their authority from the power of the religious *sacerdotum*. This chapter examines the legally performed secrets that fall under the other “sword,” that of the *regnum* or king: the *arcana imperii*. Specifically, after anchoring the conceptual history of the *arcana imperii* in the theatricalities of the political history of Ancient Rome and in the *Odyssey* of Homer, the chapter traces Early Modern innovations to the *arcana imperii* through a specific instantiation in Early Modern drama. This instantiation is the cryptic, circulating letter in Marlowe’s *Edward II*, which contains a state secret and appears to implicate or kill

⁴⁰⁷ Peter Damian . The image of the “two swords,” one representing the power of the church and the other the power of worldly rulers, derives from a long commentary tradition on the *Kata Loukan Euangelion* (*Gospel of Luke*). After instituting the sacrament of communion at the Last Supper, Christ sets out for the Mount of Olives to pray, knowing he is about to be betrayed and eventually crucified. The disciples, and particularly St. Peter, approach Christ, “And they said, Lord, behold, here are two swords. And he said unto them, It is enough” (*Gospel of Luke* 22.38, οἱ δὲ εἶπαν Κύριε, ἰδοὺ μάχαραι ὧδε δύο. ὁ δὲ εἶπεν αὐτοῖς Ἰκανόν ἐστιν., transl. KJV.) The late antique and medieval commentators generally conclude that Christ intends to declare that all authority on earth (“it is enough”) falls under one of the two “swords,” namely the *sacerdotum* in the form of the church and the *regnum* in form of the divinely ordained worldly sovereign. The history of this political-theological discussion is treated at some length in Chapter 2.

everyone who handles it. That analysis paves the way for the argument of chapters 3 and 4, which begin with a discussion of Marlowe's *Doctor Faustus* and its emphasis on amassing knowledge at all costs before considering the contrast in Shakespeare's *Hamlet* between the Ghost's certainties and Prince Hamlet's doubts, the former exemplifying the *arcana imperii*, and the latter typifying the constant weighing of probabilities inherent in the modern concept of intelligence.

I. *Arcana Imperii: The Emperor and the Corpse*

As discussed in Chapter 2, the discourse of *mysterium* originates in the pneumatology of the Holy Ghost. The genealogies of the *arcana imperii*, meanwhile, found their origins in the ministrations of a far less salutary specter, albeit one that “shuffled off its mortal coil” only about a decade before the paraclete descended as a dove on the freshly baptized Jesus of Nazareth in the River Jordan.⁴⁰⁸ It is the ghost of Postumus Agrippa (12 BCE-14 CE), grandson of the Roman Emperor Octavianus Augustus (63 BCE-14 CE) and original “skeleton in the closet of power.”⁴⁰⁹

The state drama surrounding his murder is set against the backdrop of another demise, that of Augustus himself. Augustus appears to have been aware of the theatrical flavor surrounding the death of an emperor. In his *Lives of the Twelve Caesars*, Gaius Suetonius Tranquillus (69 CE-122 CE) records that when Augustus becomes aware that he is about to die, he dutifully preps for his final scene by adjusting his hair and then summons his circle of closest friends into his chamber at

⁴⁰⁸ *Gospel of Matthew* 3.16; *Gospel of Mark* 1.10; *Gospel of Luke* 3.22; *Gospel of John* 1.32.

⁴⁰⁹ Eva Horn, *Secret War*. Geoffrey Winthrop-Young, transl. Evanston, Ill.: Northwestern UP, 2013. 83.

his villa in Nola near Neapolis. His final question echoes the closing words of an actor exiting the stage: “Do you think that I have acted my part on the stage of life well?” Before they can answer, Augustus adds, in Greek verse, “If all be right, with joy your voices raise, / In loud applauses to the actor’s praise”⁴¹⁰ – or as the Latin aphorism was to become, *acta est fabula, plaudite*. With that, the frail Octavius breathes his last, the emperor apotheosizes, and Divus Augustus joins the Roman pantheon.

The establishment of his successor, meanwhile, takes the form of a plot worthy of Shakespeare. In Book 1.5 of his *Annales*, Publius Cornelius Tacitus (56-120 CE) describes the efforts of Augustus’ third and final wife, Livia Drusilla (58 BCE-29 CE), to install her son Tiberius Claudius Nero (42 BCE-37 CE), stepson to Augustus. According to Tacitus, Livia was famous for her seductive powers, her skill at court intrigue, and her taste for poisoning rivals, making her the first in the line of the Agrippinas; she was rumored to have had a hand in the murder or exiling of nearly all other heirs apparent. To achieve her goal, Livia had set watchmen around the Nola villa, to prevent the news of Augustus’ death from spreading before her son Tiberius could be recalled from self-imposed exile in Illyria. As soon as Tiberius did return, the Emperor’s death was publicly announced, and Tiberius was immediately proclaimed Augustus’ sole heir and master of the Roman state.⁴¹¹

⁴¹⁰ “Et admissos amicos percontatus, ecquid iis videretur minimum vitae commode transegisse, adiecit et clausulam: ἐπει δὲ πάνυ καλῶς πέπαισται, δότε κρότον / καὶ πάντες ἡμᾶς μετὰ χαρᾶς προπέμψατε.” Suetonius, *Divus Augustus*, 99, transl. Alexander Thomson, *Suetonius: The Lives of the Twelve Caesars*. Philadelphia: Gebbie, 1889. 97.

⁴¹¹ “Utrumque se ea res habuit, vix dum ingressus Illyricum Tiberius properis matris litteris accitur; neque satis conpertum est spirantem adhuc Augustum apud urbem Nola an exanimem repperit. Acribus namque custodiis domum et vias saepserat Livia, laetique interdum nuntii vulgabantur, donec provisus quae tempus monebat simul excessisse Augustum et rerum potiri Neronem fama eadem tulit.” Tacitus, *Annales* 1.5.

Livia's secrecy was necessary because Tiberius was not the only one with a legitimate claim to Augustus' inheritance – in fact, as the son of another man, whom Livia had divorced to become Augustus' wife, Tiberius' claim rested entirely on his adoption, on the favor shown to him through Augustus, and on the effective staging of the circumstances of succession. The rival and theoretically more obvious claimant was Augustus' biological grandson through his daughter Julia, Postumus Agrippa. Livia had attempted to see him off: according to Tacitus, she employed “secret intrigues” and finally her charms and “open suggestion” to persuade Augustus to make Tiberius a formal heir, while exiling Postumus Agrippa to the island of Planasia in the Tyrrhenian Sea, even though Postumus Agrippa had been “convicted of no gross offense.”⁴¹² In denying Postumus Agrippa access to the emperor during his final years and preventing him from lobbying for his inclusion in the will, this had put Postumus Agrippa *de facto* out of the running. However, Augustus had not, in the end, formally disinherited Postumus Agrippa *de jure*. After Augustus' death, Postumus Agrippa turns into a problem that has to urgently be dealt with. In his *Natural History*, Pliny the Elder calls Tiberius *tristissimum hominum* (“gloomiest of men” or “most unsociable of men”).⁴¹³ That epithet is well-earned in this case: spurred on by Livia, Tiberius turns to murder.

⁴¹² “Ut Agrippa vita concessit, Lucium Caesarem euntem ad Hispaniensem exercitum, Gaium remeantem Armenia et vulnere invalidum mors fato propra vel novercae Liviae dolus abstulit, Drusoque pridem extincto Nero solus et privignis erat, illuc cuncta vergere: filius, collega imperii, consors tribuniciae potestatis adsumitur omnisque per exercitum ostentatur, non obscuris, ut antea, matris artibus, sed palam hortatu. Nam senem Augustum devinxerat adeo, uti nepotem unicum, Agrippam Postumum, in insulam Planasiam proiecerit, rudem sane bonarum artium et robore corporis stolidum ferocem, nullius tamen flagitii conpertum.” Tacitus, *Annales* 1.3.

⁴¹³ Pliny the Elder, *Natural History* 28.5.

The killing of Postumus Agrippa becomes the astonishing inaugural act of Tiberius' reign. Tacitus closes Book 1.5 of the *Annales* with the announcement of Augustus' death, and without skipping a beat opens Book 1.6 with the sentence, "The first deed [*facinus*, "action, deed, crime"] of the new regime was the cutting down [*caedes*, "cut down, strike, murder"] of Postumus Agrippa." The murder was conducted by an assassin, a centurion *firmitus animo* ["of a firm mind"]. Evidently taken by surprise and unarmed, Postumus Agrippa fought back with his bare hands, so that the centurion killed him with difficulty, a gruesome, dragged-out death. When the first news of the killing reached Rome and the court, Tiberius pretended ignorance. He and Livia fostered rumors that the dying Augustus himself had ordered Postumus Agrippa killed, citing the late emperor's oft-stated distaste for his grandson, or that the centurion who had run Postumus Agrippa through with his sword had been a crazed man acting on his own accord. When, inconveniently, the centurion finally himself appeared to report *ut mos militia* ["according to the military code of conduct"] that he had successfully executed Tiberius' order, Tiberius denied that he had given any such order and declared that the crime would have to be accounted for before the Senate.⁴¹⁴ After all, Augustan Rome was still nominally a senatorial autocracy, governed by law,

⁴¹⁴ "Primum facinus novi principatus fuit Postumi Agrippae caedes, quem ignarum inermumque quamvis firmitus animo centurio aegre confecit. Nihil de ea re Tiberius apud senatum disseruit: patris iussa simulabat, quibus praescripsisset tribuno custodiae adposito ne cunctaretur Agrippam morte adficere quandoque ipse supremum diem explevisset. Multa sine dubio saevaue Augustus de moribus adulescentis questus, ut exilium eius senatus consulto sanciretur perfecerat: ceterum in nullius umquam suorum necem duravit, neque mortem nepoti pro securitate privigni inlatam credibile erat. Propius vero Tiberium ac Liviam, illum metu, hanc novercalibus odiis, suspecti et invisii iuvenis caedem festinavisse. Nuntianti centurioni, ut mos militiae, factum esse quod imperasset, neque imperasse sese et rationem facti reddendam apud senatum respondit." Tacitus, *Annales* 1.6.

and Roman sensibilities forbade that the emperor appeared to be acting like the despotic kings of old, who thought themselves unaccountable to the law.

It is at this moment that the *arcana imperii* enter legal discourse. The reasons are entirely pragmatic. The murder of Postumus Agrippa was necessary to preserve an orderly state under a firmly established legitimate rule that prevented any return to the chaos and slaughter of the Roman Republican civil wars, which a factional fight between the two contenders would inevitably have triggered. Meanwhile, the rule of law, the pieties of office, and the authority of the legal structures of Rome had to also be upheld, which precluded the emperor from ordering murder out of expediency, outside the law and the *mos maiorum*, the customs of the ancestors. Finally, as legitimate emperor, Tiberius could not be officially tied to a crime that according to Roman law warranted a death penalty.

The fear of judicial death also provided the motive for the man who proposed the concept of the *arcana imperii* as a solution: a lower-ranking official called Gaius Sallustius Crispus Passienus, grandnephew of the historian Sallust (86-35 BCE) and eventually stepfather to the later emperor Nero (37-68 CE). Tiberius had indeed issued no direct command to the centurion. His order had instead followed a logic of executive power, in that its route from Tiberius' stated intent to the sword-blade entering Postumus Agrippa's body followed a transmission from link to link along a chain of command, each implementing a necessary step from thought to action. Instead of issuing a public order, Tacitus explains, Tiberius had indicated his desire to see Postumus Agrippa dead to a *particeps secretorum* ["participant in the secret"], the self-same Passienus. Interpreting Tiberius desire as an implicit command, Passienus

had converted the desire into a political instruction, which he had passed on in a secret letter to the tribune in charge of the security of Postumus Agrippa on Planasia. The tribune remains unnamed, as does the centurion, emphasizing that both now serve entirely as functions in the logic of an executive task. As tribunes must upon receiving instructions from their civilian command, the tribune converts the instruction into a military order and selects the best centurion to carry out the covert mission. As centurions must upon receiving orders from their commanding officers, the centurion executes the mission. At the end of the process, to use today's evasive parlance of covert ops, the target Postumus Agrippa is first secured and then confirmed dead. Tiberius' intent and the centurion's actions converge in the moment Postumus Agrippa dies. The executive chain then loops back to its first link: the centurion reports to the sovereign that his mission has been accomplished. The arc of the plot closes.

When Tiberius denies having issued the order, Passienus panics. This structure of covert executive action has not just been ruthlessly effective in eliminating Postumus Agrippa. It has also ensured that no blame can attach itself to Tiberius. Even if the emperor might, in private, have mused about wishing his rival dead, he had neither killed him with his own hands nor ordered the centurion directly to do so. Since the conversation with Passienus occurred in secret, Tiberius can even claim that he did not explicitly tell Passienus to issue the instruction; that Tiberius was serious in his private musings was an interpretation on Passienus' part, who issued the instruction on his own accord. Passienus realizes, therefore, that a trial of the centurion before the Senate, as Tiberius suggests, would result in the centurion tracing his orders

to the tribune, and the tribune in turn ascribing his instructions to Passienus' letter, whose word would stand against that of the emperor.

In this moment, Passienus experiences the conundrum faced by every administrator of political secrets: as a *particeps secretorum*, his own testimony would concern words and actions that are by definition out of reach for the public, and therefore cannot be independently verified. This seals his fate, as Tacitus puts it, “whether he told the truth or lied.” As the man at the end of the paper trail, Passienus can either falsely confess to the Senate that the murder of Postumus Agrippa was indeed his own idea and face the legal consequences of homicide. Or else, Passienus could contradict the emperor, implicate Tiberius, and incur the emperor's lethal wrath. Either way, Passienus would be blamed, and forfeit his life.

Passienus arrives at a solution. As Tacitus tells it, he approaches Tiberius through Flavia and successfully proposes a new and pragmatic principle of Roman imperial governance. Rather than account for the murder of Postumus Agrippa in the open Senate, the emperor should claim the executive privilege not to divulge [*vulgare*, “let the commons share in”] the *arcana domus* [“secrets of his house”], nor the *consilia amicorum* [“counsel of his friends”], nor the *ministeria militum* [“services of his soldiers”], as this would “weaken the *vim* [“strength, vigor, virtue”] of the sovereign” and touch directly on the foundations of his sovereignty.⁴¹⁵

⁴¹⁵ “Quod postquam Sallustius Crispus particeps secretorum (is ad tribunum miserat codicillos) comperit, metuens ne reus subderetur, iuxta periculoso ficta seu vera promeret monuit Liviam ne arcana domus, ne consilia amicorum, ministeria militum vulgarentur, neve Tiberius vim principatus resolveret cuncta ad senatum vocando.” Tacitus, *Annales*, 1.6.

What might seem like a rather spurious argument to modern eyes is a clever one in the Roman context. Passienus' appeal to the *domus* is not coincidental. The Roman imperial power of Augustus that Tiberius inherited was not based on any abstract political constitution that clearly delineated the duties and powers of the office. Rather, the emperor's powers were inferred from a list of offices and titles conferred on him, over time and usually as rewards for certain achievements, by the *Senatus Populusque Romanus*, the Senate and the people of Rome. Augustus, for instance, had been named *princeps civitates* ["first citizen of the state"], *princeps senatus* ["first in the Senate"], permanent consul holding both the military *imperium* ["right to command"] and the right to appoint praetors as judges, chief judge of the highest court of appeals, and *pontifex maximus* ["chief priest"]. These titles and offices had made Augustus the ultimate authority over the four functions of the state: legislative, judicial, executive, and ritual. It had not relieved him of his accountability to the Senate and the people of Rome, however. Nor would Tiberius be.

Instead, Passienus' suggestion builds on another title of Augustus, *pater patriae*, "father of the country." The Roman *paterfamilias*, too, held the legislative, judicial, executive, and ritual authority over his *gens*, and the title *pater patriae* extends this domestic logic to the entire Roman state. Tiberius would be offered the same title by the Senate several times during his reign – when taking office; after the famine of 19 CE; after Sejanus, his fall; and after his reform acts of 33 CE – but declined it each time, as he also did with the title *imperator*, evidently both in deference to Augustus and to avoid any suspicion that he intended to reinstate the

much-reviled Roman monarchy.⁴¹⁶ Refusing the title *per se* does not, however, detract from the authority akin to a “father of the country” implied in the portfolio of real powers Tiberius wielded: he remained *pater patriae* in function if not in name.

As such, Tiberius’ role of emperor mirrored the divisions between his role as *princeps civitates*, which took place in the public political sphere, his role as a *paterfamilias*, whose role was to represent his *gens* in the public sphere but to rule it in the intrafamilial sphere, and his role as *dominus*, the absolute authority in his own household. The latter two are related but not identical. A single, extended *gens* could have only a single *paterfamilias*, but contain many adult male members and own many homes. Each home, however, was structured as a separate *domus*, or private sphere, to which the public had no access, in which the political sphere had no say, and over which the *dominus* of that specific home was the sole authority, accountable to no one else. Romans valued this distinction, as reflected in the commonly employed phrase *domi forisque* [“at home and outdoors”] to differentiate between domestic and official spheres.⁴¹⁷ Cicero laments in his fourth speech against Catilina that this distinction has come under threat, as “neither the Forum, in which all justice rests, ... nor the Senate, from where the security of all the peoples of the world is upheld... nor the home, every man’s refuge from the world, nor even the bed, the place of rest, has been free from plots and the risk of death.”⁴¹⁸

⁴¹⁶ Suetonius, *Divus Tiberius*, 26 & 67; Tacitus, *Annales*, 1.72 & 2.87; Cassius Dio, *Historiae Romanae*, 57.8, 58.12, & 58.22.

⁴¹⁷ Susan Treggiari, “Home and Forum: Cicero between ‘Public’ and ‘Private.’ *Transactions of the American Philological Association* 128 (1998). 1-23. 6.

⁴¹⁸ “Ego sum ille consul, patres conscripti, cui non forum in quo omnis aequitas continetur, non campus consularibus auspiciis consecratus, non curia, summum auxilium omnium gentium, non domus,

Accordingly, Passienus is making an argument about jurisdiction. When he suggests Tiberius refuse to divulge the goings-on within his household, his *arcana domus*, Passienus suggests that all actions at the emperor's court that include *participes secretorum* are not subject to the Senate because they properly belong to the jurisdiction of the private sphere, not the public sphere. The Roman laws regarding family and home derived not from formal jurisprudence but from the *mos maiorum* ["custom of the ancestors"]. The *mos maiorum* preceded the written law of the Twelve Tables, and derived its sacrosanct authority from the ancestral household gods, the *lares* and *penates*, and from the ancestral gods of the *gens*, the family. The *mos maiorum* allowed the *paterfamilias* to exercise complete authority over the lives of his biological and adopted children, as well as the lives of his siblings and their offspring. Apart from the regular duties and arrangements of the household, his authority included the right to sell any family member into slavery, approve or reject marriages, hold his entire extended family's property as if it were his own, take on debt in the family members' name, disinherit them, and indeed decide whether they were to live or to die, in theory if rarely in practice.

Immoderate action by a *paterfamilias* or *dominus* was beyond the reach of the laws of the Senate, and was supposed to be censured through social disapproval – by citizen-peers, which the Emperor by definition does not have, and by the public, which has no access to the internal workings of the emperor's *domus* as long as the *arcana* remain just that: secret. In regard to Postumus Agrippa, Passienus' case is aided by the

commune perfugium, non lectus ad quietem datus, non denique haec sedes honoris umquam vacua mortis periculo atque insidiis fuit." Cicero, *In Catilinam*, 4.2.

fact that Tiberius also assumed the role of the *paterfamilias* over the imperial family, and thus has complete authority over the fate of his step-nephew. Beyond shielding Tiberius from public scrutiny, this shift from the public to the private sphere also opened new possibilities for pragmatic, *ad hoc* executions of imperial decisions that might offend the Senate, while nevertheless remaining within the bounds of Roman law – as long as they touch on the person of the sovereign, his vim, or his vigor.

In a moment that foreshadows the incipient mathematics-infused concept of modern-day intelligence already inherent in the structures of the *arcana imperii*, Passienus employs a specific image in the conclusion of his plea to have the events surrounding the murder of Postumus Agrippa treated as a secret matter. As *dominus*, the emperor is the only one who can properly read and know all the ledgers concerning his own house, the contents of his treasure chest [*arca*, “strongbox,” from Greek, ἀρκέω, “sufficient, strong,” the root of *arcana*]. Passienus recasts this metaphor from the world of reckoning: “It is a precondition of empire that the *ratio* [“calculation, account”] can only add up correctly if the accounts have but a single reader,” the sovereign himself.⁴¹⁹ As all things concerning the *domus*, the *arcana* – that is, information figured as value – require an accounting of their role in the *οἶκος* [*oikos*, “household”], making them part of the imperial *oikonomia*. It is in that sense that the *arcana* must be positioned in the larger construct of sovereign authority, in the framework of the ontology of the state.

⁴¹⁹ “Eam condicionem esse imperandi ut non aliter ratio constet quam si uni reddatur.” Tacitus, *Annales* 1.6.

Passienus appears to have persuaded Tiberius. Moreover, the initially carefully delineated argument about *arcana domus* soon becomes refigured as the more expansive *arcana imperii*, which transfer the same accountability structure onto the emperor's relationship as the *paterfamilias* of all Rome. It is, in fact, Tiberius who coins the lexical phrase, *arcana imperii*. Several years after the murder of Postumus Agrippa has ceased to be a concern, Tiberius faces a minor political challenge from the senator Gaius Cestius Gallus (d. 67 CE), a man who is otherwise primarily known for his flagrant debauchery, exemplified by his habit of throwing parties featuring nude servant girls.⁴²⁰ Gallus attempts to persuade the emperor to govern more transparently, accountably, and predictably, by asking that Tiberius' appointments of executive officials should follow clearly defined term limits, that the number of public posts remain consistent, and that the names of the candidates not be announced *ad hoc* according to the emperor's whimsy, but rather all at once, annually, and well in advance of the appointment, so that the Senate might better review them. Tiberius cheerfully rejects the notion. To ask him to share his thoughts on candidates for executive positions in advance, he claims, would hamper his *vim imperii*,⁴²¹ his ability to act forcefully on behalf of the state, as needs dictate. In any case, as the state is like

⁴²⁰ "Cestio Gallio, libidinoso ac prodigo seni, olim ab Augusto ignominia notato et a se ante paucos dies apud senatum increpito cenam ea lege condixit, ne quid ex consuetudine immutaret aut demeret, utque nudis puellis ministrantibus cenaretur." Suetonius, *Divus Tiberius*, 42.

⁴²¹ "Tiberius tamen, quasi augetur potestas eius, disseruit: grave moderationi suae tot eligere, tot differre. vix per singulos annos offensiones vitari, quamvis repulsam propinqua spes soletur: quantum odii fore ab iis qui ultra quinquennium proiciantur? unde prospici posse quae cuique tam longo temporis spatio mens, domus, fortuna? superbire homines etiam annua designatione: quid si honorem per quinquennium agitent? quinquuplicari prorsus magistratus, subverti leges, quae sua spatia exercendae candidatorum industriae quaerendisque aut potiundis honoribus statuerint. favorabili in speciem oratione vim imperii tenuit." Tacitus, *Annales*, 2.36.

Tiberius' *domus*, and as *paterfamilias* his servants are his to appoint, Gallus' request is nothing but an attempt to account for the *ratio* of the *arcana imperii*,⁴²² which belong to the emperor alone. Tiberius will no longer permit such intrusions.

The *arcana imperii* subsequently became a legal principle of the Roman Empire, and of those states that built its laws on Roman example and crowned their kings in ceremonies echoing the ancient emperors. In regard to Early Modern Britain, James I.'s taste for antiquity-evoking royal processions and the significance of the attendant masques has already been extensively dealt with in the discussion of the *mysterium* in Chapter 2. The Roman *arcana imperii* were also on his mind. The doyen of the history of sovereignty as political theology, Ernst Kantorowicz, suggests that Tacitus was "known to scholarly James I,"⁴²³ not least because the king responds to his own versions of Gallus in Parliament in a fashion highly evocative of Tiberius: Parliament is not to "wade ... in the deepest mysteries of monarchy and politick government"⁴²⁴ or into "my Prerogative or mystery of State," and "none ... shall presume to meddle with anything concerning our government or mysteries of State,"⁴²⁵ since "that which concernes the mysterie of the Kings power, is not lawful to

⁴²² "Et certamen Gallo adversus Caesarem exortum est. Nam censuit in quinquennium magistratum comitia habenda, utque legionum legati, qui ante praeturam ea militia fungebantur, iam tum praetores destinarentur, princeps duodecim candidatos in annos singulos nominaret. Haud dubium erat eam sententiam altius penetrare et arcana imperii temptari." Tacitus, *Annales*, 2.36.

⁴²³ Ernst Kantorowicz, "Mysteries of State." *Harvard Theological Review* 48 (1955), 65-91. 68-69.

⁴²⁴ James I. of England, Scotland, & Ireland. "Proclamation Suppressing the 'Interpreter.'" Thomas P. Taswell-Langmead, ed. *English Constitutional History*. 2nd ed. London: Stevens & Haynes, 1881. 503 n1.

⁴²⁵ James I. of England, Scotland, & Ireland, "Letter to the Speaker of Parliament, 4 Dec. 1621." William Cobbett, ed. *Cobbett's Parliamentary History of England*, Vol. 1. London: Bagshaw, 1806. 1326-1327. 1326.

be disputed.”⁴²⁶ In fact, James I. discusses the *arcana imperii* in a large number of letters, speeches, and proclamations that stretch all the decades of his rule, making it a recognizable theme of Stuart British discourse.

It is thus no surprise that a search of the entire *Early English Books Online* catalogue only produces a single mention of the *arcana imperii* preceding James I.’s reign in England – and that in a commentary on Julius Caesar’s *De Bello Gallico*⁴²⁷ – whereas mentions proliferate once James takes the throne. John Donne, for example, defines the *arcana imperii* in his *Pseudo-Martyr* as:

by what meanes a Prince, or any Soveraigne state, may best exercise that power which is in them, and give least offence to the Subiects, and yet preserve the right and dignitie of that power ... And he shall certainly be frustrated of many iust and lawfull ends, if he discover the way by which he goes to them. And therefore these disguisings, and averting of others from discerning them, are so necessarie, that though, *In Genere rei*, they seeme to be within the compasse of deceite and falshood, yet the end, which is, maintenance of lawfull Authoritie, for the publike good, iustifies them so well, that the Lawyers abhorre not to giue them the same definition (with that Addition of publike good).⁴²⁸

⁴²⁶ James I. of England, Scotland, & Ireland, “A Speech in the Starre-Chamber, the XX of June Anno 1616.” Charles Howard McIlwain, ed. *Political Works of James I.* Cambridge, Mass.: Harvard UP, 1918. 333.

⁴²⁷ Clement Edmondès, *Observations upon the Five First Bookes of Caesars Commentaries ... De Bello Gallico.* London: Peter Short, 1600. 140.

⁴²⁸ John Donne, *Pseudo-Martyr.* London: Burre, 1610. 47-48.

Donne revisits the still recognizably Tacitean concept in his “Meditation X.” in *Devotions Upon Emergent Occasions*, where he compares his own body to a kingdom conquered by a disease that now rules it: “The disease hath established a kingdom, an empire in me, and will have certain *arcana imperii*, secrets of state, by which it will proceed and not be bound to declare them.”⁴²⁹ Other Stuart-era writers mention the *arcana imperii* in contexts as diverse as anti-Jesuit polemics,⁴³⁰ the necessary humility for reading the Bible,⁴³¹ and of course in support of James’ position on sovereign authority.⁴³²

Appropriately enough for a historian with theological interests, Kantorowicz provides a history of the *arcana imperii* that is heavily tied to the theology of the *mysterium*, and in particular the king’s “two bodies,” and historians of the concept usually follow suit.⁴³³ For the purposes of this dissertation, however, it is the relationship between the *arcana imperii* and Early Modern literature that matters most. Literary scholars have tied James I.’s view on the *arcana imperii* to his own self-portrayal as an actor on the stage in his own works on sovereignty, *Basilikon Doron* and *True Lawe*,⁴³⁴ or have focused on the satirical or critical portrayal of the king’s

⁴²⁹ John Donne, “10. Meditation.” *Devotions Upon Emergent Occasions*. London: Burre, 1624. 226-235. 234.

⁴³⁰ e.g. Peter Hay, *A Vision of Balaams Asse*. London: Bill, 1616. 102.

⁴³¹ e.g. Willem Teellinck, *The Ballance of the Sanctuarie*. London: Sheppard, 1621.74.

⁴³² e.g. John Fraser, *A Lerved Epistle*. Douai: Kellam, 1605. 12; Godfrey Goodman, *The Fall of Man*. London: Kyngston, 1616. 180.

⁴³³ Ernst Kantorowicz, *The King’s Two Bodies: A Study in Mediaeval Political Theology*. Princeton, N.J.: Princeton University Press, 1957.

⁴³⁴ Jonathan Goldberg, *James I. and the Politics of Literature*. Palo Alto, Calif.: Stanford UP, 1989. esp. 166.

insistence on the integrity of the *arcana imperii* in writers as diverse as Marston,⁴³⁵ Jonson,⁴³⁶ and, once again, Donne.⁴³⁷ None of these critiques appear to be particularly concerned with the ability of literature to mimetically portray the epistemological structures of the Early Modern *arcana imperii* themselves, however. It is to the tools for such an analysis that we will now turn.

II. The *Oikos* and the Arrow

The epistemological structures of the Early Modern *arcana imperii* can be most effectively excavated by focusing on three aspects suggested by the Postumus Agrippa plot. The first aspect is the relationship between the *arcana imperii* and the sphere of the *domus* in the form of the *oikonomia*, recalling Passienus' declaration that "It is a precondition of empire that the *ratio* can only add up correctly if the accounts have but a single reader."⁴³⁸ The second aspect is suggested by the particular plot structure of clandestine political murder, previously discussed in terms of the "chain of command," which requires, to borrow a phrase from Dryden, that "the Plots of their Plays [be] narrow, and the persons few."⁴³⁹ It also requires that each character's actions are figured as *intentional action without knowledge*: the characters proceed with a great deal of technical skill and *as if* motivated by a driving certainty, but the

⁴³⁵ Linda Levy Peck, "John Marston's *The Fawn*." David L. Smith, Richard Strier, & David Bevington, eds. *The Theatrical City*. Cambridge: Cambridge UP, 1995. 117-136. 126.

⁴³⁶ Glenn A. Odom, "Jacobean Politics of Interpretation in Jonson's *Masque of Blacknesse*." *Studies in English Literature, 1500-1900*. 51.2 (Spring 2011), 367-383.

⁴³⁷ Michael W. Price, "Recovering Donne's Critique of the *Arcana Imperii* in the *Problems*," *Studies in Philology* 101.3 (Summer 2004), 332-355.

⁴³⁸ Tacitus, *Annales* 1.6.

⁴³⁹ John Dryden, *Of Dramatick Poesie, An Essay*. London: Herringman, 1668. 20.

source of that certainty for that particular character is impossible to immediately discern, and is certainly not made explicit in some moment of self-disclosure, as one might expect, for example, from the closely related revenge plot. Rather than clarify the motivational subtext, the actions in fact seem to obfuscate them and render them arcane.

Consequently, the third defining aspect of the plots associated with the *arcana imperii* is a dislocation of the effect of the action on the major characters. In his discussion of μύθος [*mythos*, “plot”] in the *Poetics*, Aristotle suggests that the plot’s σύνθεσιν τῶν πραγμάτων [*systasis ton pragmaton*, “chain of events”]⁴⁴⁰ should allow characters to come to the fore by facing περιπέτεια [*peripeteia*, “reversal”] and ἀναγνώρισις [*anagnorisis*, “recognition”].⁴⁴¹ However, in the plots associated with *arcana imperii* this is not straightforwardly the case: neither the driving force Tiberius nor the victim Postumus Agrippa face particularly telling reversals that reveal or shape their character. Whereas Tiberius’ involvement in the plot appears to be that of an inscrutable cipher who faces no reversals at all, Postumus Agrippa’s rather final reversal, his death struggle, demonstrates nothing about him except that he desires not to die. Reversals are experienced only by characters *within* the chain of events, namely Passienus and the anonymous centurion. (This may give us a hint as to why so much modern espionage fiction focuses on the operational struggles of the assassin of the Bond-and-Bourne type, and not on the complexity of the characters pulling the strings.) Rather, the plot structure of covert killing associated with the *arcana imperii*

⁴⁴⁰ Aristotle, *Poetika* 1450a.

⁴⁴¹ Aristotle, *Poetika* 1452a.

focuses on the relationship between the act of targeting, its execution, and its τέλος [*telos*, “purpose”], which those in the chain of events experience as “the slings and arrows of outrageous fortune,” a feature best explicated through an exemplary literary string-pulling: the archery of *Odysseus*.

The relationships between the *oikonomia* of the *ratio* of state and the *arcana imperii* became prevalent during the Early Modern period. In his widely read *De Arcanis Rerum Publicarum* (1605),⁴⁴² for instance, Arnold Klapmeier (1574–1604) defines the term after a lengthy discussion of Tacitus as “machinations or hidden councils for conserving the present order of the state, in which one thing is done, but another is simulated,”⁴⁴³ and characterizes the *arcana imperii* in terms of the royal treasury: “Just as the empire is like to an *arca* [treasure chest, strongbox] or citadel, the *arcana imperii* are like to walls and ramparts which protect this ark from the ill intentions of the seditious.”⁴⁴⁴ The English royalist theorist Robert Filmer (1588-1653) in his *Patriarcha*, too, evokes the language of treasure and of skilled household management when he discusses “*Arcana Imperii*, or Cabinet Counsels, [which] the Vulgar may not pry into... [as] the Causes and Ends of the greatest politique Actions and Motions of State dazle the Eyes, and exceed the Capacities of all men, save only those that are hourly versed in the managing of Publique Affairs.”⁴⁴⁵

⁴⁴² Arnoldus Clapmarius, *De Arcanis Rerum Publicarum*. Amsterdam: Ludovicum Elzevirium, 1641. Original: 1605.

⁴⁴³ “Machinationem sive occulta consilia conservandae praesentis Reipublicae quibus aliud agitur, aliud simulatur agi.” Clapmarius, *De Arcanis Rerum*, 21.

⁴⁴⁴ “Ius enim imperii est instar arcis vel palatii, arcana vero imperii sunt veluti muni ac propugnacula sive cuniculi qui hanc arcem a factiosorum iniuriis defendunt.” Clapmarius, *De Arcanis Rerum*, 21.

⁴⁴⁵ Robert Filmer, *Patriarcha, or the Natural Power of Kings*. London: Davis, 1680. 5.

In more recent discourse, the key thinker on the relationship between the *ratio* of state and *oikonomia* is Giorgio Agamben, particularly in his *The Kingdom and the Glory*,⁴⁴⁶ part of his *Homo Sacer* series. Agamben presents the *oikonomia* as interrelated with the general problem of political theology:

Two broadly speaking political paradigms, antinomical but functionally related to one another, derive from Christian theology: political theology, which founds the transcendence of sovereign power on the single God, and economic theology, which replaces this transcendence with the idea of an *oikonomia*, conceived as an immanent ordering – domestic and not political in a strict sense – of both divine and human life.”⁴⁴⁷

Throughout his *Homo Sacer* series, Agamben recalls the distinction within political theology between two *logoi*: the ontological, which is a *logos* of immutable one-ness on which the concept of God's sovereignty rests (and by extension, that of divinely appointed kings); and the economical, which is a *logos* of interaction with the world, of the way in which God governs the kingdom of God (and by extension, the kingdom of earthly kings), which appears to work mysteriously and apparently disconnectedly from the ontological. Agamben notes that “Theologians distinguish between a general providence, which establishes the universal laws ... and [particular providence,] that is entrusted to the angels or to the mechanisms of immanent and secondary causes and

⁴⁴⁶ Giorgio Agamben, *The Kingdom and the Glory*. Palo Alto, Calif.: Stanford UP, 2011; Giorgio Agamben, *Il Regno e la Gloria*. Vicenza: Neri Pozza, 2007.

⁴⁴⁷ Agamben, *Kingdom*, 1. “Una delle tesi che essa cercherà di dimostrare è che dalla teologia cristiana derivano due paradigmi politici in senso lato, antinomici ma funzionalmente connessi: la teologia politica, che fonda nell'unico Dio la trascendenza del potere sovrano, e la teologia economica, che sostituisce a questa l'idea di un' *oikonomia*, concepita come un ordine immanente – domestico e non politico in senso stretto – tanto della vita divina che di quella umana.” Agamben, *Regno*, 13.

they will call this execution, *executio*. So the machine of the divine government is a general law and execution.”⁴⁴⁸

The consequence is, Agamben explains, on the one hand, the old formula: “the king reigns, but he does not govern.”⁴⁴⁹ Others do this for him. When they do, when both the ontological and economical components of sovereignty are met, then government works, and the state survives. But: “A government is possible only if the two aspects are coordinated in a bipolar machine. So I will define government as when you have the coordination of these two elements. General law and an execution, general providence and particular providence.”⁴⁵⁰ This bipolar machine, however, must negotiate between the *potentia* and the *potestas*: “If they are completely divided, no government is possible. There would be on the one hand an almighty sovereign who is effectively impotent, and on the other, the chaotic mess of the particular acts of interventions of governance.” Consequently, so Agamben, “the history of western politics is precisely the history of the various changing articulations ... of these two poles of power: Reign and Government; Sovereignty and Economy.”⁴⁵¹

Agamben’s point here echoes that of another leading theologian of Two Swords theory, Gelasius I. (d. 496 CE). Generally, late antique and medieval Two

⁴⁴⁸ Giorgio Agamben, “The Power and the Glory.” 11th B.N. Ganguli Memorial Lecture, 11 January 2007.

⁴⁴⁹ Agamben, *Kingdom*, 71-72 & 84. “Regna, ma non governa,” Agamben, *Regno*, 84. See also William James Durant, *The Story of Philosophy*. London: Ernest Benn, 1947. 80.

⁴⁵⁰ Agamben, “Glory.”

⁴⁵¹ *Ibid.*

Swords theory rested on three sets of passages contained in the Christian scriptures.⁴⁵² The first is Jesus of Nazareth's command to "render ... unto Caesar the things that are Caesar's; and unto God the things that are God's."⁴⁵³ The second is Paul of Tarsus' closely aligned view in the *Epistle to the Romans* that Christians should "render therefore to all their dues: tribute to whom tribute is due; custom [τέλος, *telos*] to whom custom [τέλος]; fear to whom fear; honor to whom honor."⁴⁵⁴ The third is Paul's placement of Christ "for ever after the order of Melchizedek"⁴⁵⁵ in the *Epistle to the Hebrews*; later commentators took this to mean that Christ was to be viewed as a spiritual authority in the tradition of the Jewish Levites, who derived their lineage from the ancient priest of Salem, Melchizedek.⁴⁵⁶ Gelasius writes to the Byzantine Emperor Anastasius I. Dicoros (431-518 CE) to explicate the implications of these source texts for the relationship between the church and the state and their respective spheres of authority.

In his letter titled *Duo Sunt*,⁴⁵⁷ Gelasius draws a dividing line between the two powers. He writes,

⁴⁵² Philip L. Reynolds, "The Medieval Period: The Division of Powers," in Brent A. Strawn, ed. *The Oxford Encyclopedia of the Bible and Law*. Oxford: Oxford UP, 2015. Online. DOI: 10.1093/acref:obso/9780199843305.001.0001.

⁴⁵³ "Ἀπόδοτε οὖν τὰ Καίσαρος Καίσαρι καὶ τὰ τοῦ Θεοῦ τῷ Θεῷ," transl. KJV. *Gospel of Matthew* 22.21.

⁴⁵⁴ "ἀπόδοτε πᾶσιν τὰς ὀφειλάς, τῷ τὸν φόρον τὸν φόρον, τῷ τὸ τέλος τὸ τέλος, τῷ τὸν φόβον τὸν φόβον, τῷ τὴν τιμὴν τὴν τιμὴν," transl. KJV. *Epistle to the Romans* 13.7.

⁴⁵⁵ "καθὼς καὶ ἐν ἑτέρῳ λέγει Σὺ ἱερεὺς εἰς τὸν αἰῶνα κατὰ τὴν τάξιν Μελχισέδεκ," transl. KJV. *Epistle to the Hebrews* 5.6. See also *Hebrews* 5-7, *passim*.

⁴⁵⁶ *Genesis* 14.8; *Psalms* 110.4.

⁴⁵⁷ *Duo Sunt*, alias "Epistola 12: Famuli Vestrae Pietatis" in Andreas Thiel, ed. *Epistolae Romanorum Pontificum Genuinae*, Vol. 1. Brunsberg: Eduard Peter, 1867. 349-358.

There are two, august Emperor, by which this world is principally ruled: the sacred authority [*auctoritas sacra*] of the priests and the power of the kings [*regalis potestas*]. Of these, that of the priests [*sacerdotum*] is weightier, since they have to render an account for even the kings of men in the divine judgment [*ratio*]. ... Truly, if they, recognizing the supremacy [*imperium*] granted you from heaven [*superna dispositione*] in matters affecting the public order [*publica disciplina*], obey your laws, unless they otherwise might obstruct the course of secular affairs by irrelevant considerations, with what readiness, I ask you, should you not yield them obedience to whom is assigned the dispensing of the sacred mysteries?"⁴⁵⁸

While Gelasius' letter is more straightforwardly read as a negative delineation of authority that prevents secular forces and religious forces from meddling in each others' affairs, Agamben explains that it was later understood as a positive statement regarding the type of authority each wields. Agamben paraphrases Gelasius' text, "the world is governed through the coordination of two principles, the *auctoritas* (that is, a power without actual execution) and the *potestas* (that is, a power that can be exercised); the Kingdom and the Government."⁴⁵⁹ According to Agamben, "what is

⁴⁵⁸ "Duo quippe sunt, imperator auguste, quibus principaliter mundus hic regitur: auctoritas sacra pontificum, et regalis potestas. In quibus tanto gravies est pondus sacerdotum, quanto etiam ipsis regibus hominum in divino reddituri sunt examine rationem. ... Si enim, quantum ad ordinem pertinet publicae disciplinae, cognoscentes imperium tibi superna dispositione collatum, legibus tuis ipsi quoque parent religionis antistites, ne vel in rebus mundanis exclusae videantur obviare senentiae; quo, oro te, eis obedire, qui praerogandis venerabilibus sunt attributi mysteriis?" Thiel, *Epistolae*, 451.

⁴⁵⁹ Agamben, *Kingdom*, 103. "Il mondo è governato attraverso la coordinazione di due principi, l'*auctoritas* (cioè un potere senza esecuzione effettiva) e la *potestas* (cioè un potere di esercizio) – il Regno e il Governo." Agamben, *Regno*, 118.

primarily at stake ... is guaranteeing the possibility of the government of men,” where the *auctoritas* “must immediately distinguish itself from its actual exercise (its *executio*), which then constitutes the secular.”⁴⁶⁰ *Oikonomia* is the mechanism by which the *executio* functions.

In the second chapter of *The Kingdom and the Glory*, Agamben derives this particular view of *oikonomia* from the Aristotelian tradition. As Agamben explains, Aristotle’s conception of an *oikonomia* refers to the administration of a household [*oikos*], “a complex organism composed of heterogenous relations,” which are “linked by a paradigm that we could define as ‘administrative,’ and not epistemic.” Instead, “Aristotle writes that ‘the term “head of the family” [δεσπότης, *despotes*, Latin: *dominus*] does not refer to a science [ἐπιστήμη, *episteme*] but to a certain way of being.” As such, “this activity ... implies decisions and orders that cope with problems that are each time-specific and concern the functional order (τάξις, *taxis*, Latin: *dispositio*) of the different parts of the *oikos*.”⁴⁶¹ Agamben compares Aristotle’s conception with that of Xenophon in his *Oikonomikos*, in whose conception *oikonomia* “not only has to do with the need and use of objects, but, first and foremost, with their ordered arrangement (*peri ...taxeos skeuon*),” and who “defines this activity

⁴⁶⁰ Agamben, *Kingdom*, 103. “Questa possibilità esige che venga presupposta una *plenitude potestatis*, che deve, però, separare immediatamente da sé il suo esercizio effettivo (la *executio*), che va a costituire la spada secolare.” Agamben, *Regno*, 118.

⁴⁶¹ Agamben, *Kingdom*, 17-18; Aristotle, *Politika* 1253-1259. “Ciò che unisce queste relazioni ‘economiche’ ... è un paradigma che si potrebbe definire ‘gestionale’ e non epistimico: si tratta, cioè, di un’attività che non è vincolata a un sistema di norme né costituisce una scienza in senso proprio (‘Il termine “capofamiglia” [*despotes*]’, scrive Aristotele, ‘non denota una scienza [*epistemen*], ma un certo modo di essere’ ...), ma implica decisioni e disposizioni che fanno fronte a problemi ogni volta specifici, che riguardano l’ordine funzionale (*taxis*) delle diverse parti dell’*oikos*.” Agamben, *Regno*, 31.

or ordered administration as ‘control’ (*episkepis*, from which derives *episkopos*, ‘superintendent,’ and, later, ‘bishop’).” Consequently, “*oikonomia* is presented here as a functional organization, and administrative activity that is bound only to the rules of the ordered function of the house (or of the company in question).”⁴⁶²

This sense of *oikonomia* – as a way of being (Aristotle), and as an ordering activity (Xenophon) – is then, by analogical extension, applied to the human body in the Hippocratic corpus, where it “designates the set of practices and apparatuses that the doctor needs to implement with the patient.”⁴⁶³ Meanwhile, Stoics like Chrysippus apply it more generally to “express the idea of a force that regulates and governs the whole from the inside,”⁴⁶⁴ and the fourth-century Gnostic *Acts of Thomas* ascribes that type of *oikonomia* to God as “providing for the needs of life,” in its paraphrase of “your heavenly Father feeds [the birds of the sky].”⁴⁶⁵

Agamben then turns to the analogical adaptation of the term *oikonomia* to the field of rhetoric, where Quintilian’s *oeconomia* “designates the ordered arrangement of the material of an oration or a treatise,”⁴⁶⁶ a term Cicero translates into Latin as *dispositio*.⁴⁶⁷ Agamben points out that “economy is, however, more than a mere arrangement [*disposizione*], since it implies, above and beyond the ordering of the

⁴⁶² Agamben, *Kingdom*, 18; Xenophon, *Oikonomikos*, 8.15-23, here 23: “περὶ ... τάξεως σκευῶν.”

⁴⁶³ Agamben, *Kingdom*, 19; Hippocrates, *Epidemika* 6.2.24.

⁴⁶⁴ Agamben, *Kingdom*, 19; Chrysippus, frags. 178 & 978.

⁴⁶⁵ Agamben, *Kingdom*, 10; *Kata Thoman Euangelion* 1.28; *Kata Matthaion Euangelion* 6.26.

⁴⁶⁶ Agamben, *Kingdom*, 19; Quintilian, *Institutio Oratoria* 3.3.9: “Hermagoras iudicium, partitionem, ordinem, quaeque sunt elocutionis, subiicit oeconomiae, quae Graece appellata ex cura rerum domesticarum et hic per abusionem posita nomine Latino caret.”

⁴⁶⁷ Cicero, *De Inventione* 1.9.

themes (*taxis*), a choice (*diairesis*) and an analysis (*exergesia*) of the topics,”⁴⁶⁸ which Longinus calls the “whole texture of the composition.”⁴⁶⁹ Agamben concludes that “it is on this basis that, in the Christian age, the term *oikonomia* ... would acquire the meaning of a ‘divine plan of salvation’ (with particular reference to Christ’s incarnation).”⁴⁷⁰

In a turn to political theology, Agamben notes that Pauline theology in particular echoes these concepts of *oikonomia* in describing the church in “the language of domestic administration: *doulos* (“slave”), *hyperetes*, *diakonos* (“servant”), *oikonomos* (“administrator”),” and even “Christ himself ... is always defined with the term that designates the master of the *oikos* (that is, *kyrios*, or *dominus* in Latin).”⁴⁷¹ It is Philo of Alexandria and the Stoics who intertwine the idea of the *oikos* as household directly to the *polis*, defining it as “a *polis* on a small and contracted scale” and economy as “a contracted *politea*,” whereas the *polis* is a “large house [*oikos megas*]” and politics “a common economy.”⁴⁷² Agamben concludes: “The modern metaphor of the political community as a ‘house’ – ‘the house of Europe’ – here finds its archetype.”⁴⁷³

⁴⁶⁸ Agamben, *Kingdom*, 19.

⁴⁶⁹ Agamben, *Kingdom*, 20; Longinus, *Peri Hypsous*, 1.4.

⁴⁷⁰ Agamben, *Kingdom*, 20.

⁴⁷¹ Agamben, *Kingdom*, 24.

⁴⁷² Agamben, *Kingdom*, 24; Chrysippus frag. 323; Philo, *De Iosepho* 438: “ἔδει γάρ τον μέλλοντα ἐσεσθαι πολιτικόν ἐγγυμνάσασθαι καὶ ἐνασκηθῆναι πρότερον τοις κατ οἰκονομίαν οικία τε γάρ πόλις ἐστιν ἐσταλμένη και βραχεία και οικονομία συνηγμένη τις πολιτεία, ὡς και πόλις μὲν οἶκος μέγας, πολιτεία δέ κοινή τις οικονομία.”

⁴⁷³ Agamben, *Kingdom*, 24-25.

Finally, Agamben connects *oikonomia* with Trinitarian thought. Tertullian, in his *Treatise Against Praxeas*, uses the concept of *oikonomia*, tied to sovereignty, in order to defend the doctrine of the Trinity. Agamben cites a passage that “is interesting since it contains a sort of theological paradigm of administration, which finds its perfect exemplum in the angelical hierarchies.”⁴⁷⁴ In the passage, Tertullian explains that “simple people... shy at the economy” when they are told by the Rule of Faith that “they must believe in one only [God] yet ... believe in him along with his *oikonomia*.” Tertullian observes that this is because they falsely assume that “the plurality and ordinance [*dispositio*] of trinity is a division of unity,” whereas in truth “a unity which derives from itself a trinity is not destroyed but administered by it.”⁴⁷⁵ This, for Agamben, is “the articulation of economy and monarchy in the figure of the administration.”⁴⁷⁶ Tertullian goes on to claim that “no kingdom is in such a sense one man’s own, in such a sense single, in such a sense a monarchy, as not to be administered also through those other closely related persons whom it has provided for itself as officers [*officiales*].” While, so Tertullian, the monarchy “does not cease to be a monarchy, if the son also is assumed as partner in it,” then “also the divine monarchy is administered by the agency of so many legions and hosts of angels.”⁴⁷⁷

⁴⁷⁴ Agamben, *Kingdom*, 42.

⁴⁷⁵ Agamben, *Kingdom*, 42. Tertullian, *Adversus Praxean*, 3.1: “Simplices enim quique, ne dixerim imprudentes et idiotae, quae maior semper credentium pars est, quoniam et ipsa regula fidei a pluribus diis saeculi ad unicum et verum deum transfert, non intellegentes unicum quidem sed cum sua oeconomia esse credendum, expavescent ad oeconomiam. numerum et dispositionem trinitatis divisionem praesumunt unitatis, quando unitas ex semetipsa derivans trinitatem non destruat ab illa sed administretur.”

⁴⁷⁶ Agamben, *Kingdom*, 42.

⁴⁷⁷ Agamben, *Kingdom*, 42; Tertullian, *Adversus Praxean*, 3.2-5.

Agamben declares that Tertullian institutes “with a quasi-Kafkian move ... a correspondence between angels and officers.”⁴⁷⁸ Thus, so Agamben, Tertullian makes a connection between the Trinity, monarchy, and administration “to demonstrate the necessary compatibility of monarchy and economy.”⁴⁷⁹ It is a motif, so Agamben, that echoes Aristotle’s opening claim to his *Economics*: “Politics is a poliarchy, economics is a monarchy.”⁴⁸⁰

Throughout the rest of his book, Agamben develops his theory that glory, created by external actions like prayer, liturgy, and acclamation (the *oikonomia*), reconciles the two forms of trinity, by pointing towards an empty throne (the inexpressible sovereign). According to Agamben, the reliance on *oikonomia* to defend the concept of the Trinity led to its being “so tenacious that it can be recovered in modern theologians in the guise of the opposition between immanent and economic Trinity,” that is, “God as he is in himself ..., the Trinity of substance” and “God in his salvific action ..., the Trinity of revelation,” two Trinities that are “different and inseparable at the same time... a bipolar machine.”⁴⁸¹

If, then, the *arcana imperii* have an *oikonomia*, which can be accounted for and whose *ratio* can be read by the sovereign, then its currency must be what has been locked away: secrets that cannot be spoken about, but which must not be forgotten. These secrets take the form of narratives, and those narratives follow the particular

⁴⁷⁸ Agamben, *Kingdom*, 43.

⁴⁷⁹ *Ibid.*

⁴⁸⁰ Agamben, *Kingdom*, 43; Aristotle, *Oikonomika* I.1343a: “ἡ οἰκονομικὴ καὶ πολιτικὴ διαφέρει οὐ μόνον τοσοῦτον ὅσον οἰκία καὶ πόλις ταῦτα μὲν γὰρ αὐταῖς ἐστὶ τὰ ὑποκείμενα, ἀλλὰ καὶ ὅτι ἡ μὲν πολιτικὴ ἐκ πολλῶν ἀρχόντων ἐστίν, ἡ οἰκονομικὴ δὲ μοναρχία.”

⁴⁸¹ Agamben, *Kingdom*, 62.

plot type of the *arcana imperii*, which focuses on the act of targeting, and of the “securing” of the target. In his *Poetics*, Aristotle writes of the increasing tension that drives the plot as δέσις [*desis*, “tying together”], the moment of release as μετάβασις [*metabasis*, “change, transition”], and the resolution of that tension as λύσις [*lisis*, “untying”], which leads to the plot’s end, its τέλος [*telos*].⁴⁸² In the plots associated with the *arcana imperii*, the nature of that *desis* is concentrated into a single act: targeting, in the interest of the preservation of the sovereign. The setting in motion of the action against the target constitutes the *metabasis*. The actions leading from that moment to the *telos*, the “securing” of the target, and possibly its death, is figured as a series of inevitable events releasing that tension, the *lisis*. It is thus no stretch to turn to the metaphor of archery – which creates tension by pulling back the string, a change by the release of the string, and a release of the tension in the flight of the arrow that finds its target – to further explicate the particularities of this concept.

The theorist who provides the most appropriate contemporary account of such a “militarization of thinking” is Samuel Weber in the essay collection *Targets of Opportunity*. Weber’s essay “Networks, Netwars, and Narratives” made a brief appearance in Chapter 1 of this dissertation, where it contributed the observation that the logic of networks differs from the logic of hierarchical organizations in that networks replace the pyramid structure often imagined in terms of a Euclidean triangle with a nodal structure that “may sometimes appear acephalous (headless), and at other

⁴⁸² “ἔστι δὲ πάσης τραγωδίας τὸ μὲν δέσις τὸ δὲ λύσις, τὰ μὲν ἔξωθεν καὶ ἔνια τῶν ἔσωθεν πολλάκις ἢ δέσις, τὸ δὲ λοιπὸν ἢ λύσις: λέγω δὲ δέσιν μὲν εἶναι τὴν ἀπ’ ἀρχῆς μέχρι τούτου τοῦ μέρους ὃ ἔσχατόν ἐστιν ἐξ οὗ μεταβαίνει εἰς εὐτυχίαν ἢ εἰς ἀτυχίαν, λύσιν δὲ τὴν ἀπὸ τῆς ἀρχῆς τῆς μεταβάσεως μέχρι τέλους.” Aristotle, *Poetika* 1455b.

times polycephalous (hydra-headed).”⁴⁸³ With apologies to Weber and his marked preference for referencing the *Odyssey*, if networks recall the acephalous Charybdis and the polycephalous Scilla, the question of targeting might be called *polyphemous*: its conceptualization relies on imagining a single eye fixed entirely on the object of its lethal desire.

The focus in this chapter is on Weber’s essay “A Rather Singular Strike,” which provides another salient insight derived from the *Odyssey*. Weber begins with an etymological observation: the *Oxford English Dictionary* derives the word “target” from the Germanic root *targa*, which paradoxically means “shield.”⁴⁸⁴ The act of targeting someone is thus figured defensively; in the context of the *arcana imperii*, this expresses the categorization of targeting in terms of the security of the state. Moreover, Weber points out that the language surrounding military targeting is frequently derived from the metaphor of the archer taking aim at an object, whether on the hunt or during war. The taking aim, or intention to strike the target, requires a tension, both in “tending” to the target and “holding” it, and indeed, in holding the bowstring before releasing it. Weber relies on another etymological connection – that between “tension” and “intentionality” – to categorize targeting as a phenomenological mode, of the type that in modernity has come to “define the structure of consciousness.”⁴⁸⁵ When that phenomenological structure is appropriated

⁴⁸³ Samuel Weber, *Targets of Opportunity: On the Militarization of Thinking*. New York: Fordham UP, 2005. 99.

⁴⁸⁴“target, n.1.” *OED Online*. July 2018. Oxford University Press.
<http://www.oed.com/view/Entry/197836> (accessed November 17, 2018).

⁴⁸⁵ Weber, vii-viii.

in covert military contexts, the language barely shifts: in order for a “mission” to be successful, the target “would have to be *identified and localized, named and depicted*, in order to be made into an accessible target, susceptible of destruction.” As in hunting contexts, this requires the seizing of an opportunity as it presents itself, and acting expediently as events unfold.⁴⁸⁶ In this sense, the language of targeting shares conceptual space with the various definitions of “intelligence” as a knowledge-form, in which one distinction between intelligence and other forms of information is inevitably that intelligence is provisional, contingent, and tied to a cycle of tactical action (see Introduction). As the form of political secrecy most closely associated with targeting, the *arcana imperii* thus function with a cognitive depth that the other forms of secrecy familiar during the Early Modern period do not: the performative *mysterium* emphasizes disclosure of the fact that it exists but does not share its content, and the administrative *secretum* emphasizes the nature of access, of who may or may not read the secrets. The *arcana imperii*, meanwhile, exist as an economy of action that is meant to never be observed at all.

Weber gives some humanistic breadth to this discussion of targeting by examining two instances in Greek philosophy and literature, respectively, that make use of the bowman metaphor. The first is the *Hippias Minor* of Plato, in which Socrates asks Hippias whether it is better for an archer to have the type of mind that voluntarily misses its mark, or does so involuntarily.⁴⁸⁷ Socrates does so in the context

⁴⁸⁶ Weber, 4.

⁴⁸⁷ τί δὲ δὴ; ἀνθρώπου ψυχὴν ἐκτῆσθαι τοξότου ἄμεινόν ἐστιν, ἥτις ἐκουσίως ἀμαρτάνει τοῦ σκοποῦ, ἢ ἥτις ἀκουσίως, Plato, *Hippias Minor*, 375a-b.

of a larger conversation about justice, which turns on the question whether skillful liars, like Odysseus or Achilles in the *Iliad* for example, can be considered wise. Hippias thinks not, but Socrates argues that justice requires both power and knowledge, and the most powerful and most knowledgeable person should therefore be the wisest man to dispense it. The ability to lie successfully, meanwhile, requires the skill of a powerful mind and a deeper knowledge of the situation than the person who is being deceived, so the liar is in fact wiser, and more capable of being just. That is because the mind that “errs voluntarily” (i.e. deceives) is a better mind than the one which errs “involuntarily,” due to lack of power or knowledge. This, so Socrates, is the lesson from archery.⁴⁸⁸ Weber concludes: “The activity of the mind, thinking is ... the archer. ... Thinking is hitting the mark, making the point: targeting.”⁴⁸⁹

Archery is useful for Weber because of its history as an extended metaphor that goes well beyond this less well-known Platonic dialogue. After all, the Greek word for the well-directed flying of the arrow at its mark is *τέλος* [telos]. Weber cites Jean-Luc Nancy’s essay “Dies Irae,”⁴⁹⁰ who recalls the Stoic distinction between *skopos*, the target [*la cible*], which is “the goal presently and clearly offered to an intention” [*une visée*, from Latin *visere*, “to see”], and the *telos*. The *telos*, so Nancy, is the “fulfillment of an action or of a process,” which differs from the *skopos*: “the fruit is not the target of the tree, any more than the target is the fruit of the archer.” In

⁴⁸⁸ καὶ ψυχή ἄρα ἀκουσίως ἀμαρτάνουσα πονηροτέρα ἢ ἐκουσίως; ἐν τοξικῇ γε. Plato, *Hippias Minor*, 375b.

⁴⁸⁹ Weber, viii.

⁴⁹⁰ Jean-Luc Nancy, “Dies Irae.” *La Faculté de Juger*, Jacques Derrida et al., eds. Paris: Editions de Minuit, 1980.

fact, “*skopos* is the draw of the bow, *telos*, life and death.”⁴⁹¹ Weber makes an elegant leap: “*Skopos* is already, tendentially, the *tele-scope*, since ‘the one who aims’ is also ‘the one who surveys.’ To survey ... is to command at a distance.”⁴⁹² For the purposes of this dissertation, which deals with espionage and intelligence, it is worth pointing out an additional meaning of *skopos*: completely in accord with Weber’s analysis, σκοπός can also mean “spy.”⁴⁹³

To recall Tiberius’ opening act in the long history of the *arcana imperii*, then: From a position of greater power and greater knowledge, the sovereign sees the opportunity to fix the *visée* from a distance through his intension, which implies the desirable *telos*. But neither the reading of that intension as genuine command, the fixing of the *skopos*, the tension inherent in realizing the *telos*, nor the final striking of the target Postumus Agrippa are the Emperor’s own actions. In fact, the Emperor feigns ignorance about the consequences of his desire, thus meeting Socrates’ definition for a just actor according to the *Hippias Minor*. Nor is this a blatant lie: the Emperor witnesses nothing about the route that his desire takes, and therefore cannot *know* that this death was the effect of a dynamic the Emperor himself caused. As far as Tiberius is concerned, Postumus Agrippa could well have been fortuitously murdered by someone else, for other reasons entirely, at just the time that also suits Tiberius. It is only when the centurion reports back to Tiberius that moral responsibility rears its spectral head; Tiberius, like his Judean appointee Pontius Pilate, has already asked

⁴⁹¹ The English translation of Nancy is Weber’s, 6.

⁴⁹² Weber, 7.

⁴⁹³ Henry George Liddell & Robert Scott, “σκοπ-ός,” *A Greek-English Lexicon*. Oxford: Clarendon Press, 1940.

“what is the truth?” and does not wish to stay for an answer. Passienus’ solution reinstates the ambiguity. Nor can anyone now call Tiberius disingenuous in his denials, even if there is no other plausible explanation for all the known facts. As *arcana imperii*, the facts about the chain of action that leads from Tiberius to the murder of Postumus Agrippa are not witnessable by any others: as *paterfamilias*, only Tiberius reads all the accounts.

The important observation here is that there is another, added layer to the indeterminability of the execution of secret actions that is also unique to the *arcana imperii*. Once the archer has fixed his target, all the actions that follow are *unconscious acts* within a chain of events without any moment of reasoning (much less moral reasoning), which instead rely on what Michael Polanyi, recalling Plato’s *Meno*, calls “tacit knowledge.”⁴⁹⁴ These actions are the product of habit, training, and muscle memory, executed automatically and without further deliberation at the exactly right time. They are also in part the product of forces entirely outside the archer’s control: of the effects of velocity, wind, and gravity on the arrow; and of the ability of this particular sharpened arrowhead to wedge into the target, create sufficient friction to fracture the membranes of toga and skin, and create a tear. That is, the archer does not stand in a direct causal relationship with the target’s demise, a tenuousness exacerbated by the physical distance between an archer and his target.

Since the arrow takes on its own pragmatic execution without any direct influence of the archer, the archer is at a distance from the strike. That this also implies a moral distance from the consequences of the strike is clear from the

⁴⁹⁴ Michael Polanyi, *The Tacit Dimension*. Chicago: U of Chicago P, 2009. 22-23.

prohibitions of the use of bows, longbows, and crossbows in the 29th Canon issued by the Second Lateran Council in 1139, as *deo odibilem*, “detestable to God.” In the case of Tiberius, the apparatus that executes the kill order acts in precisely the same, responsibility-fracturing way. Passienus conducts a political act devoid of any personal murderous intent, by formulating the Emperor’s desire as policy and passing both on to the tribune. The tribune conducts a military act devoid of any personal murderous intent, by choosing a centurion to take action and by translating the policy into a military mission. The centurion follows an order devoid of rationale, and thus also without murderous intent, killing because soldiers follow orders to kill. In the end, there is a convenient corpse.

Weber finds his final literary archer in Odysseus. Upon his return to Ithaca in an old man’s disguise that only his trusty hunting dog and an old nursemaid can penetrate, Odysseus performs his unique feat of archery in the competition of the axe heads against the interloping suitors of his wife Penelope. In one sweeping and automatic act, Odysseus then throws off his disguise and shoots an arrow into the neck of his main adversary, Antinous, who is sitting smugly at banquet.⁴⁹⁵ Weber observes that – apart from illustrating an exemplary seizing of an opportunity to devastating effect from a position of greater power (skill at the bow) and knowledge (the knowledge who Odysseus truly is: the sovereign of Ithaca) – the entire scene also “exhibits the power of targeting over targets: twelve axes are pierced by a single arrow.”⁴⁹⁶ This, so Weber, “reveals just how much the act of targeting transcends in

⁴⁹⁵ Homer, *Odyssei* 19-22.

⁴⁹⁶ Weber, 11.

significance its merely instrumental value – precisely by comparing the ‘bow’ in the hands of Odysseus to a kind of musical instrument,” the lyre:

What, beyond the sound of the cord, is involved in the comparison of Odysseus’s handling of the bow, first with a musician handling a lyre, then with a swallow’s song? Nothing less, perhaps, than the ability to resist the ravages of time. Odysseus examines the bow carefully to test for such damage, and when he has hit his first target, he confirms that his ‘force is intact,’ having withstood the passage of time as the medium of loss and decline. The song of an individual swallow may be ephemeral, but its imitation through a human instrument renders it reproducible at will and indefinitely. ... Targeting in general, then, can be seen as a means of overcoming spatial and temporal dislocation, especially with respect to human finitude.⁴⁹⁷

It is this observation that returns the *arcana imperii* also into the broader subtext of this dissertation, which are the Early Modern debates about Euclidean mathematics, and its relationship with the emergence of a concept of political secrecy built around what Euclid refers to as “that which is given,” *data*. Euclid’s data concept is derived from the abstractions of geometry. The givenness lies in the universality of geometrical rules and in particular ratios, which appear to be part of the natural fabric of the universe. Pythagorean thought represents perhaps the clearest instantiation of the relationship between the geometrical ratios of Euclid’s *data*, which, being abstractions, are intangible, and the world of lived experience, in the form of music. It is Pythagoras who invents the harmonious scales we still employ, after all. An echo of

⁴⁹⁷ Weber, 12.

the Pythagorean musical geometry is preserved in this scene of the *Odyssey*. The intervals of the Pythagorean tuning system are based on the frequency ratio 3:2, and the Pythagorean temperament consists of a twelve-tone series. Odysseus employs his lyre-bow to shoot skillfully (along a perfect straight line, one might add) through a series of twelve axe heads, creating a “force” that “can resist the ravages of time,” which recalls both geometrical and musical associations. This fact bears highlighting because this episode from the *Odyssey*, and the significance of the number twelve and the Pythagorean ratios, will recur in an Early Modern geometrical debate related to Euclidean *data* in Chapter 4.

Meanwhile, it will suffice to point out that Weber’s analysis of the mechanisms of targeting elucidate the nature of *arcana imperii*-related plots. These plots focus the reader’s attention on their execution, which in regular Aristotelian plots would be considered symptomatic of the characters and their motivations. Since the *arcana imperii* function to completely obscure the protagonists of the plot and their motivations, however, it is the triangulation of these symptomatic dynamics, rather than the direct depiction of reversals and recognition, that allows the audience to infer the truth behind the events. That is, the plot structure of the *arcana imperii* is, as most secrets are, accessible only by *inference* based on the *data* [“the given”], the *calculation* of the probable trajectory of the targeting-dynamic, and the accounting of the *ratio* of the *oikonomia* of the associated events, all based on *probable* readings that can be constructed into *factum* [“the made”]. Each of these are also tools required for the making of the modern concept of “intelligence.”

III. The Cipher and the Spider in Marlowe's *Edward II*

The full title of Christopher Marlowe's play about King Edward II (1284-1327) is *The Troublesome Raigne and Lamentable Death of Edward the Second, King of England, with the Tragical Fall of Proud Mortimer*.⁴⁹⁸ The title is no overstatement. The play's plot derives primarily from Raphael Holinshed's *Chronicles of England, Scotland, and Ireland*.⁴⁹⁹ Holinshed describes a period filled with scandal surrounding the king's close (and probably amorous) relationships with his favorite courtiers Piers Gaveston (1284-1312) and Hugh Despenser (1286-1326), military embarrassments abroad, civil strife at home, famine, and unending plots against the throne. It culminates in the king's brutal murder in prison. Many of the king's final maladies were instigated by the powerful nobleman Roger Mortimer (1287-1330), an occasional rebel and the lover of Edward II.'s own queen, Isabella of France (1295-1358). Mortimer himself is eventually arrested on order of Isabella's son, Edward III. (1312-1377), and executed by hanging. The "troublesome raigne," "lamentable death," and "tragical fall" of this particular Plantagenet and his adversary are, in other words, perfect candidates for a play that thinks through the epistemological configurations of the *arcana imperii*, including its economy (*oikonomia*) of reckoning related to the *ratio* of the executive, and the plot mechanisms of targeting rivals whose existence threatens the stability of the state. As the most major playwright implicated in the espionage networks of Elizabethan spymaster Francis Walsingham (Chapter 1),

⁴⁹⁸ Christopher Marlowe, *The Troublesome Raigne and Lamentable Death of Edward the Second, King of England, with the Tragical Fall of Proud Mortimer*. London: Jones, 1594.

⁴⁹⁹ Raphael Holinshed, *Chronicles of England, Scotland, and Ireland*, Vol. 3. London: Hooker, 1586. 318-342.

Christopher Marlowe may also be taken to be writing from a position of specialist knowledge. *Edward II* was entered into the Stationer's Register on 6 July 1593.⁵⁰⁰ Marlowe had been stabbed to death on 30 May of that year, only about a month before. Inadvertently, Marlowe's theatrical disclosures of the structures of the *arcana imperii* in *Edward II* also constitute his own last words.

The term *arcana imperii* denotes a particular kind of secret. The word "secret" only occurs twice in *Edward II*, and both times, fittingly enough, it comes out of the mouth of the conspirator Mortimer. Both instances occur in Act V, scene 4. The first marks the conclusion to the speech that begins, "The king must die, or Mortimer goes downe," in which Mortimer explains his covert plot to assassinate the king. At the center of the plot lies a letter, which is written in Latin. It reads, *Edwardum occidere nolite timere bonum est*.⁵⁰¹ Holinshed calls it a "riddle or doubtfull kind of speech, as it might be taken in two contrarie senses."⁵⁰² "Cunninglie" written and "unpointed" (i.e. unpunctuated), the letter is a cipher that could be read two ways. One translation reads, "Feare not to kill the king tis good he die." The other reads, "Kill not the king tis good to feare the worst." The first is a command to execute Edward II, Mortimer's rival for power. The other is an injunction against the same killing. The result, Mortimer explains, is that "This letter ... / Containes his death, yet bids them save his

⁵⁰⁰ "¶Ito. Julij [1593]. William Jones: Entred for his copie under th andes of Master Richard Judson and the Wardens. A booke. Intituled *The troublesom Reign and Lamentable Death of Edward the Second, king of England, with the tragicall fall of proud Mortymer.*" Edward Arber, ed. *A Transcript of the Registers of the Company of Stationers of London, 1554-1640*, Vol. 2. London: Arber, 1875. 299.

⁵⁰¹ Marlowe, *Edward II* 5.4.8 & 11.

⁵⁰² Holinshed, *Chronicles*, 341.

life.”⁵⁰³ Consequently, Mortimer considers it a sufficient tool to communicate the order to assassinate the king, but as insufficient to count as evidence in a court of law. The command, in all its ambiguity, leaves Mortimer’s hands and is passed to the figure called Lightborne, an assassin, who executes the ambiguous command in an unambiguous fashion. The parallels to the *arcana imperii* plot in Tacitus are self-evident.

Once he has explained this economy of executing a covert action against the current legitimate heir to the throne, Mortimer first uses the term “secret:” “Within this roome is lockt the messenger, / That shall conveie it, and performe the rest, / And by a secret token that he beares, / Shall he be murdered when the deed is done.”⁵⁰⁴ Importantly, the “secret token” is not the ciphered death sentence regarding Edward II. Rather, it is an unspecified object that will have Lightborne eliminated once he has carried out his charge. Mortimer summons Lightborne, who appears to have been deaf to Mortimer’s monologue despite being hidden in the same room, and asks him by what method he will kill Edward. Lightborne, signifying the inscrutable mechanics of covert executive action, refuses to disclose his “trickes,” prompting Mortimer to use the word “secret” a second time: “Do it bravely, and be secret.”⁵⁰⁵ While Lightborne might interpret this to mean he should be inconspicuous in his actions and discrete after they are done, that sentence, too, carries a double meaning. The “secret token” will render Lightborne a victim of targeting alongside Edward II, consigning both to

⁵⁰³ Marlowe, *Edward II* 5.4.6 & 7.

⁵⁰⁴ Marlowe, *Edward II*, 5.4.17-20.

⁵⁰⁵ Marlowe, *Edward II* 5.4.1-28.

the hidden graveyard of the *arcana imperii*. “Be secret” does not modify Lightborne’s actions; it demarcates his fate. That fate is the inevitable sum of the ciphered *ratio* that Mortimer alone can read, in his role as would-be regent.

Despite all the ambiguities already present in Mortimer’s presentation of the letter, there is another reading of it in terms of the structure and logic of the *arcana imperii*. Mortimer’s choice to “cunninglie” cloak a straightforward command in the ambiguities of translation and grammar is not an arbitrary one. Historians of the period observe that until the rise of Francis Walsingham to position of spymaster, English diplomats and courtiers actually employed obscure phrasing as their main means of conveying secret intelligence, a method both amateurish and transparent to foreign spies, who were far more adept. It was Walsingham who introduced complex, mathematical cyphers he had learned from the Italians and the French. Marlowe, who was trained as a spy under Walsingham’s regime, would have been aware of this innovation, as well as of the reluctance with which courtiers from old noble families were willing to adopt innovations introduced by “new men” (see Chapter 1). Mortimer, who is from such an old noble family, enacts his character rather precisely by employing the outmoded technique, and eventually suffering the consequences for his pride.

Finally, Tiberius’ reaction to the report of the centurion finds its counterpart in *Edward II* as well. Mortimer’s letter illustrates that within the economy of the *arcana imperii*, political secrets always inherently appear multivalent. If two readings are possible, then the *arcana imperii* speak both truths – indeed, they *must* speak them. When Mortimer declares about the two ways of reading the cipher, “That’s an other

sence,”⁵⁰⁶ he is pointing out that the ciphered truth is another way of experiencing reality, another sense, another way of seeing, hearing, smelling, feeling, and tasting the realities of *auctoritas*. The reality of kingship contained in this secret expresses itself in just such two truths, in fact correlating with the “king’s two bodies” of Kantorowicz’s conception. The king (as a man with a physical body) must die in order to save the kingdom, which is a crime against the king. The king (as the office holder) must be preserved in order to save the kingdom, which requires the crime against the man. It is in this way, too, that the letter is “unpointed:” It does not choose one reading over the other because to point to one would deny the other, equally veracious one. The *ratio* of the *arcana imperii* is that in order to speak accurately about a question of secrecy, its economy of meaning must refuse to choose a single interpretation, and instead play out all of them all at once, no matter how contradictory they might seem. Consequently, participating in a plot related to the *arcana imperii* is always simultaneously both a crime (in terms of the law of the *polis*, the Senatorial *urbs*) and a heroic act (in terms of the *domus* of the *pater patriae*).

This interpretation, that the executive economy of the *arcana imperii* operates with a different sense of truth and reality altogether than the public sphere does, is further supported by the figure of Lightborne. After Mortimer instructs Lightborne to “do it bravely, and be secret,” Lightborne replies, “You shall not need to give instructions.”⁵⁰⁷ Lightborne does not need Mortimer’s bifurcate letter, nor his explicit commands as to which “trickes” to use to kill Edward, because Lightborne already

⁵⁰⁶ Marlowe, *Edward II* 5.4.10.

⁵⁰⁷ Marlowe, *Edward II* 5.4.29

understands the nature of political secrecy, which manifests in its execution as a process that stands outside the laws of public accountability. Lightborne declares:

'Tis not the first time I have killed a man.
I learned in Naples how to poison flowers,
To strangle with a lawne thrust through the throte,
To pierce the wind-pipe with a needles point,
Or whilst one is a sleepe, to take a quill
And blowe a little powder in his eares,
Or open his mouth, and powre quick silver downe,
But yet I have a braver way then these.⁵⁰⁸

Lightborne's imagery immediately evokes the language of targeting, in particular in the echoes of Odysseus' arrow piercing the "soft neck" of Antinous. The suitor-victim's name can be read as a pun, *anti-nous*, "against the *nous*;" the νοῦς [*nous*] in its classical conception being the ability to perceive the world as it is, the use of the senses.⁵⁰⁹ It is no coincidence that Lightborne's description of his expertise in executing assassinations related to the *arcana imperii* constitutes not just of successfully achieving the *telos* of the *desis*, *metabasis*, and *lusion* of targeting, but of neutralizing all the senses – the forms of apprehension or *nous* that would enable a transparent understanding of the plot as it actually took place – as well as all of the communicating faculties, which allow the disclosure of the secret: smell ("poison flowers"), speech ("thrust through the throte"), touch ("pierce the wind-pipe with [an

⁵⁰⁸ Marlowe, *Edward II* 5.4.29-37.

⁵⁰⁹ Liddell & Scott, "νόος, νόον."

indiscernable] needles point”), hearing (“blow a powder in his eares”), seeing (“while sleeping”), and taste (“pour quicksilver downe” his mouth).

When Lightborne adds, “I have a braver way then these,” he is of course also speaking about another aspect of the *arcana imperii*: the role of the open secret, which is widely known but, in Mortimer’s words, “be not spide.”⁵¹⁰ That negotiation between a truth that can be deduced but neither confirmed nor spoken, too, is already present in the paradox of Tacitus’ account. Even though the murder of Postumus Agrippa falls under the *arcana imperii*, which should be unknowable to anyone outside the *domus* of the imperial executive, Tacitus is fully aware of Tiberius’ and Passienus’ motivations and actions. This emphasizes that the *arcana imperii* may be conceptually, legally, and socially secret under the regime whose *arca* they disappear into, but to a limited degree must make their own existence and their economy of executive action knowable to the public. To use a metaphor from Aristotle, if the executive is a body politic with a soul, or ψυχή [*psyche*], then the legally and politically knowable taxonomy of that body must delineate the blueprint of that soul’s abilities, its δύναμις [*dynamis*, “potentiality,” Latin: *potentia*], and an exemplary structure of its economy of execution, its ενέργεια [*energeia*, “actuality,” from ἔργον, *ergon*, “work”]. If those abstract aspects cannot be publicly taxonomized, however indirectly, they lose their functionality as a tool of sovereign power. In the typical Early Modern case of Marlowe’s play, that public taxonomizing takes place on the theatre stage.

⁵¹⁰ Marlowe, *Edward II* 5.4.40.

Like Tacitus, Marlowe achieves this disclosure by depicting a secret nominally hidden in the *arca* of the kingdom of which the audience is already aware and which, as an “open secret” it can depict and discuss, by virtue of distance through the passage of time and a change in regime. Marlowe’s audience was already well aware that Lightborne was going to execute Edward with a hot poker up the king’s rectum, as that had become the popular legend since Geoffrey the Baker (d. 1360) included the anecdote in his *English Chronicle of the Times of Edward II and Edward III*. However, the economy of the targeting of Edward II necessitates that Lightborne’s method need not be disclosed to Mortimer (i.e. remain “unpointed”): If Mortimer, like Tiberius until the reappearance of the centurion, does not know the precise manner of the execution of the targeting plot, the outcome encompasses *all* possibilities, and simultaneously none, while still coming to its purpose.

If the question becomes how the medium of theatre, specifically, can uniquely play out the structure of political secrecy, *Edward II* offers an illustration. Throughout the play, the disgruntlement of the nobles against Edward’s favourite Gaveston is portrayed as a matter of favouritism, with the attendant hints at homosexual impropriety. Gaveston indeed introduces this theme himself in Act I, Scene 1, when he imagines his return to England in overtly homoerotic tones: “Sweete prince, I come! These these thy amorous lines, / Might have enforst me to have swum from France, / and like Leander, gaspt upon the sande, / So thou wouldst smile and take me in thy armes ... the king, upon whose bosome let me die.”⁵¹¹ Edward II reciprocates: “I will

⁵¹¹ Marlowe, *Edward II* 1.1.6-14. In the myth of Hero and Leander, Leander swims the Hellespont every night to seduce Hero.

have Gaveston;” “Kis not my hand; / Embrace me Gaveston as I do thee;” “Not Hylas was more mourned of Hercules / Than thou has beene of me;” “Thy woorth sweet friend is far above my guifts; / Therefore to equall it receive my hart.”⁵¹²

However, the king’s homoerotic attachment to Gaveston is never the concrete objection voiced by the king’s enemies to Gaveston’s rise. When Coventry objects to Gaveston’s return, it is not on moral, but on legal grounds (“I did no more than I was bound to do / And Gaveston unlesse thou be reclaimd, / As then I did incense the parlement, / So will I now, and thou shalt back to France”⁵¹³). In Act I, Scene 4, whereas the younger Mortimer declares, “The king is lovesick for his minion,” and after Lancaster brusquely inquires, “*Diabolo*, what passions call you these?,”⁵¹⁴ Mortimer senior dismisses those insinuations as irrelevant: “The mightiest kings have had their minions.”⁵¹⁵ After Mortimer senior lists homosexual liaisons as examples, beginning with Alexander and Ephestion, and ending with Socrates and Alcibiades, young Mortimer impatiently brushes the point aside, as if he needed no convincing. Instead, young Mortimer bursts forth with the deeper secret underlying the nobles’ opposition to Gaveston: “Unckle, his wanton humor grieves not me, / But this I scorne, that one so baselie borne, / Should by his soveraignes favour grow so pert, / And riote it with the treasure of the realme.”⁵¹⁶ Gaveston’s failing, his dirty political

⁵¹² Marlowe, *Edward II* 1.1.95-161. In the myth of Hercules, Hylas is his beautiful young lover, who is eventually abducted by the nymphs of the spring at Pegae and vanishes without a trace.

⁵¹³ Marlowe, *Edward II* 1.1.181-184.

⁵¹⁴ Marlowe, *Edward II* 1.4.319.

⁵¹⁵ Marlowe, *Edward II* 1.4.391.

⁵¹⁶ Marlowe, *Edward II* 1.4.402-405.

secret, is his ignoble heritage, and it is the royal coupling with the base, not his base coupling, that is the scandal that leads to the nobles' rebellion and ultimately to the king's assassination.

It is this theme of base coupling that reoccurs in the very theatrical moment portraying the assassination, indicating that the secret gains its full force only when it is performed. Act V, scene 5 opens with the extremely fitting line, "I wonder the king dies not." The king's gaolers, Matrevis and Gurney, describe the king's predicament as being caught up in the most base of physical matter: sewage. As Matrevis puts it, "Being in a vault up to the knees in water, / To which the channels of the castell runne, / From whence a dampe continually ariseth, / That were enough to poison any man."⁵¹⁷ The idea is to torture the king, not in conventional fashion by physical violence, but rather by exposing him to the very opposite of the majesty that is supposed to be inherent to him as a crowned king, to "assaile his minde." The tactic is working. Edward II himself describes it less delicately: "This dungeon where they keepe me, is the sincke, / Wherein the filthe of all the castell falles."⁵¹⁸ To this, Matrevis and Gurney add a range of other humiliations, recognizable to us as torture, and exacerbated by the gap between Edward's (former) royal position and the reality of being treated like a commoner:

And there in mire and puddle have I stood,
This ten dayes space, and least that I should sleepe,
One plaies continually upon a Drum,

⁵¹⁷ Marlowe, *Edward II* 5.5.15 & 16.

⁵¹⁸ Marlowe, *Edward II* 5.5.57.

They give me bread and water being a king,
So that for want of sleepe and sustenance,
My mindes distempered, and my bodies numde,
And whether I have limmes or no, I know not.
O would my bloud dropt out from every vaine,
As doth this water from my tattered robes.⁵¹⁹

As intended, his incarceration has made Edward question his very sense of self:

“Know that I am a king, oh at that name, / I feele a hell of greefe: where is my crowne? / Gone, gone, and doe I remaine alive?”⁵²⁰

What Mortimer has in store for Edward, however, is not just a lesson in subjection to the regular, if cruel regime of prison, which Edward would not have been the first former king to experience. It is the full execution of the economy of targeting that Lightborne represents, both as agent and as assassin. The *arcanum* is not just the assassination, although, as Tacitus has established, deposing of the deposed is inherently matter of the imperial *domus* and the *arca*. As Lightborne points out almost immediately, it is rather the logic of the “unpointed,” enciphered plot that Mortimer has animated and targeted at Edward II, and to which Matrevis and Gurney readily lend a hand. The fact that Lightborne, who is pure executive function, chooses death by hot poker up the rectum as the expression of that secret without “instructions” suggests that this method has always been the *telos*, inevitable outcome. Edward, in fact knows it; he repeatedly tells Lightborne that he is aware of his murderous

⁵¹⁹ Marlowe, *Edward II* 5.5.59-67.

⁵²⁰ Marlowe, *Edward II* 5.5.90-91.

intentions, no matter how cruelly Lightborne pretends to be a figure of concern for the king's well-being.

This is where theatricality matters most, in the figuration of the deepest of all the *arcana imperii*, the regicide. While any specifics of the love affair between Edward and Gaveston have been left to the audience's imagination, and while the king and Gaveston's mockery of Mortimer, his failures as a military commander, and most of his other offenses against the revolting court have been relayed and described to the audience verbally, the execution itself takes place only on the stage, not in the text. There is no detailed instruction in the text, and the manner of death is not explained through stage directions. All the reader knows is that the form of execution requires what Lightborne calls for in terms of equipment: "See that in the next roome I have a fier, / And get me a spit, and let it be red hote," as well as "a table and a fetherbed."⁵²¹ But the reader cannot read what the audience can see. The execution takes place without a word, after being announced by Lightborne: "So, lay the table downe, and stampe on it, / But not too hard, least that you bruse his body."⁵²² The stage direction reads only, "[King dies.]" The reader can deduce the manner of death, but not see it. The audience, on the other hand, can see the manner of death, and can read it, although it leaves no record in the text. In this moment, the *arcana imperii* most depend on the theatrical to become perceivable.

What the audience reads, of course, is the figure of the king as seen through the lens of targeting plot aimed at preserving the *auctoritas* of the state, exposed at the

⁵²¹ Marlowe, *Edward II* 5.5.31 & 33.

⁵²² Marlowe, *Edward II* 5.5.113.

fissures of its very stabilizing structures. One of the intentioned readings of the violation is that Edward's homoerotic attachment to Gaveston is being punished: It is a violent imitation of one type of sex act associated with erotic desire between men. But this is an incomplete reading. As Mortimer senior has pointed out, Edward's homoerotic proclivities have no bearing on his fitness to be a king. Rather, the homoerotic attachment is being evoked in the method of death because by extension it evokes base-born Gaveston, and it is Gaveston who is the problem that kills Edward. Accordingly, the symbolism of shoving a hot poker up the king's rectum is not primarily the erotic association of the rectum, but rather the scatological one, as steeping the king in feces-filled sewage for days before the act already strongly suggests. There is no more base matter than sewage, and no more base act than a king being put to death in this manner, by the commoner Lightborne, because of the commoner Gaveston. The hot poker *is* Gaveston, and the threat to the powerful nobles that his elevation presents. The threat to the state that this form of execution is meant to enact is the pollution of the noble – the king's body, which stands for the state – by the base. The secret reads that it is this threat that kills Edward, because a king polluted by the common, an *auctoritas* polluted by the subjects of the *potestas*, cannot be fit to rule.

This moment of theatricality marks the apex (or nadir) of the enactment of this particular political secret, but the full account of the political secret remains incomplete. If purification from the base is the object, there remains the problem of the second commoner involved in the execution of this secret: Lightborne. When plotting the assassination, Mortimer asks Lightborne to "Do it bravely, and be secret,"

and at all costs “to be not spide.” After murdering the king, Lightborne seeks confirmation from his co-conspirators: “Tell me sirs, was it not bravelie done?” Gurney confirms that it was. Gurney then immediately kills Lightborne. The full structure of the targeting plot enacted in this moment of the play can therefore only be properly understood when it is clear what “token” triggered Gurney to kill Lightborne, even though this was not part of the instruction Gurney and Matrevis received in Mortimer’s letter. Once again, the answer can only be understood through the medium of theatre.

Lightborne has succeeded in killing the king, but he has not succeeded in fulfilling Mortimer’s charge. He may have murdered bravely, but he very much did not act in secret, and he very much was “spide,” contrary to the instructions he did receive. It might have been forgivable if Matrevis and Gurney had been the only witnesses, since they are co-conspirators, and equally guilty. But theatre, enacted on a stage in front of an audience, cannot keep a secret. The medium dictates that the murder would be “spide” – by all of the public sphere, in fact. This is not a frivolous observation. In order for the political secret that the deposed king has been murdered to be effective in stabilizing the kingdom, the public must know that the murder occurred, or else the legitimacy of the new king is perpetually in question. Meanwhile, the state can only survive regicide if the *arcana imperii* manage to consume and erase the fact that the state has murdered the king. Consequently, no man can have murdered the king. Instead, the killing must have been conducted by someone who, in the moment of killing, did not function as a man, but rather – like the centurion in Tacitus – entirely as executive function, erasing his own agency, much like an official

executioner would while conducting the affairs of state. In executing the economy of the targeting plot, the *telos* has become identical to the act. Once the killing has been completed, however, this pure form of executive function must be terminated, or else the assassin would remain perpetually beyond the law, having just killed its very incarnation, the king. In Tacitus, the termination of the centurion is merely implied. In *Edward II*, it is made explicit: Gurney stabs Lightborne as soon as the murder is done, and Gurney and Matrevis erase Lightborne by consigning him to the same sewer that had erased Edward's function as king.

If the cancelling of Lightborne in his executive function reveals a crucial step in the logic of the *arcana imperii*, then the question remains what command ensured that the erasure would take place. Mortimer tells us this: "by a secret token that he beares, / Shall he be murdered when the deed is done. / Lightborne, come forth!" This detail of the token once more returns us to the realm of the theatrical. There is no token in the text that reoccurs to signify that Lightborne must be murdered. The only textually visible candidate for it is Mortimer's letter. That letter, however, contains only one sentence that the audience knows about: *Edwardum occidere nolite timere bonum est*, and no command regarding Lightborne. There may be a second sentence Mortimer did not disclose, declaimed by Matrevis: *pereat iste*, "let him perish."⁵²³ However, within the logic of the secrecy, the existence of such a second sentence in the letter is immensely problematic. If the letter is meant to be ambiguous in the way that Mortimer describes earlier, adding "let him perish" to the message about the king

⁵²³ Marlowe, *Edward II* 5.5.25.

erases any ambiguity. To a reasonable reader, the second phrase would apply to the king, not Lightborne. The plot surrounding the letter would be a farce. Including the phrase in the letter would also imply that Mortimer makes some unlikely assumptions about Lightborne: that despite being in the same room as Mortimer when Mortimer explains the letter's double meaning, Lightborne is not listening; that, contrary to all evidence and training as a covert operative, Lightborne is too honest to read the letter once he leaves Mortimer's sight; and that, despite being well-travelled and Catholic, Lightborne has not even simple Latin; or else, that Lightborne is not clever enough to find someone to translate the Latin for him, and then not clever enough to notice more than one part of the letter can be read two ways – again, unlikely for someone the soon-to-die Edward accuses of an expert at dissembling.

The final option would be that the phrase Mortimer reads out loud contains a cyphered message that parses out as *pareat iste* to Matrevis, who would need to have the cypher's key. Gurney, who does not seem to have had that key, indeed exclaims, "Whats heere? I know not how to conster it."⁵²⁴ In that regard, something could perhaps be made of Matrevis' exclamation "Heere is the keyes"⁵²⁵ as indicative of a cypher, but it would take a certain level of interpretive contortion. It is far more likely Matrevis is referring to the keys to the dungeon. Even so, assuming that the message is cyphered would not be a completely plausible method of keeping Lightborne from reading it. As Marlowe would have known perfectly well, the masters of cyphers in his time were the Italians, and Lightborne, Naples-trained in spycraft, would have had

⁵²⁴ Marlowe, *Edward II* 5.5.16.

⁵²⁵ Marlowe, *Edward II* 5.5.25.

little difficulty with Mortimer's presumably simple English cypher. No satisfactory scenario in which the phrase *pareat iste* is actually included in the letter can sensibly be construed from the evidence.

This leaves us with the most likely option in a targeting plot of the type associated with the *arcana imperii*, which is obvious precisely because it is invisible. The "token" is meant to be ambiguous and overlooked, as required by the economy of a targeting plot, which would resist its own disclosure. In this scenario, Matrevis, who mutters "*pareat iste*" to himself in Latin, in response to Mortimer's letter rather than reading it from the page, is privy to whatever token marks Lightborne as an assassin who must be killed, even though the token is not indicated in the text and not evident to the audience. So is Gurney, who cannot read the text of the letter himself, but knows he must stab Lightborne after the assassination is complete. It would be coherent within the logic of the *arcana imperii* that anyone not granted the privileged access to the economy of the targeting plot would be unable to tell, but that those with that access would act as if it were obvious. The actions on stage suffice to show that there must have been a token: the *arcanum* announces itself, but it remains hidden, as its economy demands.

However, all these readings of how the full economy of the targeting plot is performed in the play are caught up in attempting to decipher the content of the *arca*, whereas the economy of the *arcana imperii* can function and be discerned regardless of any knowledge of the content. Evidently, the token that condemns Lightborne is the material letter itself; whoever holds it, dies. Indeed, Mortimer's letter can be read in terms of its relays, as "token" or *datum* that passes through the economy of a system.

While it does, as a material object rather than a message, the letter implicates everyone within that system. Mortimer, the author of the plot, writes an ambiguous statement on a letter, which he gives to Lightborne (who may or may not read it). Lightborne brings the letter to Gurney (who cannot read it) and Matrevis (who can). Gurney carries the letter to the young King Edward III (who reads it backwards into the events that have passed, settling on one of the two readings as definite, a judgment derived from his ability as the true king to alone read the *ratio* of the state correctly). Edward III then returns the letter to Mortimer, who is implicated when he is confronted by the letter. The resulting death toll of the circulated political secret in its form as a letter is four (Edward II, Lightborne, Gurney, Mortimer), along with one exile (Matrevis, who “flies to the savages”), one jailed and awaiting death (the Queen), and one orphaned but in full command of his sovereignty (Edward III). If the elements of the targeting plot associated with the *arcana imperii* are the medium of the “skeletons in the closet of power,” the closet here is a rather full one. However, once performed on the theatrical state, its bones – that is, its structure as an economy of action – are clear to see.

In conclusion, it might be worth considering the question of Lightborne’s token, and of how political secrecy is figured more generally, from the perspective of another kind of token: the emblem. Edward II’s family, the House of Plantagenet, was armigerous, meaning it carried the royal arms of England, the three golden lions on a red background (*Gules, three lions passant guardant or*). However, these were the emblems of the royal office, not of the person inhabiting it. Starting in the 15th century, the rise of printed emblem books marked a habit of illustrating virtues and

idealized skills pictorially in a more abstract form, often didactically. For instance, in *Emblemata Amatoria*, the reader learns that a good lover can shape a “rough, unpliant dame / with melting lips and soothing tongue,” much like the depicted mother bear was said to shape her newborn cub into the desired shape by licking it into the form of a bear.⁵²⁶ A middle ground might be allocated to emblems assigned to important persons, such as kings – and often self-assigned, as more personal alternatives to an official coat of arms.

The *Selectorum Symbolorum Heroicorum Centuria Gemina*,⁵²⁷ a 1619 emblem manual, claims to include the personal emblems for all the English kings up to James I., including that of Edward II. Edward II.’s emblem is a spider in a web, which is being blown by the wind. The emblem includes the Latin motto *ardentior ibo*, “I venture forth bravely.” The coincidental echoes with Marlowe’s play aside (the king is “*bravely done*,” and his death must not be “*spide*”), the emblem provides a set of images easily relatable to the targeting plots of the *arcana imperii*: The spider in the web, the idea of bold action taken in adversity, the gossamer nature of life and of political alliances, the web-like structure of how political secrets function. The Latin text accompanying the emblem comments that spiders are able to overcome insects much larger than themselves, as Edward II had to do in order to rule his court before he himself was consumed by Mortimer’s plot. The emblem commentary also takes a rather pitying view of Edward II by quoting from Juvenal’s *Satyricon*: *Dat veniam*

⁵²⁶ George Saintsbury, *Minor Poets of the Caroline Period*, Vol. 2. Oxford: Clarendon P, 1906. 355.

⁵²⁷ Salomon Neugebauer, Lucas Jennis, & Jacques de Zetter, *Selectorum Symbolorum Heroicorum Centuria Gemina*. Frankfurt: Jacques de Zetter, 1619. 179-180.

*corvis, vexat censura columbas*⁵²⁸ [“censure pardons the raven, but is visited upon the dove”] – a fairly clear assignation of guilt to the plotters, whom history has pardoned, and vindication of Edward, whom the facts of life did not.

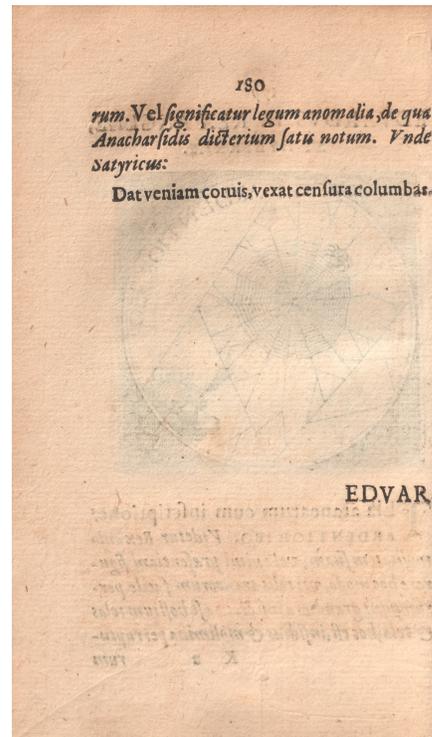
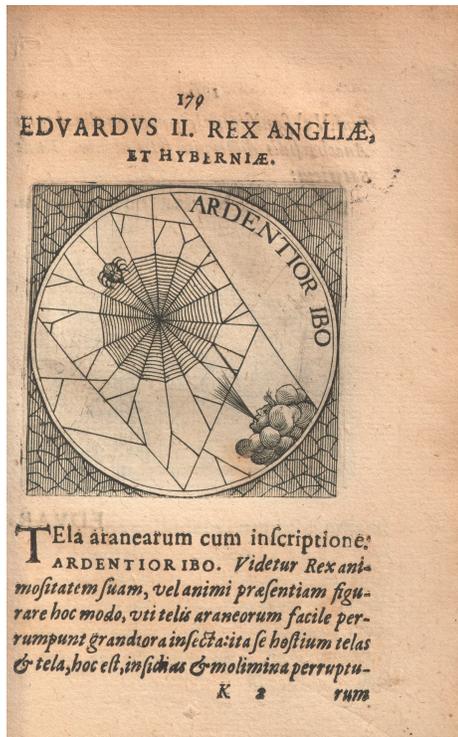


Figure 2: Emblem, “Eduardus II. Rex Angliae.” Salomon Neugebauer, Lucas Jennis, & Jacques de Zetter, *Selectorum Symbolorum Heroicorum Centuria Gemina*. Frankfurt: Jacques de Zetter, 1619. Images in the Common Domain.

It might not be entirely far-fetched to look for Lightborne’s token in something similarly emblematic. Marlowe probably took Lightborne’s name from predecessor plays like the Chester Cycle, where Lightborn is a *secundus demon* punished by the

⁵²⁸ Juvenal, *Satyricon*, “Satura II,” 63.

divine for “foule pryde” and wields instruments like a hot poker.⁵²⁹ The moniker Lightborne parallels that of Lucifer (“light-bearer”) and Mephistopheles (“not-light-loving”). Like the demon in Marlowe’s *Faustus*, Lightborne is the animating principle that cruelly executes the desires of an overly prideful political schemer, whose own downfall is the direct result of having engaged that animating principle in the first place. Indeed, Mortimer’s first calling of Lightborne, who previously had been invisible in the same room, sounds oddly like a conjuring: “Lightborne, come forth!”⁵³⁰ Like Mephistopheles, Lightborne withholds the most crucial arcane knowledge from his client (here, the exact method of execution), because secrecy is a crucial part of his power, and because he appears to see withholding knowledge as some sort of game. Lightborne descends into the netherworld of the dungeon with glowing lies on his lips, but otherwise the only light Lightborne bears is the heated metal with which he dispatches the king. Like a demon, he disappears immediately after his deed is done (“*exeunt omnia*,” despite having been stabbed just moments before), leaving Mortimer to be carried off to his own hell in the next scene. Perhaps, when it comes to Lightborne, “the secret token that he beares” is nothing less than the red hot poker, which marks Lightborne as more than just an assassin: He is the demon of the *arcana imperii*, and his motto is: “You know this token? I must have the king.”⁵³¹

⁵²⁹ Glynne Wickham, *Early English Stages 1576-1600*. Abingdon, UK: Routledge, 2013. 30.

⁵³⁰ Marlowe, *Edward II* 5.4.21.

⁵³¹ Marlowe, *Edward II* 5.5.19.

CHAPTER 3: ARCANA IMPERII TO INTELLIGENCE

Demons in the Data: From *Arcana Imperii* to the Mathematical *Logos*

While Chapter 1 of this dissertation had considered the *mysterium* as a form of political secrecy relating to the office and the symbol of the god-ordained king, Chapter 2 laid the groundwork for understanding a second concept, the *arcana imperii*, as a form of political secrecy tied particularly to the person of the sovereign. The history of the *arcana imperii* begins with a political murder at the outset of the reign of the Roman Emperor Tiberius, recorded in Tacitus' *Annales*. This murder leads to the establishment of the *arcana imperii* as a type of knowledge inaccessible to the public, and unavailable to the processes of law that rule the public sphere [Greek: *polis*, Latin: *urbs*]. Instead, this knowledge falls under the jurisdiction of the sovereign's private household [Latin: *domus*] over which the sovereign rules absolutely, in his sacred role as *paterfamilias* of the empire and as head of the royal household [Greek: *despotes*, Latin: *dominus*].

The *arcana imperii* comprise any knowledge that touches on the sovereign's person, legitimacy, and *vim*, broadly conceived. They also include any record of that knowledge, assessment of it, advice on it from "participants in the secret" [Latin: *particeps secretorum*], and all operational, executive actions pursuant to that knowledge. All these *arcana imperii*, and all the records touching them, are possessions of the sovereign. As such, they are locked away in his treasure chest [Greek: *arche*, Latin: *arca*, *thesaurus*] and are subject only to the economic logics

[Greek: *oikonomia*] of the sovereign's own household. Moreover, any full account [Latin: *ratio*] of the *arcana imperii* can only be accessed by the sovereign, who, as *dominus*, is their "single reader." Any attempt by others to break into this archive and "read" the *arcana imperii* constitutes a direct assault on the sovereign's legitimacy, and thus on that of the *imperium* itself.

In addition to explicating the origin story and foundational structures of the *arcana imperii*, Chapter 2 argues that the executive operations associated with the *arcana imperii* appear to play out as a particular plot-type: *targeting plots*. Targeting plots have certain recognizable characteristics. They are motivated by the desire to preserve the *vim* of the sovereign. Their actions are directed against a specific enemy, and their narrative structure is direct and outcome-oriented. Targeting plots are played out by a small number of characters, usually activated along a clear chain of command. Apart from the sovereign and his direct advisors, these participating characters have little or no knowledge about the *ratio* motivating the plot, nor about the plot's wider implications. Accordingly, the characters frequently appear to shed their agency and individuality and become absorbed into their roles' executive function in the targeting plot, often experiencing a total cancellation once they have played their part. Finally, in terms of Aristotle's *Poetics*, targeting plots follow specific forms of *desis*, *metabasis*, and *lisis* leading to their particular type of *telos*: the act of targeting someone in order to preserve the sovereign itself represents the *desis*, the setting in motion of covert executive action against the target constitutes the *metabasis*, the *lisis* is figured as a series of seemingly inevitable operational events releasing that tension, and the *telos* encompasses the elimination of the target. Chapter

2 examines the logics of such plots both through the archery of Odysseus when he ousts the suitors on his return to Ithaca, and through the circulating, cryptic letter in Marlowe's *Edward II* that appears to implicate or kill everyone who handles it – except for the legitimate sovereign, Edward III, who reads its *ratio* correctly.

Chapter 3 of this dissertation will rely on these conceptual and poetic findings to trace the transformation of the *arcana imperii* into the modern information concept of “intelligence.” In the *arcana imperii* concept originating in Tacitus and reflected in *Edward II*, the legitimacy of the sovereign is tied to an economy of knowledge in which only the sovereign is the accurate reader of the *ratio* of state. The metaphor of *ratio* is a mathematical one, and it is through this mathematical sense that the transformation into *intelligence* takes place. The Early Modern mathematical debate that accompanies this transition relates to the Euclidean idea of *data*, and in particular a redefinition of the concepts of *magnitude* and *number*. The underlying scholarly debate arrived in Britain through increased contact with the Islamic East, by means of a cultural exchange itself spurred through an expansion of knowledge-collection abroad during the earliest years of the Empire. In the chapter, the epistemologies of secrecy related to *magnitude* are considered through the accumulation of arcane knowledge in *Doctor Faustus*, an impulse that reflects Early Modern attitudes towards the problem of a world where there was “too much to know,” and which has its contemporary successor in the concept of Big Data. Those related to the shift in definitions of *magnitude* and *number*, and thus to the possibility of a *ratio*, are demonstrated in Chapter 4 by a shift in the nature of secrets as exemplified in Shakespeare's *Hamlet*, in which Old Hamlet operates on the basis of a Tacitean

concept of *arcana imperii*, and Young Hamlet insists on operational certainty for his own targeting plot based on knowledge recognizable as modern *intelligence*. Young Hamlet's epistemology of secrets represents an adaptation of the ancestor concept to the emerging modern realities.

Much ink has been spilled on the relationship in the Early Modern period between poetics and mathematics. Most often, such work considers the formal affinities between lyric verse and music, an art heavily dependent on the mathematics of meter, rhythm, and harmony. Scholarship abounds on the material history of the book, and on verse as printed artifact, including the geometry of lines, shapes, page design, and decorative elements that accompany such verse. Less attention appears to have been paid to epistemological shifts in how Early Modern narrative, and particularly drama, manifests a *mathematization of knowledge*.

Before delving into such a literary analysis, it will be important to explain what might be meant by "the mathematization of knowledge," and to suggest what it might have to do with literature, with political secrecy, and with the combination of the two. In the 21st century, political secrecy takes the form of "secret intelligence." This chapter, and the next, will argue that the emergence of that form has both mathematical and literary roots. The first step will be to establish the lexical availability of the term "intelligence" in the Early Modern period also, and how it might differ from the *mysterium*, the *arcana imperii*, and simpler and more universal concepts such as "secrets" and "spying." It will become clear is that the term "intelligence" was lexically available in Early Modern Britain, and it is in fact in the

sixteenth and seventeenth centuries that it takes on a specific set of meanings that we might today associate with the data-concept called “secret intelligence.”

I. Intelligence in the Lexicon

The first use of the term “intelligence” in English to denote a form of knowledge (rather than a mental faculty) occurs in the *Confessio Amantis* by John Gower (1330-1408),⁵³² where it refers generally to a field of knowledge. Even in this first instance, “intelligence” is, whether coincidentally or not, already associated explicitly with mathematics, and with knowledge imparted specifically to a sovereign. At the end of Book VI of *Confessio Amantis*, the lover Amans interrupts his long confession to Genius, the chaplain of Venus. In a reference to Alexander the Great and his teacher Aristotle, Amans asks that Genius tell him “Hou Alisandre was betawht / To Aristotle, and so we tawht / Of al that to a king belongeth, / Whereof min herte sore longeth / To wite what it wolde mene.”⁵³³ Genius complies and uses “intelligences” first in the most general sense, to describe three principal fields of knowledge (“Theorique,” “Rhetorique,” and “Practique”)⁵³⁴ before turning to a more particular context. “Theorique,” Genius specifies, “which cleped is Mathematique / Devided is in sondri wise,” namely “Arsmetique,” “Musique,” “Geometrie,” and “Astronomie.”⁵³⁵ While arithmetic teaches accounting and music imparts how “to

⁵³² “intelligence, n.” *OED Online*. March 2019. Oxford University Press. <http://www.oed.com/view/Entry/97396> (accessed 28 April 2019).

⁵³³ John Gower, *Confessio Amantis*, 6.2411-6.2415.

⁵³⁴ John Gower, *Confessio Amantis*, 7.24- 7.46.

⁵³⁵ John Gower, *Confessio Amantis*, 7.145-7.152.

make melodie,” “Mathematique of his science / Hath yit the thridde *intelligence* / Full of wisdom and clergie / And cleped is Geometrie,” which allows for the measuring of all the earth, and true knowledge of its extent and nature.⁵³⁶

Accordingly, Gower’s use of “intelligence” refers an imperial or royal form of knowledge (imparted by Aristotle to the archetypal *dominus* Alexander the Great). Moreover, whether intentionally or not, Gower uses the term “intelligence” specifically to refer to a type of mathematical knowledge, geometry, to emphasize that field’s scope (conveying true knowledge of the scope and nature of the world), which makes it “full of wisdom and clergie.” That is not to claim that Gower’s suggestive use of the term predetermines *all* other uses of “intelligence” – that word retains a second, far more general meaning synonymous to “knowledge,” “information” or “news” well into the 18th Century. Rather, Gower serves as an excellent example to point out that the specific meaning of “intelligence” that this chapter focuses on is contained within that word’s etymology during the stirrings of the Early Modern era.

Indeed, it is around the year 1500 that the term “intelligence” emerges even more recognizably in its modern form, namely as knowledge *taken to be true* (and more importantly, *probable*), based on evidence in the form of *information*, which has been conveyed by a trustworthy messenger, and which is employed towards a strategic, tactical, or military purpose. The *Oxford English Dictionary* pinpoints the first use of the word in this sense to an appropriately political-theological moment in the Nativity pageants of the *Ludus Coventriae* mystery plays of the early Tudor reign

⁵³⁶ John Gower, *Confessio Amantis*, 7.175-7.190.

in the late 15th Century. The relevant moment in the play concerns the Annunciation to Mary as recounted in the *Gospel according to Luke*.⁵³⁷ In the version contained in the *Ludus Coventriae*, the Virtues Truth (“Veritas”), Mercy (“Misericordia”), Justice (“Justitia”), Peace (“Pax”), and the Trinity of Father (“Pater”), Son (“Filius”), and Holy Ghost (“Spiritus Sanctus”) convene in a “parliament of heaven.” The virtues persuade God the Father, in his function of King of Heaven, to execute a plan to save human kind from sin. The plan includes sending the Archangel Gabriel “in thyn hey inbasset” [“in thine high embassy”] to convey the *Ave Maria* to the (future) Mother of God, Mary.⁵³⁸ Following the narrative as outlined in the *Gospel of Luke*, immediately after receiving Gabriel’s embassy and learning that she is pregnant with the Son of God, Mary sets out to visit her cousin, the aged holy woman Elizabeth, who is married to an equally holy priest in Jerusalem, Zacharias. Elizabeth has become pregnant by divine intervention with John the Baptist,⁵³⁹ the second coming of Elijah in the Christian scriptures, “the voice of one crying in the wilderness, ‘Prepare ye the way of the Lord, make his paths straight.’”⁵⁴⁰ The *Ludus Coventriae* further recounts the

⁵³⁷ *Gospel of Luke* 1.26-38.

⁵³⁸ Katherine Salter Block, ed. *Ludus Coventriae*. Early English Text Society No. 120. Oxford: Oxford UP, 1922. 97-108.

⁵³⁹ *Gospel of Luke* 1.39-45: “And Marie arose in those dayes, and went into the hill country with haste, into a citie of Iuda, And entred into the house of Zacharias, and saluted Elizabeth. And it came to passe that when Elizabeth heard the salutation of Marie, the babe leaped in her wombe, and Elizabeth was filled with the holy Ghost. And she spake out with a loud uoyce, and saide, Blessed art thou among women, and blessed is the fruite of thy wombe. And whence is this to me, that the mother of my Lord should come to mee? For loe, assoone as the voice of thy salutation sounded in mine eares, the babe leaped in my wombe for ioy. And blessed is she that beleueed, for there shalbe a performance of those things, which were told her from the Lord.”

⁵⁴⁰ Luke 3:2b-6: “The word of God came unto Iohn the sonne of Zacharias, in the wilderness. And he came into all the country about Iordane, preaching the baptisme of repentance, for the remission of sinnes, As it is written in the book of the words of Esaias the Prophet, saying, The uoyce of one crying in the wilderness, Prepare ye the way of the Lord, make his paths straight. Euery valley shall be filled,

prelude to the birth of John the Baptist, in which Gabriel appears to the geriatric Zacharias and prophesizes the conception of his son. The news are so unlikely that even the ever-honest Zacharias doubts them, and Gabriel strikes him literally speechless in retaliation:⁵⁴¹

Sovereynes vndyrstondeth þat ... an old prest clepyd Zakarye ... in hese mynistracion the howre of incense the Aungel Gabryel apperyd hym to. þat hese wyff xulde conseyye he 3aff hym intelligence. Hese juge hese unwurthynes and Age no belvyd so the plage of dompnesse [dumbness] his lippis lappyd lo.⁵⁴²

That is, Zacharias receives “intelligence” that the royal and divine plan of salvation is underway, but because he is not authorized to divulge it – and indeed, doubts its veracity – his lips are closed for him, and the Messianic secret remains just that.

As did the origin story of the *arcana imperii* and the plot in *Edward II*, this episode evokes the lens of Agamben’s *executio* and *oikonomia*, which, too, is deduced from the theological metaphors of the Father and of the Son, respectively. The episode in the *Ludus* also evokes elements of the *arcana imperii* plot. The sovereign of the world, advised by his small set of intimate counsellors, sends a lone messenger on an “embassy” to instigate the plot of the Christ. That plot is an infiltration of the incarnate world through a single person, Christ, intended as a covert and deceptive act of warfare in the cosmic conflict between forces loyal to the kingdom of heaven and the

and euery mountaine and hill shal be brought low, and the crooked shall bee made straight, and the rough waues shall be made smooth. And all flesh shal see the saluation of God.”

⁵⁴¹ Luke 1.5-25.

⁵⁴² Salter, *Ludus*, 116.

treasonous rebel forces of the Prince of Darkness, Lucifer. Its aim, in the end, is to defeat Lucifer, and to “harrow” – that is, to militarily sack and lay waste to – Lucifer’s kingdom, hell. God the Father’s allies and instruments for this initial stage of the targeting plot are a small circle of human agents – Mary, Joseph, Elizabeth, Zacharias – who receive versions of the same “intelligence:” the conceiving of divine or divinely inspired sons.

Moreover, the four human agents are fitting choices for a Messianic Secret.⁵⁴³ While the one couple, the carpenter Joseph and his teenage betrothed Mary in the Galilean backwater of Nazareth, is too socially insignificant to betray its particular Messianic secret and be taken seriously, the reputable and popular priest Zacharias is in a strategically far more dangerous position. As the Early Modern audience of the *Ludus* would have known and the *Gospel of Luke* specifies, shortly after receiving this intelligence, Zacharias is supposed to address the people convened at the very center of Jewish religion and public life, the Temple in Jerusalem: “The people waited for Zacharias, and marvelled that he tarried so long in the temple. And when he came out, he could not speak unto them: and they perceived that he had seen a vision in the temple: for he beckoned unto them, and remained speechless.” As if to emphasize the point, the strategic intelligence imparted to Zacharias by the sovereign of the universe behind the locked doors of the temple is also safely locked within Zachariah’s

⁵⁴³ This persistently influential reading of the many episodes in the Christian Gospels, especially highlighted in the *Gospel of Mark*, when Jesus of Nazareth forbids his disciples and the beneficiaries of his miracles to proclaim that he is the Messiah, was brought into the conversation of modern theology by the Hanoverian German Lutheran theologian Georg Friedrich Eduard William Wrede (1859-1906) in his 1901 monograph, *Das Messiasgeheimnis in den Evangelien: zugleich ein Beitrag zum Verständnis des Markusevangeliums*. Göttingen: Vandenhoeck & Ruprecht, 1901. In English, William Wrede, *The Messianic Secret*. J.C.G. Greig, transl. Cambridge, UK: James Clarke, 1971.

memory. The secret of the Christ, the *logos* of the Christian world, is thus recognizably a political secret of the *arcana imperii* type, one regarding the Kingdom of Heaven.

A person collecting “intelligence” is an “intelligencer,” a term denoting the specific type of spy who acquires information covertly and specifically from politically informed and connected sources (rather than, for example, a journalist who does so publicly or a military scout who acquires it secretly but only through personal reconnaissance and not through third parties). This term, too, lexically emerges during the early Tudor period, through none other than the poet, courtier, and diplomat Thomas Wyatt the Elder (see also Ch. 1 on the *mysterium*).⁵⁴⁴ Wyatt introduces the term “intelligencer” in a letter in 1540, the birth year of Devonshire privateer-poet Francis Drake (1540-1596) and London composer William Byrd (1540-1623), the year Pope Paul III (1468-1549) approved the Society of Jesus in his bull *Regimini Militantis Ecclesiae*,⁵⁴⁵ and that Europe experienced a catastrophic “megadrought” that led to the great rivers Seine, Elbe, and Rhine running nearly dry, and the Thames fill with backwashing seawater instead of fresh water as far upstream as the London Bridge.⁵⁴⁶ Wyatt had been sent by King Henry VIII.’s Principal Secretary – and therefore spymaster – Thomas Cromwell (1485-1540) on an embassy to the court of

⁵⁴⁴ “intelligencer, n.” *OED Online*. March 2019. Oxford UP. <https://www.oed.com/view/Entry/97399>. Accessed 14 May 2019.

⁵⁴⁵ “7. Bulla Prima Pauli III, Approbatio Societatis Jesu ad Numerum Sociorum Sexaginta, 1540.” *Monumenta Historica Societatis Iesu*, 3rd series 1.63 (1934), 24-32.

⁵⁴⁶ Christian Pfister, “The ‘Black Swan’ of 1540: Aspects of a European Megadrought.” Claus Leggewie & Franz Mauelshagen, eds. *Climate Change and Cultural Transition in Europe*. Leiden: Brill, 2018. 156-193. 174-175; Oliver Wetter et al. “The Year-Long Unprecedented European Heat and Drought of 1540 – A Worst Case.” *Climatic Change* 125.3-4 (August 2014), 349-363.

Holy Roman Emperor Charles V. in Toledo in Castile in 1537.⁵⁴⁷ Wyatt's task was to undermine a potential alliance between Catholic France and the Holy Roman Empire against Protestant England on behalf of the papal cause.⁵⁴⁸ Such a unification was being advocated by the exiled counter-Reformation cleric, and one of the last of the Plantagenets, Cardinal Reginald Pole (1500-1558). In a variation on the dynamics associated with the *arcana imperii*, Wyatt and the swashbuckling poet-diplomat and so-called "Vicar of Hell" Francis Bryan (1490-1550) were additionally tasked with a secret, parallel, and ultimately unsuccessful, assassination plot targeting Pole, whom Henry VIII had publicly proclaimed an abject traitor.⁵⁴⁹

Two years into Wyatt's deployment to the Spanish court, in 1538, Pole's remaining family in England was charged with treason following the Exeter Conspiracy. During the subsequent trials, Wyatt suddenly found himself compromised. His mistress in England, Elizabeth Darrell (1513-1556), had testified on behalf of the king. In her testimony against the Poles and their Catholic-leaning allies, she shared confidential details she could only have heard from Wyatt, suggesting that Wyatt had been privately indiscrete with the king's secrets.⁵⁵⁰ Shortly afterwards, in January 1539, despite Wyatt's evidently extraordinarily skillful diplomacy on behalf

⁵⁴⁷ Letter, Henry VIII to Wyatt. Harley MS 282 f. 79. George Frederick Nott, *The Works of Henry Howard Earl of Surrey and of Sir Thomas Wyatt the Elder*, Vol. 2. London: Longman, 1816. 311-315.

⁵⁴⁸ Letter, Cromwell to Wyatt. Harley MS 282 f. 208. Nott, *Wyatt*, Vol. 2, 318-320; Letter, Henry VIII to Wyatt. Harley MS 282 f. 34. Nott, *Wyatt*, Vol. 2, 461-463; et al.

⁵⁴⁹ Susan Bridgen, "'The Shadow That You Know': Sir Thomas Wyatt and Sir Francis Bryan at Court and in Embassy." *The Historical Journal* 39.1 (1996), 1-31.

⁵⁵⁰ *Letters and Papers, Henry VIII* 13.2.702. Greg Walker, "Wyatt's Embassy, Treason, and 'The Defence.'" Greg Walker, ed. *Writing Under Tyranny: English Literature and the Henrician Reformation*. Oxford: Oxford UP, 2005. 335-350.

Henry VIII., the Emperor did formally agree to a joint policy with the French, codified in the Treaty of Toledo.⁵⁵¹ Wyatt managed to make up for some of his diplomatic failures by leveraging his personal sympathy with Charles V. to have Pole ejected from the Spanish court. Wyatt then plotted to waylay Pole on his travels back to Rome, failing only due to Pole's paranoia and some bad luck.⁵⁵² Increasingly desperate, in December 1539 Wyatt switched his attentions to an associate of Pole's, the Welshman and Persia merchant Robert Brancetour, whom he tracked down first in Paris and then in Flanders. Unfortunately, Wyatt's attempt to have Brancetour extradited to England ruined Wyatt's remaining credit with Brancetour's protector, Charles V.; desperate to finally somehow restore favor with Henry VIII., Wyatt had unwisely and angrily lost his temper in front of the Emperor when confronting him about Brancetour in person.⁵⁵³

In 1540, things took a final turn for the worse. The regime of Wyatt's patron Cromwell in England began to unravel. The avid Protestant Cromwell had counseled Henry VIII. to counter the recent alliance between the two leading Catholic sovereigns on the Continent through a Protestant alliance with the German princes in the Schmalkaldic League, and to seal the alliance by marrying the sister of one of its most important leaders, Anne of Cleves (1515-1557). Upon her arrival in England, Henry VIII. pronounced Anne unattractive and himself displeased, but nevertheless married her for strategic reasons in January 1540. Catastrophically for Cromwell, who had

⁵⁵¹ "Traité entre l'Empereur Charles V. et le Roy François I." Toledo, 12 Jan. 1538 [1539], Additional MS 21382 f. 137, British Library, London, United Kingdom.

⁵⁵² Letter from Wyatt to Cromwell. Cotton MS Vespasian C 7 fol. 24.

⁵⁵³ Letter from Wyatt to Henry VIII. Harley MS 282 f.83. Nott, *Wyatt*, 368-383.

made many enemies in his ten years at the helm of English politics, the Imperial-French alliance collapsed only weeks later, turning a once clever marriage into an impolitic and tactical mistake, one that culminated in an annulment before the year was over. The king blamed Cromwell, and Cromwell's enemies pounced, focusing also on his religious radicalism and on the inevitable corruption surrounding an Early Modern politician this powerful and this long in office. Cromwell was arrested on tenuous charges of treason in June, and executed by attainder without a trial in July.⁵⁵⁴ Wyatt, meanwhile, had managed a brief return to royal favor by acting as the diplomatic traveling companion on their trip to England for Henry VIII.'s guests Ferdinando Sanseverino, Prince of Salerno (1507-1568) and Ercole II d'Este, Duke of Ferrara (1507-1559) that same month.⁵⁵⁵ However, consequently Wyatt ended up in London in time to witness Cromwell's botched and torturous execution, reportedly weeping openly and being consoled by Cromwell from the scaffold.⁵⁵⁶ This display

⁵⁵⁴ Henry VIII's summons of Cromwell to Westminster is Cotton MS Nero C 10 fol. 406, his attainder is fol. 503. Cromwell's to Henry VIII from the Tower of London pleading for his life are Cotton MS Titus B 1 fol. 267-269. His last words on the scaffold are Harley MS 3362 fol. 17.

⁵⁵⁵ Letter, Wyatt to Cromwell. Harley MS 282 fol. 245r; Letter, Henry VIII to Wyatt. Cotton MS Titus B 1 fol. 380.

⁵⁵⁶ "Y, entre todos aquellos señores, vió el Crumuel á Mestre Hihuet, el caballero que habia estado preso por amor de la Reyna Anna, y llamóle, y díjole, '¡Oh, gentil Hihuet, quédate á Dios, y yo te ruego ruegues á Dios por mí!' Mucho fué el amor que siempre tuvo con este Mestre Hihuet. Y el Hihuet no le pudo responder, tantas eran las lágrimas que lloraba. Todos aquellos señores se maravillaban en ver que el Mestre Hihuet hacia tanto sentimiento. Y como el Crumuel fuese hombre muy sabio, miró en ello y dijo en alto: '¡Oh, Hihuet, no llores; porque si yo no fuese más culpante que tú eras cuando fuiste preso, no sería venido á lo que estoy!' Y todos los señores querian mucho al Hihuet; y así, disimularon, y otro pudiera ser que le prendieran por saber si sabia de alguna traicion que el Crumuel hubiese inventando." Mariano Roca de Togores Molíns, ed. *Crónica del Rey Enrico Otavo de Inglaterra*. Madrid: A. Durán, 1874. 142-143. In English: "Amongst all these gentlemen he noticed Master Wyatt, the gentleman who had been imprisoned for the affair of Queen Anne; and he called him, and said, 'Oh, gentle Wyatt, good-bye, and pray to God for me.' There was always great friendship between these two, and Wyatt could not answer him for tears. All these gentlemen marvelled greatly to see that Master Wyatt was in such grief, and Cromwell, who was a very clever man, noticing it, said out loud, 'Oh, Wyatt, do not weep, for if I were no more guilty than thou wert when they took thee, I should not be in this pass.' Everybody was very fond of Wyatt, so they pretended not to notice; but if it had been anyone else they

did Wyatt no favors, marking him as one of Cromwell's allies, to be eliminated in the coming purge.

By the end of the year, Cromwell's papers had been thoroughly searched for compromising material. Among them was a letter to Cromwell written in 1538 by Edmund Bonner (1500-1569), later the re-Catholicized "Bloody Bonner" of Queen Mary's reign, but then still a loyal Protestant and spying on Wyatt on behalf of Cromwell and Henry VIII. In it, Bonner reported a suspicion that Wyatt had been disloyal to the king.⁵⁵⁷ Worse still again, since the Exeter Conspiracy, it had become sufficient for a charge of treason to have had any direct contact with Cardinal Pole.⁵⁵⁸ Before the Exeter Conspiracy trials, Wyatt had once sent his fellow diplomat John Mason to contact Pole in the French city of Nice in order to gain intelligence about the Cardinal – then, a normal part of his ambassadorial duties. Now, this embassy could be turned into an accusation against Wyatt. Wyatt's actions became retroactively treasonous in a Tudor state that flagrantly operated under *ex post facto* law whenever convenient to the king.⁵⁵⁹ To add insult to injury, Wyatt's co-diplomat in Flanders, the Archdeacon of Lincoln Richard Pate (d. 1565), defected to Rome.⁵⁶⁰ Wyatt was

might have arrested him, to see whether he knew of any other treason which Cromwell might have plotted." Martin Andrew Sharp Hume, transl. *Chronicle of King Henry VIII. of England*. London: George Bell & Sons, 1889. 104.

⁵⁵⁷ Letter, Bonner to Cromwell. Petyt MS 47 fol. 9.

⁵⁵⁸ Shulman, *Graven*, 257-262.

⁵⁵⁹ The classic explanations of this tendency to use retroactive bills of attainder from the 15th Century through the 17th Century are in the seminal work on British constitutional history by Thomas Pitt Tadwell-Langmead (1840-1882), *English Constitutional History*. London: Stevens & Haynes, 1875. 279 & 458-363 n2; and Henry St. Clair Feilden, *A Short Constitutional History of England*. Oxford: Blackwell, 1882. 153.

⁵⁶⁰ Tracey A. Sowerby, "Richard Pate, the Royal Supremacy, and Reformation Diplomacy." *The Historical Journal* 54.2 (June 2011), 265-285.

arrested in January 1541 and imprisoned, sure he would soon follow Cromwell to the executioner's block, and mounted a written defense from the Tower.⁵⁶¹ He was, however, once more be released on the pleading of the short-lived fifth queen, Catherine Howard (1523-1542), and briefly held the post of Vice-Admiral.⁵⁶² Already greatly weakened through his imprisonment, Wyatt fell ill in October 1542 during an overeager ride to meet a newly arriving Spanish ambassador in the harbor town of Falmouth, and died.

It is during the fraught months when Cromwell's fall was imminent, while Wyatt was still picking up the pieces of his pursuit of Brancetour in Flanders, that Wyatt wrote the letter in question, on 2 April 1540.⁵⁶³ His use of the term "intelligence" to mean secret and politically or militarily relevant, tactical knowledge rather than simply "news" occurs in the appropriately mundane context of accounting for his spies: "These mens things with Fraunce by all ways that I can lerne and conferryng on intelligens with an other remaine after that same rate as I have ere this written." Wyatt then addresses why his own information contradicts conflicting intelligence reports Cromwell appears to have received from other sources, specifically on the subject of the Holy Roman Emperor's designs on Gelderland, a

⁵⁶¹ Declaration and Oration of Innocence by Wyatt, Harley MS 78 fols. 5-15. Nott, *Wyatt*, 277-308.

⁵⁶² Letter, Privy Council to Lord William Howard. State Papers 8 fol. 544 (26 March 1541).

⁵⁶³ Harley MS 282, f. 238, British Library, London, United Kingdom. Cf. also "Letter XL., Sir Thomas Wyatt to Cromwell, Lord Privy Seal." George Frederick Nott, ed. *The Works of Henry Howard, Earl of Surrey and Sir Thomas Wyatt the Elder*, Vol. 2. London: Longman, Hurst, Orme, and Brown, 1816. 404-408; "448. 2. April 1540, Wyatt to Cromwell." James Gairdner & Robert Henry Brodie, eds. *Letters and Papers, Foreign and Domestic, Henry VIII*, Vol. 15 (1540). London: Her Majesty's Stationery Office, 1896. 183-184; Kenneth Muir, *Life and Letters of Sir Thomas Wyatt*. Liverpool: Liverpool UP, 1963. 156-160.

Dutch province belonging to England's newly in-lawed ally Cleves. He introduces the term "intelligencer" in the process:

That your Lordshipp wryteth off the intelligences and aduertisements that the kinges highnes hath from hens and other partes, towching the thinges of Geldres, as well off ambassadours as other thinges, but in this I dare well say *the Intelligensirs penetrate no furder than the common bruyte*, whereoff I have wrytten afore this tyme, and what I thowght was the grownd thereof.

Whereas, Wyatt goes on, said "bruyte is risen" by the public displays of court politics, Wyatt has access to well-placed sources who know of things not as they seem, but as they are: "some men of wisdome have fowndid them sellffis, shewying me" the interior workings of the court's thinking, which "could not be hydden from them that wold not hide it from me." It is hard to imagine a more succinct summary of the mechanics of political espionage based on human intelligence. There is also a certain irony in the exchange; after all, it was a failure of intelligence gathering about the imminent end to the French-Imperial alliance that would bring both Cromwell and Wyatt to ruin, and cut their lives brutishly short.

This use of the terms "intelligencer" and "intelligence" as jargon among polyglot professionals like Cromwell and Wyatt to denote spies and the knowledge acquired through espionage, respectively, does not imply that the terms had entered the broader English lexicon. Bearing this specific meaning (rather than the broader generic sense, equivalent to today's "information" or "news," which is now obsolete but was widespread well into the 18th Century), they do not manifest in printed public

discourse for about another thirty years. Its first instance in print appears to occur in 1569, ten years after the coronation of Queen Elizabeth, the same year *Hamlet's* “Polacks on the ice” formed the Polish-Lithuanian Commonwealth with the Union of Lublin; Elizabeth confronted the “Rising of the North” by the Catholics Charles Neville, Earl of Westmorland (1542-1601), and Thomas Percy, Earl of Northumberland (1528-1572) in support of Mary, Queen of Scots (1542-1587); and the Flemish cartographer Geert de Kremer, better known as Gerardus Mercator (1512-1594), created his *Nova et Aucta Orbis Terrae Descriptio ad Usus Navigantium Emendate Accommodata*, the first map to use the still-common Mercator projection to enable practical navigation. That year, the prolific Elizabethan scholar Thomas Stocker (fl. 1569-1592) published an English version of the *Bibliotheca* of the Greek historian Diodoros of Sicily (1st Century CE), based on a French translation of the original.⁵⁶⁴ In Book XIX, Diodoros describes the Battle of Kretopolis (319 BCE) between the Macedonian general Antigonos the One-Eyed (382-301 BCE) and his enemies Alketas (d. 320) and Attalos. The defeated Alketas flees to the well-fortified city of Termessos, but commits suicide after he hears that the townspeople “secretly in the night advertised Antigone by their intelligencers, that they would deliuer Alcete alyue or dead.”⁵⁶⁵ In this specific episode, the “intelligencers” are a dramatic addition

⁵⁶⁴ Thomas Stocker, *A Righte noble and Pleasant History of the Successors of Alexander Surnamed the Great, taken out of Diodorus Siculus ... Translated out of French into Englysh*. London: Henrie Bynneman, 1569. Stocker's source is the 1510-1511 French translation of the Greek by the Savoyard jurist, diplomat, and humanist, Claude de Seyssel (d. 1520), later Bishop of Marseilles and Archbishop of Turin. Bibliothèque Nationale de France, Département des Manuscrits, Fonds Français, MS 712. First published posthumously, *L'Histoire des Successeurs de Alexandre le Grand Extraicte de Diodore Sicilien*. Paris: Josse Bade, 1530.

⁵⁶⁵ Stocker, *History*, 28v.

of Stocker's: neither his French source⁵⁶⁶ nor the Greek original make mention of such figures. Later in the book, however, Stocker uses the term to describe an instance in the Fourth War of the Diadochi (308–301 BCE) in which Antigonos restores democracy and the independence of the city states in Greece in exchange for military support, adding that Antigonos moreover “sent also his intelligencers to learne what Cassander did,” one of his principal enemies in that conflict.⁵⁶⁷ In this latter instance, the term “intelligencer” translates the French *espies*, “spies.”⁵⁶⁸ In this form, it appears to be a uniquely English innovation: the *Oxford English Dictionary* points out that the cognate *intelligentière* was introduced *from* English to Italian by John Florio (1553–1625) in his 1598 Italian-English dictionary, *A Worlde of Wordes*,⁵⁶⁹ and the cognate *intelligencier* was introduced *from* English to French by Randle Cotgrave (d. 1634) in his 1611 French-English dictionary, *A Dictionarie of the French and English Tongues*.⁵⁷⁰ Despite its Latinate root, the word first had taken on a meaning roughly synonymous with “spy” in England.

In the early 1570s, several other English texts follow Stocker's usage. In 1570, Pope Pius V (1504–1572) excommunicated Queen Elizabeth and declared her rule

⁵⁶⁶ de Seyssel, *L'Histoire*, 1.22.22r: “Car ils enuoiret de nuyct secrettement deuers Antigonus / luy promettant bailer ledict Alceta, vif ou mort.”

⁵⁶⁷ Stocker, *History*, 83r.

⁵⁶⁸ de Seyssel, *L'Histoire*, 2.37.69r: “Et daultre coste enuoia des espies pour scauoir que faisoit Cassander.”

⁵⁶⁹ John Florio, *A Worlde of Wordes, or Most Copious and Exact Dictionarie in Italian and English*. London: Arnold Hatfield, 1598. 187. Florio defines it “an intelligencer, or newsbearer,” with the strictly journalistic sense apparently better represented by *gazzettiere*, “an intelligencer or such as have daily occurrences,” cf. 145.

⁵⁷⁰ Randle Cotgrave, *A Dictionarie of the French and English Tongues*. London: Adam Islip, 1611. Aaa2r. “*Intelligencier*: m. An Intelligencer; an intelligence-giver; a spy.”

illegitimate in his bull *Regnans in Excelsis*.⁵⁷¹ In response to a copy of the Pope's bull that had been anonymously posted at Bishop's Gate in London, the Calvinist English parliamentarian Thomas Norton (1532-1584) wrote in a polemical pamphlet titled *An Addition Declaratorie to the Bulles, with a Searching of the Maze*, which defends Queen Elizabeth, declares all Catholics traitors because of their split loyalties, and derides a charge by Catholic sympathizers that a Protestant had forged the bull hung at Bishop's Gate, with reference to what is evidently an act of espionage: "There are intelligences enow that the effect of the thing it selfe was more than a yeare agoe decreed in Rome."⁵⁷² In another pamphlet of that year on the same subject, *A Disclosing of the Great Bull... That Roared at My Lord Byshops Gate*, Norton writes bracingly of his fellow Protestants that "It is good to be awake. Some men are wakened ... with very whisperinges, as with *secret rumors and intelligences*."⁵⁷³

Likewise in 1570, the Huguenot French historian Jean de Serres (1540-1598) published his *Mémoires de la III Guerre Civile et des Derniers Troubles de France*. This work was translated that same year into English by Nottinghamshire English

⁵⁷¹ "Illius itaque autoritate suffulti, qui nos in hoc supremo iustitiae throno, licet tanto oneri impares, voluit collocare, de apostolicae potestatis plenitudine declaramus praedictam Elizabetham haereticam, et haereticorum faultricem, eique adhaerentes in praedictis, anathematis sententiam incurrisse, esseque a Christi corporis unitate praecisos. Quin etiam ipsam praetense regni praedicti iure, necnon omni et quocunque dominio, dignitate, privilegioque privatam." In English: "Being therefore supported with his Authority, whose pleasure it was to place Us (though unable for so great a burthen) in this Supream Throne of Justice, we do out of the fulness of our Apostolick Power, declare the aforesaid Elizabeth, being an Heretick, and a favourer of Hereticks, and her Adherents in the matters aforesaid, to have incurred the sentence of Anathema, and to be cut off from the Unity of the Body of Christ. And moreover, we do declare Her to be deprived of her pretended Title to the Kingdom aforesaid, and of all Dominion, Dignity, and privilege whatsoever." Thomas Barlowe, ed. *Brutum Fulmen*. London: Robert Clavell, 1681. 5.

⁵⁷² Thomas Norton, *An Addition Declaratorie to the Bulles, With a Searching of the Maze*. London: John Daye, 1570. B2r.

⁵⁷³ Thomas Norton, *A Disclosing of the Great Bull and Certain Calues that He Hath Gotten, and Specially the Monster Bull that Roared at My Lord Byshops Gate*. London: John Daye, 1570. B4v-C1r.

writer and later colonial co-administrator in Ireland with Edmund Spenser, Geoffrey Fenton (1539-1608), as *A Discourse on the Ciuille Warres and Late Troubles in Fraunce*.⁵⁷⁴ Fenton uses the terms “intelligence” and “intelligences” to refer to tactically relevant military information, usually as translations of the French *auertissement*,⁵⁷⁵ but in one case, when it touches explicitly on the plotting of secret councils, of the French *intelligences*,⁵⁷⁶ which had been used in this way since the late 15th Century.⁵⁷⁷ Aside from Norton’s pamphlets, in the initial years of the 1570s, this

⁵⁷⁴ Jean de Serres, *Mémoires de la III Guerre Civile et des Derniers Troubles de France*. Geneva: Jean Crespin, 1570; Geoffrey Fenton, transl. *A Discourse of the Ciuille Warres and Late Troubles in Fraunce, Drawn into Englishe*. London: Lucas Harrison & George Bishop, 1570.

⁵⁷⁵ Examples: “Au commencement de ces guerres les seigneurs Princes ayã eu aduertissement qu’on faisoit entrer au Royaume grand nombre d’estrangers pour fortifier les Catholiques, delibererent faire de mesme pour se fortifier,” *Mémoires*, 101; rendered: “In the first kindlyng of these warres, the Princes hauing true intelligence of diuers nombres of straungers entred the Realme for the strengthe of the Catholikes, determined also to fortifie their armie by the like meane,” *Discourse*, 78; “Le mesme iour de l’assemblee des armees le sieur de la Loue mareschal du camp desdits Princes, avec son regimen de caualerie, fut mandé a Aesse ville sur Viène, pour garder ce passage. Dequoy ayant Monsieur aduertissement vint le len demain xi. de Iuin camper à une lieuë dudict Aesse,” *Mémoires*, 115; rendered: “The same day the Lord de la Loue marshall of the Princes campe with his regiment of horssemen, was sent to Aesse vppon Vienne, to garde the passage, whereof the kings brother hauing intelligence, came the next day being the xi. of June, and encamped wythin a league of the sayd Aesse.” *Discourse*, 88.

⁵⁷⁶ “Ne faut douter que Dieu ne face la grace à vostre Majesté de voir bien tost les coeurs & volonte de vos subiets unies & reconciliees, & vostre Royaume retourner en son premier estat, splendeur & dignité à la honte & confusiõ de von ennemis & les nostres, lesquels par leurs secretes menees & tres-estroitces intelligences qu’ils ont avec l’Espagnol, ont bien sceu industrieusemēt & subtiliement diuertir l’orage & la tēpeste qui estoit és Pays-bas, pour la faire retourner & tomber sur vostre Couronne, & sur vostre Royaume,” *Mémoires*, 148-194; rendered: “It is not to bee doubted, that GOD (by his speciall grace) will not vnseele the eyes of your Maiestie, and so gyue you speedie and true sight into the hartes and willes of youre Subiectes, reconciled and knitte with an indissoluble bonde, and your Realme returne into his firste estate, beautie and dignitie, to the shame and confusion of yours and our common enemies, who by their subtill and priuie intelligences with the house of Spayne, haue with sinister pollicies translated the late storme and tempeste of the lowe Countryes to your Realme, and almost thundred it vppon the type of youre Crowne,” *Discourse*, 114.

⁵⁷⁷ The *Dictionnaire de la Langue Française*, better known as the “Littré,” traces the provenance of this specific use to the *Mémoires* of Philippe de Commines (1447-1511), published in 8 volumes from 1489 to 1498, who uses “intelligence” frequently to denote tactically useful political and military knowledge, associated with intrigues and plots. De Commines was a Burgundian diplomat and courtier and later turncoat for the French, who, among other missions, had represented Burgundian interests in the English possessions in France around Calais, where he met English figures of the Wars of the Roses like the Yorkist King Edward IV (1442-1483); Richard Neville, 16th Earl of Warwick (1428-1471), who appears as a character in Shakespeare’s *Henry VI, Pt. 2* and *Pt. 3*; and Henry Tudor, later King Henry

meaning of “intelligence” recurs in English exclusively in texts translated from French.⁵⁷⁸ In the second half of that decade, it also occurs in texts translated from Italian and Spanish,⁵⁷⁹ but not, evidently, in any natively English texts.

Importantly for a chapter that will eventually turn to Marlowe’s *Doctor Faustus*, this changes in 1588, a year after one of Marlowe’s German sources, *Historia von D. Johann Fausten* was first published.⁵⁸⁰ The brother of scholar-pamphleteers Gabriel Harvey (1552-1631) and Richard Harvey (1560-1630), the astrologer and

VII (1457-1509). For example, des Commynes writes about suspicions that the Charles IV of Valois-Anjou, Count of Maine (1414-1472) conspired with rebellious nobles against the King of France in 1465, “Aucuns ont voulu dire que le dit conte du Mayne avoit intelligence avec eulx, mais je ne le crois pas.” (“Some would have it, that the Count of Maine held intelligence with them; but I could never discover this, and therefore do not believe it.”) However, this was not consistent usage. Elsewhere de Commynes uses “intelligences” to mean “influence,” such as when he describes the consequences for the English when they refused to a peace settlement to the Hundred Years War suggested by the Burgundians: “Habandonnez furent de ceste maison de Bourgongne, et perdirent leur temps, et les intelligences au royaulme se prindrent à perdre et à diminuer.” (“Being forsaken by the house of Burgundy, they soon lost their time, and their influence in that kingdom daily declined and dwindled.”) In a more recognizable context of espionage, meanwhile de Commynes uses “nouvelles,” “news” instead: “Et y avoit maintes ambassades allans et venans au Roy de par eulx, et de par luy à eulx deux.... les ungz pour scavoir Nouvelles, les aultres pour soubstraire gens, et pour toutes mauvaises marchandises, soubz umbre de bonne foy.” (“During which time, several ambassadors were still going and coming, sometimes from them to the king, sometimes from the king to them ... some for intelligence, and some to debauch their respective subjects, and make what pernicious bargains they could, and all under the specious pretence of amity and friendship.”) Philippe de Commynes, *Mémoires*, Vol. 1. Paris: J. Renouard, 1840. 29, 67 & 111; Andrew Richard Scoble, transl. *The Memoirs of Philip de Commynes, Lord of Argenton*, Vol. 1. London: G. Bell, 1877. 19, 48, & 85-86,

⁵⁷⁸ For example: “Likewise they shall remayne acquitted and discharged of all Artes of hostilitie, leuying and conducting of men of warre ... in cases ciuill as criminall, voyages, intelligences, treaties, & dealings had for their ayde and conseruation,” *The Edict of the French King, for the Appeasing of the Troubles of his Realme*, 11. August 1573. London: Henrie Bynneman, 1573. X; “And on the otherside, there is so good order taken, and such fetches practized in their houses at home, that accordyng to the meanes that your highnesse counseleth, they can nother doe nor say any thyng, wherof good intelligence is not giuen backe agayne,” *A Iustification or Cleering of the Prince of Orednge Agaynst the False Sclaunders*, Arthur Goldyng, transl. London: John Day, 1575.

⁵⁷⁹ For instance in Pietro Martire d’Anghiera, *The History and Trauayle in the West Indies*. Richard Willes, transl. London: Richard Jugge, 1577. 233 & 238; Antonio de Guevara, *A Chronicle, Conteyning the Lues of Tenne Emperours of Rome*. Edward Hellowes, transl. London: Henry Middleton, 1577. 285; *Certaine Orations and Answeres Made by Iohn Casimire Countie Palatine of Rhyne*. Anonymous, transl. London: John Day, 1579. C4r; Francesco Guicciardini, *The Historie of Guiccardin Conteyning the Warres of Italie and Other Parties*. Geoffrey Fenton, transl. London: Thomas Vautroullier, 1579. *passim*.

⁵⁸⁰ *Historia von D. Johann Fausten*. Frankfurt am Mayn [Main]: Johann Spies, 1587.

physician John Harvey (1564-1592) published a pamphlet in which he compares an intelligencer to the demonic dog who, legend had it, served the very Faustian Kölsch-German occultist scholar Heinrich Cornelius Agrippa of Nettesheim (1486-1535):

“Lord what a cunning man was he, that could foresee, and foretell such strange casualties! Had he not, trow you, some secret conference with some such nimble intelligencer, as Cornelius Agrippa had of his spritish characteristicall cur?”⁵⁸¹ A year later, the term is used by Gabriel Harvey’s nemesis, the polemicist Thomas Nashe (1567-1601), writing under the pseudonym Cutbert Curry-Knave during the Martin Marprelate controversy. Nashe, together with his fellow wordsmith John Lyly (1553-1606)⁵⁸² and others, took the side of the Anglican bishops against the eponymous and pseudonymous Puritan polemicist and his supporters, the aforementioned Harvey brothers: “What talk I to him, of hel or damnation, whom Lucifer hath furnisht to infection, with the painted poison of snout-holy deuotion, and all the powers of darknesse, haue adorned as an intelligencer to their kingdome, of the infirmities in our flourishing Church of England.”⁵⁸³ Shortly thereafter, Shakespeare for the first time uses the term in his 1592 play *The Tragedy of King Richard the Third*, in much the same way: Queen Margaret says of the king, “Richard yet lives, hell’s black intelligencer, / Only reserved their factor, to buy souls / And send them thither.”⁵⁸⁴

Such an association of intelligencers with political power, the occult, and with diabolic

⁵⁸¹ John Harvey, *A Discoursiue Probleme Concerning Propheesies*. London: Richard Watkins, 1588. 61.

⁵⁸² John Lyly, *Pappe with an Hatchet, alias a Figge for my Godsonne*. London: John Anoke & John Astile, 1589.

⁵⁸³ Thomas Nashe, *An Almond for a Parrat, or Cutbert Curry-knaues Almes Fit for the Knaue Martin*. London: Eliot’s Court Press, 1590. B2v.

⁵⁸⁴ William Shakespeare, *Richard III*, 4.4.2856.

allegiances was, of course, also implied in the role of Lightborne in Marlowe's 1593 play *Edward II* (Chapter 2).

It is reasonably clear, then, that an idea of "intelligence" and "intelligencers" had lexically and conceptually established itself in English discourse by the late Elizabethan period that bears some resemblance to today's close association of the term with the informational "dark arts" of espionage. It is also clear that unlike the *mysterium* (Chapter 1) and the *arcana imperii* (Chapter 2), which both are carefully performed and center closely on the person and role of the king, from whom these secrets also issue, this third form of political or tactical secret, *intelligence*, is found, amassed, and presented to the king (or other executive person) through third parties, leaving it to the king and his counsellors to draw their calculations from its various, incomplete, and somewhat haphazardly obtained content. In other words, whereas the *mysterium* and the *arcana imperii* are *factum* ("made," i.e. "facts" in the legal sense) by the sovereign and his counsellors, this form of secrecy is *datum* ("given," "data" in the informational sense) to them. Unlike facts, however, "data" is at core a mathematical concept. It is for this reason that a proper consideration of "intelligence" as a form of knowledge must take some account of the mathematical structure of reality, which data may reflect.

II. The Computational *Logos*

What form might a relevant mathematical structure of reality take? The answer that will matter for this particular argument need not universalize; this dissertation will not argue that mathematics constitutes *the* structure of reality, nor indeed that

mathematics achieves any accurate description of “the real,” whatever one’s ontological commitments might make that out to be. Rather, this argument will focus on the pragmatic question of the extent to which the modern concept of *data*, *information*, and thus *intelligence* are mathematically informed, what sort of mathematical inferences information must make about the structure of reality in order to make any claim to represent truth (or at least probability), and the degree to which the subcategory of information called “intelligence” reflects those assumptions. This is the question of the computational *logos*.

The modern concept of secret *intelligence* refers to a type of probability-based information, which enables “knowledge and foreknowledge of the world around us” and to which only key executive decision makers have access.⁵⁸⁵ According to the General Definition of Information, *information* is defined as “data + meaning,”⁵⁸⁶

⁵⁸⁵ “Put simply, the main purpose of intelligence is to provide information to policymakers that may help illuminate their decision options.” Loch K. Johnson, “National Security Intelligence.” *Oxford Handbook of National Security Intelligence*. Oxford: Oxford UP, 2010. 3-32. 5. “The purpose of national intelligence estimating is to help policymakers better appreciate the true state of the world and the hazards and opportunities that face the nation.” Harold P. Ford, *Estimative Intelligence*. Intelligence Profession Series 10. McLean, Va.: Association of Former Intelligence Officials, 1993. 1. ...“eliminating or reducing uncertainty for government decision-makers...” J.R. Clapper, “Luncheon Remarks, Association of Former Intelligence Officers.” *The Intelligencer* (October 1995), 3. “Intelligence is the knowledge and foreknowledge of the world around us – the prelude to Presidential decision and action.” Central Intelligence Agency, *Factbook on Intelligence*. Washington, D.C.: Office of Public Affairs, 1993. 15.

⁵⁸⁶ This formula is generally attributed to (albeit representing a shorthand of) Peter Checkland & Jim Scholes, *Soft Systems Methodology in Action*. New York: Wiley, 1990. 303: “Human beings appear to be uniquely capable of attributing meaning to what they perceive. We can obtain the *data* which is the position of the hands on a clock and convert it into the *information* that we are late for an appointment or that we have time for another cup of tea. This transformation of data into information by the attribution of meaning makes the study of information a very broad and hybrid field.” See also John Mingers, “The Nature of Information and Its Relationships to Meaning.” Russel L. Winder, Stephen K. Probert and Ian A. Besson, eds. *Philosophical Aspects of Information Systems*. London: Taylor & Francis, 1997. 73-84; Luciano Floridi, *Philosophy and Computing: An Introduction*. London: Routledge, 1999. 106-107; Luciano Floridi, *The Philosophy of Information*. Oxford: Oxford UP, 2011. 83-84.

where “data and information are reified entities” and “information is made of data.”⁵⁸⁷ *Data*, meanwhile, is defined “diaphorically”⁵⁸⁸ as “the elementary unit of information ... a difference that makes a difference,”⁵⁸⁹ or as “lacks of uniformity.”⁵⁹⁰ These differences or lacks of uniformity are amenable to being recorded as 1 (“difference” or “data point”) against a background of 0 (“uniformity” or “blank”), thus giving a binary structure to data. Its binary structure makes data complementary with digital computing, which stores information based on switches that are turned on (1) or off (0). Consequently, binary mathematics is the basic structure of modern information, which uses digital computing to administer its information systems. All modern digital information, stored and accessed via computers, is mathematized in this way. All knowledge based on data is therefore mathematized knowledge. Since modern secret

⁵⁸⁷ “Over the past decades, it has common to adopt a *General Definition of Information* (GDI) in terms of *data + meaning*. GDI has become an operational standard, especially in fields that treat data and information as reified entities, that is, stuff that can be manipulated (consider, for example, the now common expressions ‘data mining’ and ‘information management’). A straightforward way of formulating GDI is as a tripartite definition: GDI σ is an instance of information, understood as semantic content, if and only if: GDI.1) σ consists of n data, for $n \geq 1$; GDI.2) the data are *well formed*; GDI.3) the well-formed data are *meaningful*. ... ‘Meaningful’ means that the data must comply with the meanings (*semantics*) of the chosen system, code, or language in question. ... semantic information is not necessarily linguistic.” Luciano Floridi, *Information: A Very Short Introduction*. Oxford: Oxford UP, 2010. 20-21.

⁵⁸⁸ Floridi, *Short Introduction*, 23. “Diaphoric” is derived from Greek διαφορά, “difference.”

⁵⁸⁹ Gregory Bateson, “Double Bind, 1969.” *Ecology of Mind*. Northvale, N.J.: Jason Aronson, 1972. 276-283. 276: “The explanatory world of substance can invoke no differences and no ideas but only forces and impacts. And, per contra, the world of form and communication invokes no things, forces, or impacts but only differences and ideas. (A difference which makes a difference is an idea. It is a bit, a unit of information.)” The word ‘bit’ is a contraction of ‘binary digit,’ “a unit of information derived from a choice between two equally probable alternatives or ‘events’; such a unit stored electronically in a computer.” “bit, n.4”. *OED Online*. March 2019. Oxford University Press. <http://www.oed.com/view/Entry/19519> (accessed April 03, 2019). The term was coined by John Wilder Tukey (1915-2000) of Bell Labs in the 1940s, who also invented the word “software;” Tukey was credited for this by his then-colleague Claude Shannon (1916-2001) in Claude Shannon, “A Mathematical Theory of Communication.” *Bell System Technical Journal* 27.3 (July 1948). 379-423 & 27.4 (October 1948), 623-656. 380.

⁵⁹⁰ Floridi, *Short Introduction*, 23.

intelligence is knowledge consisting of digitized information made from data, the same binary, mathematized structure applies to intelligence.

At the beginning of the Early Modern period, of course, this modern concept could not have yet evolved on the basis of 21st Century mathematical foundations. However, the conceptual groundwork was very much being laid throughout the 16th and 17th Centuries. A rudimentary sketch of binary mathematics was first recorded in the notes of a contemporary of Shakespeare, the English mathematics tutor (and companion on a voyage to Virginia⁵⁹¹) to Walter Raleigh, Thomas Harriot (1560-1621).⁵⁹² Harriot was a friend of Christopher Marlowe's and was implicated in the "Baines Note" presented at Marlowe's trial for blasphemy just before the playwright's suspicious death.⁵⁹³ This was due to Harriot's reputation as one of the "Three Magi" of the so-called "Wizard Earl," Henry Percy, 9th Earl of Northumberland (1564-1632), alongside alchemist-mathematician Walter Warner (1563-1643) and the geographer-mathematician Robert Hues (1553-1632).⁵⁹⁴ Harriot never published his findings on binary numbers, however; there is no record that he shared his insights with any

⁵⁹¹ Thomas Hariot, *A Briefe and True Report of the New Found Land of Virginia*. Frankfurt am Main: Johann Wechel, 1588. The Latin original appears to be lost; this is a translation into English by the early Americanist and Herefordshire cleric Richard Hakluyt (1552-1616). By 1590, the book appears to have been re-translated into (or edited in) Latin by the Artois-Wallonian doctor and botanist Charles de l'Écluse (Carolus Clusius, 1526-1609) under the title, *Admiranda narratio fida tamen, de commodis et incolarum ritibus Virginiae, nuper admodum ab Anglis*. Frankfurt am Main: Johannes Wechel, 1590. This is presumably what Aubrey refers to as *Historia Virginiae* in *Lives* 1.287.

⁵⁹² John W. Shirley, "Binary Numeration before Leibniz." *American Journal of Physics* 19 (1951), 452-454. Harriot's notes comprise Additional MS 6786, ff. 346-347.

⁵⁹³ The English double agent Richard Baines (1554-1594), one of Walsingham's (pseudo-)Catholic spies and one-time roommate of Christopher Marlowe, wrote in his famous "Baines Note:" Marlowe "affirmeth that Moyses was but a Jugler, & that one Heriots being sir W. Raleighs man can do more than he." Harley MS 6848, f. 185.

⁵⁹⁴ John Aubrey, "Thomas Hariot." *Brief Lives*, Vol. 1 (A-H). Andrew Clark, ed. Oxford: Clarendon P, 1898. 284-287.

colleagues, and in his margin notes he dismissed his own speculations as impractical.⁵⁹⁵ Around the same time, Francis Bacon contrived a very practical binary steganographic cipher for encrypting secret letters into sequences of As and Bs (rather than 0s and 1s), which he used to send secret intelligence from abroad while employed by the British spymasters Francis Walsingham, Thomas Wilson, and William Cecil in the 1570s, but failed to explore the theoretical mathematical implications.⁵⁹⁶ Neither Harriot nor Bacon's binary methods made an impression on the wider mathematical world.

That would be left to two other mathematicians of the later 17th Century, both taking their cues from different imperial diplomatic efforts. In his 1670 *Two-Headed Mathematics, Old and New*, the Spanish Cistercian Juan Caramuel y Lobkowitz (1606-1682) had sketched out a limited form of binary mathematics inspired by dictionaries of Native American languages, which he noted did not use a base-10 system.⁵⁹⁷ In response to the difficulties of engaging diplomatically and scientifically

⁵⁹⁵ Shirley, 454. It appears that Harriot's habit of not disclosing, discussing, or publishing the details of his discoveries and yet alluding to them occasionally led to some suspicion that he was in fact dabbling in the arcane. For instance, Aubrey writes of him, "Sir Robert Moray (from Francis Stuart), declared at the Royal Society – 'twas when the comet appeared before the Dutch warre – that Sir Francis had heard Mr. Harriot say that he had seen nine comets, and had predicted seaven of them, but did not tell them how. 'Tis very strange: excogitent astronomi" (285).

⁵⁹⁶ A full explication of this cipher, with examples, can be found in Francis Bacon, *Opera ... qui continent ... augmentis scientiarum* [Extended Latin transl. of *Advancement of Learning* included in *Instauratio Magna*]. London: John Haviland, 1623. Bk 6. 277-284. Bacon already briefly alludes to this cipher, which he calls *omnia per omina*, in his 1605 *Of the Proficiency and Advancement of Learning, divine and humane*. London: Henrie Tomes, 1605. 60-61: "For Cyphars; they are commonly in Letters or Alphabets, but may bee in Wordes... the highest degree whereof, is to write *omnia per omnia*." Bacon claims to have invented the cipher in his youth while abroad, presumably during his Grand Tour with the Huguenot British courtier Amias Paulet (1532-1588), ambassador to Paris, from 1576 to 1579. Both Francis Bacon and his brother Anthony Bacon (1559-1601) were working as British intelligencers abroad during the 1570s and 1580s, especially in the French sphere of influence, cf. Jardine & Stewart, *Hostage to Fortune*, 39-118, *passim*.

⁵⁹⁷ Juan Caramuel y Lobkowitz, *Mathesis biceps, vetus et nova*. Lyon: Laurentius Anisson, 1670. 45-48.

with the Chinese Empire, the Saxon-German polymath Gottfried Wilhelm Leibniz (1646-1716) would finally develop and publish an authoritative theory of binary mathematics for the Paris Academy, hoping that it could function as a universalizable means of communicating information, by converting semantic content into strictly mathematical terms. Leibniz additionally proposed a binary calculation machine, an early version of the digital computer based on his 1679 manuscript, *De Progressione Dyadica* (see Chapter 4).

In addition to the technic of binary mathematics, it was only in the 17th and early 18th Century that a modern and mathematically based understanding of the other constituent component of information and intelligence fully emerged: probability. Modern probability theory is credited especially to the Swiss mathematician – and correspondent of Leibniz – Jacob Bernoulli (1655-1705), as developed in manuscript form between 1684 and 1689 and posthumously published in 1713 as part of his *Art of Conjecture*.⁵⁹⁸ However, here, too, the ingredient ideas had been percolating significantly earlier.

Traditional Aristotelian thought on logic, for example, had held that future events could not be accurately predicted at all. In his *On Interpretation*, Aristotle had famously used the example of a naval battle that may or may not occur tomorrow to illustrate the point.⁵⁹⁹ Christian patristic theologians like Aurelius Augustinus

⁵⁹⁸ Jacob Bernoulli, *Ars Conjectandi*. Basel: Brothers Johann Rudolph & Emanuel Thurneysen [Thurnisiorum fratrum], 1713

⁵⁹⁹ Aristotle, *De Interpretatione [Peri Hermeneias]*, Book 9, esp. 18b and the final section of 19a. The crucial point comes in the penultimate paragraph: εἶναι μὲν ἢ μὴ εἶναι ἅπαν ἀνάγκη, καὶ ἔσσεσθαι γὰρ ἢ μὴ· οὐ μὲντοι διελόντα γὰρ εἰπεῖν θάτερον ἀναγκαῖον. λέγω δὲ οἷον ἀνάγκη μὲν ἔσσεσθαι ναυμαχίαν αὔριον ἢ μὴ ἔσσεσθαι, οὐ μὲντοι ἔσσεσθαι γὰρ αὔριον ναυμαχίαν ἀναγκαῖον οὐδὲ μὴ γενέσθαι· γενέσθαι μὲντοι ἢ μὴ γενέσθαι ἀναγκαῖον. ὅστ' ἐπεὶ ὁμοίως οἱ λόγοι ἀληθεῖς ὥσπερ τὰ πράγματα, δῆλον ὅτι ὅσα

Hipponensis (Augustine of Hippo, 354-430 CE) had gone further, likening the attempt to predict the future to the forbidden art of divination, to idolatry, and to tempting God.⁶⁰⁰ Church fathers like the Carthaginian-Latin theologian Quintus Septimius Florens Tertullianus (Tertullian, 155-240 CE)⁶⁰¹ and the Greek Archbishop of Constantinople, Ioannes the Golden-Mouthed (John Chrysostom, 349-407 CE)⁶⁰² had considered gambling – that is, the attempt to predict the probable outcome of future events for monetary gain – as a close relative of the sinful counterfeits of the *spectaculi* in the theater.

The issue had been reconceived in the Early Modern period, instigated by Jean Calvin (1509-1564) in his *Institutes*, in his exegesis of *Proverbs* 16.33: “The lot is cast into the lap; but the whole disposing thereof is of the Lord.”⁶⁰³ Calvin claims, firstly, that it is God who causes lots to fall a certain way. This means that at least God

οὕτως ἔχει ὥστε ὁπότερ' ἔτυχε καὶ τάναντία ἐνδέχεται, ἀνάγκη ὁμοίως ἔχειν καὶ τὴν ἀντίφασιν.” In English: “All things must be or not be, or must come or not come into being, at this or that time in the future. But we cannot determinately say which alternative must come to pass. For example, a sea-fight must either take place on the morrow or not. No necessity is there, however, that it should come to pass or should not. What is necessary is that it either should happen to-morrow or not. And so, as the truth of propositions consists in corresponding with facts, it is clear in the case of events where contingency or potentiality in opposite directions is found that the two contradictory statements about them will have the same character.” Aristotle, *Categories, On Interpretation, Prior Analytics*. Loeb Classical Library 325. H.P. Cooke & Hugh Tredennick, transl. Cambridge, Mass.: Harvard UP, 1938. 138-141.

⁶⁰⁰ Rüdiger Campe, *The Game of Probability*. Palo Alto: Stanford UP, 2012. 20-23.

⁶⁰¹ Tertullian, “De Spectaculis.” *Tertullian, Minucius Felix: Apology, De Spectaculis, Octavius*. Loeb Classical Library 250. Transl. Terrot Reaveley Glover. Cambridge, Mass.: Harvard UP, 1931. 230-301. “Aspice populum ad id spectaculum iam cum furore venientem, iam tumultuosum, iam caecum, iam de sponsonibus concitatum. Tardus est illi praetor, semper oculi in urna eius cum sortibus volutantur. Dehinc ad signum anxii pendent, unius dementiae una vox est.” In English: “Look at the populace coming to the show—mad already! disorderly, blind, excited already about its bets! The praetor is too slow for them; all the time their eyes are on his urn, in it, as if rolling with the lots he shakes up in it. The signal is to be given. They are all in suspense, anxious suspense. One frenzy [dementiae], one voice!” (XVI, 270-273).

⁶⁰² John Chrysostom, *De Inani Gloria et de Educandis Liberis*.

⁶⁰³ In Hebrew, *Mishlé* [משלי] 16.33:

בְּחֵיק יוֹטֵל אֶת-הַגּוֹרֵל אֶל-מִשְׁפָּטָיו:

already knows the outcome, thus predetermining it. And, secondly, Calvin asserts that what appears like chance to humans caught in the strictures of a finite view of things is in fact orderly and perfectly predictable in terms of the god's-eye-view of divine providence.⁶⁰⁴ This “opens up a space for worldly calculation,” as it presumes a correspondence between the ordering of the secular world and all events in it vis-à-vis the perfect divine order that underlies and animates the world.⁶⁰⁵ (It also, theologically speaking, managed to reconcile Christian thought with the pervasive ritual use in the Jewish *Tanakh* of a game of chance, the casting of lots, in order to establish God's divine will, not least in establishing executive sovereignty over Israel.⁶⁰⁶)

Subsequently, different types of probabilistic thinking converged more coherently, suggesting an underlying mathematical correspondence between different

⁶⁰⁴ “Ridicula sane insania, quod facere sine Deo instituunt miseri homines, qui ne profari quidem possunt nisi quod ille voluerit. Porro quo magis exprimeret Scriptura, nihil penitus in mundo geri nisi ex eius destinatione, quae maxime fortuita videntur, illi subiaceret ostendit. Quid enim magis ad casum referas quam dum praetereuntem viatorem defractus ex arbore ramus interficit? At longe aliter Dominus, qui se fatetur eum tradidisse in manu occisoris. Sortes similiter quis non fortunae caecitati permittat? Verum Dominus non patitur, qui sibi vindicet earum iudicium. Non sua potentia fieri docet ut & in sinum coniciantur lapilli & extrahantur: sed quod unum casui dari poterat, a seipso esse testatur.” Jean Calvin, *Institutio Christianae Religionis*. Geneva: Robert Stephan, 1559. 63. In English: “It is a strange infatuation, surely for miserable men, who cannot even give utterance except in so far as God pleases, to begin to act without him! Scriptures moreover, the better to show that every thing done in the world is according to his decree, declares that the things which seem most fortuitous are subject to him. For what seems more attributable to chance than the branch which falls from a tree, and kills the passing traveller? But the Lord sees very differently, and declares that He delivered him into the hand of the slayer. In like manners who does not attribute the lot to the blindness of Fortune? Not so the Lord, who claims the decision for himself. He says not, that by his power the lot is thrown into the lap, and taken out, but declares that the only thing which could be attributed to chance is from him.” John Calvin, *Institutes of Christian Religion*. Henry Beveridge, transl. Edinburgh: Calvin Translation Society, 1845. 239.

⁶⁰⁵ Campe, 26. In depth: 23-31.

⁶⁰⁶ E.g. *Book of Joshua* 18.9-10: “And the men went and passed through the land, and described it by cities into seven parts in a book, and came again to Joshua to the host at Shiloh. And Joshua cast lots for them in Shiloh before the Lord: and there Joshua divided the land unto the children of Israel according to their divisions” (KJV). In Hebrew, *Sefer Yehoshua* [ספר יהושע] 18.9-10:

וַיֵּלְכוּ הָאֲנָשִׁים וַיַּעֲבְרוּ בָאָרֶץ וַיִּכְתְּבוּהָ לְעָרִים לְשִׁבְעָה חֻלְקִים עַל־סֵפֶר וַיָּבֹאוּ אֶל־יְהוֹשֻׁעַ אֶל־הַמַּחֲנֶה שְׁלֹה:
וַיִּשְׁלַח לָהֶם יְהוֹשֻׁעַ גּוֹרֵל בְּשִׁלֹה לִפְנֵי יְהוָה וַיִּסְלַח־נָשָׁם יְהוֹשֻׁעַ אֶת־הָאָרֶץ לִבְנֵי יִשְׂרָאֵל כְּמַחְלָקָתָם:

types of probability. The first was mathematical calculations related to espionage ciphers, which attempted to identify the likelihood that certain letters of the alphabet would repeat themselves, thus aiding in the deciphering. This method was first applied systematically by Arab cryptologers during the Islamic Golden Age (700s-1300s CE), most prominently by the Al-Khalil ibn Ahmad al-Farahidi (usually referred to as Al-Khalil, 718-786 CE), one of the “grammarians of Basra” in Mesopotamia during the Umayyad and Abbasid caliphates, in his *Book of Cryptographic Messages*;⁶⁰⁷ the Mesopotamian “father of Muslim philosophers” Abu Yusuf Ya‘qub ibn ‘Ishaq as-Sabbah al-Kindi (al-Kindi, 801-873 CE) in his *Manuscript on Deciphering Cryptographic Messages*;⁶⁰⁸ and the Mesopotamian cryptologist Ali ibn ‘Adlan (1187-1268 CE), in his *Treatise for King Ashraf*.⁶⁰⁹ Such cipher-calculations had a long afterlife, not least in poetry – they spilled over into a popular tradition of Arabic verse that the reader had to first decrypt through a close reading of metric and rhythmic possibilities before being able to enjoy its beauty and insights.⁶¹⁰ More importantly, insofar as that these scholars had treated the sample of available letters in an encrypted text as a mathematical sample subject to statistical analysis *and then also formal and textual interpretation*, these thinkers were the first to skirt the idea that the realm of

⁶⁰⁷ Abu ‘Abd ar-Raḥmān al-Khalīl ibn Aḥmad ibn ‘Amr ibn Tammām al-Farāhīdī al-Azdī al-Yaḥmadī [‘Al-Khalil’], *Kitab al Mu’amma* (كتاب المعَمَى). The book itself is lost, but its content is known from other sources. See Ibrahim A. Al-Kadit, “Origins of Cryptology: The Arab Contributions.” *Cryptologia* 16.2 (1992), 97-126; Lyle D. Broemling, “An Account of Early Statistical Inference in Arab Cryptology.” *The American Statistician* 65.4 (Fall 2011), 255–257.

⁶⁰⁸ Abu Yūsuf Ya‘qūb ibn ‘Ishāq aṣ-Ṣabbāḥ al-Kindī [‘Al-Kindi’], *Makhtut Fi Faku Rasayil Altashfir* (مخطوط في فك رسائل التشفير).

⁶⁰⁹ ‘Alī ibn ‘Adlān [‘Ibn Adlan’], *Al-Mu'allaf lil-Malik al-'Ashraf* (المؤلف للملك الأشرف).

⁶¹⁰ James L. Massey, “Review of Series on Arabic Origins of Cryptology.” *Cryptologia* 32.3 (July 2008), 280-283. 282. See particularly the anonymous *Art of the Poets* and the work of Ibn Ṭabaṭaba and Muhammad al-Gurhumi.

political secrecy might contain a new knowledge-concept, one that integrates arithmetic, semantics, and a certain kind of poetics.

Finally, in Renaissance Europe, the Lombard physician and polymath Gerolamo Cardano (1501-1576) took these different precursors of probability theory and applied their insights to games of chance such as dice, giving them the modern applicability to events whose outcome is still “in the air” as far as all observers are concerned. In his 1565 *Book on Games of Chance*,⁶¹¹ Cardano first states the mathematical definition of probability (using the term *circuit* for what today would be referred to as a *set*⁶¹²), which he purposely frames as the uncovering of a secret, and as contradicting Aristotle:

I do not wish to hide this, which has eluded many, not understanding Aristotle, to their loss. Therefore, there is one general calculation [*ratio generalis*]: that we must consider the entire circuit, and the number of those casts which represents the favorable outcome, and then compare

⁶¹¹ Girolamo Cardano, *Liber de Ludo Aleae*. The current scholarly consensus, based on internal evidence within the text, is that the work was written in 1565. Based on the absence of evidence proving otherwise, the current scholarly consensus also appears to be that this work went unpublished until it was included in the 1663 edition of Cardano’s collected works; if any, the authority usually cited on this question is the facsimile edited by August Buck, *Opera Omnia*. Stuttgart: Friedrich Frommann Verlag, 1966. Girolamo Cardano, “Liber de Ludo Aleae.” *Hieronymi Cardani Mediolanensis ... Operum*, Vol. 4. Charles Spon [Carolus Sponius], ed. Lyon: Jean-Antoine Huguetan & Marc-Antoine Ravaut, 1663. 262-276.

⁶¹² Modern set theory was not invented until the 19th Century, when it was discovered by the Danish-German mathematician Georg Ferdinand Ludwig Philipp Cantor (1845-1918) as a means to address problems regarding mathematical infinity. His seminal paper was “On a Property of the Collection of All Real Algebraic Numbers.” Georg Cantor, “Ueber eine Eigenschaft des Inbegriffs aller reellen algebraischen Zahlen.” *Journal für die reine und angewandte Mathematik* 77 (1874), 258-262. In the Early Modern period, a “set” of numbers tended to refer to the threshold of points needed in order to win a game of dice, or else the stake on the table during one particular throw of the dice. See for example Thomas Heywood (d. 1641), *A Woman Killed with Kindness*, D4v: “Let them that are taken playing false forfeit the set.”

that number to the remaining circuit; wagers should be made according to that proportion in order to contend on equal terms.⁶¹³

Importantly, Cardano was primarily an arithmetician, not a geometer.⁶¹⁴ The *data* for his calculations is a series of arithmetic numbers, and his means of describing possible future realities is algebraic.

Probability theory finally took a fuller theoretical modern form a generation before Bernoulli, in an exchange in 1654 between the Gascon-French mathematician Pierre de Fermat (1607-1665) and his Auvergnese-French colleague Blaise Pascal (1623-1662), also about games of chance; the latter also consulted the Hollander-Dutch scientist Christiaan Huygens (1629-1695). The problem had been posed to them by the Poitevin-French salon intellectual Antoine Gombaud, Chevalier de Méré (1607-1684), who was connected with them through the extensive epistolary network of the Mainiot-French polymath Marin Mersenne (1588-1648), the precursor to the Royal French Academy in Paris in a parallel way that Samuel Hartlib would later become that of its Royal British cousin in London.⁶¹⁵ The mathematical technicalities of this interim step in probability theory aside, it is salient to note that Pascal and Fermat, too,

⁶¹³ “Volui hoc non latere, quia multi non intelligentes Aristotelem, decipiuntur, & cum iactura. Una est ergo ratio generalis, ut consideremus totum circuitum, & ictus illos, quot modis contingere possunt, eorumque numerum, comparentur, & iuxta proportionem erit commutatio pignorum, ut aequali conditione certent.” Cardano, *Opera* I, 266.

⁶¹⁴ Cardano’s most famous work is his *Ars Magna* (1545), in which Cardano is the first to introduce multiple roots and complex numbers. *Artis Magnae sive de Regulis Algebraicis*. Nürnberg: Johann Petreius, 1545.

⁶¹⁵ Pascal mentions this conversation in his letter to Fermat on 29 July 1654: “I admire the method of the points more than that of the dice; I have seen several people solve that of the dice, like the Chevalier de Méré, who is the one who proposed these questions to me.” In French: “J’admire bien davantage la méthode des parties que celle des dés; j’avois vu plusieurs personnes trouver celle des dés, comme M. le chevalier de Méré, qui est celui qui m’a propose ces questions.” “Lettre LXX. Pascal a Fermat.” *Œuvres de Fermat*, Vol. 2. Paul Tannery & Charles Henry, eds. Paris: Gauthier-Villars et Fils, 1894, 289–98. 290.

turned to arithmetic to solve problems featuring contingent realities, encapsulated by the metaphor “dice in the air.” The conversation about probability between Gombaud, Pascal, Fermat, and Huygens was therefore *de facto* also a broader exchange about which kind of mathematics can best predict – and thus capture – the nature of reality: arithmetic or geometry.

The difference between the two rival points of view is well captured in a letter from Gombaud to Pascal written in late 1658 or early 1659,⁶¹⁶ in which Gombaud criticizes Pascal for insisting on the supposed superiority of the “geometrical spirit.”⁶¹⁷ Gombaud accuses Pascal of using a method that misses the big picture by insisting on thinking of evidence as only that which can be logically deduced from abstract principles: “There remains to you yet a habit that you have taken in this Science, to judge whatever it be only by your demonstrations which most often are false. These long reasonings you draw from line to line prevent you from entering, first some higher understanding.” Moreover, Gombaud points out that real-world scenarios tend to require attention to factors that rely on induction (or, in this case of probable rather than definitive conclusions, abduction): “You lose thence a great advantage in the world, for then as with quick mind, and acute eyes, we remark on the look and the air of the persons so we see a quantity of things which are much able to serve.” Consequently, “you believe that in order to have the right mind & not make false

⁶¹⁶ Blaise Pascal, *Les Lettres de Blaise Pascal*. Maurice Beaufreton, ed. Paris: Georges Crès, 1922. 283 n1. Beaufreton ascribes this dating to the Parisian historian of Jansenism, Augustin Gazier (1844-1922), without citing a more precise reference for it.

⁶¹⁷ Antoine Gombaud, Chevalier de Méré. “Lettre XIX. A Monsieur Pascal.” *Lettres de Monsieur le chevalier de Méré. Partie 1*. Paris: Denys Thierry & Claude Barbin, 1682. 110-126.

reasoning, so it suffices for you to follow your Figures without distancing yourself from them.” This, so Gombaud keeps Pascal from seeing things *as they really are*, from “penetrating into what the things consist which present themselves:” “Your numbers, this Artificial reasoning, do not make known that which the things are. It is necessary to study them by another way, but you remain always in errors where the false demonstrations of Geometry have cast you [*jetter*, as in *jetter les dés*, ‘cast the dice.}]”⁶¹⁸ Gombaud evidently found himself on the modern side of this debate – that is, he favored observations based on calculations of arithmetical (i.e. *observable* and *countable*) types of data and inductive reasoning like that practiced by the scientific method of later decades.

Pascal continued to disagree, siding emphatically with geometry. There had indeed be an Early Modern tendency to view geometrical thinking as the basis of all other mathematics, and also of philosophy. Historians of mathematics have generally pinpointed the work of the Padovian mathematicians Pietro Pomponazzi (1462-1525)

⁶¹⁸ “Il vous reste encore une habitude que vous avez prise en cette Science à ne juger de quoy que ce soit que par vos demonstrations qui le plus souvent sont fausses. Ces longs raisonnemens tirez de ligne en ligne vous empeschent d’entrer, d’abord en desconnoissances plus hautes qui ne trompent jamais. Je vous avertis aussi que vous perdez par-là un grand avantage dans le monde, car lors qu’on à l’esprit vif, & les yeux fins on remarque à la mine & à l’air des personnes qu’on voit quantité de choses qui peuvent beaucoup servir, & si vous demandiez selon vostre coûtume à celui qui sçait profiter de ces sortes d’observations sur quel principe elles sont sondées, peut-estre vous diroit-il qu’il n’en sçait rien, & que ce ne sont des preuves que pour luy. Vous croyez d’ailleurs que pour avoir l’esprit juste & ne pas faire un faux raisonnement, il vous suffit de suivre vos Figures sans vous en éloigner, & je vous jure que ce n’est presque rien non plus que cet art de raisonner par les regles, dont les petits esprits & les demi-Savans sont tant de cas. Le plus difficile & le plus necessaire pour cela dépend de penetrer en quoy consistent les choses qui se presentent, soit qu’on veuille les opposer ou les comparer, ou les assembler, ou les separer, & dans le discourse en tirer de consequences bien justes. Vos nombres ny ce raisonnement Artificiel ne sont pas connoistre ce que les choses sont, il faut les étudier par une autre voye, mais vous demeurerez toûjours dans les errers où les fausses demonstrations de la Geometrie vous ont jetté.” Gombaud, *Lettres*, 111-112. The transl. is by Richard J. Pulskamp, Department of Mathematics and Computer Science, Xavier University, Cincinnati, http://cerebro.xu.edu/math/Sources/Demere/de_mere_to_pascal.pdf.

and especially his later colleague Giacomo Zabarella (1533-1589) on Aristotelian logic as the lead texts of that perspective. That work concerns the formulation of the two aspects of the so-called *regressus* method: the “resolutive” and the “compositive” aspects, the first associated with *analysis* and the second with *synthesis*.⁶¹⁹ According to Zabarella, for example, geometry was certain, because deductive, whereas the veracity of arithmetic was only verifiable by induction, which could only approximate certainty through high probabilities and thus could not be taken to properly express truth. This view remained influential in the 17th Century, especially among rationalist thinkers: Pascal’s intellectual and mathematical predecessor, René Descartes, has long been regarded as a practitioner of the geometrical method in his philosophy,⁶²⁰ as have Galileo Galilei (see below) and, later, Nicolas Malebranche,⁶²¹ Thomas Hobbes⁶²² and Baruch Spinoza.⁶²³

Pascal had his own perspective on geometrical thinking, however, which he discusses primarily in two texts. The first occurs in *Pensées XXI*, “Pensées Diverses.”

⁶¹⁹ Ernst Cassirer, *Das Erkenntnisproblem in der Philosophie und Wissenschaft der neueren Zeit*, Vol. 1. Berlin: Verlag Bruno Cassirer, 1922. 136-144.

⁶²⁰ René Descartes, AT vii 211-213, CSM II 110-111.

⁶²¹ For instance Nicholas Malebranche, “*Oeuvres complètes de Malebranche*, Vol. 1, A. Robinet, ed. Paris: J. Vrin, 1958. 122ff.

⁶²² Thomas Hobbes, *De Corpore* 3.20.6 §4: “Analysis ergo est, ex terminorum alicujus dicti, quod pro vero supponimus, definitionibus, et rursus ex terminorum illarum definitionum definitionibus ratiocinatio perpetua, donec ad nota aliqua ventum sit, quorum composition est veritatis vel falsitatis dicti suppositi demonstration.” In English, in the anonymous first translation of 1656: “Analysis, is continual Reasoning from the Definitions of the terms of a proposition we suppose true, and again from the Definitions of the terms of those Definitions, and so on, till we come to some things known, the Composition whereof is the demonstration of the truth or falsity of the first supposition.”

⁶²³ Edwin Curley, *Behind the Geometrical Method: A Reading of Spinoza’s Ethics*. Princeton: Princeton UP, 1988. The sources for Spinoza’s method trace back to correspondence between Christian Wolff, Ehrenfried Walther von Tschirnhaus, and Spinoza.

Pascal defines *l'esprit de Géométrie* – or as Pascal's first English translator, Joseph Walker (fl. 1680s), phrases it, “the Wit of Geometry:”⁶²⁴

There are then two sorts of Wits, one that penetrates vigorously and profoundly the Consequences of Principles, and that is the Polite Wit [*l'esprit de finesse*]; the other comprehends a great many Principles without mingling them, and that's the Wit of Geometry; the one is strength and clearness of Wit; the other is largeness of Wit.⁶²⁵

Pascal considers the difference between the two *esprits* one of method, declaring that to the Wit of Geometry, “the Principles are clear, but remote from common usage, so that one has some difficulty to look that way for want of use; but turn a little that way and the Principles will appear plainly.”⁶²⁶ Meanwhile, “in the refin'd Wit the Principles are in common use, and visible to the sight of all the World. One has no need to turn about, nor to give themselves any inconvenience; there needs only *to have a clear sight*; but it must be clear; for the Principles are so fine, and in such great number, that 'tis almost impossible but they will be lost.”⁶²⁷ Consequently, the two types of *esprit* rarely coexist within the same mind:

⁶²⁴ Blaise Pascal, *Pensées*. Paris: Guillaume Desprez, 1670, 307-312. 308; Blaise Pascal, *Monsieur Pascall's Thoughts, Meditations, and Prayers*. Joseph Walker, transl. London: Jacob Tonson, 1688. 235.

⁶²⁵ Pascal, *Thoughts*, 235-236. In French: “Il y a donc deux sortes d'esprits, l'un de pénétrer vivement & profondément les consequences des principes, & c'est là l'esprit de justesse; l'autre de comprendre un grand nombre de principes sans les confondre, & c'est là l'esprit de Geometrie. L'un est force & droiture d'esprit, l'autre est etendue d'esprit.” Pascal, *Pensées*, 308.

⁶²⁶ Pascal, *Thoughts*, 236. “Il y a beaucoup de difference entre l'esprit de Geometrie & l'esprit de finesse. En l'un les principes sont palpables, mais éloignez de l'usage commun, de sorte qu'on a peine à tourner la teste de ce costé là manque d'habitude; mais pour peu qu'on s'y tourne on voit les principes à plein.” Pascal, *Pensées*, 308.

⁶²⁷ Pascal, *Thoughts*, 236. “Dans l'esprit de finesse les principes sont dans l'usage commun, & devant les yeux de tout le monde. On n'a que faire de tourner la teste ny de se faire violence. Il n'est question

'Tis seldom Geometricians are Witty, or that the Witty are Geometricians, because Geometricians will handle witty things Geometrically, and thereby make themselves ridiculous, going about to begin by Definitions, and then afterwards by Principles, which is not the manner of proceeding in this kind of Reasoning [i.e. *l'esprit de finesse*]; not but the mind doth it, but it does it silently, naturally, and without Art; *the expression of it is beyond the power of Men, and the knowledge of it belongs but to very few.*⁶²⁸

In contrast,

Refin'd Wits on the contrary being thus accustomed to judge *at one view*, are so startled when there is laid before them Propositions that they don't understand, and for the clearing of which they must pass through difficult Principles and Definitions, that they were not wont to see so particularly, that they are soon wearied and discouraged.⁶²⁹

Geometricians, Pascal concludes, can understand finesse if "all things are explain'd to them by Definitions and Principles," whereas the Witty lack the virtue of patience "to

que d'avoir bonne veüe: mais il faut l'avoir bonne; car les principes en sont si déliez & en si grand nombre, qu'il est presque impossible qu'il n'en échappe." Pascal, *Pensées*, 309.

⁶²⁸ Pascal, *Thoughts*, 237. "Et ainsi il est rare que les geometres soient fins, & que les fins soient geometres; à cause que les geometres veulent traiter geometriquement les choses fines, et se rendent ridicules, voulant commencer par les définitions, & ensuite par les principes, ce qui n'est pas la maniere d'agir en cette sorte de raisonnement. Ce n'est pas que l'esprit ne le fasse; mais il le fait tacitement, naturellement, & sans art; car l'expression en passe tous les hommes, & le sentiment n'en appartient qu'à peu." Pascal, *Pensées*, 310-311.

⁶²⁹ Pascal, *Thoughts*, 237. "Et les esprits fins au contraire ayant ainsi accoutumé de juger d'une seule vue, sont si étonnez quand on leur presente des propositions où ils ne comprennent rien, & où pour entrer il faut passer par des définitions & des principes steriles et qu'ils n'ont point accoutumé de voir ainsi en détail, qu'ils s'en rebutent et s'en dégoûtent." Pascal, *Pensées*, 311.

descend to the first Principles of imaginary and speculative things, which they never have seen in the World nor in Custom.”⁶³⁰ Though less pragmatic, only the geometricians have a true handle on reality, which consists of rational objects.

The second text is the essay often titled “Of the Geometrical Spirit,” which does not use the term *l’esprit de Géométrie* itself but considers the geometrical method as a form of *inventio*.⁶³¹ Pascal begins by stating what he considers to be the “three principal objects in the study of truth:” discovery, demonstration, and verification.⁶³² Pascal focuses particularly on demonstration, which to him includes verification.⁶³³ Geometrical demonstration proceeds from definitions and is deductive in nature; this approach is rhetorically persuasive as “nothing more promptly and more effectually removes the captious cavils of sophists” and “suffices to banish all kinds of difficulties and equivocations,”⁶³⁴ and alone of the sciences it manages to approach “the true order, which consists ... in defining every thing and in proving every thing.”⁶³⁵ Once

⁶³⁰ Pascal, *Thoughts*, 238. “Les geometres qui ne sont que geometres ont donc l’esprit droit, mais pourvu qu’on leur explique bien toutes choses par définitions & par principes; autrement ils sont faux et insupportables; car ils ne sont droits que sur les principes bien éclaircis. Et les fins qui ne sont que fins ne peuvent avoir la patience de descendre jusqu’aux premiers principes des choses speculatives & d’imagination qu’ils n’ont jamais vues dans le monde & dans l’usage.” Pascal, *Pensées*, 311-312.

⁶³¹ Blaise Pascal, “Of the Geometrical Spirit.” *Minor Works*, Harvard Classics 48.3. O.W. Wright, transl. New York: Collier & Son, 1910. 421-437; Blaise Pascal, “De L’Esprit Géométrique.” *Œuvres Complètes* 3. Léon Brunschvigg & Pierre Boutroux, eds. Paris: Hachette, 1871. 163-182.

⁶³² Pascal, “Geometrical Spirit,” 421; Pascal, “L’Esprit,” 163: “On peut avoir trois principaux objets dans l’étude de la vérité: l’un, de la découvrir quand on la cherche; l’autre, de la démontrer quand on la possède; le dernier, de la discerner d’avec le faux quand on l’examine.”

⁶³³ Pascal, “Geometrical Spirit,” 421; Pascal, “L’Esprit,” 163: “Je ne parle point du premier: je traite particulièrement du second, et il enferme le troisième. Car, si l’on sait la méthode de prouver la vérité, on aura en même temps celle de la discerner, puisqu’en examinant si la preuve qu’on en donne est conforme aux règles qu’on connaît, on saura si elle est exactement démontrée.”

⁶³⁴ Pascal, “Geometrical Spirit,” 424; Pascal, “L’Esprit,” 165: “Rien n’éloigne plus promptement et plus puissamment les surprises captieuses des sophistes que cette méthode, qu’il faut avoir toujours présente, et qui suffit seule pour bannir toutes sortes de difficultés et d’équivoques.”

⁶³⁵ Pascal, “Geometrical Spirit,” 424; Pascal, “L’Esprit,” 165: “Ces choses étant bien entendues, je reviens à l’explication du véritable ordre, qui consiste, comme je disais, à tout définir et à tout prouver.”

reduced to their basic elements, these definitions are self-evident to a geometric mind: “For, when it has arrived at the first known truths, it pauses there and asks whether they are admitted, having nothing clearer whereby to prove them; so that all that is proposed by geometry is perfectly demonstrated, either by natural enlightenment or by proofs.”⁶³⁶ Therefore, Pascal concludes, geometry is not just a species of mathematics, but rather the genus to which other, derivative species like mechanics and arithmetic belong.⁶³⁷ It points to “properties common to all these things, the knowledge of which opens the mind to the greatest marvels of nature.”⁶³⁸ However, because the geometrical mind operates free of the common referents of human experience, such as specific fixpoints in space and time, “we find minds excellent in all things else, that are shocked by these infinities and can in no wise assent to them.”⁶³⁹

In holding this view, Pascal was hardly alone. Pascal’s point that geometrical thinking best gets at infinite and rational truths is famously prefigured by Galileo Galilei when he writes in *The Assayer* that

⁶³⁶ Pascal, “Geometrical Spirit,” 428; Pascal, “L’Esprit,” 168: “Mais, hors ceux-là, le reste des termes qu’elle emploie y sont tellement éclaircis et définis, qu’on n’a pas besoin de dictionnaire pour en entendre aucun; de sorte qu’en un mot tous ces termes sont parfaitement intelligibles, ou par la lumière naturelle ou par les définitions qu’elle en donne.”

⁶³⁷ Pascal, “Geometrical Spirit,” 428-429; Pascal, “L’Esprit,” 168: “On trouvera peut-être étrange que la géométrie ne puisse définir aucune des choses qu’elle a pour principaux objets: car elle ne peut définir ni le mouvement, ni les nombres, ni l’espace; et ce pendant ces trois choses sont celles qu’elle considère particulièrement et selon la recherche desquelles elle prend ces trois différents noms de mécanique, d’arithmétique, de géométrie, ce dernier mot appartenant au genre et à l’espèce.”

⁶³⁸ Pascal, “Geometrical Spirit,” 428-429; Pascal, “L’Esprit,” 169: “Ainsi il y a des propriétés communes à toutes choses, dont la connaissance ouvre l’esprit aux plus grandes merveilles de la nature.”

⁶³⁹ Pascal, “Geometrical Spirit,” 431; Pascal, “L’Esprit,” 170: “On trouve des esprits, excellents en toutes autres choses, que ces infinities choquent, et qui n’y peuvent en aucune sorte consentir.”

Philosophy is written in this grand book, the universe, which stands continually open to our gaze. But the book cannot be understood unless one first learns to comprehend the language and read the letters in which it is composed. It is written in the language of mathematics, and its characters are triangles, circles, and other geometric figures without which it is humanly impossible to understand a single word of it; without these, one wanders about in a dark labyrinth.⁶⁴⁰

Galileo's notion has often been paraphrased as, "Mathematics is the language in which God has written the universe." Like Pascal, what he meant is geometry.

III. The Geometrical *Logos*

To turn now to the concept of *data*. Given the importance of data as the "stuff" of information with a binary and arithmetic structure, it might be surprising to discover that the term *data* originates with Eukleides of Alexandria (ca. 300 BCE), who uses it in a decisively geometrical fashion. The word is a Latin translation of the title of one of Euclid's works, *Dedomena (Data)* which, too, means "the given."⁶⁴¹ Euclid's more famous work, the *Stoicheia (Elements)*, consists of definitions,

⁶⁴⁰ "The Assayer," in *Discoveries and Opinions of Galileo*, ed. & transl. Stillman Drake (Princeton: Princeton UP, 1957), 231-280, 237-238. The original is in Galileo Galilei, *Il Saggiatore*. Rome: Virginio Cesarini, 1623: "La filosofia è scritta in questo grandissimo libro che continuamente ci sta aperto innanzi a gli occhi (io dico l'universo), ma non si può intendere se prima non s'impara a intender la lingua, e conoscer i caratteri, ne' quali è scritto. Egli è scritto in lingua matematica, e i caratteri son triangoli, cerchi, ed altre figure geometriche, senza i quali mezzi è impossibile a intenderne umanamente parola; senza questi è un aggirarsi vanamente per un oscuro laberinto."

⁶⁴¹ Floridi, 22-25; Christian Marinus Taisbak, transl. & ed. *Δεδομένα: Euclid's Data, Or the Importance of Being Given*. København: Museum Tusulanum Press, 2003.

propositions, and their mathematical proofs.⁶⁴² The *Dedomena*, meanwhile, states observations that are necessarily logically deduced from those definitions, propositions, and mathematical proofs. This is what makes them *datum, given* – or as Danish historian of mathematics Christian Marinus Taisbak puts it, “Euclid proves deductively that if some items are given, some other items are also given, *into the bargain* so to speak.”⁶⁴³ The entire *Dedomena* is a catalogue of statements like the following, which is reasonably accessible to the layperson: “Def. 5. A circle is said to be given in magnitude if its radius is given in magnitude.”⁶⁴⁴ In other words, if one knows the measurement of the radius of a circle, one knows everything else about that circle’s size because the radius is the only part of the formulas describing circles (such as that for circumference, $C=2\pi r$, or that for the area of a circle, $A=\pi r^2$) whose magnitude is variable. These *data* are “given” because they follow necessarily, but they remain abstract and describe abstract objects. It should thus be evident that at this moment in mathematical history, this meaning of *data* does not yet evidently resemble to the arithmetic-binary *difference that makes a difference* of the 21st Century’s “diaphoric,” empirical meaning of the term. That shift will require an Early Modern mathematical innovation, one that overcomes the shortcomings of the geometrical view.

⁶⁴² Beginning rather famously with the, in the words of Euclid’s first English translator Henry Billingsley (d. 1606), “Definition of a poynt. A signe or point is that, which hath no part.” This translation includes a preface by none other than John Dee, an overview of the branches of mathematics. Euclid, *The Elements of Geometrie*. Henry Billingsley, transl. London: John Daye, 1570. B.i.r. In the Greek original: “σημεῖόν ἐστιν, οὗ μέρος οὐθέν.”

⁶⁴³ Taisbak, *Δεδομένα*, 13.

⁶⁴⁴ Taisbak, *Δεδομένα*, 33. In Greek: “ὁρος 5. Κύκλος τῷ μεγέθει δεδῶθαι λέγεται, οὐ δέδῶται ἢ ἐκ τοῦ κέντρου τῷ μεγέθει.”

Many ancient Greek philosophers, however, would have agreed with Euclid. Among the Pre-Socratics, this assumption predominates in Pythagorean philosophy, which held that everything was made of numbers, and that the structure underlying the *kosmos* expresses itself in the harmonic interplay of geometrical magnitudes that can be figured as ratios.⁶⁴⁵ A fairly lucid summary of the logic underlying this Pythagorean theory of emergence of the *kosmos* from numbers can be found in the *Lives of Eminent Philosophers* by the 3rd Century Bithynian-Greek biographer Diogenes Laertius: “The first truth of all things [*archen men apanton*] is the monad,” or unit. The dyad can be derived from the monad. Numbers can be derived from monads and dyads. Plane geometry follows from numbers. Solid geometry follows from plane geometry. The bodies of the sensible world follow from solid geometry. The four elements fire, water, earth, and air express the sensible bodies, and when they interchange and combine, they form the earth as we know it. Thus, the bodies of the sensible world are directly derived from numbers, and all of them are contained in a perfectly spherical world.⁶⁴⁶ As the popular Pythagorean mnemonic goes, “all is number,” and in Euclid’s terms, all these necessary derivations represent *data*. The Greek philosopher Syrianos (d. 437 CE), teacher to the great Neoplatonist Proclus

⁶⁴⁵ For an excellent and brief recent exploration of this conception (and the possibility for productive epistemological disharmony), see Daniel Heller-Roazen, *The Fifth Hammer: Pythagoras and the Disharmony of the World*. New York: Zone, 2011.

⁶⁴⁶ Diogenes Laertius, *Lives*, “Pythagoras,” 8.25: “ἀρχὴν μὲν ἀπάντων μονάδα: ἐκ δὲ τῆς μονάδος ἀόριστον δυάδα ὡς ἂν ὕλην τῇ μονάδι αἰτίῳ ὄντι ὑποστήναι: ἐκ δὲ τῆς μονάδος καὶ τῆς ἀόριστου δυάδος τοὺς ἀριθμούς: ἐκ δὲ τῶν ἀριθμῶν τὰ σημεῖα: ἐκ δὲ τούτων τὰς γραμμάς, ἐξ ὧν τὰ ἐπίπεδα σχήματα: ἐκ δὲ τῶν ἐπιπέδων τὰ στερεὰ σχήματα: ἐκ δὲ τούτων τὰ αἰσθητὰ σώματα, ὧν καὶ τὰ στοιχεῖα εἶναι τέτταρα, πῦρ, ὕδωρ, γῆν, ἀέρα: μεταβάλλειν δὲ καὶ τρέπεσθαι δι’ ὅλων, καὶ γίνεσθαι ἐξ αὐτῶν κόσμον ἔμψυχον, νοερόν, σφαιροειδῆ, μέσην περιέχοντα τὴν γῆν καὶ αὐτὴν σφαιροειδῆ καὶ περιουκουμένην.” At greater length, see also Sextus Empiricus, *Against the Mathematicians* (alias, delightfully, *Against the Professors*), “Against the Physicists II,” 10.255-284.

(412-485 CE), confirms in his *On Aristotle's Metaphysics* that the Pythagoreans received their theory of first principles from Orpheus himself,⁶⁴⁷ and that they believed that number is “the lord of shapes and forms,” the “cause for gods and daemons,” and “guide rule and technical reason-principle [*logos*] for the God who is lord of all and most powerful craftsman.”⁶⁴⁸ The geometrical proportions between numbers, figures, and tones create harmony between the different elements, and this harmony amounts to Pythagoras’ *logos*, the rational principle structuring his world-order, or *kosmos*.⁶⁴⁹

Accordingly, there emerges a type of mathematical poetics for the intellectual realm, one tied to poetry and music in the person of Orpheus, with whom Pythagoras had been connected since the 5th Century BCE.⁶⁵⁰ The so-called Spartan Orpheus-relief from that period, for example, depicts the common Greek and Roman theme of Orpheus surrounded by tokens of his ability to bring cosmic order and harmony to the world through his music, since “although each note had a different sound, / it stood in right relation to the rest:” a group of tamed wild animals.⁶⁵¹ Publius Ovidius Naso (43

⁶⁴⁷ “The Pythagoreans also believe in one kind of number, the mathematical; ... for they construct the whole universe of numbers ... Having received from Orpheus the theological first principles of intelligible and intellectual numbers, [they] extended their significance very considerably, and demonstrated the extent of their dominance as far as the sensible world, while bearing constantly in mind the dictum, ‘All things are like to number’” (122). John Dillon & Dominic O’Meara, transl. *Syrianus: On Aristotle, Metaphysics 13-14*. London: Bloomsbury, 2014. 87.

⁶⁴⁸ Dillon & O’Meara, *Syrianus* (123), 87.

⁶⁴⁹ For a useful explication of this conceptual relationship, also vis-à-vis the *logos* of Heraclitus (535-475 BCE), see Catherine Rowett, “Philosophy’s Numerical Turn” in David Sider & Dirk Obbink, eds. *Doctrine and Doxography: Studies on Heraclitus and Pythagoras*. Berlin: De Gruyter, 2013, 3-31. esp. 11-17.

⁶⁵⁰ V.M. Strocka, “Orpheus und Pythagoras in Sparta.” Heide Froning, Tonio Hölscher, & Harald Mielsch, eds., *Kotinos*. Mainz: Zabern, 1992. 276-283.

⁶⁵¹ Extant ancient art works with this theme number in the hundreds and appeared to have been so widespread in the Greco-Roman art world that they had become an ancient cliché, evidently thoroughly annoying the Greek Lydian geographer Pausanias (110 CE-180 CE): “πολλὰ μὲν δὴ καὶ ἄλλα πιστεύουσιν οὐκ ὄντα Ἕλληνας καὶ δὴ καὶ Ὀρφέα Καλλιόπης τε εἶναι Μούσης καὶ οὐ τῆς Πιέρου καὶ οἱ τὰ θηρία ἰέναι πρὸς τὸ μέλος ψυχαγωγούμενα, ἐλθεῖν δὲ καὶ ἐς τὸν Ἄϊδην ζῶντα αὐτὸν παρὰ τῶν κάτω

BCE-18 CE) in his *Metamorphoses* has stones and entire groves of trees move, and flocks of birds settle in them, to join the wild animals who come and surround Orpheus as he sings.⁶⁵² This reading of Orpheus' powers persisted into the Early Modern period, for instance in the *Banquet* of Florentine poet Dante Alighieri (1265-1321), who describes Orpheus as an allegory for "wise one" [*lo savio*] whose music and devotion to knowledge and art "tames" [*mansuescere*] and "humbles" [*umiliare*] "wild hearts" [*crudeli cuori*], by giving them the ability to move and thus instilling in them a "rational life" [*vita ragionevole*] and raising them above the non-sentient level of mere stones.⁶⁵³ That is, Orpheus' music contains the *ratio* of the *kosmos*, which expresses itself in living beings as *psyche*.

The Spartan relief, however, adds a second man to this scene, depicted in conversation with Orpheus as an equal: a bearded Pythagoras, complete with scrolls in his hands, which he is holding up as if for discussion. Presumably, these scrolls represent Pythagoras' *Golden Verses* and his theory of numbers, both of which

θεῶν τὴν γυναῖκα αἰτοῦντα" (9.30.4). W.H.S. Jones, transl. *Pausanias' Description of Greece with an English Translation* (Cambridge, Mass.: Harvard UP, 1918): "There are many untruths believed by the Greeks, one of which is that Orpheus was a son of the Muse Calliope, and not of the daughter of Pierus, that the beasts followed him fascinated by his songs, and that he went down alive to Hades to ask for his wife from the gods below."

⁶⁵² Ovid, *Metamorphoses* 10.86-105 & 143-147.

⁶⁵³ "Come quando dice Ovidio che Orfeo faceva con la cetera mansuete le fiere, e li arbori e le pietre a sé muovere; che vuol dire che lo savio uomo con lo strumento de la sua voce fa[r]ia mansuescere e umiliare li crudeli cuori, e fa[r]ia muovere a la sua voluntade coloro che non hanno vita di scienza e d'arte: e coloro che non hanno vita ragionevole alcuna sono quasi come pietre" (2.3b). Dante Alighieri, *Il Convivio (The Banquet)*, Richard Lansing, transl. Garland Library of Medieval Literature, 1990: "Thus Ovid says that with his lyre Orpheus tamed wild beasts and made trees and rocks move toward him, which is to say that the wise man with the instrument of his voice makes cruel hearts grow tender and humble and moves to his will those who do not devote their lives to knowledge and art; and those who have no rational life whatsoever are almost like stones."

Orpheus is said to have shared with Pythagoras.⁶⁵⁴ An eagle perches on the philosopher's shoulder, alluding to the Pythagorean legend that Pythagoras shared Orpheus' ability to tame the wild beasts, as evidenced by wild eagles approaching him as if tame during a visit to Olympia and his sojourn in Kroton in Magna Graecia.⁶⁵⁵ The Arab-Syrian Neoplatonist philosopher Iamblichos (245 CE-325 CE) similarly recounts a story of Pythagoras using his Orpheus-like powers when calming a bear that was attacking the Daunians in Apulia by stroking its head, feeding it, and conversing with it until the bear swore an oath to cease his violent ways, after which the bear reportedly turned vegetarian.⁶⁵⁶

That the musical and poetic powers ascribed to Orpheus remained central to the Pythagorean worldview is clear well beyond such artistic and literary representations. Porphyry of Tyre (234-305 CE) reports that according to Apollonios of Tyana (15 CE-100 CE), Orpheus and Pythagoras share the same father: Apollo, god of truth, music, and poetry.⁶⁵⁷ Diogenes Laertios (200s CE) notes that "Ion of Chios

⁶⁵⁴ Strocka, 277-280. The most detailed ancient source for this claim is Iamblichos in his *Pythagorean Life*: "Orpheus the son of Calliope, having learnt wisdom from his mother in the mountain Pangaeus, said, that the eternal essence of numbers is the most providential principle of the universe, of heaven and earth, and the intermediate nature; and farther still that it is the root of the permanency of divine natures, of Gods and daemons.

⁶⁵⁵ Iamblichus, *Pythagorean Life* 13.62: "He happened once to be talking to his students, at the Olympic games, about omens and messages from the gods brought by birds, saying that eagles too bring news to those the gods really love. An eagle flew overhead: he called it down, stroked it, and let it go. It is clear from these stories, and others like them, that he had the command of Orpheus over wild creatures, charming them and holding them fast with the power of his voice;" *Pythagorean Life* 27.142: "In Kroton, they say, the white eagle stood still and let him stroke it."

⁶⁵⁶ Iamblichus, *Pythagorean Life*, 13.60: "For it is said that Pythagoras detained the Daunian bear which had most severely injured the inhabitants, and that having gently stroked it with his hand for a long time, fed it with maize and acorns, and compelled it by an oath no longer to touch any living thing, he dismissed it. But the bear immediately after hid herself in the mountains and woods, and was never seen from that time to attack [even] any irrational animals," the 'rational animal' here being humans.

⁶⁵⁷ Iamblichus, *Pythagorean Life*, 1.5 & 8: "Such is the high birth ascribed to Pythagoras by his fellow citizen; but one of the Samian poets says he was the son of Apollo: 'Pythagoras, borne to Zeus-beloved

says in his *Triagmi* that Pythagoras attributed some poems that he himself had made to Orpheus.”⁶⁵⁸ However, the role the Orphic correspondences between mathematics, music, and truth play in Pythagorean thought is perhaps most strikingly represented in Iamblichos’ well-known story about Pythagoras, the smith, and the hammers.⁶⁵⁹ Pythagoras had walked past a smithy and noticed that the sound of the differently sized hammers ringing on the anvil produced sounds at different pitches, which a follow-up experiment revealed correspond to the intervals of the octave, the fifth, and the fourth, and thus the basic ratios of musical harmony: 2:1, 3:2, and 4:3. This, so Iamblichos’ story goes, leads Pythagoras to discover the geometrical order inherent in musical scales, which he then transfers to a wide variety of musical instruments. With his retelling of this episode in his *Of Music*, the Roman philosopher Ancius Manlius Severinus Boëthius (477-534 CE) – “first of the scholastics” and favorite philosopher of King Alfred, the *Roman de la Rose*, and Chaucer – later inscribed this origin story deep into the European perception of physics, music, and mathematics, as a sort of genesis tale for his influential threefold classification of music into Instrumental Music [*musica instrumentis* or *instrumentalis*], Soul Music [*musica humana*], and the Music of the Spheres [*musica mundana*].⁶⁶⁰

Apollo / By Pythais, the fairest of the Samians. ... No-one who takes account of his birth, and of the range of Pythagoras’ wisdom, could doubt that the soul of Pythagoras was sent to humankind from Apollo’s retinue.”

⁶⁵⁸ Porphyry, *Life of Pythagoras* 8.8: “Ἴων δὲ ὁ Χῖος ἐν τοῖς Τριαγμοῖς φησιν αὐτὸν ἔνια ποιήσαντα ἀνενεγκεῖν εἰς Ὀρφέα.”

⁶⁵⁹ Iamblichus, *Pythagorean Life*, 26.

⁶⁶⁰ Boethius, *De Institutione Musica*, 1.10.

However, the consequences of this Pythagorean legend for the relationship between poetics and mathematics reach deeper. To understand it means to return to the targeting plot of Odysseus discussed in Chapter 2. In the first volume of his (so far untranslated) *Music and Mathematics*, Friedrich Kittler observes that Odysseus strings the bow with a tendon, Greek νευρή [*neure*], derived from the same word root, νευρων [*neuron*], that is also the source of the words *nerve* and *neuron*, the media that structure all conscious experience and all cogitation. Moreover, these same tendons are used to string lyres – and, Kittler points out, Odysseus targets his enemies on the night of the Feast of Apollo, who, apart from being the supposed father of Orpheus and Pythagoras, famously “leads the choirs of the Muses with his lyre and kills with his bent bow.”⁶⁶¹

It is therefore a conscious choice on the part of the Homeric poet to compare Odysseus’ stringing of the bow before he eliminates his target Antinous with the playing of a lyre: “Odysseus ... like a man well-acquainted with the lyre, and with song, easily stretches the string across a new peg ... and without effort strings the great bow; gripping it with the right hand, he tests [*peirao*] the string [*neure*], which sang beneath his touch, with a voice like a swallow’s.”⁶⁶² Kittler concludes: “From

⁶⁶¹ Friedrich Kittler, *Musik und Mathematik, Band 1: Hellas, Teil 1: Aphrodite*. München: Wilhelm Fink Verlag, 2006. 85 & 86. Translation mine. Here: “Aber heut ist der Festtagabend des Apollon, der Musenchöre mit der Leier führt und mit gekrümmtem Bogen tötet” (86).

⁶⁶² “ἀτὰρ πολύμητις Ὀδυσσεύς, αὐτίκ’ ἐπεὶ μέγα τόξον ἐβάστασε καὶ ἶδε πάντα, ὡς ὅτ’ ἀνὴρ φόρμιγγος ἐπιστάμενος καὶ ἀοιδῆς ῥηϊδίως ἐτάνυσσε νέφω περιὶ κόλλοπι χορδῆν, ἅψας ἀμφοτέρωθεν εὐστρεφῆς ἔντερον οἴος, ὡς ἄρ’ ἄτερ σπουδῆς τάνυσεν μέγα τόξον Ὀδυσσεύς. δεξιτερῇ ἄρα χειρὶ λαβῶν πειρήσατο νευρῆς: ἡ δ’ ὑπὸ καλὸν ἄεισε, χελιδόνι εἰκέλη αὐδῆν” (21.404-411). Transl. mine.

this *πεῖρα* [*peira*, “test, attempt”] emerges all empiricism in Hellas and Hesperia,”⁶⁶³ which is to say, the West. The neuron, the lyre, and the targeting poetically converge.

How does this observation point to a mathematization of knowledge? Kittler provides a clue there, too – derived from none other than the Swiss inventor of semiotics, Ferdinand de Saussure (1857-1913). In his *Course in General Linguistics*, Saussure observes a revolutionary particularity of the Greek alphabet:

In this regard, the early Greek alphabet deserves our admiration: Here, each simple sound is represented by a single graphic sign, and reciprocally each sign corresponds to a simple sound, and always the same one. It is an ingenious discovery, which the Latins inherited. In the transcription of the word *bárbaros*, ‘barbarian,’ ΒΑΡΒΑΡΟΣ, each letter corresponds to a homogenous beat.⁶⁶⁴

Kittler observes that unlike the Egyptian and Semitic alphabets, which consist entirely of consonants, the Greek alphabet also provides letters for vowels: “All those who learn the letters can speak Greek.”⁶⁶⁵ In other words, the Greek alphabet is not a system limited to linguistic representation and lexical transcription, but rather bears the hallmark of a system adaptable to non-verbal forms of knowledge: regularity and evenness, a unit-based structure, predictable sequence, and universal intelligibility.

⁶⁶³ “Aus dieser *πεῖρα* wird alle Empirie in Hellas und Hesperien hervorgegangen sein.” Kittler, *Musik und Mathematik* 1.1, 86.

⁶⁶⁴ Ferdinand de Saussure, *Cours de Linguistique Générale*, eds. Charles Bally & Albert Sechehaye. Paris: Payot, 1916. 65: “A cet égard l’alphabet grec primitif mérite notre admiration. Chaque son simple y est représenté par un seul signe graphique, et réciproquement chaque signe correspond à un son simple, toujours le même. C’est une découverte de génie, dont les Latins ont hérité. Dans la notation du mot *bárbaros* ‘barbare,’ ΒΑΡΒΑΡΟΣ, chaque lettre correspond à un temps homogène.”

⁶⁶⁵ “Griechisch können alle sprechen, die bloss die Lettern kennen.” Kittler, *Musik und Mathematik* 1.1, 108-109.

It is perhaps no surprise, under these circumstances, that in the Greek mind, the Greek alphabet has many creators, each introducing a distinct set of valences. According to Herodotus, it is Kadmos, prince of the Phoenicians, founder of Thebes, brother to Europa, and prime Greek slayer of monsters alongside Perseus, Bellepheron, and Heracles, who first brought the Phoenician alphabet to the Greeks, adapting and regularizing the letters to suit the sounds of their own language.⁶⁶⁶ This adoption and adaption process takes place in Ionia, the region to which the island of Samos, birthplace to Pythagoras, too, belongs.⁶⁶⁷ According to the Roman grammarian Gaius Iulius Hyginus (64 BCE-17 CE), the god Hermes, name-giver to hermeneutics, “reduced the sounds to characters,” giving them the shapes of geometrical wedges because this triangular structure imitated the flying formation of cranes, Hermes’ sacred bird.⁶⁶⁸ That bird’s most famous poet, Ibycus (late 6th Century BCE) – him of “behold the cranes of Ibycus”⁶⁶⁹ – likewise hailed from Samos and wrote at least one

⁶⁶⁶ Herodotus, *Histories* 5.58: “These Phoenicians who came with Cadmus and of whom the Gephyraeans were a part brought with them to Hellas, among many other kinds of learning, the alphabet, which had been unknown before this, I think, to the Greeks. As time went on the sound and the form of the letters were changed.” Original Greek: “οἱ δὲ Φοίνικες οὗτοι οἱ σὺν Κάδμῳ ἀπικόμενοι, τῶν ἦσαν οἱ Γεφυραῖοι, ἄλλα τε πολλὰ οἰκίσαντες ταύτην τὴν χώραν ἐσήγαγον διδασκάλια ἐς τοὺς Ἕλληνας καὶ δὴ καὶ γράμματα, οὐκ ἔόντα πρὶν Ἑλληνισι ὡς ἐμοὶ δοκέειν, πρῶτα μὲν τοῖσι καὶ ἅπαντες χρέωνται Φοίνικες: μετὰ δὲ χρόνου προβαίνοντος ἅμα τῇ φωνῇ μετέβαλλον καὶ τὸν ῥυθμὸν τῶν γραμμάτων.”

⁶⁶⁷ Herodotus, *Histories*, 58.2: “At this time the Greeks who were settled around them were for the most part Ionians, and after being taught the letters by the Phoenicians, they used them with a few changes of form. In so doing, they gave to these characters the name of Phoenician, as was quite fair seeing that the Phoenicians had brought them into Greece.” Greek: “περιοίκεον δὲ σφέας τὰ πολλὰ τῶν χώρων τοῦτον τὸν χρόνον Ἕλλήνων Ἴωνες, οἱ παραλαβόντες διδασχὴν παρὰ τῶν Φοινίκων τὰ γράμματα, μεταρρυθμίσαντες σφέων ὀλίγα ἐχρέωντο, χρεώμενοι δὲ ἐφάτισαν, ὡσπερ καὶ τὸ δίκαιον ἔφερε, ἐσαγαγόντων Φοινίκων ἐς τὴν Ἑλλάδα, Φοινικῆα κεκλήσθαι.”

⁶⁶⁸ Hyginus, *Fabulae* 277: “Alii dicunt Mercurium ex gruuum volatu, quae cum volant litteras exprimunt.”

⁶⁶⁹ *Suda*, “Ibycus:” “Ibycus son of Phytios, but others [say] of Polyzelos the Messenian historiographer, others yet of Kerdas. His family was from Rhegium. From there he came to Samos when Polycrates the father of the tyrant was ruling. ... When he was captured by robbers in a deserted place, he said that the very cranes which happened to be flying over would become his avengers. And he himself was killed;

explicitly Pythagorean poem.⁶⁷⁰ According to Heraklides of Pontiké (390-310), Pythagoras considered himself a “son of Hermes,”⁶⁷¹ and in later traditions he in fact becomes absorbed into the mythical figure of Hermes Trismegistus, the sorcerer-sage,⁶⁷² consequently, Pythagoras, too, receives credit for having given “beauty” to the shapes of Greek letters by giving them the geometrical shapes of lines, angles, and circles.⁶⁷³ Plutarch, in turn, credits the invention of the Greek alphabet to Palamedes, the messenger who summons a reluctant Odysseus to join Agamemnon’s attack on Troy⁶⁷⁴ and against whom Odysseus retaliates with a lethal targeting plot involving a coded letter (in this case, supposedly from Priamos);⁶⁷⁵ is the preferred conversation

but after this one of the robbers in the city saw some cranes and said, ‘Behold the avengers of Ibycus.’ When someone heard this and followed up on these words, the deed was confessed and the robbers were punished. So from this came the proverb, ‘the cranes of Ibycus.’” Byzantine Greek original: “Ἴβυκος, Φυτίου, οἱ δὲ Πολυζήλου τοῦ Μεσσηνίου ιστοριογράφου, οἱ δὲ Κέρδαντος: γένει Ῥηγῖνος. ἐνθὲνδε εἰς Σάμον ἦλθεν, ὅτε αὐτῆς ἦρχεν ὁ Πολυκράτης τοῦ τυράννου πατῆρ. ... συλληφθεὶς δὲ ὑπὸ ληστῶν ἐπὶ ἐρημίας ἔφη, κἂν τὰς γεράνους, ἃς ἔτυχεν ὑπερίπτασθαι, ἐκδίκους γενέσθαι. καὶ αὐτὸς μὲν ἀνηρέθη: μετὰ δὲ ταῦτα τῶν ληστῶν εἷς ἐν τῇ πόλει θεασάμενος γεράνους ἔφη: ἴδε, αἱ Ἴβύκου ἐκδικοί. ἀκούσαντος δὲ τινος καὶ ἐπεξελθόντος τῷ εἰρημένῳ, τὸ τε γεγονός ὠμολογήθη, καὶ δίκας ἔδωκαν οἱ λησταί: ὡς ἐκ τούτου καὶ παροιμίαν γενέσθαι, αἱ Ἴβύκου γέρανοι.” The anecdote is a conflation of Plutarch, *Moralia*, 2.509.F & Zenobius, *Epitome*, 1.37.

⁶⁷⁰ This assumption is based on extant commentary on a lost Ibycus poem. One idea contained in it – that the Morning Star and the Evening Star are the same – was popularized by Pythagoras. Cf. Cecil Maurice Bowra, *Greek Lyric Poetry from Alcman to Simonides*. 2nd ed. Oxford: Clarendon P, 1961. 241. Scholiast, *On Basil’s Oration on Genesis*: “ὁ δὲ αὐτὸς ἑωσφόρος καὶ ἔσπερος. καίτοι γε τὸ παλαιὸν ἄλλος ἐδόκει εἶναι ὁ ἑωσφόρος καὶ ἄλλος ὁ ἔσπερος. πρῶτος δὲ Ἴβυκος ὁ Ῥηγῖνος συνήγαγε τὰς προσηγορίας.” In English: “The Dawn-bringer and Hesperus are the self-same, though in ancient times they were thought to be different. Ibycus of Rhegium was the first to equate the titles [in poetry].” *Anecdota Graeca Oxoniensia* 3, 413. Barroccian MS 85, fol. 118, Bodleian Library, University of Oxford, UK.

⁶⁷¹ Herakleides Ponticus as qtd. in Diogenes Laertius, *Lives*, “Pythagoras,” 8.1.

⁶⁷² Cf. Antoine Faivre, “Visages d’Hermès Trismégiste.” Antoine Faivre & Frédérick Tristan, eds. *Présence d’Hermès Trismégiste*. Paris: Albin Michel, 1988. 49-99. 88.

⁶⁷³ Scholiast cf. Kittler 294 n5.

⁶⁷⁴ Plutarch, *Questiones Convivales* 9.3: “[Enter Greek text here.]” In English: “The first letters called Phoenician from Cadmus are four times four, or sixteen; and of those that were afterward added, Palamedes found four, and Simonides four more.”

⁶⁷⁵ Hyginus, *Fabulae* 105.3.1-4.5: “postero die cum exercitus in castra redirect, quidam miles epistulam quam Vlixes scripserat super cadaver Phrygis positam ad Agamemnonem attulit, in qua scriptum fuit PALAMEDI A PRIAMO MISSA, tantumque ei auri pollicetur quantum Vlixes in tabernaculum

partner of Socrates in Hades,⁶⁷⁶ was a rhetorical theorist Plato admired,⁶⁷⁷ and coincidentally was supposed to have invented dice, and thus games of chance (and, we might note, unwittingly initiated their mathematical offspring, probability).⁶⁷⁸ Aeschylus, meanwhile, ascribes the origins of the Greek alphabet *and* numbers to the Titan Prometheus, who declares: “Numbers [*arithmos*, ἀριθμός], most principal of all methods [*exochon sophismaton*, ἔξοχον σοφισμάτων], I discovered for them, and the combining of letters, mother of the arts of the Muses, which hold all things in memory.”⁶⁷⁹

obruerat, si castra Agamemnonis ut ei conuenerat proderet. itaque Palamedes cum ad regem esse productus et factum negaret, in tabernaculum eius ierunt et aurum effoderunt, quod Agamemnon ut uidit, uere factum esse credidit. quo facto Palamedes dolo Vlixes deceptus ab exercitu uniuerso innocens occisus est.” In English: “On the next day when the army came back to the camp, a soldier found on the body of the Phrygian, the letter which Ulysses had written, and brought it to Agamemnon. Written on it were the words: ‘Sent to Palamedes from Priam,’ and it promised him as much gold as Ulysses had hidden in the tent, if he would betray the camp of Agamemnon according to agreement. And so when Palamedes was brought before the king, and so denied the deed, they went to his tent and dug up the gold. Agamemnon believed the charge was true when he saw the gold. In this way Palamedes was tricked by the scheme of Ulysses, and though innocent, was put to death by the entire army.”

⁶⁷⁶ Plato, *Apology of Socrates*, 41a-b: “ἢ αὖ Ὀρφεῖ συγγενέσθαι καὶ Μουσαίῳ καὶ Ἡσιόδῳ καὶ Ὀμήρῳ ἐπὶ πόσῳ ἂν τις δέξαιτ’ ἂν ὑμῶν; ἐγὼ μὲν γὰρ πολλάκις ἐθέλω τεθνάναι εἰ ταῦτ’ ἔστιν ἀληθῆ. ἐπεὶ ἔμοιγε καὶ αὐτῶ θαυμαστῆ ἂν εἴη ἡ διατριβὴ αὐτόθι, ὅποτε ἐντύχομι Παλαμῆδει καὶ Αἴαντι τῶ Τελαμῶνος καὶ εἴ τις ἄλλος τῶν παλαιῶν διὰ κρίσιν ἄδικον τέθνηκεν, ἀντιπαραβάλλοντι τὰ ἐμαυτοῦ πάθη πρὸς τὰ ἐκείνων.” In English: “Or again, what would any of you give to meet with Orpheus and Musaeus and Hesiod and Homer? I am willing to die many times over, if these things are true; for I personally should find the life there wonderful, when I met Palamedes or Ajax, the son of Telamon, or any other men of old who lost their lives through an unjust judgement, and compared my experience with theirs.” Transl. Lamb.

⁶⁷⁷ Plato, *Phaedrus*, 261b: “ἀλλ’ ἢ τὰς Νέστορος καὶ Ὀδυσσεῶς τέχνας μόνον περὶ λόγων ἀκήκοας, ἃς ἐν Ἰλίῳ σχολάζοντες συνεγραψάτην, τῶν δὲ Παλαμῆδους ἀνήκοος γέγονας;” In English: “Then you have heard only of the treatises on rhetoric by Nestor and Odysseus, which they wrote when they had nothing to do at Troy, and you have not heard of that by Palamedes?”

⁶⁷⁸ Pausanias, *Description of Greece* 2.20.3: “πέραν δὲ τοῦ Νεμείου Διὸς Τύχης ἐστὶν ἐκ παλαιοτάτου ναός, εἰ δὴ Παλαμῆδης κύβους εὐρῶν ἀνέθηκεν ἐς τοῦτον τὸν ναόν.” In English: “Over against the Nemean Zeus is a temple of Fortune, which must be very old if it be the one in which Palamedes dedicated the dice that he had invented.”

⁶⁷⁹ Aeschylus, *Prometheus Unbound* 5.459-461: “καὶ μὴν ἀριθμόν, ἔξοχον σοφισμάτων, ἐξηῦρον αὐτοῖς, γραμμάτων τε συνθέσεις, μνήμην ἀπάντων, μουσομήτορ’ ἐργάνην.”

Thus delineated as an underlying structure evoking a rudimentary forms of *memoria*, *pronunciatio*, *dispositio*, and *elocutio*, it is perhaps no surprise that the etymology of the first letter of the alphabet ostensibly created by the eagle-nourishing patron of human invention should reflect that fifth house of rhetoric also: *alphē* means “to gain,”⁶⁸⁰ and *alpho*, “I invent,”⁶⁸¹ *alphainein*, “to invent.”⁶⁸² Moreover, as Plutarch points out in the same *Symposiacs* in which he is the first to raise the infamous question of the chicken or the egg,⁶⁸³ the first of the letters is the beginning of all: speech (“the first sound children make”), “thus ‘to hear,’ ‘to sing,’ ‘to pipe,’ ... begin with the letter alpha” and also “to lift up” and “to open:” the ordinal first is “a light to assist for blindness” and the basis of all mathematics.⁶⁸⁴

It is evident, then, is that in Ancient Greece, all those who learn the Greek alphabet cannot just speak Greek letters. They can also count. In Ancient Greece, the letters of the alphabet can also stand for numbers; it is an “alphabet of numbers”

⁶⁸⁰ “ἀλφή,” Liddell-Scott, 1940.

⁶⁸¹ “ἄλφα: τό στοιχείον, παρά τό ἄλφω τό ευρίσκω: πρότον γάρ τῶν ἄλλων στοιχείων ευρέθη,” *Etymologikon Mega* (“Etymologicon Magnum”).

⁶⁸² This meaning of the word recurs in certain types of literary criticism. For example, Robert Graves, *The Greek Myths*, Vol. 1. London: Penguin, 1955. 183: “Alpha was the first of the eighteen letters, because *alphē* means honour, and *alphainein* is to invent, and because the Alpheius is the most notable of rivers.” (NB: I have found no source to confirm Graves’ assertion that *alphē* means “honour;” the etymology of the name of the rivers named Alpheus in Hades and on the Peloponnese is generally taken to mean “white, frothy.”) Wolfgang Heidenreich, “Deutzeichen.” *Bild und Gedanke*, Günter Schnitzler, ed. München: Wilhelm Fink Verlag, 1980. 434-446. 435: “Vom Feuer des Sprachgeists ein Funkenwirbel im Raum: ... nun aber nicht mehr σήματα, Semata, sprechende Bilder, jetzt Auflösung der rauschenden Tonfülle der Welt in Laute, jetzt das ἀλφαινειν, Alphainein, des ‘Erfinden und Entdecken’ des Buchstabierens der Welt aus den Elementen seiner Sprache.” Which, to be fair, is also rather frothy.

⁶⁸³ Plutarch, *Symposiacs* 2.3: “Ἐκ δὲ τούτου τὸ ἄπορον καὶ πολλὰ πράγματα τοῖς ζητητικοῖς παρέχον εἰς μέσον εἴλετο ἰ πρόβλημα περὶ τοῦ ᾧ οὗ καὶ τῆς ὄρνιθος, ὁπότερον γένοιτο πρότερον αὐτῶν.” In English: “From this context the problem about the egg and the hen, which of them came first, was dragged into our talk, a difficult problem which gives investigators much trouble.” Transl. Clement & Hoffleit.

⁶⁸⁴ Plutarch, *Symposiacs* 9.3.

[*alphabet der zahlen*].⁶⁸⁵ Thus, Palamedes' dice reoccur in the archaeological record inscribed with letters instead of the typical dots.⁶⁸⁶ The Athenian philosopher and military leader Xenophon (431-354 BCE) recounts how, as soon as a Greek schoolboy learns how to spell the name "Socrates," he is asked to also deduce ordinal values of the letters in the name.⁶⁸⁷ (It is therefore perhaps less of a surprise that Xenophon's contemporary Plato, in his *Meno*, relies on the geometrical-mathematical skills of a slave boy who is "a Greek, and speaks Greek ... confidently before any number of people any number of times" to prove his inherent *ratio*-nality – a slave boy who has a basic confidence in his own rhetoric assuredly knows how to spell, and thus count.⁶⁸⁸)

Soon, the Ancient Greeks transferred the ordinality of the alphabet into cardinality, wherein the first nine letters to represent 1 to 9, the next nine letters for 10 to 90, the third nine letters for 100 to 900.⁶⁸⁹ Thus Plutarch accounts for the Greek name of the Nile, *Neilos* (Νεῖλος) – which in Old Egyptian has an entirely different name, *Hapy* – by adding the numbers the letters of the word ΝΕΙΛΟΣ represent $50 + 5 + 10 + 30 + 70 + 200 = 365$, the number of days the river gifts to the Egyptians every

⁶⁸⁵ Kittler, *Musik und Mathematik* 1.1, 206.

⁶⁸⁶ Pierre Wuilleumier, *Tarente, des origines à la conquête romaine*. Paris: E. de Boccard, 1939. 235. Cit. Kittler, *Musik und Mathematik* 1.1, 206 n6.

⁶⁸⁷ Xenophon, *Oekonomikos* 8.14: "τὸν δὲ τοῦ κυβερνήτου διάκονον, ὃς πρωρεὺς τῆς νεῶς καλεῖται, οὕτως ἤϊρον ἐπιστάμενον ἐκάστων τὴν χώραν ὡς καὶ ἀπὸν ἂν εἶποι ὅπου ἕκαστα κεῖται καὶ ὅποσα ἔστιν οὐδὲν ἤττον ἢ ὁ γράμματα ἐπιστάμενος εἶποι ἂν Σωκράτους καὶ ὅποσα γράμματα καὶ ὅπου ἕκαστον τέτακται."

⁶⁸⁸ Plato, *Meno*, 82b & 84c: "Ἕλληνα μὲν ἐστὶ καὶ ἐλληνίζει; πάνυ γε σφόδρα, οἰκογενῆς γε" ... "τότε δὲ ῥαδίως ἂν καὶ πρὸς πολλοὺς καὶ πολλὰκις."

⁶⁸⁹ Kittler, *Musik und Mathematik* 1.1, 208: "Eben diese Ordinalität des Alphabets nun überführt das Zahlssystem in Kardinalität. Seit 580 [CE] lesen sich die ersten neun Lettern, von Eins bis Neun, als Einer; die zweiten neun, von Zehn bis Neunzig, als die Zehner; die dritten neun, von Hundert bis Neunhundert, als die Hunderter."

year.⁶⁹⁰ Kittler observes, “For the first time in all the history of writing, a character set is bent backwards on itself; it has been recoded.”⁶⁹¹ The Pythagoreans knew it. Their famous vow of silence is not just a gesture towards the *arcana* of their fraternity,⁶⁹² but a positive argument for their belief that to describe the world accurately is to describe it in numbers, and while a number is expressed in the same alphabet as words are, they are unpronounceable, speechless (*alogos*, ἄλογος): “χξς cannot pass any lips because this sequence of signs includes no vowel; therefore, it signifies 666,”⁶⁹³ making the *alogos* the number the writer of *Apocalypse of St. John* would later ascribe to the demonic “Great Beast.”⁶⁹⁴ Any word, any *logos*, is also a number, and its meaning might only accurately be expressible as number.

Building on this realization, the Ancient Greeks realized that their alphabet represented a *stoicheia*, “the degrees or steps from one end to the other, the constituent parts of a whole, forming a complete series, whether as hours, or letters, or numbers, or parts of speech, or physical elements, provided always that such elements are held

⁶⁹⁰ Plutarch, *Symposiacs* 5.1, also Kittler, *Musik und Mathematik* 1.1, 209.

⁶⁹¹ “Zum erstenmal in aller Schriftgeschichte hat sich also ein Zeichensatz auf sich zurückgebeugt; er wurde recodiert.” Kittler, *Musik und Mathematik* 1.1, 208.

⁶⁹² “Eum elige adiutorem, quem magis admireris, cum videris quam cum audieris... Apud Pythagoram discipulis quinque annis tacendum erat; numquid ergo existimas statim illis et loqui et laudare licuisse?” Seneca the Younger, *Epistle* 52.9-10. In English: “Choose a guide you will admire more when seeing him act than hearing him speak. ... Five years Pythagoras made his disciples keep silent; do you think that they had the right on that account to break out immediately into applause?”

⁶⁹³ “χξς kann über keine Lippen kommen, weil in dieser Zeichenfolge nirgendwo ein Stimmlaut klingt; also heisst sie soviel wie 666.” Kittler, *Musik und Mathematik* 1.1, 209.

⁶⁹⁴ The allusion is to *Apocalypse of St. John* 13.17-18: “καὶ ἵνα μή τις δύνηται ἀγοράσαι ἢ πωλῆσαι εἰ μὴ ὁ ἔχων τὸ χάραγμα, τὸ ὄνομα τοῦ θηρίου ἢ τὸν ἀριθμὸν τοῦ ὀνόματος αὐτοῦ. Ὡδε ἡ σοφία ἐστίν· ὁ ἔχων τὸν νοῦν ψηφισάτω τὸν ἀριθμὸν τοῦ θηρίου· ἀριθμὸς γὰρ ἀνθρώπου ἐστὶ· καὶ ὁ ἀριθμὸς αὐτοῦ χξς.” In English: “And that no man might buy or sell, save he that had the mark, or the name of the beast, or the number of his name. Here is wisdom. Let him that hath understanding count the number of the beast: for it is the number of a man; and his number is Six hundred threescore and six” (KJV).

together by a systematic order.”⁶⁹⁵ Or as Kittler puts it, “What is an alphabetical number, and how was it inspired? The answer derives from alphabet itself, which does not simply structure sounds, but also tabulates them in a fixed order, into a στοιχεῖα.”⁶⁹⁶ That is, the poetics of the alphabet reach beyond its sounds and its triangular shapes, which may be inspired by the cranes of Hermes (or Ibycus), into the structuring logic of the alphabetic system itself – and that structure is geometrical. After all, *Stoichea* is the Greek title of Euclid’s *Elements*, the *biblos* of all geometry. Thus, the Thracian grammarian Dionysios Thrax (170-90 BCE) observes in his *Art of Grammar* that the letters of the alphabet are called elements (*stoicheia*) from being “in a fixed series (*stoichos*, στοιχός) or arrangement;”⁶⁹⁷ the word *stoichos* can also refer to a row of bricks, a column of soldiers, rows of members of the chorus in a play, and lines of verse.⁶⁹⁸ The Skeptic Sextus Empiricus (160-210 CE), in *Against the Grammarians*, writes of the *stoicheia* of the “written character, or mark, its value, and its name,” in the sense “of that from which the whole art is derived ... a sort of primary material.”⁶⁹⁹

⁶⁹⁵ Friedrich Max Müller, *Lectures on the Science of Language*, Vol. 2. London: Longmans, Green, 1891. 373. The German British linguist Müller (1823-1900) would have understood this mathematical-linguistic-musical multivalence well; his own father, the Anhaltian German poet Wilhelm Müller (1794-1827), authored lyrics for *lieder* composed by Austrian German composer Franz Schubert (1797-1828), notably the song cycles *Winterreise* (“Winter Journey”) and *Die Schöne Müllerin* (“The Pretty Miller’s Girl”), alongside a cycle titled *Die Lieder der Griechen* (“Songs of the Greeks”). He was also a scholar on Homeric poetry and a German translator of Marlowe’s *Doctor Faustus*. Hans-Wolf Jäger, “Müller, Wilhelm,” *Neue Deutsche Biographie* 18, 320-322.

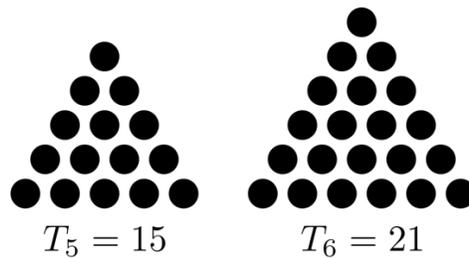
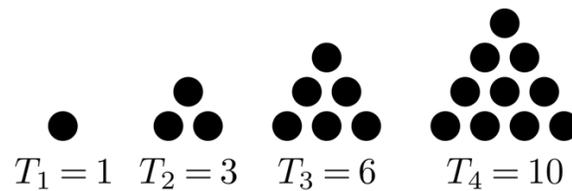
⁶⁹⁶ Kittler, *Musik und Mathematik* 1.1, 207.

⁶⁹⁷ Dionysios Thrax, *Tekhne Grammatike* 7: “Τὰ δὲ αὐτὰ καὶ στοιχεῖα καλεῖται διὰ τὸ ἔχειν στοιχόν τινα καὶ τάξιν.”

⁶⁹⁸ “στοῖχος,” Liddell-Scott, 1940.

⁶⁹⁹ Sextus Empiricus, *Against the Grammarians* 1.4.98-100: “τάξει δὲ λεκτέον ἡμῖν πρῶτον περὶ τῶν στοιχείων, ἐξ ὧν τὰ πάντα κατ’ αὐτοὺς συνέστηκεν καὶ ὧν ἀναιρεθέντων ἀγραμμάτους ἀνάγκη γίνεσθαι τοὺς γραμματικούς. Καὶ δὴ τριχῶς λεγομένου τοῦ στοιχείου, τοῦ τε γραφομένου χαρακτῆρος

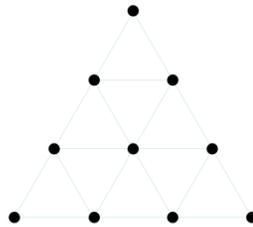
This structure accordingly includes the individual entities in the structure, i.e. units. It also includes the logics of their relationship to each other, i.e. their shapes and lines. Eventually, these relationships take the form of geometry; even numerical *stoicheia* results in forms, as evidenced by the so-called Pythagorean triangular numbers, which, briefly put, arise from the stoicheic depiction of the constituent elements of, respectively, 1 (T1), 1 + 2 (T2), 1 + 2 + 3 (T3), 1 + 2 + 3 + 4 (T4), 1 + 2 + 3 + 4 + 5 (T5), 1 + 2 + 3 + 4 + 5 + 6 (T6), thus:



etc.

καὶ τύπου καὶ τῆς τούτου δυνάμεως καὶ ἔτι τοῦ ὀνόματος, προαγέτω νῦν ἡ ζήτησις μάλιστα περὶ τῆς δυνάμεως· αὕτη γὰρ καὶ κυρίως στοιχεῖον παρ' αὐτοῖς προσηγόρευται. εἰκοσιτεσσάρων τοίνυν στοιχείων ὄντων τῆς ἐγγραμμάτου φωνῆς, τούτων διττὴν ὑποτίθενται κατὰ τὸ ἀνωτάτω τὴν φύσιν.” In English: “And first in order we must discuss the ‘elements,’ wherefrom their whole system is constructed, and the abolition of which will necessarily bring it about that the Grammarians are ungrammatical. The term ‘element’ being used in three senses, – of the written character or form, and of its ‘function’ (or sound), and also of the name, – let us proceed now in our inquiry to deal mainly with the function; for this is accounted by the Grammarians to be the ‘element’ proper. As, then, there are twenty-four elements of the voice in written form, they lay it down that the nature of these, in respect to their *summa genera*, is twofold...” R.G. Bury, transl. *Sextus Empiricus, Vol. IV: Against Professors*. Loeb Classical Library 382. Cambridge, Mass.: Harvard UP, 1949. 58-59. The interpretive second quotation included here is from Edgar Krentz, “Philosophic Concerns in Sextus Empiricus, ‘Adversus Mathematicos I.’ *Phronesis* 7.2 (1962), 152-160. 156.

Of these, T4 represents the Tetractys, the “divine number” representative of the order of the *kosmos* to which the Pythagoreans are said to have addressed a prayer⁷⁰⁰ and which additionally represents the musical ratios: the fourth (4:3), the fifth (3:2), the octave or diaspon (2:1), and the unison (1:1). The harmonious balance of the figure, which aligns it with the idea of *kosmos* and the acoustically exact – that is, physically measurable – harmonies of music, is further underscored by its perfectly equilateral shape, all sides representing equal ratios of magnitude to one another:



The *stoichea* of the alphabet, the medium of language, is taken to coinhere similar harmonies. To reiterate with the Pythagoreans: all language, too, is number, and all is geometry.

Kittler notes that this rather naturally leads to the third function of the Ancient Greek alphabet: its use as musical notation. The complete regularity of the Greek relationship between alphabet and sound already noted by Saussure, the “homogenous beat” [*temps homogène*] it implies, and the perfectly balanced *ratio* of the *stoicheia* that underlies the Pythagorean system all lend themselves to the establishment of a

⁷⁰⁰ Plutarch, *Isis and Osiris* 76: “οἱ δὲ Πυθαγόρειοι καὶ ἀριθμοὺς; καὶ σχήματα θεῶν ἐκόσμησαν προσηγορίας... ἡ δὲ καλουμένη τετρακτὺς, τὰ ἕξ καὶ τριάκοντα, μέγιστος ἦν ὄρκος, ὡς τεθρύληται, καὶ κόσμος ὠνόμασται, τεσσάρων μὲν ἀρτίων τῶν πρώτων, τεσσάρων δὲ τῶν περισσῶν εἰς ταὐτὸ 19 συντιθεμένων, ἀποτελούμενος.” In English: “The Pythagoreans go further, and honor numbers and figures with the names of the gods. ... It is commonly reported that their sacred *tetractys*, the number thirty-six, is regarded by them as their most solemn oath, and called *kosmos*, being made up of the first four even numbers added to the first four odd ones.”

direct correspondence between letter, number, and musical pitch. The letters correspond to notes. Thus, one of the chorus' songs from Euripides' *Orestes* (408 BCE) can be performed exactly even today, based on Vienna Papyrus G 2315, which was found, appropriately enough, in the ruins of a City of Hermes: Hermopolis in Egypt.⁷⁰¹ It is possible to read *and* hear the lines of the “Stasimon Chorus” in Greek, in which the Chorus laments on Orestes' behalf: “I weep, I weep for you. / Great good fortune among mortals is not lasting: / some god, shaking it like the sail of a swift ship, / overwhelms it in waves of fearful trouble, / deadly and boisterous / like those of the main.”⁷⁰² The notation system is moreover versatile, able to distinguish regular tone scales from enharmonic or chromatic versions by rotating the letters at a right angle.⁷⁰³ To Kittler, this recalls the Atomists Leukippos of Miletos (5th Century BCE) and his student Demokritos of Abdera in Thrace (460-370 CE), who held that “atoms in emptiness differ – apart from form and sequence – only in terms of their position [*thesis*, θέσις] towards each other.”⁷⁰⁴ This type of versatile form of writing, which

⁷⁰¹ The papyrus was first described and reprinted in facsimile by the Austrian paleographer Carl Wessely (1860-1931): Carl Wessely, “Papyrusfragment des Chorgesanges von Euripides Orest 330 FF. mit Partitur.” *Mittheilungen aus der Sammlung der Papyrus Erzherzog Rainer* 5.3 (1892), 65-73. A transliteration of the Greek letters into modern musical notation followed in Charles [Carl] Wessely, “Le Papyrus Musical d’Euripide.” *Revue des Études Grecques* 5.19 (1892), 265-280.

⁷⁰² Euripides, *Orestes*, 339-344: “κατολοφύρομαι κατολοφύρομαι. / ὁ μέγας ὄλβος οὐ μόνιμος ἐν βροτοῖς / ἀνὰ δὲ λαῖφος ὥς τις ἀκάτου θοᾶς / τινάξας δαίμων κατέκλυσεν δεινῶν / πόνων ὡς πόντου λάβροις ὀλεθρίοισιν ἐν κύμασιν.” Euripides. *Helen. Phoenician Women. Orestes*. David Kovacs, ed. & transl. Loeb Classical Library 11. Cambridge, Mass.: Harvard UP, 2002. 446-449.

⁷⁰³ “Schliesslich ist es ... den Instrumentalbuchstaben gestattet, um einen oder gar zwei rechte Winkel zu rotieren; derart gedrehte Lettern stehen für chromatisch oder enharmonisch eingefärbte Töne eines Tetrachords.” Kittler, *Musik und Mathematik* 1.1, 293.

⁷⁰⁴ “Nicht anders denken oder schreiben – wohl fast zur selben Zeit – die Atomisten Leukippos und Demokritos: Atome in der Leere unterscheiden sich – abgesehen von Form und Folge – allein durch ihre Lage voneinander.” Kittler, *Musik und Mathematik* 1.1, 293. Kittler’s take is a paraphrase of Aristotle’s description of the Atomists’ perspective, in *Metaphysics* 1.985b: “ταύτας μέντοι τρεῖς εἶναι λέγουσι, σχῆμά τε καὶ τάξιν καὶ θέσιν: διαφέρειν γάρ φασι τὸ ὄν ῥυσμῶ καὶ διαθιγῆ καὶ τροπῆ μόνον: τούτων δὲ ὁ μὲν ῥυσμός σχῆμά ἐστιν ἢ δὲ διαθιγῆ τάξις ἢ δὲ τροπῆ θέσις:”

“constitutes a medium that makes its own *logos* true” is apparently unique to the Ancient Greeks,⁷⁰⁵ until, as Kittler is fond of pointing out, “our own unique culture encodes all symbol systems in existence – image, letters, number, music – into the binary numbers 0 and 1.”⁷⁰⁶

The medial logic of such an alphabet suggests that semantic content is one among several, complementary ways to truthfully describe reality. This skeptical approach appears to be the route the Pythagoreans chose. For example, Porphyry quotes the first-century Neopythagorean Moderatos of Gades:

Unable to give a clear account in language (*λόγος*, *logos*) of the primary Forms and first principles because of the difficulty in conceiving and expressing them [in language], the Pythagoreans resorted to numbers for the sake of a lucid exposition (*εὔσημος διδασκαλία*, *eusemos didaskalia*), imitating the geometers and grammarians. For the latter, when they want to teach the elements (*στοιχεῖα*, *stoicheia*) of language and their powers, resort to written characters [i.e. the letters of the alphabet] for the first instruction and say that these are the elements (*stoicheia*). Later, however, they teach

⁷⁰⁵ “Die letzte Voraussetzung für die Kunst einer solchen ‘Komposition’ aber, wie Pindar sie in höchster Vollendung übte, war die an den Beginn der πόλις-Zivilisation zu setzende Analyse des Lautkörpers der griechischen Sprache, die nicht nur zum ersten phonologisch exakten ‘Alphabet’ für eine Sprache, sondern in Verbindung damit auch zur ersten (sogar vom Standpunkte letzter physikalischer Erkenntnisse von heute aus absolut ‘akustisch’ exakten) Notenschrift in der menschlichen Geschichte führte.” Johannes Lohmann, *Musiké und Logos*. Stuttgart: Musikwissenschaftliche Verlagsgesellschaft, 1970. cit. Kittler, *Musik und Mathematik* 1.1, 292.

⁷⁰⁶ “Fast wie unsere einzigartige Kultur, deren Digitalcomputer alle Zeichensysteme, die es gibt – Bild, Schrift, Zahl, Musik –, in den Binärzahlen 0 und 1 codiert, hatten die Griechen und nur sie an ihrem Alphabet ein Medium, das den Logos in seinem Sammeln oder Einem selbst wahr machte.” Kittler, *Musik und Mathematik* 1.1, 292.

that these characters are not the elements but through them one acquires a conception of the true elements. And the geometers, who are unable to present incorporeal things in language (*logos*), resort to figures in diagrams and say that this is a triangle; they do not mean that the triangle is this visible thing but that it is of the sort (τό τοιοῦτο, *toiouto*), and they present the concept of triangle by means of a diagram. The Pythagoreans did the same in case of primary reasons (λόγοι, *logoi*) and Forms. Since they are unable to communicate in language (λόγοι παραδιδόναι, *logoi paradidonai*) the incorporeal Forms and first principles, they resorted to an explanation by means of numbers.⁷⁰⁷

From this perspective, the question raised by the Pythagoreans is not whether mathematics could represent reality: to the Pythagoreans, mathematics *is* reality. Accordingly, all knowledge that reflects this reality, too, is at its core mathematical – or since, as Pascal would later have it, the species arithmetic provides the constituent parts of more a more truthful genus, reality is, more precisely, geometrical.

⁷⁰⁷ Porphyry, *Life of Pythagoras* 48-49. Transl. (with minor edits by me) by Charles H. Kahn, *Pythagoras and the Pythagoreans: A Brief History*. Cambridge: Hackett, 2001. 106. The original Greek reads: “ἡ δὲ περὶ τῶν ἀριθμῶν πραγματεία, ὡς ἄλλοι τε φασὶν καὶ Μοδέρατος ὁ ἐκ Γαδεΐρων πάνυ συνετῶς ἐν ἑνδεκά βιβλίοις συναγαγὼν τὸ ἀρέσκον τοῖς ἀνδράσι διὰ τοῦτο ἐσπουδάσθη. μὴ δυνάμενοι γάρ, φησί, τὰ πρῶτα εἶδη καὶ τὰς πρῶτας ἀρχὰς σαφῶς τῷ λόγῳ παραδοῦναι διὰ τε τὸ δυσπερινόητον αὐτῶν καὶ δυσέξοιστον, παρεγένοντο ἐπὶ τοὺς ἀριθμοὺς εὐσήμου διδασκαλίας χάριν μιμησάμενοι τοὺς γεωμέτρους καὶ τοὺς γραμματιστάς. ὡς γὰρ οὗτοι, τὰς δυνάμεις τῶν στοιχείων καὶ αὐτὰ ταῦτα βουλόμενοι παραδοῦναι, παρεγένοντο ἐπὶ τοὺς χαρακτῆρας, τούτους λέγοντες ὡς πρὸς τὴν πρώτην διδασκαλίαν στοιχεῖα εἶναι, ὕστερον μὲντοι διδάσκουσιν ὅτι οὐχ οὗτοι στοιχεῖα εἰσὶν οἱ χαρακτῆρες, ἀλλὰ διὰ τούτων ἐννοία γίνεται τῶν πρὸς ἀλήθειαν στοιχείων· καὶ οἱ γεωμέτραι μὴ ἰσχύοντες τὰ ἀσώματα εἶδη λόγῳ παραστήσαι παραγίνονται ἐπὶ τὰς διαγραφὰς τῶν σχημάτων, λέγοντες εἶναι τρίγωνον τόδε, οὐ τοῦτο βουλόμενοι τρίγωνον εἶναι τὸ ὑπὸ τὴν ὄψιν ὑποπίπτον, ἀλλὰ τὸ τοιοῦτο, καὶ διὰ τούτου τὴν ἐννοίαν τοῦ τριγώνου παριστᾶσι. καὶ ἐπὶ τῶν πρῶτων οὖν λόγων καὶ εἰδῶν τὸ αὐτὸ ἐποίησαν οἱ Πυθαγόρειοι, μὴ ἰσχύοντες λόγῳ παραδιδόναι τὰ ἀσώματα εἶδη καὶ τὰς πρῶτας ἀρχάς, παρεγένοντο ἐπὶ τὴν διὰ τῶν ἀριθμῶν δήλωσιν.”

Mathematical symbols might didactically communicate an understanding of the real, but verbal language neither touches on the mathematical realities, nor does it communicate any truth about those realities, except by means of analogy.

The Pythagorean attitude towards the certainty of mathematical knowledge and the comparative uncertainty of semantically communicated knowledge had a long philosophical afterlife, and the ability to apprehend mathematical knowledge was clearly considered a necessary qualification for any serious scholar. According to legend, the entrance to Plato's Academy featured a sign reading, "Let no non-geometers enter here,"⁷⁰⁸ and Diogenes Laertios claims that Plato's famous successor at the head of the Academy, Xenokrates of Chalkedon (395-313 BCE), turned away anyone who had not yet mastered the mathematical arts of music, geometry, or astronomy, as those were the "handles [λαβάς, *labás*] to hold on to"⁷⁰⁹ when attempting philosophical thought. Fellow Academy graduate Aristotle, whom Plato describes as the racehorse ["the one needs a bridle"] to Xenokrates' donkey ["the other needs a spur"],⁷¹⁰ too, conceives of mathematics as an exemplary form of knowledge,

⁷⁰⁸ The 6th Century scholar David of Thessalia, a student of Olympiodoros the Younger (495-570 CE) in Alexandria, writes in his *Commentary on Aristotle's Categories*: "καὶ διὰ Πλατόνα ἐπιγράψαντα πρὸ τοῦ μουσείου ἀγεωμέτρητος μέδεις εἰσίτω" (3 par. 1). Ioannes the Grammarian (490-570 CE), also of Alexandria, uses a slightly different formulation that amounts to the same thing in his commentary on Aristotle's *De Anima*: "Πυθαγόρειος δε ο Πλάτων, οὐ και προ της διατριβής ἐπεεγράπτο 'αγεωμέτρητος μη εισίτω'" (1.3.3v).

⁷⁰⁹ Diogenes Laertius, *Lives of Eminent Philosophers*, "Xenocrates," 4.2.10: "πρὸς δὲ τὸν μήτε μουσικὴν μήτε γεωμετρίαν μήτε ἀστρονομίαν μεμαθηκότα, βουλόμενον δὲ παρ' αὐτὸν φοιτᾶν, 'πορεύου,' ἔφη: 'λαβάς γὰρ οὐκ ἔχεις φιλοσοφίας.'" "To those who had learned neither music, nor geometry, nor astronomy but wished to listen to his lectures, he said, 'Leave, for those are the handles to hold on to philosophy.'"

⁷¹⁰ Diogenes Laertius, *Lives of Eminent Philosophers*, "Xenocrates," 4.2.6: "ἦν δὲ τὴν φύσιν νωθρός, ὥστε λέγειν τὸν Πλάτωνα συγκρίνοντα αὐτὸν Ἀριστοτέλει, 'τῷ μὲν μύωπος δεῖ, τῷ δὲ χαλινού.' καὶ 'ἐφ' οἷον ἵππον οἷον ὄνον ἀλείφω.'" "[Xenocrates] was born slow. Comparing him to Aristotle, Plato would say, 'The one needs a spur. The other needs a bridle.' And, 'See what a donkey I am bringing up compared to such a horse.'"

since in his *Organon* it is the syllogistic structures of geometrical proofs that he requires his students to imitate in order to produce soundly logical, deductive conclusions as the basis of logical argument.

What emerges, then, is a conception of a mathematical nature of things that can be apprehended properly only in a geometrical mode, as abstract Forms of which reality as experienced is a mere flicker on the wall of Plato's Cave. Plato, in fact, takes the issue a step further in *The Republic*. Having established that philosophers should rule the ideal city, Socrates tells the famous allegory⁷¹¹ and then dialogues with Glaucon about the proper education of such philosophers should be: "a conversion and turning about of the soul from a day whose light is darkness to the veritable day—that ascension to reality of our parable which we will affirm to be true philosophy ... the study that would draw the soul away from the world of becoming to the world of being."⁷¹² Next, the dialogue outlines a course of study to shape minds capable of such an enlightenment, each intended for a continuously more select tier of students. These include a basic education in poetry, music, and athletics,⁷¹³ a second-tier education in mathematics, including arithmetic and numbers,⁷¹⁴ plane geometry,⁷¹⁵ and geometry of solids.⁷¹⁶ The third tier will also learn applied geometry, i.e. astronomy⁷¹⁷ and

⁷¹¹ Plato, *Republic*, 514a-520a.

⁷¹² Plato, *Republic*, 521c-d: "τοῦτο δὴ, ὡς ἔοικεν, οὐκ ὀστράκου ἂν εἴη περιστροφή, ἀλλὰ ψυχῆς περιαγωγή ἐκ νυκτερινῆς τινος ἡμέρας εἰς ἀληθινὴν, τοῦ ὄντος οὐσαν ἐπάνοδον, ἣν δὴ φιλοσοφίαν ἀληθὴ φήσομεν εἶναι ... τί ἂν οὖν εἴη, ὦ Γλαῦκων, μάθημα ψυχῆς ὀκτὸν ἀπὸ τοῦ γιγνομένου ἐπὶ τὸ ὄν." Transl. Paul Shorey, *Plato: The Republic*, Vol. 2. Cambridge, Mass.: Harvard UP, 1937. 147.

⁷¹³ Plato, *Republic*, 521d-e.

⁷¹⁴ Plato, *Republic*, 522c.

⁷¹⁵ Plato, *Republic*, 526c.

⁷¹⁶ Plato, *Republic*, 528c.

⁷¹⁷ Plato, *Republic*, 528e.

harmonics.⁷¹⁸ The top tier will end its education with dialectic, the art of philosophical argument.⁷¹⁹ To Plato, mathematics, and especially geometry, clearly is at the center of the quest to understand “the world of being.”

Plato has Socrates and Glaucon engage in a particularly salient conversation when discussing the necessity of learning geometry. Firstly, a basic understanding of arithmetic and geometry would be necessary for warriors, “as applies to the conduct of war ... in dealing with encampments and the occupation of strong places and the bringing of troops into column and line and all the other formations of an army in actual battle and on the march.” (This point of view is echoed 2000 years later by James I in his 1599 *Basilikon Doron*, who alludes to Plato for this insight into the mind-formation of a good Early Modern sovereign: “I graunt it is meete yee haue some entrance, specially in the Mathematickes; for the knowledge of the arte militarie, in situation of Campes, ordering of battels, making Fortifications, placing of batteries, or such like.”⁷²⁰) However, warriors require only a “slight modicum” of geometry.⁷²¹ That is because to Plato higher geometry does not have a practical purpose, but rather aims at finding “the good,” and to study it means to “force the soul to turn its vision

⁷¹⁸ Plato, *Republic*, 530d.

⁷¹⁹ Plato, *Republic*, 532a-535a.

⁷²⁰ James I, *Basilikon Doron*, 113.

⁷²¹ Plato, *Republic*, 526d: “ὅσον μὲν, ἔφη, πρὸς τὰ πολεμικὰ αὐτοῦ τείνει, δῆλον ὅτι προσήκει: πρὸς γὰρ τὰς στρατοπεδεύσεις καὶ καταλήψεις χωρίων καὶ συναγωγὰς καὶ ἐκτάσεις στρατιᾶς καὶ ὅσα δὴ ἄλλα σχηματίζουσι τὰ στρατόπεδα ἐν αὐταῖς τε ταῖς μάχαις καὶ πορείαις διαφέροι ἂν αὐτὸς αὐτοῦ γεωμετρικός τε καὶ μὴ ὢν. ἀλλ’ οὖν δὴ, εἶπον, πρὸς μὲν τὰ τοιαῦτα καὶ βραχὺ τι ἂν ἐξαρκοῖ γεωμετρίας τε καὶ λογισμῶν μόριον.” Transl. Shorey.

round to the region where dwells the most blessed part of reality, which is imperative that it should behold:” the realm of Forms and Ideas.⁷²²

To Plato the discipline of geometry is not so much descriptive of the world *as it is* as a sophisticated but ultimately futile attempt to accurately capture, record, and calculate the world of Forms: “This at least will not be disputed by those who have even a slight acquaintance with geometry, that this science is in direct contradiction with the language employed in it by its adepts.”⁷²³ That is so because geometers tend to try to solve problems and address real-world challenges in mechanics, which implies their calculations *arrive* at the answer rather than distancing them from the Forms:

Their language is most ludicrous, though they cannot help it, for they speak as if they were doing something and as if all their words were directed towards action. For all their talk is of squaring and applying and adding and the like, whereas in fact the real object of the entire study is pure knowledge That it is the knowledge of that which always is, and not of a something which at some time comes into being and passes away for geometry is the knowledge of the eternally existent.⁷²⁴

⁷²² Plato, *Republic*, 526e: “τὸ δὲ πολὺ αὐτῆς καὶ πορρωτέρω προῖον σκοπεῖσθαι δεῖ εἴ τι πρὸς ἐκεῖνο τείνει, πρὸς τὸ ποιεῖν κατιδεῖν ῥᾶον τὴν τοῦ ἀγαθοῦ ἰδέαν. τείνει δέ, φαμέν, πάντα αὐτόσε, ὅσα ἀναγκάζει ψυχὴν εἰς ἐκεῖνον τὸν τόπον μεταστρέφεσθαι ἐν ᾧ ἔστι τὸ εὐδαιμονέστατον τοῦ ὄντος, ὃ δεῖ αὐτὴν παντὶ τρόπῳ ἰδεῖν.” Transl. Shorey.

⁷²³ Plato, *Republic*, 527a: “οὐ τοίνυν τοῦτό γε, ἦν δ’ ἐγώ, ἀμφισβητήσουσιν ἡμῖν ὅσοι καὶ σμικρὰ γεωμετρίας ἔμπειροι, ὅτι αὕτη ἡ ἐπιστήμη πᾶν τούναντίον ἔχει τοῖς ἐν αὐτῇ λόγοις λεγομένοις ὑπὸ τῶν μεταχειριζομένων.” Transl. Shorey.

⁷²⁴ Plato, *Republic*, 527a-b: “λέγουσι μὲν που μάλα γελοίως τε καὶ ἀναγκαίως: ὡς γὰρ πράττοντές τε καὶ πράξεως ἔνεκα πάντας τοὺς λόγους ποιούμενοι λέγουσιν τετραγωνίζειν τε καὶ παρατείνειν καὶ

Geometers would do better in Plato's view if they committed to deduction from first principles rather than induction from their calculations, confusing their diagrams of triangles and circles with the eternal Idea itself.

In the cosmology contained in his *Timaeus*, meanwhile, Plato even goes so far as to suggest that geometers would best apprehend reality *as it is* if they began with the abstract Forms and then looked for them in the world of their experience, because since Creation, all things are made up of versions of those forms:

Before that time, in truth, all these things were in a state devoid of reason or measure, but when the work of setting in order this Universe was being undertaken, fire and water and earth and air, although possessing some traces of their own nature, were yet so disposed as everything is likely to be in the absence of God; and inasmuch as this was then their natural condition, God began by first marking them out into shapes by means of forms and numbers.⁷²⁵

Specifically, they are made of the triangles Pythagoras, too, was so fond of:

Fire and earth and water and air are solid bodies; and the form of a body, in every case, possesses depth also. Further, it is absolutely necessary that depth should be bounded by a plane surface; and the

προστιθέναι καὶ πάντα οὕτω φθεγγόμενοι, τὸ δ' ἔστι πᾶν τὸ μάθημα γνώσεως ἕνεκα ἐπιτηδεύμενον. ... ὡς τοῦ ἀεὶ ὄντος γνώσεως, ἀλλὰ οὐ τοῦ ποτέ τι γιγνομένου καὶ ἀπολλυμένου.”
Transl. Shorey.

⁷²⁵ Plato, *Timaeus*, 53a-53b: “καὶ τὸ μὲν δὴ πρὸ τούτου πάντα ταῦτ' εἶχεν ἀλόγως καὶ ἀμέτρως: [53β] ὅτε δ' ἐπεχειρεῖτο κοσμεῖσθαι τὸ πᾶν, πῦρ πρῶτον καὶ ὕδωρ καὶ γῆν καὶ ἀέρα, ἴχνη μὲν ἔχοντα αὐτῶν ἅττα, παντάπασί γε μὴν διακείμενα ὡσπερ εἰκὸς ἔχειν ἅπαν ὅταν ἀπὴ τινος θεός, οὕτω δὴ τότε πεφυκότα ταῦτα πρῶτον διεσχηματίσατο εἶδεσί τε καὶ ἀριθμοῖς.” Transl. W.R.M. Lamb, *Plato*, Vol. 9. Cambridge, Mass.: Harvard UP, 1925.

rectilinear plane is composed of triangles. Now all triangles derive their origin from two triangles, each having one angle right and the others acute; and the one of these triangles has on each side half a right angle marked off by equal sides, while the other has the right angle divided into unequal parts by unequal sides. These we lay down as the principles of fire and all the other bodies, proceeding according to a method in which the probable is combined with the necessary.⁷²⁶

Geometers might learn about, sketch, and imitate these triangles and other forms, but only a small elite of true philosophers understands their abstract nature properly:

“But the principles which are still higher than these are known only to God and the man who is dear [*philos*, “like a brother”] to God.”⁷²⁷

The geometrical *logos*, which lies at the heart of both Pythagoras’ and Plato’s theories about the true nature of the world, suggests that the geometrical method points at the true certainties of existence – and only the most adept elite, which can decipher geometry’s code and comprehend its *ratio*, can reach the quasi-divine realm of a true knowledge. Derivatively, the ultimate authority of geometry can be rhetorically [appealed to in order to refute counterarguments through *pars pro toto* displays of geometrical learning. This method played a significant role in Greek and

⁷²⁶ Plato, *Timaeus*, 53c-d: “πρῶτον μὲν δὴ πῦρ καὶ γῆ καὶ ὕδωρ καὶ ἀήρ ὅτι σώματά ἐστι, δῆλόν που καὶ παντί: τὸ δὲ τοῦ σώματος εἶδος πᾶν καὶ βάθος ἔχει. τὸ δὲ βάθος αὐτὰ πάντα ἀνάγκη τὴν ἐπίπεδον περιελιφέναι φύσιν: ἡ δὲ ὀρθὴ τῆς ἐπιπέδου βάσεως ἐκ τριγώνων συνέστηκεν. τὰ δὲ τρίγωνα πάντα ἐκ δυοῖν ἄρχεται [53δ] τριγώνοις, μίαν μὲν ὀρθὴν ἔχοντος ἑκατέρου γωνίαν, τὰς δὲ ὀξείας: ὧν τὸ μὲν ἕτερον ἑκατέρωθεν ἔχει μέρος γωνίας ὀρθῆς πλευραῖς ἴσας διηρημένης, τὸ δ’ ἕτερον ἀνίσους ἄνισα μέρη νενεμημένης. ταύτην δὴ πυρὸς ἀρχὴν καὶ τῶν ἄλλων σωμάτων ὑποτιθέμεθα κατὰ τὸν μετ’ ἀνάγκης εἰκότα λόγον πορευόμενοι.” Transl. Lamb.

⁷²⁷ Plato, *Timaeus*, 53d-e: “τὰς δ’ ἔτι τούτων ἀρχὰς ἄνωθεν θεὸς οἶδεν καὶ ἀνδρῶν ὃς ἂν ἐκείνῳ φίλος ᾖ.” Transl. Lamb.

Hellenistic intellectual discourse until that world's Christianization introduced a theologized version of that self-same concept. Thus the Alexandrian-Roman mathematician Claudius Ptolemaeus (100-170 CE) – him of the Ptolemaian model of the universe, complete with Pythagorean “music of the spheres,” that would dominate Western theories until the astronomical discoveries of the Early Modern period – privileges geometrical thinking above theology and physics as a source of certain truths:

The first two divisions of theoretical philosophy should rather be called guesswork than knowledge, theology because of its completely invisible and ungraspable nature, physics because of the unstable and unclear nature of matter; ... only mathematics can provide sure and unshakeable knowledge to its devotees ... for its kind of proof proceeds by indisputable methods, namely arithmetic and geometry.”⁷²⁸

The Pergamonian-Greek physician Klaudios Galenos (129 CE-216 CE), meanwhile, whose work was the basis of medical training well into the Early Modern period, justified the authority of his own expertise in medicine by drawing parallels to the certainties of geometry. Galen himself had received an extensive education in all things mathematical as a young boy from his own father, the Pergamonian architect Aelios Nikon, including geometry, number theory, computation, architecture, and astronomy.⁷²⁹ In several of his texts, Galen derides those without a full geometrical

⁷²⁸ Ptolemy, *Almagest*, 1.1. G.J. Toomer, transl. & ed.. London: Duckworth, 1984.

⁷²⁹ Cf. Galen, *Passions of the Soul* [*De Propriorum Animi Cuiuslibet Affectuum Dignotione et Curatione*], 7.1-4.

education as unable to understand the other sciences like his own,⁷³⁰ asserts that discursive philosophy is inferior to geometry in understanding medicine,⁷³¹ and in the *ekphrasis* with which he opens his *Exhortation to the Studies of the Arts*, Galen places geometers and physicians as “honorable men” next to the god himself in a relief of Hermes, whom he contrasts to the futile and corrupted followers of Tyche, goddess of fickle and unpredictable Fortune.⁷³²

What, then, is the geometrical *logos*? Music and astronomy are applications of geometry to the aural and the visual spheres, respectively, and share variations of the same subject matter: lines, angles, curves, and ratios between fixed or moving points (in a plain, in the sky, on the scale, and on the metric beat). They also share an important limit inherent to their common *technē*. Despite of what the idea of a “mathematization of knowledge” might appear to imply to modern ears, none of these geometrical fields can *measure* or *calculate*, and certainly not *account*. Unlike *arithmetic*, which is inductive in nature, geometry is deductive. It can be observed that two plus two is four by repeatedly placing two apples and another two apples into a basket, and every time ending up with four apples in the basket. But just as there is no such thing as an abstract apple, there are no triangles in the wild. As Moderatos of Gades had explained, geometry’s application to the physical world functions entirely by *analogy*: “geometers ... resort to figures in diagrams and say that this is a triangle;

⁷³⁰ Incl. the general educated elite in *Affections and Errors of the Soul* [*De Propriorum Animi cuiuslibet Affectuum et Peccatorum Dignotione et Curatione*], 2.1-8; and Roman astrologers specifically in *On Hippocrates’ Airs, Waters, Places*.

⁷³¹ Cf. *On the Elements according to Hippocrates* [*De Elementis ex Hippocrate*].

⁷³² *Exhortation to the Studies of the Arts* [*Adhortatio ad Artes Addiscendas*].

they do not mean that the triangle is this visible thing but that it is of the sort (τό τοιοῦτο, *to toiouto*), and they present the concept of triangle by means of a diagram.”⁷³³ In other words, when finding – or in mechanics, building – an object that appears triangular, it is not in fact a triangle, but a *simulacrum* of a triangle. That is so because a triangle in the geometrical sense only ever exists on a two-dimensional plane and consists of points that have, by definition, a position on the plane but no *extent* (no length, area, or volume), and of lines that have, by definition, a position on the plane and only one dimension, length. A physical object, however, exists in a three-dimensional space and, by definition, always has all of the dimensional properties, including of extent (area and volume). The closest such an object could get to a geometrical triangle would be in the hypothetical case that it was so sliver-thin it consisted only of one layer of molecules – and even yet, that would still amount to area and volume. In other words, using geometrical concepts like the triangle to describe objects in the physical world amounts to mentally superimposing an abstract triangle on a near-similar shape, and pretending for the sake of argument that one is analogous to the other. Geometrical shapes can only ever be imaginatively modeled onto the physical world. They have no existence in it. The closest things to geometrical objects that appear to have a physical existence are, unsurprisingly, the stars, which *seem* like physical, observable things. However, being made of

⁷³³ Qtd. in Porphyry, *Life of Pythagoras*, 48-53: “καὶ οἱ γεωμέτραι μὴ ἰσχύοντες τὰ σώματα εἶδη λόγῳ παραστήσαι παραγίνονται ἐπὶ τὰς διαγραφὰς τῶν σχημάτων, λέγοντες εἶναι τρίγωνον τόδε, οὐ τοῦτο βουλόμενοι τρίγωνον εἶναι τὸ ὑπὸ τὴν ὄψιν ὑποπίπτον, ἀλλὰ τὸ τοιοῦτο, καὶ διὰ τούτου τὴν ἔννοιαν τοῦ τριγώνου παριστᾶσι.”

immaterial light and being unreachable, stars do not *function* as material things, but rather as points without extent on the geometrical spheres of the heavens.

These facts lead Pythagoras – and later also the Platonists, the Stoics, and their joint cosmo-*logical* successors in the three Abrahamic Faiths – to observe that, firstly, an abstract geometrical form appears to be more perfect than any particular analogous physical iteration that resembles it; that, secondly, the world nevertheless appears to be governed by geometrical patterns and movements, meaning that geometry does describe *some* kind of reality; and thirdly, that therefore there must be a level of reality that is reserved for perfect forms, which is not accessible to humans bound to a physical existence. (Aristotle rejects this notion because he thinks, conversely, that geometry is a language of symbolic metaphors and does not actually describe anything real.⁷³⁴) According to Pythagoras, the only language capable of expressing the truth-content of that geometrical sphere must be a geometrical language, and the only candidate for such a language, for the reasons already noted, is music. It is not actually such an enormous logical leap, then, for Pythagoras to assume that the geometrical stars in their geometrical movements on their geometrical spheres generate that geometrical language: the music of the spheres.

That particular mathematical-philosophical logic being established, we can now turn from the subject matter of geometry to its *techne*, which is where the crux of this argument will lie. The issue at the heart of it has to do with the fact that geometry has no arithmetic. Arithmetic requires individual instances that can be counted and

⁷³⁴ Cf. Hans Joachim Krämer, “Zur geschichtlichen Stellung der Aristotelischen Metaphysik.” *Kant-Studien* 58.3 (1967), 313-354.

tallied into groups called numbers, and it needs those individual instances to be equivalent to each other. That is, a single apple, called 1, can be grouped together with a second single apple, also called 1, to make 2 apples. For the layperson, it might be counterintuitive to observe that one cannot conduct this type of arithmetic on a geometrical form, but that complication is primarily a didactic one. It arises from the fact that most elementary geometers learn to identify a shape by applying a ruler to a diagram of the form on paper. One might have been taught, for example, that a four-sided shape with 90° angles is a rectangle. A four-sided shape with 90° angles and sides all of an equal length is a square. An elementary geometer looking at a shape on a piece of paper might suspect that the shape in front of them is, indeed a square. But to confirm one's suspicion, one has been told, one must *induce* that it is a square, by presenting calculable, objective, observable, and repeatable evidence. One must measure the length of all four sides with a normed ruler, and if the measurements all equal, say, one inch, and anyone else measuring the sides with the same normed ruler would also find them to all equal one inch, then one may pronounce it a square. One then can do other useful arithmetical calculations with these measurements, such as adding up all the measurements of the sides to establish the perimeter of the square, which in the case of this example is four inches.

Except that it is not. Such a calculation is nonsensical from a geometrical perspective, because the exercise confuses the representation of the square on paper with the square itself as it exists in the abstract. The confusion amounts to the equivalent of calling a square-shaped wooden tabletop a square, even though it is actually a wooden tabletop. It might resemble a square, but it is not one, and a good

thing, too: being comprised of points and lines without area or volume, a square would make a very bad place to place a steaming hot coffee cup. Likewise, a graphical representation of a square printed in a layer of ink on a thin slice of dried fibrous cellulose pulp is not a square. It's a graphical representation of one. All the elementary geometer measured was the length of the layers of ink on paper, not the square itself. Geometry and its derivative applications can only *identify relationship*, based on *unit* and *ratio*. It does not know number, only geometrical magnitude.⁷³⁵ Any application of geometry to the physical world is therefore by *analogy* only, by postulating, for argument's sake that a geometrical unit corresponds to a physical length. Whatever one might think of Greek philosophical distinctions between Form and the physical world when it comes to the discourse of ideas, the distinction is unequivocally accurate as a description of geometrical *techne*. This, then, is why within a geometrical *logos*, already *on a technical level* there can be no information, and thus no modern concept of intelligence: both require accounting for “differences that make a difference” through arithmetic, and must work on the assumption that this modern, diaphoric *data* points inductively to a corresponding physical reality.

Nevertheless, the geometrical *logos* would later find its echo in Christian theology. The religion's main readable source of authority on knowledge is, of course,

⁷³⁵ Euclid defines magnitude in Book 5 of the *Elements*: “1. μέρος ἐστὶ μέγεθος μεγέθους τὸ ἔλασσον τοῦ μείζονος, ὅταν καταμετρηῖ τὸ μείζον. 2. πολλαπλάσιον δὲ τὸ μείζον τοῦ ἐλάττονος, ὅταν καταμετρηῖται ὑπὸ τοῦ ἐλάττονος. 3. λόγος ἐστὶ δύο μεγεθῶν ὁμογενῶν ἢ κατὰ πηλικότητά ποια σχέσις.” In English: “1. A magnitude is a part of a magnitude, the less of the greater, when it measures the greater. 2. The greater is a multiple of the less when it is measured by the less. 3. A ratio is a sort of relation in respect of size between two magnitudes of the same kind.” Transl. Thomas Little Heath, *Euclid's Elements*. New York: Dover, 1956.

the canon of “god-breathed”⁷³⁶ – and, crucially, not god-written – Jewish and Christian texts compiled into the *Bible*, the *librum scripturae*, or “Book of Scripture.” From the 3rd Century onwards, however, Christian theologians began legitimizing a second source of readable authority – creation – using the metaphor of the *librum naturae*, or “Book of Nature.” The metaphor first arose in Christian Egypt, where the Coptic monk Avva Antoni (Father Anthony, 251–356), better known in the West as Anthony the Desert Father, was living as a hermit when he was visited by a Greek-educated scholar. The visitor is reported to have asked, “Father, how can you endure deprived of the comfort of books?” Anthony replied, “Philosopher, my book is the nature of things that are made, and it is present whenever I wish to read the words of God.”⁷³⁷ Anthony’s metaphor of nature as a readable book that can complement or, to the right-minded believer, replace canonical scripture evidently appealed to late classical Christian theologians contending with the intellectual legacy of Greco-Roman philosophy. In line with the predominantly dismissive attitude of Early Christianity towards any source of meaningful knowledge save the scriptures, the

⁷³⁶ In his *Second Epistle to Timothy*, one of the canonical books of the Christian *New Testament*, Paulos of Tarsus writes in the original Greek, “πᾶσα γραφή θεόπνευστος καὶ ὠφέλιμος πρὸς διδασκαλίαν, πρὸς ἐλεγμὸν, πρὸς ἐπανόρθωσιν, πρὸς παιδείαν τὴν ἐν δικαιοσύνῃ, ἵνα ἄρτιος ᾦ ὁ τοῦ θεοῦ ἄνθρωπος, πρὸς πᾶν ἔργον ἀγαθὸν ἐξηρητισμένος” (3.16-17), which in English translates as, “All Scripture is God-breathed and is useful for teaching, rebuking, correcting and training in righteousness, so that the servant of God may be thoroughly equipped for every good work” (KJV). The influential 4th Century Latin translation, the *Vulgata*, by Eusebius Sophronius Hieronymus [Jerome] translates the first phrase, “omnis scriptura divinitus inspirata.” The Latin *inspirare*, “to breathe in,” in this sense as synonymous with Paul’s use of θεόπνευστος (“God-breathed”), is the origin of the theological concept of “divine inspiration.”

⁷³⁷ So reported in the *Church History* of the 4th Century church historian Sokrates Skolastikos of Constantinople (380-c.439): “Τῷ δικαίῳ Ἀντωνίῳ προσῆλθέν τις τῶν τότε σοφῶν, καὶ, ‘ Πῶς διακαρτερεῖς, ’ εἶπεν, ‘ ὦ πάτερ, τῆς ἐκ τῶν βιβλίων παραμυθίας ἐστερημένος; ’ ‘ Τὸ ἐμὸν βιβλίον, ’ ἔφη ὁ Ἀντώνιος, ‘ ὃ φιλόσοφε, ἡ φύσις τῶν γεγονότων ἐστὶ καὶ πάρεστιν, ὅτε βούλομαι, τοὺς λόγους ἀναγινώσκειν τοὺς τοῦ Θεοῦ ’ ” (4.23).

Tertullian had famously formulated the dictum, “What does Athens have to do with Jerusalem? What the Academy with the Church?”⁷³⁸ Foremost among those early Christian thinkers advocating against such stark distinctions and in favor of “secular” sources of knowledge was Basileios of Kaisareia (Basil, 330-379), who wrote in his *Address to Adolescents on the Proper Uses of Greek Literature* that “since much has been uttered in praise of virtue by poets, much by historians, and much more still by philosophers, we ought especially to apply ourselves to such literature.”⁷³⁹ In this vein, Basil is the first to suggest that natural philosophy (*theoria physiké*) is a particularly useful as a means to read God’s *logos* of creation like one reads a book,⁷⁴⁰ marvels as a piece of art,⁷⁴¹ studies as in school or absorbs an athletic performance in an

⁷³⁸ Tertullian, *De Praescriptione Haereticorum* 7.9: “Quid ergo Athenis et Hierosolymis? Quid academiae et ecclesiae?”

⁷³⁹ Basil of Caesarea, *De Legendis Gentilium Libris* 5.1-2: “Καὶ ἐπειδήπερ δι’ ἀρετῆς ἡμᾶς ἐπὶ τὸν βίον καθεῖναι δεῖ τὸν ἡμέτερον, εἰς ταύτην δὲ πολλὰ μὲν ποιηταῖς, πολλὰ δὲ συγγραφεῦσι, πολλῶ δὲ ἔτι πλείω φιλοσόφοις ἀνδράσιν ὕμνηται, τοῖς τοιοῦτοις τῶν λόγων μάλιστα προσεκτέον.”

⁷⁴⁰ Basil of Caesarea, *In Isaiah* 212: “For there are two means by which we can be led to the knowledge of God and proper care of ourselves: either ascending to the Maker by means of natural scientific studies, through visible things, or by means of the teachings given to us through the Law.” Transl. Nikolai A Lipatov, *St Basil the Great: Commentary on the Prophet Isaiah*. Mandelbachtal & Cambridge: Edition Cicero, 2001; Basil of Caesarea, *Homilia de Gratiarum Actione*, 221C-224A: “We were made in the image and likeness of our Creator, endowed with intellect and reason, so that our nature was complete and we could know God. In this way, continuously contemplating the beauty of creatures, through them as if they were letters and words, we could read God’s wisdom and providence over all things.”

⁷⁴¹ Basil of Caesarea, *Hexameron* 3.10: “And God saw that it was good. God does not judge of the beauty of His work by the charm of the eyes, and He does not form the same idea of beauty that we do. What He esteems beautiful is that which presents in its perfection all the fitness of art, and that which tends to the usefulness of its end. He, then, who proposed to Himself a manifest design in His works, approved each one of them, as fulfilling its end in accordance with His creative purpose. A hand, an eye, or any portion of a statue lying apart from the rest, would look beautiful to no one. But if each be restored to its own place, the beauty of proportion, until now almost unperceived, would strike even the most uncultivated. But the artist, before uniting the parts of his work, distinguishes and recognizes the beauty of each of them, thinking of the object that he has in view. It is thus that Scripture depicts to us the Supreme Artist, praising each one of His works; soon, when His work is complete, He will accord well deserved praise to the whole together.” In Greek: “Καὶ εἶδεν ὁ Θεὸς ὅτι καλόν. Οὐχὶ ὀφθαλμοῖς Θεοῦ τέρψιν παρέχει τὰ παρ’ αὐτοῦ γινόμενα, οὐδὲ τοιαύτη παρ’ αὐτῷ ἢ ἀποδοχὴ τῶν καλῶν, οἷα καὶ παρ’ ἡμῖν· ἀλλὰ καλὸν τὸ τῷ λόγῳ τῆς τέχνης ἐκτελεσθὲν, καὶ πρὸς τὴν τοῦ τέλους εὐχρηστίαν συντεῖνον. Ὁ τοίνυν ἐναργῆ τὸν σκοπὸν τῶν γινομένων προθέμενος, τὰ κατὰ μέρος

amphitheater,⁷⁴² since the contemplation of created things, by means of analogy, reveals the Creator and divine realities.⁷⁴³ The metaphor recurs in the work of Basil's fellow Greek John Chrysostom;⁷⁴⁴ the Latin theologian Augustine of Hippo;⁷⁴⁵ and the Syriac theologian Ephrem the Syrian (306-373),⁷⁴⁶ among others.

γινόμενα ὡς συμπληρωτικά τοῦ τέλους, τοῖς τεχνικοῖς ἑαυτοῦ λόγοις ἐπελθὼν ἀπεδέξατο. Ἐπεὶ καὶ χεὶρ καθ' ἑαυτήν, καὶ ὀφθαλμὸς ἰδίᾳ, καὶ ἕκαστον τῶν τοῦ ἀνδριάντος μελῶν διηρημένως κείμενα, οὐκ ἂν φανεῖη καλὰ τῷ τυχόντι· πρὸς δὲ τὴν οἰκειάν τᾶξιν ἀποτεθέντα, τὸ ἐκ τῆς ἀναλογίας, ἐμφανὲς μόνις ποτέ, καὶ τῷ ἰδιώτῃ παρέχεται γνώριμον. Ὁ μέντοι τεχνίτης καὶ πρὸ τῆς συνθέσεως οἶδε τὸ ἐκάστου καλόν, καὶ ἐπαινεῖ τὰ καθ' ἕκαστον, πρὸς τὸ τέλος αὐτῶν ἐπαναφέρων τὴν ἔννοιαν. Τοιοῦτος οὖν δὴ τις καὶ νῦν ἔντεχνος ἐπαινήτης τῶν κατὰ μέρος ἔργων ὁ Θεὸς ἀναγράφεται· μέλλει δὲ τὸν προσήκοντα ἔπαινον καὶ παντὶ ὁμοῦ τῷ κόσμῳ ἀπαρτισθέντι πληροῦν.” Philip Schaff, transl, *A Select Library of Nicene and Post-Nicene Fathers of the Christian Church*, Vol. 8. New York: Christian Literature Co., 1895. 71.

⁷⁴² Basil of Caesarea, *Hexameron* 1.6.2: “The [physical] world is really the school where reasonable souls exercise themselves, the training ground where they learn to know God; since by the sight of visible and sensible things the mind is led, as by a hand, to the contemplation of invisible things. ‘For,’ as [Paul] the Apostle says, ‘the invisible things of him from the creation of the world are clearly seen, being understood by the things that are made.’” Transl. Philip Schaff, *Basil: Letters and Select Works*. Edinburgh: T & T Clark, 1895.

⁷⁴³ “Indeed this same advice is given by the wise Solomon, when on one occasion he sets the ant before us as an example of the unashamed worker, and thereby outlines the path which is practical for us; and on another refers us to the ‘wise bee’s wax-moulding implement’ and thereby suggests the contemplation of nature, wherein is also blended the doctrine of the Holy Trinity—that is, if from the beauty of created things the nature of the creator is correspondingly inferred.” In Greek: “τοῦτό τοι αὐτὸ καὶ ὁ σοφὸς παρεγγυᾷ Σολομῶν, καὶ ποτε μὲν ἡμῖν προφέρει τὸν ἀνεπαίσχυντον ἐργάτην τὸν μύρμηκα καὶ δι’ αὐτοῦ τὴν πρακτικὴν ἡμῖν ὁδὸν ὑπογράφει· ποτέ δὲ τὸ τῆς σοφῆς μελίττης κηρόπλαστον ὄργανον, καὶ δι’ αὐτῆς φυσικὴν θεωρίαν αἰνίττεται, ἐν ἧ καὶ ὁ περὶ τῆς ἁγίας Τριάδος ἐγκέκραται λόγος, εἴπερ ἐκ καλλονῆς κτισμάτων ἀναλόγως ὁ γενεσιουργὸς θεωρεῖται.” Basil of Caesarea, “Letter 8: An Apology and a Treatise on Faith.” in Roy J. Deferrari, transl. *Basil. Letters, Volume I: Letters 1-58* Loeb Classical Library 190. Cambridge, MA: Harvard University Press, 1926. 46-93. 90-93.

⁷⁴⁴ E.g. John Chrysostom, *Homilies on the Statues* 9.7: “For not only, indeed, does the magnitude and beauty of the creation, but also the very manner of it, display a God who is the artificer of the universe. . . . He hath made the mode of this creation to become our best teacher, by compounding all things in a manner which transcends the course of nature.”

⁷⁴⁵ E.g. Augustine of Hippo, *Expositions on the Psalms* 45.7: “Liber tibi sit pagina divina, ut haec audias; liber tibi sit orbis terrarum, ut haec videas. In istis codicibus non ea legunt, nisi qui litteras noverunt; in toto mundo legat et idiota.” English: “It is the divine page that you must listen to; it is the book of the universe that you must observe. The pages of Scripture can only be read by those who know how to read and write, while everyone, even an idiot, can read the book of the universe.”

⁷⁴⁶ Ephrem the Syrian, *Hymns on Paradise* 5.2.

The metaphor of the “book of nature” soon turned into a rhetorical tool for Christian thinkers to build on the geometrical *logos* itself. John Cassian’s teacher Evagrius of Pontus (Evagrius, 345-399) used the metaphor to engage Stoic and Neoplatonic concepts of the *logos*,⁷⁴⁷ which had been part of Hellenistic Christian discourse as far back as the composition of the *Gospel of John* in the 1st Century.⁷⁴⁸ In response to the poet King David of Israel’s proclamation addressed to the Jewish god Yahweh in Psalm 139 that, “Your eyes saw my unformed limbs; they were all recorded in Your book; in due time they were formed, to the very last one of them,”⁷⁴⁹ Evagrius explicates, “For in this book are written the *logoi* of providence and judgment, through which book God is known as creator, wise, provident, and judging: creator through the things that have come from non-being into being.”⁷⁵⁰ The 7th Century Byzantine theologian Maximos the Confessor (Maximus, 580-662) considered the “natural law ... as uniformly as possible according to reason” and called it its own “bible” with a language constructed from letters and syllables of the “primary, immediate, and particular... dense bodies,” the words made of “universal

⁷⁴⁷ Exemplary for Neoplatonic views would be Philo of Alexandria’s treatment of *logos* as rational and creative principle in *On the Creation of the World* 8 & 61; and Plotinus’ identification of *logos* with the *Nous* or Demiurge, a thinking, creative, and ordering originator of Forms that incline towards the Good, in his *Enneads* 5.1 & 9. Exemplary for Stoic views are Diogenes Laertius’ description of *logos* as “eternal reason” tantamount to God in his *Lives of the Philosophers* 44b; and Aetius’ recounting of the Stoic *logos* as the “creative fire” whose intelligence structures the *kosmos* in *Opinions of the Philosophers* 46a.

⁷⁴⁸ Famously, the *Gospel of John* 1.1-14 combines the Hebrew story of creation (Genesis 1-3) with the Greek philosophical concept of *logos* and applies both to Jesus of Nazareth. See Introduction.

⁷⁴⁹ *Book of Psalms* 139.16. Original Hebrew:

לְמִי אֵלֹהִים עֵינֶיךָ יְצַוּוּן עֲלֵי-פָרְסֵי מַלְאָכָי: מִיָּמִים יִצְרָוּ וְלֹא יָדָד בָּהֶם:

⁷⁵⁰ Evagrius of Pontus, “Psalm 139” in *Scholia on the Psalms*: “ἐν δὲ τούτῳ τῷ βιβλίῳ εἰσὶ γεγραμμένοι καὶ οἱ περὶ προνοίας καὶ κρίσεως λόγοι, δι’ οὗ βιβλίου γινώσκεται ὁ Θεὸς ὡς δημιουργὸς καὶ σοφὸς καὶ προνοητὴς καὶ κριτὴς.”

things,” and the entire thing read by the *logos*, which has “inscribed itself” in it, “providing us the idea that God exists.”⁷⁵¹ The approximately contemporary Syriac theologian Iskhaaq of Nineveh (Isaac, 613-700) would spell out the hierarchy between the two books: “Nature was the first book God gave to us, rational beings; ink-written teachings were given after human transgression.”⁷⁵² The concept of a *librum naturae* written according to a classical geometrical *logos* that ought to be read in concert with the *librum scripturae* had become a theological commonplace by the Middle Ages,⁷⁵³ and persisted well into the Early Modern period⁷⁵⁴ (although occasionally it became a play rather than a book⁷⁵⁵) as evidenced by Galileo’s declaration about geometry as the language in which God has written the universe. In that sense, Pascal’s “spirit of geometry” is a direct descendant of the geometrical *logos* of Pythagoras and Euclid, and also that of John the Evangelist.

IV. The Demon in the *Data*

Having laid the groundwork for understanding geometrical *logos* and its particular *data* concept, we can now turn to a literary depiction of how the Early

⁷⁵¹ Maximus the Confessor, *Ambiguorum Liber* 10.

⁷⁵² Isaac of Nineveh, *Sermones Ascetici* 5.

⁷⁵³ Examples include Bernard of Clairvaux, *Sermones, De Diversis* 9.1; Bonaventure, *On the Trinity of God* 12.1&2; Thomas Aquinas, *On the Epistle to the Romans* 1.6.

⁷⁵⁴ Examples include Dante Alighieri, *Divine Comedy, Paradiso* 33.85-90; Martin Luther, *Sermons of 1545* 11.15.34-40: “Sihe auff den Acker, Garten... Got gibt die ein buch fur... Sic Deus nobiscum loquitur per omnes Creaturas, Arbores, Herbas”; Michel de Montaigne, *Apology for Raymond Sebond*: “nature n'est rien qu'une poesie oenigmatique.”

⁷⁵⁵ Cf. Jean Calvin, *Commentary on the Psalms* 104.31: “It is no small honor that God for our sake has so magnificently adorned the world, in order that we may not only be spectators of this beauteous theatre, but also enjoy the multiplied abundance and variety of good things which are presented to us in it.” Transl. James Anderson.

Modern demise of that *data* concept is mirrored in the failure of a political secrecy framework based on it. Such a failure is staged in Marlowe's *Tragicall History of Doctor Faustus*, first performed in 1592.⁷⁵⁶ The play begins with the desire of the scholar and would-be-sovereign Faustus to read the *ratio* of the *kosmos* itself in the form of *arche* and *logos* – that is, *mysterium* and *arcana* reserved for the ultimate sovereign, God. Faustus attempts to find this *ratio* in incomplete books of magic furnished to him by Mephistopheles. These books are filled with geometrical shapes and symbols that he cannot properly fathom. This geometrical *data* in the Euclidean sense, Faustus presumes, is the *data* of the *arcana* of the *imperium* of God. However, Mephistopheles manages to coax Faustus into a world of illusions rather than Forms, a bait and switch of the unattainable geometrical *logos* for the *álogos* of vice and indulgence. By craving mastery over a form of knowledge beyond his world, Faustus thus finds a demon in the *data*, becoming a futile collector of corrupting mirages rather than the *arcana* he seeks.

Faustus' self-deceit about his ability to read these secrets is theatrically underscored by the satirical staging of the counterfeit nature of Faustus' supposed magical knowledge and powers, which turn out to be illusions conjured by Mephistopheles. In this fashion, Mephistopheles instigates a targeting plot against Faustus on behalf of his own, usurper-sovereign, Lucifer. In a sense, *Faustus* provides a counterplot to the *arcana imperii* plot surrounding the Birth of Christ encountered in the *Ludus Coventriae*. Rather than question his own legitimacy as a reader of the

⁷⁵⁶ Christopher Marlowe, *The Tragicall History of D. Faustus*. London: Thomas Bushell, 1604.

divine *ratio*, Faustus insists on more and more books, seduced by the idea that he can perceive the secrets of the world as they truly are, all at one quasi-divine glance – if only he had collected more, and more complete, *data* pertaining to its *logos*. In this, Faustus’ quest for knowledge recognizably prefigures the modern form of intelligence, whose ostensible failures in the realm of national security are frequently encapsulated by the imperative that they *ought to have known*, had they only known where to look, and had looked, for the clues that would allow them to oracle the nature, scope, participants, and potential fallout of any threat. However, Faustus’ world preexists that concept, instead being caught in the logics of the geometrical *logos*. Despite his dataphage impulses, Faustus’ attempts to read the book of the universe fail, and the play ends with Faustus offering to redeem himself not by repenting from his usurping overreach, but with a futile promise to erase the ill-gotten secrets, which in the logics of the geometrical *logos*, once collected, cannot be unmade: “I’ll burn my books! Ah, Mephistopheles!” Faustus’ failure thus illustrates the failure of the older, geometrical *data* concept, and political secrets based on it, to serve as a functioning *techne* of political secrecy in an increasingly arithmetical, computational age – the Early Modern Age, one where there scholars like Faustus encounter the problem that there is “too much to know.”⁷⁵⁷

This reading is predicated on accepting a specific literary-historical premise, but it is a rather traditional one: Johann Wolfgang von Goethe (1749-1832), author of

⁷⁵⁷ This phrase is the title of Ann Blair’s excellent monograph on the development of Early Modern information management systems, *Too Much to Know: Managing Scholarly Information before the Modern Age*. New Haven: Yale UP, 2010.

Faust: A Tragedy (1808),⁷⁵⁸ was a close and astute reader of Marlowe's *Faustus*. Consequently, the former text can fruitfully illuminate the latter. In particular, Goethe's opening monologue by Faust functions as an instructive and precise commentary on its direct ancestor in Marlowe's *Faustus* by emphasizing Faust's / *Faustus*' quest for knowledge as an attempt to read the *ratio* of the sovereign of the *kosmos* itself: God.

Goethe's reading begins with the sorrows of an aging Faust. It is such an acute melancholy that in *Discourse Networks 1800/1900*, Friedrich Kittler observes about the opening of Goethe's play: "German poetry begins with a sigh," an *alas*.⁷⁵⁹ He is referring to Faust's line, "Have now, alas!, studied philosophy, / law and medicine, / and unfortunately also theology / with flaming effort."⁷⁶⁰ In Kittler's analysis of the character in Goethe, what causes the sigh is Faust's frustrating inability to grasp truths that are beyond his understanding as an ensouled earthly creature. To illustrate, Kittler cites another *alas*, this one by Friedrich Schiller: "Why can the living spirit not appear to the spirit? / [It is because] As soon as the soul speaks, *alas!*, it is no longer the soul that speaks."⁷⁶¹ Schiller (and indeed Kittler) is being quite orthodox here. In the *Genesis* account of the Jewish *Tanakh*, God himself speaks all things into being

⁷⁵⁸ Johann Wolfgang von Goethe, *Faust: Eine Tragödie*. Tübingen: J.G. Cotta, 1808.

⁷⁵⁹ Friedrich Kittler, *Discourse Networks 1800/1900*. Michael Metteer & Chris Cullens, transls. Palo Alto: Stanford UP, 1990. 3; Friedrich Kittler, *Aufschreibesysteme 1800/1900*. München: Wilhelm Fink, 1985. 11: "Die Deutsche Dichtung hebt an mit einem Seufzer."

⁷⁶⁰ Goethe, *Faust*, 354-357: "Habe nun, ach! Philosophie, / Juristerei und Medicin, / Und leider auch Theologie! / Durchaus studirt, mit heißem Bemühn."

⁷⁶¹ Friedrich von Schiller, "Tabulae Votivae," *Musen-Almanach für das Jahr 1797*. Tübingen: J.G. Cotta, 1796. 150-186. 177. German original: "Sprache. Warum kann der lebendige Geist dem Geist nicht erscheinen! *Spricht* die Seele so spricht ach! schon die *Seele* nicht mehr."

through *fiat*, except for the human's soul: "And the Lord God formed man of the dust of the ground, and breathed into his nostrils the breath of life, and man became a living soul."⁷⁶² Even the orthodox divine, which creates by speaking the *logos* of the *kosmos*, creates the *psyche* with a sigh, outdoing Orpheus' song.

In *Faust*, however, the *alas!* is not a sigh that denotes a stirring of life. It is a sigh of exhaustion, the sort implied by the word's Latin root, *ah! lassus*, "oh weariness!," or "oh tiredness."⁷⁶³ The constant accumulation of learning "with flaming effort" has tired Faust and has tired his wit, so that he has become unable to speak in anything but lists rattling off his learned curriculum, which consist of works that are not his, and that are full of signifiers for which Faust can imagine no signified. Faust's resulting anxiety is brought about by despair at language itself. Kittler calls Faust's agonizing affliction a "weave or textum of words,"⁷⁶⁴ which is deposited in a "tangled desert of books" [*wust an büchern*]⁷⁶⁵ found in "a library without new editions" [*bücherei ohne neuauisgaben*].⁷⁶⁶ Accordingly, Kittler explains, Faust:

sits in a library without new acquisitions, reads, makes extracts, and writes commentaries, in order then to dictate to his students in lecture

⁷⁶² *Genesis* 2.7 (KJV). Greek *Septuagint*: καὶ ἐπλασεν ὁ Θεὸς τὸν ἄνθρωπον, χοῦν ἀπὸ τῆς γῆς, καὶ ἐνεφύσησεν εἰς τὸ πρόσωπον αὐτοῦ πνοὴν ζωῆς [*pneuma, zoë*], καὶ ἐγένετο ὁ ἄνθρωπος εἰς ψυχήν ζῶσαν [*psyche, zoë*]. The Hebrew *B'reshith* uses the terms *nishmat* ("breath") and *khay* ("alive") in the first instance and *nephesh* ("sentient") and *khay* ("alive") in the second, but the implication from the image is the "wind-like exhaling of God," *ruach Elohim*, cf. *Job* 12.7-10, where the *nephesh* is rendered "life" and the *ruach* is translated "spirit." Hebrew text of *Genesis* 2.7:

וַיִּצְרֹף יְהוָה אֱלֹהִים אֶת־הָאָדָם עָפָר מִן־הָאֲדָמָה וַיִּפַּח בְּאַפָּיו נְשָׁמַת חַיִּים וַיְהִי הָאָדָם לְנֶפֶשׁ חַיָּה:

⁷⁶³ "alas, int. and n." *OED Online*. December 2018. Oxford University Press. <http://www.oed.com/view/Entry/4560> (accessed December 08, 2018).

⁷⁶⁴ Kittler, *Aufschreibesysteme*, 16.

⁷⁶⁵ Kittler, *Aufschreibesysteme*, 12.

⁷⁶⁶ Kittler, *Aufschreibesysteme*, 10.

what old books have dictated to him. The Republic of Scholars is endless circulation, a discourse network without producers or consumers, which simply heaves words around.⁷⁶⁷

Like the Scholar of *Ecclesiastes*, Faust has learned that “of making many books there is no end; and much study is a weariness of the flesh.”⁷⁶⁸ Faust suspects he has reached the end of human knowledge, and knowability: “Here I stand, a foolish dolt, / Just as wise as I was before... and see that we can’t know a thing / and that feels like my heart’s in flames... no dog would wish to live like this.”⁷⁶⁹

Apart from scholarly pride, what has motivated Faust to exhaust himself in this experience of compulsively collecting all kinds of learning? In Kittler’s view, Faust despairs at “the Faustian experiment of trying to insert Man into the empty slots of an obsolete discourse network.”⁷⁷⁰ Faust’s world is changing, and the books no longer describe things as they appear to be. But Faust has no better answer. In light of such agonizing futility, then, it is no surprise that Goethe’s Faust turns to other, forbidden means that promise access to the truth: “Thus I’ve surrendered to magic / to see whether through the power of my spirit and my mouth / I might not access many

⁷⁶⁷ Kittler, *Aufschreibesysteme*, 11: “Also sitzt der Magister oder gar Doktor Faust in einer Bibliothek ohne Neuerscheinungen, liest, exzerpiert und kommentiert, um dann im Kolleg seinen Schülern zu diktieren, was alte Bücher ihm diktiert haben. Die Gelehrtenrepublik ist endlose Zirkulation, ein Aufschreibesystem ohne Produzenten oder Konsumenten, das Wörter einfach umwälzt.”

⁷⁶⁸ *Ecclesiastes* 12.12. Hebrew *Qohelet*:

וְיִתֵּר מִהֵמָּה בְּנֵי הַזֶּהָר עֲשׂוֹת סִפְרִים הַרְבֵּה אֵין לָזְלִי וְלִהְיֵה הַרְבֵּה וְגַעַת בְּשָׂר:

⁷⁶⁹ “Da steh’ ich nun, ich armer Thor! / Und bin so klug als wie zuvor ... Und sehe, dass wir nichts wissen können! / Es will mir schier das Herz verbrennen ... Es möchte kein Hund so länger leben!” Goethe, *Faust*, 358-359, 364-365, & 376.

⁷⁷⁰ Kittler, *Aufschreibesysteme*, 11: “Also beginnt die Deutsche Dichtung mit dem faustischen Experiment, an alle möglichen Leerstellen eines obsoleten Aufschreibesystems versuchsweise den Menschen einzusetzen;” Kittler, *Discourse Networks*, 4.

secrets / so that I no longer must in sour sweat / say things that I don't truly know / and instead might recognize *what holds / the world together at its core.*"⁷⁷¹

It is from Kittler that we take the hint as to what this secret is that "holds the world together at its core," and once again, it is almost shockingly orthodox: in Goethe's *Faust*, the answer appears to be that it is the ancient geometrical *logos*, as derived from the first chapter of the *Gospel of John*. (It is Faust's chosen method, magic, not his inquiry itself that brings on the demons.) In Marlowe's *Faustus*, the Doctor of Divinity quotes from Paul of Tarsus' *Epistle to the Romans* and the Apostle John's *First Epistle of John* in the Latin of "Ieromes Bible" (1.1.38), the 4th Century Latin translation of the Christian scriptures by the Illyrian theologian Eusebius Sophronius Hieronymus (Jerome, 347-420) – also the subject, incidentally, of Albrecht Dürer's 1514 engraving *Saint Jerome in His Study*, which has so often been associated with the precise image of the Renaissance scholar Faustus represents.⁷⁷² One of the innovations of Goethe's *Faust* is that Faust appears instead to be translating *ex tempore* from the original Greek text, perhaps in a nod to Faust's association with the Wittenberg of Luther and his translation of the Hebrew and Greek scriptures into German.⁷⁷³ The text Goethe's Faust cites is likewise by John the Apostle, namely the

⁷⁷¹ "Drum hab' ich mich der Magie ergeben, / Ob mir durch Geistes Kraft und Mund / Nicht manch Geheimnis würde kund; / Daß ich nicht mehr mit saurem Schweiß / Zu sagen brauche, was ich nicht weiß; / Daß ich erkenne, was die Welt / Im Innersten zusammenhält." Goethe, *Faust*, 377-383.

⁷⁷² Albrecht Dürer, *Der heilige Hieronymus im Gehäus*. Engraving. 1514.

⁷⁷³ Goethe's *Faust* does not state an explicit location for Faust's study. Textual evidence suggests, however, that it is in easy traveling distance to the Weimar and Leipzig. Like the other two towns, Wittenberg is located in the historical region of Saxony, and certainly fits that description. This is contrary to Marlowe's geography, which appears to conflate Wittenberg with the Swabian county of Württemberg in the upper Danube valley, and places it near the Rhine, although neither the town nor the county is anywhere near that river.

first verse of his *Gospel*: “In the beginning [ἀρχή, *arche*] was the Word [λόγος, *logos*], and the Word [λόγος] was with God, and the Word [λόγος] was God.”⁷⁷⁴ Not only does this line furnish a direct association between the economy of the *arca* – and thus the *arcana imperii* – and the idea of *logos*; it also helps answer the question of learning raised by Faust’s opening *alas*.

Faust’s act of translating this particular passage is an ostentatious display of humanistic skill at philology. At this point in Goethe’s play, then, Faust can still be understood to accumulate his knowledge, and to tease out its possibilities, using a well-established and well-respected academic method. Faust takes an academically playful attitude towards the biblical text, riffing on the ambiguity of the Greek word *logos* in translation:

It is written, “In the beginning was the *word*.”

Here already I falter! Who can help me go on?

I cannot think so highly of the *word*.

I must find a better translation,

When the spirit illuminates me rightly.

It is written, “In the beginning was the *sense*.”

...

It is the *sense*, that truly effects and creates all things?

It should say, “In the beginning was the *power*!”

...

⁷⁷⁴ *Gospel of John* 1.1. See Introduction.

The spirit moves me! Suddenly I see counsel [*sehe rath*]

And gladly I write, “In the beginning was the *deed*.”⁷⁷⁵

Faust’s various translations constitute a learned commentary on Greek discourse of both “the beginning” (*arche*) and of “the word” (*logos*), one that associates the verbs of the *arcana imperii*’s targeting plot with the *logical* essence of the “secret” [*geheimnis*] that “holds the world together at the core:” “word,” “sense,” “power,” and “deed.” Goethe’s German text also employs the word *rath*, “counsel,” which denotes both a noun and a title – one Goethe, the *geheime rath* (“secret counsel”) of Weimar, would have chosen deliberately. Meanwhile, the entire passage from the *Gospel* introduces what is essentially a cosmo-political murder narrative, that of Christ. Like the *arcana imperii* point to the origins of the sovereign’s legitimacy, the *arche* and *logos* point to the origins of the divinely ordered *kosmos* and the divine ordering principle that, in the medieval and Early Modern periods, ordains the sovereign. It is the classical conceptions of *arche* and *logos* that provide the means by which to read Goethe’s *Faust* as a useful commentary on the *arcana imperii* in Marlowe’s *Faustus*, particularly their relationship to an evolving epistemology of secrecy.

Read in such a light, the opening of Marlowe’s English predecessor play, *Doctor Faustus*, begins with a scholar’s anxious gasp at the same realization: “Settle thy studies Faustus, and beginne / To sound the deapth o’ that thou wilt professe”

⁷⁷⁵ “Geschrieben steht: „im Anfang war das *Wort*!“ / Hier stock ich schon! Wer hilft mir weiter fort? / Ich kann das *Wort* so hoch unmöglich schätzen, / Ich muß es anders übersetzen, / Wenn ich vom Geiste recht erleuchtet bin. / Geschrieben steht: in Anfang war der *Sinn*. / ... Ist es der *Sinn*, der alles wirkt und schafft? / Es sollte stehn: im Anfang war die *Kraft*! ... Mir hilft der Geist! Auf einmal seh’ ich *Rath* / Und schreibe getrost: im Anfang war die *That*!“ Goethe, *Faust*, 1224-1229, 1232-1233, & 1236-1237.

(1.1.1-2). But, as in Goethe, no meaningful profession is forthcoming. Rather, Faustus simply displays the skills he has acquired, namely “heaving words around” while touching on nearly all the fields of knowledge available to an Early Modern scholar. He is “a Divine in shew,” while nevertheless believing that “when all is done, Divinitie is best,” and yet finally declaring, “Divinitie, adieu.” He is “ravisht” by the philosophy of Aristotle’s “Sweete Anulatikes,” yet finds that it serves no purpose than “to dispute well, Logickes chiefest end.” He is a physician who is “eternizde for some wondrous cure” and has his “billes hung up as monuments, / whereby whole Citties have escapt the plague,” yet considers the profession futile because it cannot “make man to live eternally.” He is a lawyer sufficiently skilled he can dismiss Justinian’s *Institutes* as “nothing but externall trash,” but will not argue court cases because this would make him “a mercenary drudge, / who aimes at nothing” (1.1.5-49). What Faustus says he seeks lies beyond such academic pursuits: “a world of profit and delight, / Of power, of honor, of omnipotence... a sound Magician is a mighty god” (1.1.53, 54 & 62). While Faustus speaks of his ends as beyond the regular gifted scholar’s horizon, he does appear to conceive of them very much in scholarly terms, as books whose language smacks of an arcane but recognizable: “These Metaphisickes of Magicians, / And Negromantike bookes are heavenly / Lines, circles, sceanes, letters and characters” (1.1.49-51).

It is essential to note here that Faustus does not comment on the *semantic* content of these “heavenly” books, but rather describes them as aesthetic objects, in the fashion of someone who can look at but not read them. He does not refer to words, incantations, spells, or any type of magical knowledge, but rather is drawing a visual

picture: “lines, circles, sceanes, letters, and characters,” which strike him as “heavenly” and whose deciphering he believes will lift him to the status of “a mighty god.” Traditionally, the nature of these books has been interpreted with an emphasis on their magical and diabolic characteristics, either as *grimoires* containing “various recipes, spells, and cures” or else as satanic versions of the missal used to perform the “heavenly” theater of the *mysterium* that is the *Canon Missae* of the church.⁷⁷⁶ Neither is a very persuasive take.

Faustus would not describe instructions for a Black Sabbath as “heavenly,” a missal was usually a text devoid of “lines” and “circles,” and it is unlikely that Faustus would enthusiastically pick up just another version of a familiar theological text seconds after declaring about theology, “What doctrine call you this, *Che sera, sera*, What wil be, shall be? Diuinitie, adieu.” Nor would he have thought of a satanic missal as “metaphysics,” which in the 16th and 17th Centuries was not a blanket term for any topic to do with religious beliefs. Rather, as the aforementioned fellow scholar of magic Henrich Agrippa von Nettesheim put it in his *Of the Vanitie and Uncertaintie of Artes and Sciences*, “Metaphysickes, that is, thinges supernaturall and the Science of them,” which are not found “in the nature of thinges, but also for devises of their imaginations... which be grounded upon no principels, neither is it certaine whether they be or not, as things which be thought to abide without bodie and matter, & by them termed, devided forms.”⁷⁷⁷ In his *Atheomastix*, the Cambridge clergyman and

⁷⁷⁶ E.g. Jay Zysk, *Shadow and Substance: Eucharistic Controversy and English Drama across the Reformation Divide*. Notre Dame, Ind.: U of Notre Dame P, 2017.

⁷⁷⁷ Heinrich Cornelius Agrippa von Nettesheim, *Of the Vanitie and Uncertaintie of the Artes and Sciences*. James Sanford, transl. London: Henry Wykes, 1569. 70r.

scholar Martin Fotherby (1560-1620) defines “the Metaphysickes” as “the pure essence of things” which resembles “God the Father... the very first principle of all other things” and as a science stands alongside “the Mathematickes.”⁷⁷⁸

Metaphysics in this period refers to philosophy regarding divinity and any abstract idea, a far cry from the power over the “emperors,” “kings,” “wind,” and “clouds” Faustus considers these books to bestow upon him. Indeed, metaphysics was an entirely rational art, and thought of as a close cousin of mathematics. Thus Shakespeare has Tranio in *Taming of the Shrew* warn off Lucentio of being an overly serious, and thus likely poor, student by deriding “the mathematics and the metaphysics / Fall to them as you find your stomach serves you.”⁷⁷⁹ It is unlikely that Faustus, who just abjured the traditional fields of study, would have seen all that in a book of written instructions for the liturgy of a mass.

The idea that Faustus is holding *grimoires* when he refers to “heavenly” “metaphysics of magicians and necromantic books” has a little more merit. For one, that hypothesis might explain Faustus’ inability to read the “lines, circles, scenes, letters, and characters.” After all, medieval and Early Modern scholars who worked on mathematical cryptology were often perceived to be suspect of the forbidden Dark Arts of magic, since their ciphers made little sense when read in their encrypted form and were consequently taken to hide *arcana* of all types – a prejudice the spy, carrier of encrypted letters, and accused heretic Marlowe would have been all too aware of.⁷⁸⁰

⁷⁷⁸ Martin Fotherby, *Atheomastix*. London: Nicholas Okes, 1622. 356.

⁷⁷⁹ Shakespeare, *Taming of the Shrew*, 1.1.330-331.

⁷⁸⁰ Cf. Katherine Ellison, “Occult Communication, the New Sciences, and Cryptography” in *A Cultural History of Early Modern English Cryptography Manuals*. London: Routledge, 2017. 68-89.

Moreover, *grimoires*, treatises of magic, and *demonologies* that might qualify in some sense as “metaphysics of magicians” and “necromantic books” were produced and widely read throughout the Early Modern period by scholars like the Florentine priest Marsilio Ficino (1433-1499),⁷⁸¹ the Provençal physician Michele de Nostredame (Nostradamus, 1503-1566),⁷⁸² Agrippa,⁷⁸³ the Swiss Theophrastus von Hohenheim (Paracelsus, 1493-1541),⁷⁸⁴ the Welsh astrologer at the Elizabethan court and inspiration for Shakespeare’s Prospero in *Tempest*, John Dee (1527-1609),⁷⁸⁵ and even, famously, kings: James I.’s *Daemonologie*⁷⁸⁶ was published in 1597, before the first edition of *Doctor Faustus* was printed in 1604. The latter’s conviction that witches had conjured demons to control the weather and attempt to drown him when he returned to Scotland by ship with his betrothed Anne of Denmark (1574-1619) in 1589 was well-known in Britain, and this would certainly qualify as “raising the winds” and “rending the clouds” to supersede the power of “Emperors and kings.”

Faustus’ visual description of the magical books, too, matches some aspects of the *grimoires*. Agrippa’s famous *Three Books of Occult Philosophy*, for instance, contains primarily straightforward Latin text but does feature elements such as tables equating zodiac symbols with letters of various alphabets or otherwise explaining ancient scripts, an “abracadabra” triangle formed with Hebrew letters as a chapter-

⁷⁸¹ *Mercurii Trismegisti liber*. Treviso: Gerardus de Lisa, 1471.

⁷⁸² *Les Prophéties de M. Michel Nostradamus*. Lyon: Rigaud, 1555.

⁷⁸³ *De Occulta Philosophia libri tres*. Köln: 1533.

⁷⁸⁴ *Coelum Philosophorum*, as accompanying text to the *Turba Philosophorum*.

⁷⁸⁵ *Monas Hieroglyphica*. Antwerp: Silvius, 1564; and *De Heptarchia Mystica*, 1582. Sloane MS 3191, British Library, London, UK.

⁷⁸⁶ *Dæmonologie*. Edinburgh: Robert Waldegrave, 1597.

ending decoration, a series of diagrams explaining astrological methods, and drawings of human bodies superimposed on geometric shapes in a style similar to Leonardo Da Vinci's Vitruvian Man.⁷⁸⁷ Meanwhile, an anonymous *grimoire* also ascribed to Agrippa, *Arabatel of Old Magic*, lists the angelic beings responsible for providing certain types of magic who should be addressed when performing it, including that of the sort Faustus appears to seek – however, they are explicitly identified as angels rather than demons.⁷⁸⁸ Finally, John Dee for example does write in an unintelligible language supposedly used by angels, which would strike non-initiates and “signs and characters.” However, each of these *grimoires* is largely legible for a scholar like Faustus who reads Latin, Greek, and some Hebrew, and the diagrams feature as explanations of reasonably lucid texts. If there is a mystery in them, it is the mystery of why Faustus, who is hardly illiterate, would be looking at pictures without first reading the surrounding explanatory text.

Another, more convincing alternative suggests itself. It is one that covers all the requisite criteria, including that the books would appear to a novice reader as if they were comprised entirely of “lines, circles, scenes, letters, and characters,” covered in cryptic scribbles, promising to an adept to reveal the metaphysical and mathematical *logos* at the heart of “All things that moove betweene the quiet poles,” and which according to Plato makes those who are chosen to understand it “*philos* to the gods.” That is, of course, books dealing with the geometry at the heart of the

⁷⁸⁷ Agrippa, *Occulta Philosophia*, 97, 126, 140-144, 148-153, 160-165, et al.

⁷⁸⁸ *Arabatel de Magia Veterum*. Basel: 1575. Aphorism 1: “Habebis etiam prompta Angelorum Dei, & spirituum in natura ministeria obsequentiora, quàm vllus animus humanus desiderare possit.”

geometrical *logos*, such as Euclid's *Elements*. This point is best understood with an illustration:



Figure 3: Polyglot Working Copy of Euclid’s *Elements*, Compiled from Various Earlier Editions, opened to depict Book 3.151 ff., 17th Century. Bodleian Library, University of Oxford, United Kingdom. “Lines, circles, scenes, letters, and characters.” Image is in the public domain.

The page depicted stems from a scholarly compilation of different versions of the *Elements*, whose true and complete content was heavily disputed in the Early Modern period. Although this specific page stems from the working copy of a slightly later Oxford scholar, the Savilian professor of mathematics Edward Bernard (1638-1697), it is comprised of editions of Euclid's *Elements* that were available between 1533 and 1620, plus various annotations in handwriting, in several different languages.⁷⁸⁹ The core of the book is provided by the Greek 1533 edition of which a copy had also belonged to Thomas More,⁷⁹⁰ edited by the Swabian-German scholar Simon Gryner (1493-1541), a schoolmate of Philipp Schwartzertd (Melanchthon, 1497-1560), the Palatine-German reformer and ally of Luther.⁷⁹¹ Added to it are pages taken from the Arabic version of the *Elements* compiled by Persian polymath Nasir al-Din al-Tusi (1201-1274), as published by the Medici in Rome in 1594;⁷⁹² an Italian translation printed in 1619 in the Adriatic duchy of Pesaro (whose fragments do not feature on the example above);⁷⁹³ and a bilingual Greek-Latin version by the Apennine-Italian mathematician from Urbino, Federigo Commandino (1509-1575), first printed in 1572 in Pesaro and reprinted in 1620 in London.⁷⁹⁴

⁷⁸⁹ Edward Bernard's customised *Elements*, 1690s. Auct. S1.14, Bodleian Library, University of Oxford, UK.

⁷⁹⁰ More's copy of the *Elements*, Byw. C 3.3, Bodleian Library, University of Oxford, UK.

⁷⁹¹ Simon Grynaeus, *Ευκλείδου Στοιχειῶν βιβλ. ιε*, Basel: Johann Herwagen, 1533.

⁷⁹² Nasir al-Din al-Tusi, *Kitab tahrir usul l-Uqlidus [Elements of Euclid]*. Printed as *Euclidis elementorum geometricorum libri tredecim. Ex traditione doctissimi Nasiridini Tusini*. Rome: Typographia Medicea, 1594.

⁷⁹³ Federigo Commandino, *Euclide de gli Elementi Libri Quindici*. Pesaro: 1619.

⁷⁹⁴ Federigo Commandino, *Euclidis Elementorum Libri XV*. Pesaro: 1572; *Eukleidou Stoicheiōn Biblia 13. = Elementorum Euclidis Libri Tredecim*. Eds. Henry Briggs & William Jones. London: 1620.

In its polyglot nature a text like this one, on the one hand, sums up the complex genealogy of the Euclidean tradition. While in antiquity Greek and Latin versions of the *Elements* and *Data* were widespread, these did not survive except in fragments, most of them of versions edited by the Alexandrian mathematician Theon (335-405 CE) and his daughter, the Neoplatonist philosopher Hypatia (c.360-415 CE),⁷⁹⁵ and primarily in the Byzantine Empire. Euclid's texts were translated into Arabic based on Byzantine texts around 800 CE at the direction of Harun al-Rashid ("Aaron the Just," 763-809 CE), the Persian Abbasid Caliph who features as a recurring character in *A Thousand and One Nights* and also exchanged diplomatic missions with Charlemagne in 799 CE;⁷⁹⁶ a number of other Arabic translations followed, most of them edited, excerpted, abridged, expanded, and commentaried, such as the condensed version included in its entirety in the philosophical encyclopedia *Book of Healing* by the Persian polymath Ibn Sina (Avicenna, 980-1037 CE)⁷⁹⁷ and the commentary on the *Elements* by the Persian mathematician and poet, Omar Khayyam (1048-1131), author

⁷⁹⁵ Suda, "Theon of Alexandria:" Θέων, ὁ ἐκ τοῦ Μουσειῶν, Αἰγύπτιος, φιλόσοφος ... ἔγραψε μαθηματικά, ἀριθμητικά." English: "The man from the Mouseion, an Egyptian, a philosopher ... He wrote works on mathematics and arithmetic." *Ibid.* "Hypatia:" "Υπατία: ἡ Θέωνος τοῦ γεωμέτρου θυγάτηρ, τοῦ Ἀλεξανδρέως φιλοσόφου, καὶ αὐτὴ φιλόσοφος καὶ πολλοῖς γνώριμος." English: "The daughter of Theon the geometer, the Alexandrian philosopher, she was herself a philosopher and well-known to many." Regarding their work on Euclid, see Johan Ludvig Heiberg, *Litterargeschichtliche Studien über Euklid*. Leipzig: B.G. Teubner, 1882. 174–180; and the introduction to Johan Ludvig Heiberg, ed. *Euclidis Opera Omni*, Vol. 5. Leipzig: B.G. Teubner, 1888. li–lxxvi; Thomas Little Heath, *A History of Greek Mathematics*, Vol. 2. Oxford: Clarendon P, 1921, 527-528; and (especially on Hypatia), Socrates Scholasticus, *Historia Ecclesiastica* 7.15.

⁷⁹⁶ Al-Rashid's House of Wisdom in Baghdad employed a number of famous mathematicians, including al-Kindi, al-Khwarizmi, Hunayn ibn Ishaq, and Thabit ibn Qurra. An influential extended edition of the *Elements* was translated and edited under al-Rashid's successor, Abu al-Abbas Abdallah ibn Harun al-Rashid (al-Ma'mun, 786-833 CE), by the Persian geometer Al-'Abbas ibn Sa'id al-Jawhari (800-860 CE), as *Commentary on Euclid's Elements*.

⁷⁹⁷ Ibn Sina includes the *Elements* in his 22 volume *Book of Healing* [*Kitab al-Shifa*], alongside various treatises on arithmetic, as well as Ptolemy's *Harmonics* and *Almagest*.

of the *Rubaiyat*.⁷⁹⁸ Versions translated by Jewish scholars into Hebrew and by Eastern Orthodox Christian scholars into Syriac also circulated in the Middle East and Eastern Mediterranean.⁷⁹⁹

Versions of these Arabic translations were the first to re-enter Western Europe: Around 1120 CE, the English monk Adelard of Bath (1080-1152 CE) translated the text of the *Elements* from Arabic into Latin (while also using fragments from a lost Latin translation by Boethius),⁸⁰⁰ as did the English Arabist Robert of Chester (12th Century).⁸⁰¹ Shortly afterwards, in a Toledo in Castile that had been liberated from Arab rule only decades earlier, the Lombard Arabist Gerardo of Cremona (1114-1187 CE) translated both the *Elements* and the *Data* from Arabic into Latin.⁸⁰² Based on these translations, various other fragments, and commentaries, the Lombard mathematician Giovanni Compana (Campanus, 1220-1296) compiled an influential version of the *Elements* in the 1250s CE,⁸⁰³ and it is this version that was the basis for the first printed edition of the *Elements*, by the Swabian-German printer Erhard

⁷⁹⁸ Ghiyath al-Din Abu'l-Fath Umar ibn Ibrahim Al-Nisaburi al-Khayyami ['Omar Khayyam'], *Explanation of the Difficulties in the Postulates of Euclid* [*Risala fa sharh ma ashkala min muṣadarat kitab Uqlidis*], 1077 CE.

⁷⁹⁹ On Hebrew translations, see Richard Gottheil & J.S. Raisin, "Euclid." *Jewish Encyclopedia*. New York: Funk & Wagner, 1906. On Syriac translations, see Sonja Brentjes, "Euclid," *Medieval Science, Technology, and Medicine: An Encyclopedia*. New York: Routledge, 2005. 164-167. 164-165.

⁸⁰⁰ Adelard of Bath's Euclid exists in several different manuscript versions, cf. H.L.L. Busard, "The Versions Ascribed to Adelard of Bath." *The First Latin Translation of Euclid's Elements, Commonly Ascribed to Adelard of Bath*. Toronto: Pontifical Institute of Mediaeval Studies, 1983. 16-19.

⁸⁰¹ Cf. Hubert L.L. Busard & Menso Folkerts, *Robert of Chester's Redaction of Euclid's Elements*. Basel: Birkhäuser, 1992.

⁸⁰² Cf. Hubert L.L. Busard, *The Medieval Latin Translation of Euclid's Elements Commonly Ascribed to Gerard of Cremona*. Leiden: Brill, 1984; Shuntaro Ito, *The Medieval Latin Translation of the Data of Euclid*. Basel: Birkhäuser, 1980.

⁸⁰³ Cf. Heiberg, *The Thirteen Books of Euclid's Elements*, Vol. 1. Thomas Heath, transl. Cambridge: Cambridge UP, 1908. 97.

Ratdolt (1442-1528 CE) in 1482 in Venice.⁸⁰⁴ The Greek text, meanwhile, had re-entered Europe via the former Magna Graecia, when an anonymous student from Salerno, probably an acquaintance of the last Greek-Arabic administrator in the Kingdom of Sicily, Eugenios of Palermo (Eugenius Siculus, 1130-1202 CE), produced a very close Latin translation of Greek manuscripts of the *Elements* and *Data* in 1160 CE.⁸⁰⁵ This manuscript did not circulate widely, however, so that the next translation from the original Greek did not occur until 1505 CE, when in the wake of Byzantine emigration to Italy after the Fall of Constantinople in 1453, the Venetian humanist Bartolomeo Zamberti (Zambertus, 1473-1543) translated a Byzantine manuscript copy of Theon of Alexandria's ancient edition into Latin.⁸⁰⁶ From this point onwards, translations into Latin and various European vernaculars like French, German, Italian, and Spanish abound, proliferated through the extended networks of humanist scholars.

In medieval England, Euclid had been studied in Latin, and his influence is evident in works by Robert Grosseteste (1175-1253) and Roger Bacon (1220-1292).⁸⁰⁷ Humanist scholars also introduced Greek to Oxford and Cambridge, among them Desiderius Erasmus of Rotterdam (1466-1536), who visited Oxford in 1499 because of the Greek studied there, and taught it himself during his tenure as professor of

⁸⁰⁴ *Euclid: Elementa Geometriae*. Venice: Erhard Ratdolt, 1482.

⁸⁰⁵ Cf. Daniele Molini, "The First Sicilian School of Translators." *Nova Tellus* 27.1 (2009), 191-205.

⁸⁰⁶ Heiberg, *Thirteen Books*, 98-106.

⁸⁰⁷ Cf. Alistair Cameron Crombie, *Robert Grosseteste and the Origins of Experimental Science*. Oxford: Clarendon P, 1953; Jeremiah Hackett, "Adelard of Bath and Roger Bacon: Early English Natural Philosophers and Scientists." *Endeavour* 26.2 (2002), 70-74.

divinity at Cambridge's Queen's College from 1510 to 1515.⁸⁰⁸ Most influential was the Regius Chair of Greek, John Cheke (1514-1557), tutor to the future King Edward and teacher to, and brother-in-law of, the future Secretary of State William Cecil.⁸⁰⁹ Cheke also donated his copy of Euclid's texts to his Cambridge college, St. John's, in order for his students to read and learn from it, and his co-fellow at that college, Roger Ascham (1515-1568), who would later teach Greek to the future Queen Elizabeth, remarked on Cheke's success in creating Greek-speaking studentry across the colleges of the university.⁸¹⁰ These students included Thomas Ashton (d. 1578), Greek tutor to Philip Sidney, and Richard Mulcaster (1531-1611), who taught Greek to Thomas Kyd (1558-1594) and Lancelot Andrewes (1555-1626). Other students who learned their Greek from the Cheke school of Cambridge include Thomas Nashe and, of course, Christopher Marlowe.⁸¹¹ Marlowe is likely to have read Euclid in Greek, and he may well have read Euclid in English as well, whether in the simplified paraphrase of 1551 titled *The Pathwaie to Knowledge* by Robert Recorde (1512-1558),⁸¹² who would later introduce algebra to England in his much-printed *Whetstone of Witte* of 1557,⁸¹³ or in the translation by Henry Billingsley, another St. John's graduate, with a foreword by

⁸⁰⁸ Arthur Tilley, "Greek Studies in Early Sixteenth-Century England." *The English Historical Review* 53.210 & 211 (April & July 1938), 221-239 (Pt. 1) & 438-456 (Pt. 2). 225-239 & 453-454; Neil Rhodes, "Marlowe and the Greeks." *Renaissance Studies* 27.2 (April 2013), 199-218. 201-202.

⁸⁰⁹ Rhodes, 201-208.

⁸¹⁰ Rhodes, 201.

⁸¹¹ Rhodes, 207; Thomas Baker, *History of The College of St John the Evangelist, Cambridge*. Ed. John Eyton Bickersteth Mayor. Cambridge: Cambridge UP, 1869. 405-413.

⁸¹² Robert Recorde, *The Pathwaie to Knowledge*. London: 1551.

⁸¹³ Recorde, *Whetstone of Witte*. London: John Kyngstone, 1557.

none other than John Dee.⁸¹⁴ That Marlowe read Billingsley and Dee's Euclid is particularly likely (see below).

Apart from the fact that Marlowe would have known Euclid, and could have therefore had the *Elements* and *Data* in mind, the reading that at least some of the "heavenly books" Faustus wishes to read, but cannot yet decipher, may be Euclidean has a number of arguments in its favor. The first is that it would explain the vexing odd one out in Faustus' description of books showing "lines, circles, scenes, letters, and characters." In Marlowe's period, "scenes" does not yet mean drawn illustrations in a book or figurative descriptions conjuring events to the mind's eye, which is the only scene-like thing included in some *grimoires*. That meaning of the word does not emerge until Milton first uses it in his *Tetrachordon* of 1645.⁸¹⁵ Before then, "scenes" are always references to the theatre, and more specifically to the three-dimensional elements of the stage, such as decorations, props, and painted hangings that represent the physical space in which the actions are to take place.⁸¹⁶ However, the English translation of Euclid by Billingsley, which is prefaced by the occultist John Dee, has a unique feature: In Book 11, which concerns three-dimensional figures like pyramids, spheres, cylinders, cones, and cubes, the edition includes pop-up illustrations of those figures. Again, an illustration might do the point the best justice:

⁸¹⁴ Henry Billingsley & John Dee, *The Elements of Geometrie of the Most Auncient Philosopher Euclide of Megara*. London: John Daye, 1570.

⁸¹⁵ See def. 10.

⁸¹⁶ See def. 3.

That is, it includes, quite literally, the *scenes* in which the geometry described in the chapter plays out, and asks readers' mathematical imaginations to stage their learning in its three-dimensional space, something none of the grimoires can provide. As noted, it is likely that Marlowe saw this much-printed 1570 translation, either as a student or during his time as a "University Wit," so he could have had such "scenes" in mind.

Faustus in his study might have been attracted to the "heavenly" Euclidean books for other reasons as well. For one, Faustus has dismissed Aristotle's *Analytics* and *Oncaymaeon* [*On kai me on*, "being and not being," i.e. ontology] in general, Galen's medicine and Aristotle's medical ethics, Justinian's law codex, biblical study and divinity. While this sequence is no doubt to be taken as a *pars pro toto* for the traditional humanities, geometry and its derivatives music, arithmetic, astronomy, and mechanics are glaringly omitted – that is, all those fields that per Pythagoras and Plato point to the geometrical *logos*, the true language of the abstract Forms. Marlowe, however, would have been familiar with the *Timaeus*, with its promise that geometers and true philosophers who understood the principles behind geometrical thought would be able to access "the principles which are still higher than these ... known only to God and the man who is *philos* to God." What better to encapsulate Faustus' ultimate goal: "A sound Magician is a mighty god: Heere Faustus trie thy braines to gaine a deitie?" If Faustus follows his desires, there is none, as the Evil Angel points out, with a wink towards Euclid: "Go forward Faustus in that famous art, / Wherein all natures treasury is containd: / Be thou on earth as Ioue is in the skie, / Lord and commaunder of these *Elements*."

Apart from Faustus' overarching goal to gain deity, his methods for arriving there are also heavily depend on acquiring a sound geometrical facility, perhaps especially of the deeper sort, given their grandness. Faustus wishes to have spirits "fly to India for gold, / Ransack the ocean for orient pearl, / and search all corners of the new-found world / For pleasant fruits and princely delicates: Ile haue them reade mee straunge philosophie" (1.1.80-84). That is, Faustus wishes for the "heavenly books" to supercharge his ability to charter a sort of superior colonial merchant company that can navigate the earth (requiring astronomy and geometry), excavate treasure (requiring mechanics), and set up trade and transport networks to return sought-after perishable goods and local artifacts like rare foreign books (requiring accounting). Further, he wishes to act as an extraordinary architect and engineer, both also geometrical fields, in order to establish himself as a great military dictator:

Ile haue them wall all Iermany with brasse,
And make swift Rhine circle faire Wertenberge,
Ile haue them fill the publike schooles with skill.
Wherewith the students shalbe brauely clad:
Ile leuy souldiers with the coyne they bring,
And chase the Prince of Parma from our land,
And raigne sole king of all our prouinces:
Yea stranger engines for the brunt of warre,
Then was the fiery keele at Antwarpes bridge,
Ile make my seruile spirits to inuent. (1.1.86-95)

In the classic view of the geometrical *logos* which has become Faustus' *modus operandi*, none of these tasks would be possible without a sound foundation in Euclidean thought.

Finally, the history of transmission of Euclid's *Elements* and the *Data* would equally fit Faustus' parameters. If applied to the Euclidean texts, the "heavenly books" he craves appear to the Early Modern mind to be the product of a multilingual tradition, encompassing all the learned tongues of the known world, which had to be known in total in order to access the "true" Euclid: Arabic, Aramaic, Greek, Hebrew, Latin – and after 1607, even Chinese.⁸¹⁷ Moreover, its insights had proven translatable into the major languages of empire, including English, French, German, Italian, and Spanish (and in the case of the Ottomans, who in the 1590s ruled an empire equally powerful to those of the Europeans, again, Arabic). This correlates directly to Faustus' goal to supersede the monarchs of the earth by virtue of accessing a universal language:

All things that mooue betweene the quiet poles
Shalbe at my commaun. Emperours and Kings,
Are but obeyd in their seuerall prouinces:
Nor can they raise the winde, or rend the cloudes:
But his dominion that exceedes in this,
Stretcheth as farre as doth the minde of man. (1.1.55-59)

⁸¹⁷ Matteo Ricci & Xu Guangqi [Paul Li], *Yuan Rong Jioa Yi*. Beijing: 1614.

What better candidate for this language than the geometrical mysteries taken by Pythagoras, Euclid, Orpheus, and Plato to “hold / the world together at its core”? What better language to decipher from “Lines, circles, sceanes, letters and characters” than that in which, as Galileo says, “God has written the universe?” This, more than any other, would allow Faustus’ “braines to gaine a deitie.”

This particular Fustian mood has a concrete history, which also helps elucidate Faustus’ insistence that the road to divine status lies through the familiar: more knowledge, collected in more books. That history is furnished by the longer Faust tradition. Marlowe’s presumably most direct source, *The Historie of the Damnable Life, and Deserved Death of Doctor Iohn Faustus*⁸¹⁸ frames Faustus’ desires as the result of his particularly rotten moral character, who “being of a naughty minde & otherwise addicted, applied not to his studies, but toke himself to other exercises,” is “wicked,” and is given to “fantasies and deepe cogitations.”⁸¹⁹ In this, the *Historie* paraphrases its own original, the German *Historia von D. Johann Fausten*,⁸²⁰ where Faustus is described as “godless,” with a “stupid, nonsensical, and haughty head.”⁸²¹

Such condemnations are ubiquitous in much of the source material from which Marlowe’s character is ultimately drawn, a corpus of memories and hearsay that accumulated over the period of fifty years before Marlowe put his pen to paper.

Johann Georg Faust (1480-1541) was a historical person whose lifetime coincided

⁸¹⁸ P.F., *The Historie of the Damnable Life, and Deserved Death of Doctor Iohn Faustus*. London: Thomas Orwin, 1592.

⁸¹⁹ P.F., *Historie*, A2r.

⁸²⁰ *Historia von D. Johann Fausten*. Frankfurt am Mayn [Main]: Johann Spies, 1587.

⁸²¹ *Historia*, 2: “So haben auch seine Eltern dieses Gottlosen Kindes Grewel nit erlebt noch gesehen;” *Historia*, 4 : “Daneben hat er auch einen thummen / unsinnigen unnd hoffertigen Kopff gehabt.”

with that of the Tudor king Henry VIII of England (1491-1547) and who died only 23 years before Marlowe was born. Faust's birthplace was the small town of Knittlingen in the foothills of the Black Forest in southwestern Germany, in what was then the County of Württemberg (not Wittenberg, a town then in the Electorate of Saxony, much further north in central Germany).⁸²² In 1490, centuries before Oedipa Maas doodles her quintessentially poetic question under the post horn symbol she finds at her own *skopos*, "Shall I project the world?,"⁸²³ Faust's hometown Knittlingen became a postal station on the main Innsbruck-Augsburg-Brussels route of the Taxis (later Thurn and Taxis) postal network, the spine of the Holy Roman Empire's information – and indeed, intelligence – network, incidentally including those matters concerning England.⁸²⁴ When Faust was in his teens, Württemberg was elevated to the duchy it would remain until the Napoleonic Wars in 1495 at a Diet of Worms (not identical to the later, more famous one during which Luther ostensibly declared, "here I stand, I can do no other" [*hier stehe ich, ich kann nicht anders*] in 1521).

Around the time of this elevation, Faust crossed the nearby border to the Palatinate in order to study at the nearby University of Heidelberg, founded in 1386

⁸²² Knittlingen, 1542. "Kaufbrief zur Erweiterung der Lateinschule in Knittlingen," Faust Museum und Archiv, Knittlingen. Mss. qtd. in Günther Mahal, *Faust, der Mann aus Knittlingen, 1480/1980: Dokumente, Erläuterungen, Informationen*. Knittlingen: Faust Gesellschaft, 1980. 10. "Wohnbehausung des Frühmessers vnd Hofraytin samt Keller vnd übrig zugehord, alles an vnd beyeinand rechter hand vf dem berg neben der Cappel, eynseit des Jörgen Gerlachen seelig behausung, allwo Fausten born."

⁸²³ Thomas Pynchon, *The Crying of Lot 49*. New York: Harper Perennial, 2006. 69.

⁸²⁴ Bruno Emile König, *Geschichte der Deutschen Post von ihren Anfängen bis zur Gegenwart*. Eisenach: J. Bacmeister, 1889. 162; Wolfgang Behringer, *Im Zeichen des Merkur: Reichspost und Kommunikationsrevolution in der frühen Neuzeit*. Göttingen: Vandenhoeck & Ruprecht, 2003; Paul Arblaster, "Posts, Newsletters, Newspapers: England in a European system of communications." *Media History* 11.1-2 (2005), 21-36; Paul Arblaster, *From Ghent to Aix: How They Brought the News in Habsburg Netherlands, 1550–1700*. Leiden: Brill, 2014; Nikolaus Schobesberger, et al. "European Postal Networks," in *News Networks in Early Modern Europe*, Joad Raymond & Noah Moxham, eds. Leiden: Brill, 2016. 17-63.

and then a strongly humanist institution run under the auspices of the Duke of Württemberg's rival and occasional enemy, Philip the Elector (1448-1508). Philip had encouraged the establishment there in 1491 of the *Sodalitas Litteraria Rhenana*, a humanist network of the type formed across Central Europe by the Frankish-German philosopher-poet Konrad Pyckel (Conrad Celtis, 1459-1508) under the influence of the Frisian-Dutch *ur*-humanist Roelof Huisman (Rudolphus Agricola, 1444-1485), who had taught at Heidelberg as well. This group included figures like the Bavarian-German Willibald Pirckheimer (1470-1530), an advisor to Holy Roman Emperor Maximilian I. (1459-1519) and close friend of Frankish-German artist Albrecht Dürer (1471-1528); Frankish-German scholar Martin Pollich (Martinus Polichius, 1455-1513), physician to Luther's protector, the Saxon Elector Frederick III. (1463-1525), and founding rector in 1502 of the University of Wittenberg; the Austrian-German geographer and mathematician Johannes Stabius (1468-1522), whose work forms the basis of maps drawn up according to the Mercator-projection; and the Badenser-German humanist second only to Erasmus, Johannes Reuchlin (Kapnion, 1455-1522). The network's wider circles also included the so-called *praeceptor Germaniae*, Luther's co-Reformer Melanchthon, and the Hessian-German humanist poet Ulrich von Hutten (1488-1523).⁸²⁵ Celtis himself and the Frankish-German astrologer and physician Johannes Virdung (1463-1539) additionally brought a strong interest in

⁸²⁵ G. Bricard, *De Sodalitate Litteraria Rhenana*. Bordeaux: G. Gounouilhou, 1893; Martin Matz, *Konrad Celtis und die rheinische Gelehrten-gesellschaft*. Ludwigshafen am Rhein: August Lauterborn, 1903; Henry J. Cohn, "The Early Renaissance Court in Heidelberg." *European History Quarterly* 1.4 (1971), 295-322; Tibor Klaniczay, "Celtis und die Sodalitas litteraria per Germanium," in *Respublica Guelpherbytana*, August Buck & Martin Birchner, eds. Amsterdam: Rodopi, 1987. 79-105.

magic to their studies.⁸²⁶ Until the *Sodalitas Litteraria Rhenana* dissolved itself around 1517 as members positioned themselves for and against Martin Luther,⁸²⁷ this group of freethinkers established an institutional atmosphere dominated by ostentatious displays of classical and contemporary learning, freely discussed a wide range of heterodox thought, and pushed the boundaries of all types of scientific discourse. By Marlowe's time, Heidelberg had additionally turned into a center of Calvinist innovations alongside humanist ones, attracting figures like the Württembergian-German Michael Mästlin (1550-1631), astronomer, mathematician, and teacher of fellow Württembergian-German Johannes Kepler (1571-1630); the famed Picardian-French Calvinist rhetorician Pierre de la Ramée (Petrus Ramus, 1515-1572); and Swiss-German Calvinist Reformer and vocal opponent of the teachings of the alchemist Paracelsus, Thomas Lüber (Erastus, 1524-1583). It is from this world of imaginative intellectual innovation that Faust emerges into the world of historical documentation around 1506, the same year that the statue of *Laocoön and His Sons* is unearthed in Rome: an image of despair and vexation without chance of redemption. It is such a view of Faustus' world as a university scholar that Marlowe relocated to the equally transgressive world of Luther's Wittenberg, albeit one from which Luther, with his *sola fide*, is conspicuously absent.

⁸²⁶ Benedek Láng, *Unlocked Books: Manuscripts of Learned Magic in the Medieval Libraries of Central Europe*. University Park, Penn.: Pennsylvania State UP, 2008. 259.

⁸²⁷ Ernst Jungkenn, "Johann von Dalberg und Jakob Köbel als Mitglieder der Sodalitas litteraria Rhenana," in Hans Licht, ed., *Oppenheim: Geschichte einer alten Reichsstadt*. Oppenheim: Oppenheimer Druckhaus, 1975. 167–171; Alister E. McGrath, *The Intellectual Origins of the European Reformation*. 2nd ed. Oxford: Malden, 2004. 64 & 65.

The Faust of the historical record is an alchemist, physician, and astrologer with a problematic reputation. In his *Epistolae*, Johann Heidenberg (Johannes Trithemius, 1462-1516), Palatine-German scholar at Heidelberg and teacher of the two famed alchemists Agrippa and Paracelsus describes Faust as a man who bragged that he had memorized all of Aristotle and Plato, claimed he knew how to replicate the miracles performed by Christ, and talked his way into schoolmaster positions the area so that he could mentally and physically seduce young boys.⁸²⁸ In 1513, Hessian-German humanist Konrad Muth (Mutian, 1470-1526), a correspondent of Erasmus, writes that he encountered Faust in a tavern in the Thuringian town of Erfurt, where the crowd much admired him for his chiromancy and Muth despised him for his fatuousness.⁸²⁹ By 1520, Faust was casting horoscopes for the Prince-Bishop of Bamberg, Georg Schenk von Limpurg (1470-1522).⁸³⁰ In 1528, Faust was making

⁸²⁸ Johannes Trithemius, *Epistolarum familiarum*, Vol. 2. Grossenhain: Peter Brubach, 1536, 312 & 313: “Faustus iunior, fons necromanticorum, astrologus, magus secundus, chiromanticus, agromanticus, astrologus, pyromanticus, in hydra arte secundus. ... Referebant mihi quidam in oppido sacerdotis quod in multorum praesentia dixerit, tanta se omnis sapientiae consecutum in multorum praesentia dixerit, tantam se omnis sapientiae consecutum scientiam atque memoriam, ut si volumina Platonis & Aristotelis omnia cum tota eorum philosophia in toto periissent ab hominum memoria, ipse suo ingenio, velut Ezras alter Hebraeus, restituere universa cum praesentatione valeret praestantia. Postea me Neometi existente Herbipolim venit, eademque vanitate actus in plurimorum fertur dixisse praesentia, quod Christi salvatoris miracula non sint miranda, se quoque omnia facere posse, quae Christus fecit, quoties quandocumque velit. In ultima quoque huius anni quadragesima venit Stauronesum, et simili stultia gloriosus de se pollicebatur ingentia, dicens se in Alchemia omnium, qui fuerint unquam esse perfectissimum, et scire atque posse, quicquid homines optaverint. Vacabat interea munus docendi scholasticum in oppido memorato, ad quod Francisci ab Sickingen Balivi principis tui, hominis mysticarum rerum percupidi, promotione fuit assumptus: qui mox nefandissimo fornicationis genere, cum pueris videlicet, voluptari caepit: quo statim deduct in lucem fuga paenam declinavit paratam.”

⁸²⁹ Mutianus Rufus, *Supplementum Historiae Gothanae Primum Conradi Mutiani Rufi*, Vol. 1. Jena: Johannes Bielck, 1701. 95: “Venit octavo abhinc die quidam Chiromanticus Erphurdiam, nomine Georgius Faustus, Helmitheus Hedebergensis, merus ostentator & fatuus. Eius & omnium divinaculorum vana est professio, & talis physiognomia levior typula. Rudes admirantur. In eum theologi insurgunt. ... Ego audivi garrientem in hospitio. Non castigavi iactantiam. Quid aliena insania ad me?”

⁸³⁰ Johann Mayerhofer, “Faust beim Fürstbischof von Bamberg.” *Vierteljahrsschrift für Literaturgeschichte* 3.1 (1890), 177-178. Mss. qtd. 177: “Item x gulden geben und geschenckt Doctor

astrological pronouncements to the prior of the Augustinian cloister at Rebdorf and humanist Luther-opponent, Kilian Leib (1471-1553).⁸³¹ That same year, Faust was expelled from Ingolstadt for soothsaying,⁸³² a humiliation he also experienced in Nürnberg in 1532, on the charge of being a “sodomite and necromancer.”⁸³³

Faust’s reputation did not markedly improve with time, although, like in the case of Erasmus, the rumors of homosexual impropriety ceased in his later life. In 1536, the Frankish-German humanist scholar Joachim Kammermeister (Camerarius, 1500-1574) in Tübingen, a friend to Melanchthon, writes to another humanist, Daniel Stibar von Rabeneck (1503-1555) in Würzburg, and mentions Faust’s astrological predictions in an inquiry regarding the military campaign and Papal trial lodged by the Holy Roman Emperor Charles V. (1500-1558) against the newly allied French and Ottomans.⁸³⁴ In his *Index Sanitatis* of 1539, the city physician of Worms, Philipp Begard, describes Faust as a physician, necromancer, soothsayer, and self-proclaimed philosopher who was in truth a charlatan taking money from the gullible and blessing

Faustus, pho., zuuererung; hat m. g. herren ein nativitet oder indicium gemacht; zalt am Sontag nach scolastice.”

⁸³¹ Karl Schottenloher, “Der Rebdorfer Prior Kilian Leib und sein Wettertagebuch von 1513 bis 1531.” *Riezler-Festschrift* (1913), 81-114. Mss. qtd. 92-93: “Georgius Faustus Helmstetensis quinta Junii dicebat, quando sol et Jupiter sunt in eodem unius signi gradu, tunc nascuntur prophete (utpote sui similes).”

⁸³² Franz Xaver Ostermair, “Zur Faust-Sage,” *Oberbayerisches Archiv für vaterländische Geschichte* 32 (1872 & 1873), 336. Mss. qtd. 336: “Anheut mitwoch nach Viti anno 1528 dem warsager soll befolchen werden, dz er zu der stat ausziech und seinen pfennig anderswo verzer. ... Am mitwoch nach Viti Anno 1528. Ist ainem der sich genant Doctor Jörg Faustus von Haidlberg gesagt, dz er seinen pfennig anderswo verzer, und hat angelobt, solche ervorderung für die obrigkeiht nit zu anthen noch zu äfferen.”

⁸³³ Reichsstadt Nürnberg, *Verlässe des Inneren Rats* 870, 1 May 1532: “Doctor Fausto, dem grossen Sodomitten und Nigromantico zu Für, glait ablainen.”

⁸³⁴ Friedrich Kluge, “Vom geschichtlichen Dr. Faust.” *Bunte Blätter*, 2nd ed. Freiburg: J. Bielefelds, 1910. 1-27. 9.

them with the soles of his fleeing feet.⁸³⁵ The final record of Faust's life occurs in a letter from 1540 by the mercenary and eventual Spanish-deployed Frankish-German conquistador Philip von Hutten (1505-1546) to his brother Moritz von Hutten (1503-1552), in which the soldier congratulates the "philosopher" Faust for having correctly predicted a bad year for an expedition in Venezuela.⁸³⁶ The version of the man who becomes the literary character might be best encapsulated by Melanchthon, who is said to have claimed to have known Faust in his youth and identifies him primarily as a magician, who speaks of "hidden things:" *arcana*.⁸³⁷

⁸³⁵ Philipp Begard, *Index Sanitatis*. Worms: Sebastian Wagner, 1539. 17: "Es wirt noch eyn namhafter daffterer mann erfunden: ich wolt aber doch seinen namen nit genent haben / so will er auch nit verborgen sein / noch unbekant. Dann er ist vor etlichen jaren vast durch alle landtschafft / Fürstenthumb unnd Königreich gezogen / seinen namen jederman selbs bekannt gemacht / und seine grosse kunst / nit alleyn der artzney / sonder auch Chiromancei / Nigramencei / Visionomei / Visiones imm Cristal / und dergleichen mer künst / sich höchlich berümpft. Und auch nit alleyn berümpft, sonder sich auch eynen berümpften und erfarnen meyster bekannt unnd geschriben. Hat auch selbs bekannt / und nit geleugnet / dasz er sei / unnd heysz Faustus, domit sich geschriben Philosophum Philosophorum etc. Wie vil aber mir geklagt haben, dasz sie von jm seind betrogen worden, deren ist eyn grosse zal gewesen. Nuon sein verheysen ware auch grosz / wie die des Tessali : der gleichen sein rhuom / wie auch des Theophrasti : aber die that / wie ich sie noch vernimm, vast kleyn und betrüglich erfunden : doch hat er sich imm gelt nemen, oder empfangen (das ich auch recht red) nit gesaumt / und nochmals auch imm abzug / er hat / wie ich beracht / vil mit den ferszen gesegnet."

⁸³⁶ Johann Georg Meusel, ed. "5. Zeitung aus India, Juncker Philipps von Hutten." *Historisch-litterarisches Magazin* 1 (1785), 51-118. Mss of letter from 16 January 1540, qtd. 93: "Hie habt ihr von allen Gubernationen ein wenig, damit ihr sehet, daß wir hie in Venezola nicht allein bißher unglücklich gewest sein, diese alle obgelmelte Armata verdorben seind jnnerhalb 3. Monathe, vor und nach uns zu Sevilla ausgefahren, daß ich bekennen muß, daß es der Philosophus Faustus schier troffen hat, dann wir ein fast bößes Jahr antroffen haben, aber Gott hab Lob ist uns fast unter allen andern am besten gangen."

⁸³⁷ Johannes Manlius, *Locorum Communium*, Vol. 1. Frankfurt am Main: Feyerabend und Hüter, 1565. Here, 46: "Von dem Fausten. Ich habe einen gekennt / mit namen Faust von Kundling [Kittlingen] / (ist ein kleines Stättlein / nicht weit von meinem Vatterland) derselbige da zu Crockaw in die schul gieng / da hatte er die zauberey gelernet / wie man sie dann vor zeiten an dem orth sehr gebraucht / auch offentlich solche kunst geleeret hat. Er gieng hin unnd wider allenthalben / und sagte viel verborgene ding;" Ioannes Manlius, *Locorum Communium Collectanea*. Frankfurt am Main: Martin Lechler, 1565. 38: "Novi quendam nomine Faustum de Kundling [Kittlingen], quod est parvum oppidum, patriae meae vicinium. Hic cum esset scholasticus Cracoviensis, ibi magiam didicerat, sicut ibi olim fuit eius magnus usus, et ibidem fuerunt publicae eiusdem artis professiones. Vagabatur passim, dicebat arcana multa."

Nevertheless, while all these historical instances and the accounts of the *Faust Book* confirm a general character of who the historical Faust was believed to have been, they do not amount to the sort of morally complex and compelling character that will emerge in Marlowe's *Faustus*. Some of that is owed to the medium: historical town records and letters tend to contain shorthand generalizations about the person at hand, and chapbooks like the *Historie* and *Historia* tend to emphasize a plot that serves a moralizing narrator uninterested in nuance. The complexity of *Faustus* is dependent on the theatricality of the stage. However, *Faustus* stages an act of rhetorical rather than dramatic self-fashioning: we learn little about *Faustus* from his actions, from his interactions with other characters, or from *Faustus*' conversations with them. Rather, *Faustus* creates himself by speaking, ostensibly to himself and factually to the audience. As Schiller reminds us, this should not be confused with a glimpse directly into *Faustus*' soul. Instead, the opening of *Faustus* signifies a construction of a particular identity, a performance that makes *Faustus* into "the man that in his study sits," who "the fruitfull plot of Scholerisme grac't, / That shortly he was grac't with Doctors name" (1.1.16, 17, & 28). Recalling the humanist scholars *Faustus*' historical counterpart would have heard speak in Heidelberg (and the character *Faustus* might have encountered in Wittenberg), that performance is an ostentatious display of a *copia* of learning, that of a universal man.

What marks *Faustus* as a "doctor," meanwhile, and not just a simple scholar, is his facility with language. *Faustus* can "dispute well," his "common talke sound[s] Aphorismes," and he can – contemporarily with Luther, who is translating his Bible into German as an exile in Wartburg Castle while *Faustus* is meant to be in Wittenberg

– read any Latin passage of “Ieromes Bible” and translate it fluently into English. Before it dawns on the spectator that Faustus is seriously dismissing the traditional fields of knowledge (philosophy, rhetoric and logic, medicine, law, and divinity) in favor of the arcane, his discourse on the various fields of knowledge is foremost reminiscent of the Sophists’ method of arguing *utramque partem*, “equally from both sides.”⁸³⁸ It moreover recalls the humanists’ preferred reliance on the *ars dubitandi*, the skeptical use of that Sophist technique in order to generate methodological doubt and thus avoid rushing to a reductive answer. The prime practitioner of both arts was none other than Erasmus himself, who remarks in *Of Free Will*, “I have always preferred sporting in the free plains of the Muses to crossing irons at close quarters. I take so little pleasure in assertions that I will gladly seek refuge in Skepticism.”⁸³⁹ To the more educated members of Early Modern audiences, who had an implicit understanding of what typical humanists sounded like,⁸⁴⁰ Faustus’ boasts about his depth of knowledge and his simultaneous dismissal of it demonstrate that Faustus considers himself equal to the Prince of Humanists himself.

The Chorus of the *Prologue* characterizes Faustus’ acquisition of knowledge as an insatiable appetite, with necromancy as a *techne* that serves to fill it: “Swoll’n with cunning, of a self-conceit, / His waxen wings did mount above his reach, / And

⁸³⁸ Eric MacPhail, *The Sophistic Renaissance*. Geneva: Droz, 2011. 40-44 & 73-78, et al.

⁸³⁹ Desiderius Erasmus, *De Libero Arbitrio Diatribe*. Basel: Johannes Frobenius, 1524. A1v: “Semper habui prius in liberioribus Musarum campis ludere, quam ferro cominus congrredi. Et adeo non delector assertionibus, ut facile in Scepticorum sententiam pedibus discessurus sim.”

⁸⁴⁰ While most of the major English humanists did not live past the mid-16th century (John Doget, William Grocyn, Thomas More, Polydore Vergil), notable Scottish humanists were contemporaries of Marlowe (George Buchanan, Thomas Reid, David Hume of Godscroft), as were many widely read Continental figures (Giordano Bruno, Justus Lipsius, Gian Vittorio Rossi, Michel de Montaigne, Alphonsus Ciacconius, Arnoldus Arlenius).

melting, heavens conspired his overthrow. / For, falling to a devilish exercise, And
glutted now with learning's golden gifts, / He surfeits upon cursed necromancy" (19-
24). While to 21st Century readers necromancy – the summoning of dead spirits,
angels, or demons – might at first appear to fit poorly with Euclidean geometry, on
closer inspection this is not the case in late 16th Century England. John Dee, one of the
authors of the English translation of Euclid's *Elements*, was famously also a
necromancer, and his reputation was public enough for Marlowe to have heard about
it. Like Faustus with his desire to rule an empire wider than all kingdoms, Dee had
advocated actively for the establishment of the British Empire.⁸⁴¹ Like Faustus and the
scholar at Heidelberg Stabius, Dee had an interest in navigation, and he worked
closely with Mercator on cartography.⁸⁴² Like Faust, who eventually travels the night
sky in a chariot in order to achieve a close-up perspective, Dee was interested in
astronomy, being a close friend of Scanian-Danish astronomer Tyge Ottesen Brahe
(Tycho Brahe, 1546-1601) and an eventual admirer of the work of the Prussian-Polish
astronomer Niklas Koppernigk (Nicolaus Copernicus, 1473-1543).⁸⁴³

Importantly, Dee was also deeply committed to the Pythagorean-Platonic
school of thought associated with the Hermetic Corpus, at the time thought to have

⁸⁴¹ John Dee, "Brytanici Imperii limites." Additional MS 59681, British Library, London, UK; Dee, "Of Famous and Rich Discoveries," Cotton MS Vitellius C.7, Fols. 26-269, British Library, London, UK; Dee, "A Brief Remembraunce of Sondrye Foreyne Regions," Cotton MS Augustus I.1.1v, British Library, London, UK.

⁸⁴² John Dee, *General and Rare Memorials Pertayning to the Perfect Art of Navigation*. London: John Daye, 1577.

⁸⁴³ John Dee, "Preface," in John Field, *Ephemeris Anni 1557 Currentis Juxta Copernici et Reinholdi Canones*. London: Marshe, 1556; Dee, *Propedeumata aphoristica* 1558, cf. John Lewis Heilbron, *John Dee on Astronomy: Propedeumata aphoristica (1558 and 1568)*. Berkeley, Calif.: U of California P, 1978; Charlotte Fell Smith, *John Dee: 1527-1608*. London: Constable, 1909. 146; Andrew Norman Wilson: *The Elizabethans*. New York: Macmillan, 2012. 85.

been written by the apocryphal ancient Egyptian scholar Hermes Trismegistus.⁸⁴⁴ Renaissance versions of Hermeticism held to the principle of “as above, so below,”⁸⁴⁵ interpreted, in the words of the 17th Century English polymath Thomas Browne (1605-1682), as “Philosophy of Hermes, that this visible world is but a picture of the invisible.”⁸⁴⁶ Moreover, Hermeticists held that *theurgy*, godly magic facilitated by angelic creatures, was a positive and scientific means of better understanding the world (as opposed to *goëtia*, which relies on the deceptions of evil demons).⁸⁴⁷

Dee’s form of necromancy was a version of theurgy and was, consequently, heavily geometrical – so much so that few years later Francis Bacon would consciously dismiss Platonic Forms and show a distinct aversion to mathematical thought because Dee’s association with it had tainted geometry with the disrepute of “magic.”⁸⁴⁸ In his “Preface” to Euclid’s *Elements*, Dee had lauded Plato’s distinction between the realm of Forms and the physical world: “All thinges which are, & haue beyng, are found vnder a triple diuersitie generall. For, either, they are demed

⁸⁴⁴ Ficino, *Mercurii Trismegisti liber*.

⁸⁴⁵ The principle stems from the *Emerald Table*, attributed to Hermes Trismegistus or Apollonius of Tyana. It is, in fact, an Arabic forgery titled *Kitab Balaniyus al-Hakim fi’l-`Ilal Kitāb sirr al-ḥalīqa*, attributed to the latter, and was also included in the *Secretum Secretorum*, likewise an Arabic forgery, titled *Sirr al-Asrar*. These alchemical-philosophical texts were available in Latin through various translations since the 12th century.

⁸⁴⁶ Thomas Browne, *Religio Medici*. London: A Crooke, 1643. §12.

⁸⁴⁷ Cornelius Agrippa, “De Goetia et Necromantia,” *Occulta Philosophia*, 353-354. “Ceremonialis autē magie partes sunt goëtia atq̄ theurgia. Goëtia, immundorum spirituum comēciis inauspicta, nefariae curiositatis ritibus, illicitis carminibus, & deprecamentis concinnata, omnia legume placitica est exterminate & execrata” (353). *Ibid.* “De Theurgia,” 357-358: “Theurgiam uero pleriq̄ putant haud illicitam, quasi haec bonis angelis, diuinoq̄; numine regatur, cum sepiissime tamen sub dei & angelorum nominibus malis daemonum fallaciis obstringatibus & ceremoniis coelestes, & per illas diuinas uirtutes nobis conciliamus & attrahimus” (357); cf. also Keith Thomas, *Religion and the Decline of Magic*. New York: Penguin, 1973. 320-321.

⁸⁴⁸ Brian Vickers, “Francis Bacon and the Progress of Knowledge.” *Journal of the History of Ideas* 53.3 (July-Sep 1992). 495-518. esp. 499-501.

Supernaturall, Naturall, or, of a third being.” The highest “diversity” is the realm of Forms: “Things Supernaturall, are immateriall, simple, indiuisible, incorruptible, & vnchangeable. ... Things Supernaturall, are, of the minde onely, comprehended.” The lowest “diversity” is realm of the physical: “Things Naturall, are materiall, compounded, diuisible, corruptible, and chaungeable. ... Things Naturall, of the sense exterior, ar hable to be perceiued.” The two differ in that the supernatural relies on abstract deductive reasoning and the natural on concrete inductive reasoning: “In things Naturall, probabilitie and coniecture hath place: But in things Supernaturall, chief demonstration, & most sure Science is to be had.”⁸⁴⁹

However, Dee argues, there is another form of knowledge: “a third being: which, by a peculier name also, are called *Thynges Mathematicall*,” specifically geometrical things. This type of knowledge,

beyng (in a maner) middle, betwene thinges supernaturall and naturall: are not so absolute and excellent, as thinges supernatural: Nor yet so base and grosse, as things naturall: But are thinges immateriall: and neuerthelesse, by materiall things hable somewhat to be signified. And though their particular Images, by Art, are aggregable and diuisible: yet the generall Formes, notwithstanding, are constant, vnchaungeable, vntransformable, and incorruptible.⁸⁵⁰

Consequently, geometry, the mathematics of Forms, are “in the royall mynde of man, first conceiued. But surmoutyng the imperfection of coniecture, weenyng and opinion:

⁸⁴⁹ John Dee, “Mathematicall Preface.” Billingsley & Dee, *Euclid's Elements*, *.i.r-A.iiii.v

⁸⁵⁰ Dee, “Preface,” *.i.v

and commyng short of high intellectual conception,” they are “in perfect imagination subsistynge” and portray “truthes certaine, necessary, and inuincible; vniuersally and necessarily concluded.”⁸⁵¹ Geometry straddles the line between supernatural and natural and allows the two realms to communicate with each other: “the Pythagoricall, and Platonicall perfect scholer, and the constant profound Philosopher, with more ease and spede, may (like the Bee,) gather, hereby, both wax and hony.”⁸⁵²

This, then, is the foundation of Dee’s form of necromancy, as practiced through repeated attempts to communicate with angels using geometrical devices. These devices could *trans-latare* [Latin, “carry over”] the *data* of the “divine” sphere of Forms and, via an “angelic language,” a type of cipher to which Dee had a key, could then be unlocked for human insight. Dee’s method marked the highpoint of sophistication in this method of the proto-scientific arcane arts, which after his lifetime lost all scientific credibility it might have had, to be replaced with Baconian empiricism. To receive and decipher angelic messages, Dee primarily employed the services of the Worcestershire spirit medium Edward Kelley (1555-1598), who claimed to be summon angels and other good spirits with a “shewing stone,” a polished obsidian mirror originally from Mexico,⁸⁵³ and using the method laid out in Dee’s manuscript *De Heptarchia Mystica*.⁸⁵⁴ These angels then spoke in a language

⁸⁵¹ Dee, “Preface,” *i.v

⁸⁵² Dee, “Preface,” *i.v

⁸⁵³ “Dr Dee’s Magical Mirror / Dr Dee’s Magical Speculum.” Aztec obsidian mirror. Museum No. 1966,1001.1, British Museum, London, UK.

⁸⁵⁴ John Dee, *De Heptarchia Mystica*. Sloane MS 3191, British Library, London, UK. In Ch. 5, an “Oration to God” [*Oratio ad Deo*], Dee summarizes his intentions thus: “to deliver unto me, long since, (through the eye, and eare of E. K.) An Orderlie forme, and manner of Exercise HEPTARCHICAL: How, (to thy Honor and Glory, and the Cumfort of my owne poore sowle, and of others they faithfull servants,) I may, at all tymes, use very many of thy good Angels, theyr Cownsailes

Dee and Kelley called “Enochian,” said to be the shared human language before Noah’s Flood, which was delivered in code. The angels were summoned using a geometrical “seal,” and their messages were decoded using a geometrical “Holy Table,” whose complex and decidedly mathematical nature is, once again, best grasped through illustration:

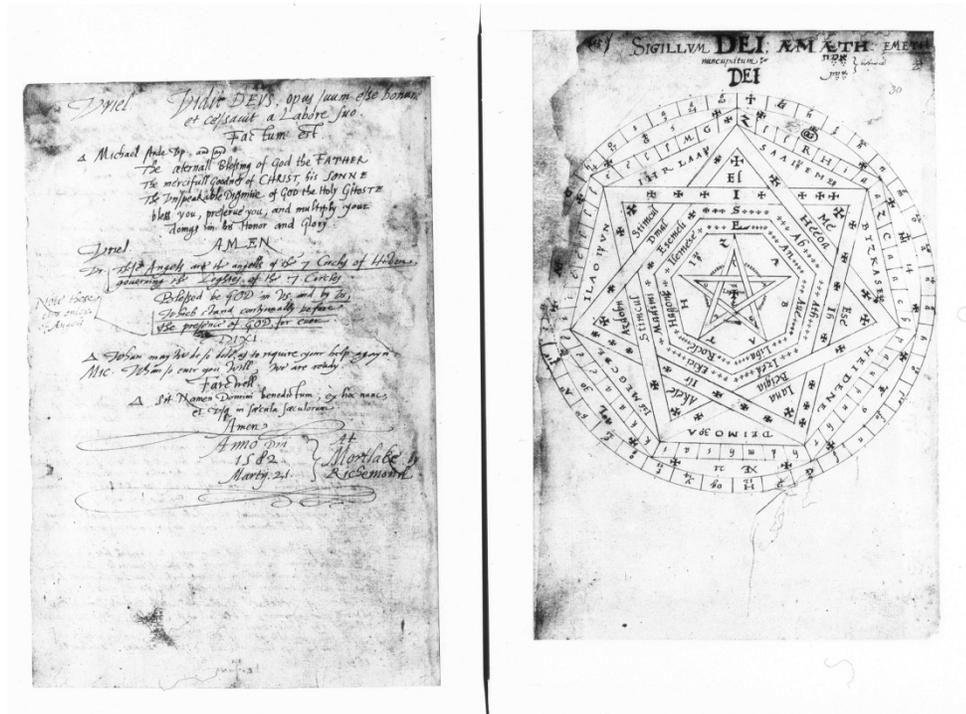


Figure 5: pp. 44 & 45 of John Dee’s manuscript, *Mysteriorum libri quinti* (1582), the page on the left depicting the “Sigillum Dei Ameth” (God’s Seal of Truth, Hebrew: $\aleph\aleph$), used for summoning angels. Sloane MS 3188, British Library, London, UK. Image is in the public domain.

and helps, according to the proprieties of such their Functions, and Offices, as to them, by thy Divine Powre, Wisdome and Goodnes, is assigned, and Limited: (Which Orderly forme, and manner of Exercise, Untyll even now, I never fownd so urgent Opportunitie, and extream Necessitie, to apply my self unto,)” 25.

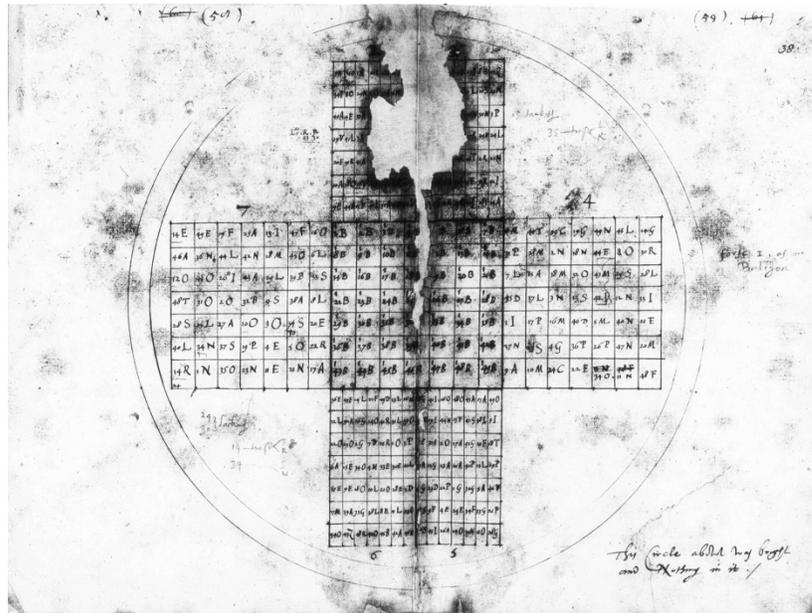


Figure 6: pp. 58 & 59 of John Dee’s manuscript, *Mysteriorum libri quinti* (1582). “This Circle about was bright and Nothing in it.” Sloane MS 3188, British Library, London, UK. Image is in the public domain.

According to Dee, on 28 April 1582 “two appeare, [the archangels] Michael and Uriel” and initiate the giving of the *data* of the angels. Alongside them, “seuen women appeare bewtiful and fayre,” representing wisdom. After making Dee and his medium Kelley swear on the archangel’s sword to submit to the archangels, Michael pronounces that he and Uriel will now “shew unto you the lower world: The Gouerners that work and rule under God,” i.e. the sphere of the angelic Forms. Understanding this secret *data*, Dee will “haue powre to work such things, as shalbe to god his glorie, profit your Cuntrie, and the knowledge of his Creatures.” Michael then shows Dee the records of the celestial *data* in the form of tablets, on which the names of the angels Dee might call upon are inscribed. While Michael verbally describes the entire Holy Table Dee will depict in his book, at first Michael lays out the geometry of

this *data*, the five adjoining squares that will make up the table itself and a circle around it. Dee observes, “this Circle about was bright and Nothing in it.” Having established the priority of the geometrical framework, Michael then dictates (via Kelley) the numerical and alphabetical content, “I wrote out of the stone the whole 7 Tables (as you see them here with their numbers and letters) while [Kelley] did view them in the stone, and orderly express them.”⁸⁵⁵ It is clear, then, that in the Hermetic theurgy of Dee, the geometrical shape supersedes the content in importance for the act of summoning, and the same is true for the act of interpreting celestial language.

Of course, the use of “seals” to summon metaphysical creatures who can relay the secrets of the divine sphere (and thus, presumably, the “political” *arcana* of the Kingdom of God) to the deserving geometer did not begin or end with Dee. Indeed, in the older Faust corpus, too, there was a long tradition of the protagonist using geometrical figures in order to summon spirits – in this case, inevitably demonic ones. In the early German Faust texts, the books containing these geometrical patterns are referred to as *höllenzwang*, “coercion of hell,” or *geisterzwang*, “coercion of spirits” and contained both a script for conducting transactions with demons and the geometrical “seals” to summon Lucifer himself or other specific spirits.⁸⁵⁶ (Not coincidentally, there were versions of this text that accused the great antagonist in the intelligence war over Protestant England, of using the very same seals to accomplish

⁸⁵⁵ Dee, *Mysteriorum*, 56-61.

⁸⁵⁶ E.g. *Dr. Fausts vierfacher Höllenzwang* ; *Fausts dreifacher Höllenzwang* ; *Dr. Fausts Mirakel, Kunst und Wunderbuch: Ein Höllenzwang* ; *Fausts Höllenzwang* ; *Dr Fausts großer und gewaltiger Höllenzwang* .

their subversions and to gain illicit riches: the Jesuits.⁸⁵⁷) Marlowe's Faustus appears to do the same. After dining with fellow necromancers Valdes and Cornelius, Faustus summons the devil by use of a geometrical figure: "Within this circle is Iehovahs name / Forward and backward agrammathist, / Th' abbrevuiated names of holy Saints, / Figures of euery adiunct to the heauens, / And characters of signs and euening starres, / By which the spirits are inforst to rise" (1.3.8-13). The similarity between Faust's seal and Dee's Sigillum Dei Ameth is evident, with the difference that Faustus appears to believe he is in the possession of geometrical knowledge that can coerce the spirits, rather than, like Dee, simply ask them for favors. Likewise clear is that Faustus adheres to the logic of the Pythagorean-Platonic Hermeticist view of himself as "*philos* to the gods" by virtue of the mastery of this type of geometrical knowledge. Faustus initially believes he cannot be touched by his actions because he is a philosopher, like the ancients, and therefore not subject to Judeo-Christian doctrine: "This word 'damnation' terrifies not him, / For he confounds hell in Elizium. / His ghost be with the olde Philosophers" (1.3.56-58).

As the plot of *Doctor Faustus* unfolds, however, it becomes clear that Faustus labors under a delusion; the *data* of geometry does not actually access any *arcana* of the divine or diabolical spheres. Mephistopheles explains that Faustus' possession of his *zwang*-style geometry and his ritual summoning of spirits through necromancy does nothing to actually control demons, nor to perform magic. In Faustus' quest to find "what holds the world together at its core," this ancient *data* concept fails. Rather,

⁸⁵⁷ E.g. *Trinum Perfectum Albae et Nigrae*; *Wahrhafter Jesuiten Höllenzwang*; *Päpstlich Magischer Jesuiten Prozess (Jeusitico Pontificius Processus Magicus)*; *Zwang des Albiruth*.

its attempted use of “coniuring speeches” simply declares Faustus open for the seduction of his soul. Mephistopheles explains the true situation: In terms of Mephistopheles’ appearance, Faustus’ speeches were

the cause, but yet per accident,
For when we heare one racke the name of God,
Abiure the scriptures, and his Sauour Christ,
Wee flye, in hope to get his glorious soule,
Nor will we come, vnlesse he vse such meanes
Whereby he is in danger to be damnd. (1.3.46-51)

Despite hearing the truth directly from the demon’s mouth, Faustus does not seem to accept this explanation. Too committed to his ancient learning and the authority he believes it bestows up on him, Faustus nevertheless offers a bargain to Mephistopheles: Faustus’ immortal soul in exchange for twenty-four years of Mephistopheles’ services. Once Mephistopheles departs, Faustus continues to insist that he knows better than the demon and that he has in fact performed an act of necromantic agency. After listing a number of supernatural achievements he wishes to perform, Faustus declares (getting ahead of himself, as he is still waiting for Lucifer’s answer to his offer): “*Now that I haue obtaind what I desire, / Ile liue in speculation of this Art, / Til Mephastophilis returne againe*” (1.3.110-113).

What Faustus desires – and what he appears to think he has bargained for – is *data* pertaining to the *arcana* of the geometrical *logos* in the form of books Mephistopheles gives him, and which Faustus then deciphers, much like Dee and Kelley did when taking dictation from Michael about the geometrical *data* of the

celestial sphere. The accumulation of books promising new knowledge *is* knowledge to Faustus; it is this pursuit of “book-heaps” that, in the words of the Bad Angel, make him *philos* to the gods. Faustus’ idea of mastery over the world and the spheres beyond is to accumulate heaps of this arcane and secret *data*, whatever the cost. Once read, however, the *data* of the books loses its value to him. Faustus’ opening monologue foreshadows this. It represents not so much a meaningful engagement with texts that have sustained the intellectual world of European civilization for millennia (Aristotle, Galen, Justinian, the *Bible*), as a disgusted wading through a discarded, “tangled desert of books” in “a library without new editions.”

Faust’s solution is the pursuit of more *data*, and this pursuit, too, comes in the form of books, which to Faustus convey mastery *qua* being “given” to him by the right sort of powers, those supposedly with insights into *arcana*. No doubt preconditioned towards this book-lust by virtue of his many years of scholarship, Faustus readily accepts, for example, the pronouncement by Valdes and Cornelius that “these bookes thy wit and our experience / Shall make all nations to cononize vs” (1.1.119-120). The books they refer to are books Faustus already owns, and which he is to bring with him to his first attempt at *goëtia*: “Then haste thee to some solitary groue, / And beare wise Bacons and Albanus workes, / The Hebrew Psalter, and new Testament, / And whatsoeuer else is requisite” (1.1.153-156). That this conflicts with Faustus’ complete dismissal, just moments earlier, of the last two texts as “Unpleasant, harsh, contemptible and vilde” does not appear to occur to an overeager Faustus, nor does it seem to matter to Valdes and Cornelius.

Once the pact with Mephistopheles stands, Faustus' initial "magic" also consists not of action, but of heaping up knowledge for knowledge's sake. Faustus need not know the physics of hell in order to achieve his many practical earthly goals, and yet his first question is, "First will I question with thee about hell, / Tel me, where is the place" (2.1.110-111). A careful listener would remember that Mephistopheles has already given Faustus an answer to this question when they first met, suggesting that his own role as a spirit who "Conspir'd against our God with Lucifer" and who is thus "euerdamnd with Lucifer" constitutes true hell, an existential state rather than a location: "Why this is hel, / nor am I out of it" (1.3.74). When Faustus' curiosity for intelligence about Lucifer's realm appears sated, Mephistopheles heaps two other illusory forms of knowledge on Faustus, neither of which actually conveys any power, much less allow Faustus insights into any truth. First, Mephistopheles conjures a succession of beautiful courtesans in the imagination of the gaping scholar, including Penelope, the Queen of Sheba, and evidently even a sort of androgyne Lucifer in drag:

Ile cull thee out the fairest curtezans,
And bring them eu'ry morning to thy bed,
She whome thine eie shall like, thy heart shal haue,
Be she as chaste as was Penelope,
As wise as Saba, or as beautiful
As was bright Lucifer before his fall. (2.1.143-148)

However, once Faustus is entranced, Mephistopheles does not actually produce anything of the sort. Instead, he hands him a book that supposedly accomplishes something entirely different:

Take this booke, peruse it thorowly,
The iterating of these lines brings golde,
The framing of this circle on the ground,
Brings whirlwindes, tempests, thunder and lightning.
Pronounce this thrice deuoutly to thy selfe,
And men in armour shal appeare to thee,
Ready to execute what thou desirst. (2.1.149-157)

A variation of this dynamic recurs between Faustus, Beelzebub, and Lucifer after Faustus has once again doubted the wisdom of his pact with the Kingdom of Hell. Lucifer and Beelzebub appear and have Mephistopheles put on a procession of the Seven Deadly Sins, namely Pride, Covetousness, Envy, Wrath, Gluttony, Sloth, and Lechery. Declaring “O this feedes my soule,” Faustus then asks Lucifer, “O might I see hel, and returne againe” (3.2.160-162). Lucifer, who had assured Faustus that “in hel is al manner of delight,” assents. Instead, however, he, too, hands Faustus a book with no relation to Faust’s stated desire: “Take this booke, peruse it throwly, and thou shalt turne thy selfe into what shape thou wilt” (3.2.161-165).

This pattern of Faustus’ greed for books that promise to contain the *data* that will reveal arcane secrets to him continues. In the A-text of the play, Faustus interrupts Mephistopheles after the first instance and asks for more books of *data* akin to that produced by the Hermetic theurgy of Dee: “Thankes Mephastophilus, yet faine would I haue a booke wherein I might beholde al spels and incantations, that I might raise vp spirits when I please.” Mephistopheles produces such a book. Faustus immediately asks for another: “Now would I haue a booke where I might see al characters and

planets of the heauens, that I might knowe their motions and dispositions.” Again, Mephistopheles obliges. Faustus piles on: “Nay let me haue one booke more, and then I haue done, wherein I might see al plants, hearbes and trees that grow vpon the earth.” Having received this book, too, Faustus reiterates his assumption that he is gaining power of spirits and the earth by amassing books, perhaps even outwitting Mephistopheles to whom he gloatingly remarks: “O thou art deceiued.” Mephistopheles, meanwhile, has already established that it is he, not Faustus’ spells, that produces any tricks Faustus asks for, and now knows that Faustus is falling for the deception: “Tut I warrant thee.”

Having accumulated the books of arcane knowledge, Faustus appears not to possess the patience or desire to read them, or not carefully enough to comprehend them, if he can decipher them at all (*cave*, for example, Arabic geometrical texts like those discussed above). Nor does Faustus appear to be a careful steward of that knowledge. In the A-text, for instance, in the very next scene Robin the Clown, an antithesis of Faustus the scholar, steals one and seeks to use it for the rather base purpose of assuaging his gluttony. Despite having received a book from Mephistopheles that explains all of astronomy, moreover, Faustus reappears soon after gazing at the stars and immediately quizzes the demon about the same subject. Mephistopheles asserts that heaven is not “such a glorious thing” and that “it was made for man, therefore is man more excellent” (2.3.9). When Faustus briefly fears the heavens are “ioyes” of which he has been “depriu’d” and declares that “twas made for me / I will renounce this magicke,” the Evil Angel reappears and once more appeals to Faustus’ Pythagorean-Platonic desire to be *philos* to the gods, by assuring

him that he already can access his preferred type of heaven: after all, “thou art a spirite” (2.3.13).

Books are not, however, the only means by which Faustus gathers arcane *data* without actively engaging with the subject of his curiosity or exercising true arcane power. Rather than achieving the great works he had sought out to perform, Faustus instead becomes distracted by a sort of voyeuristic tourism. To let him gaze at the stars about which he has supposedly already read everything there is to know, Faustus persuades Mephistopheles to let him take an eight-day whirlwind journey “seated in a chariot burning bright, / Drawne by the strength of yoked dragons neckes” so that “he views” (but does not visit or otherwise interact with) the top of Mount Olympus, the planets, stars, the tropics, the moon, the poles, and even the heights of the *primum mobile* (3.Chorus.1-15). Given that Faustus does not physically touch, experience, or walk on any of these sights; his exceedingly speedy tour of all the earth and most of the heavens reads more like the visual *data* experienced through theater backgrounds, scene-painted rooms, or, in 21st Century terms, an immersive film or virtual reality tour, what Antonin Artaud appropriately calls “alchemical theater.”⁸⁵⁸ It amounts to a

⁸⁵⁸ The idea that drama can provide a “virtual” experience of reality is at least as old as Plato’s Allegory of the Cave or Descartes’ demon, but it enters critical theory in an essay by the Provençal playwright Antonin Artaud (1896-1948) in his discussion of “réalité virtuelle du théâtre” in his essay titled, “Le Théâtre Alchimique.” *Le Théâtre et son Double*. Paris: Gallimard, 1938. 50-56. Artaud states, “Tous les vrais alchimistes savent que le symbole alchimique est un mirage comme le théâtre est un mirage. Et cette perpétuelle allusion aux choses et au principe du théâtre que l’on trouve dans à peu près tous les livres alchimiques, doit être entendue comme le sentiment (dont les alchimistes avaient la plus extrême conscience) de l’identité qui existe entre le plan sur lequel évoluent les personnages, les objets, les images, et d’une manière générale tout ce qui constitue la réalité virtuelle du théâtre, et le plan purement supposé et illusoire sur lequel évoluent les symboles de l’alchimie” (51). In English: “All true alchemists know that the alchemical symbol is a mirage as the theater is a mirage. And this perpetual allusion to the materials, and the principle of the theater found in almost all alchemical books should be understood as the expression of an identity (of which alchemists are extremely aware) existing between the world in which the characters, objects, images, and in a general way all that constitutes the virtual reality of the theater develops, and the purely fictitious and illusory world in which the symbols of

model or simulacrum of experience, one that may or may not be actually taking place or that may or may not be partially or entirely a conjured illusion. It is not analytic or internalized knowledge. Faustus sees all, but learns nothing.

The oddly gossamer depth of supernatural power Mephistopheles allows Faustus to experience takes another important turn immediately after Faustus returns. Once again, Faustus sets off, this time to “ariue at Rome, / To see the Pope, and manner of his court, / And take some part of holy Peters feast” (3.Ch.21-23), and explicitly in the company of Mephistopheles. This time, they travel on the dragon’s back, and once again see a satellite-view of a rather indirect route to the Holy City, passing first over Trier on the Mosel River – the seat of a German archbishopric, pointed out by Marlowe perhaps because of the infamous witch trials there in the 1580s – and next Paris, the Rhine Valley, Naples in southern Italy, Campania, then suddenly in northern Italy over Venice and Padua, and only then arrive in Rome. Had he bothered to notice, Faustus might have objected to the very a-geometrical crisscrossing Mephistopheles subjects him to, but he appears either too consumed with the illusion of commanding a dragon and with viewing landscapes from above, or else is geographically illiterate – something that cannot be said of the Europe-traveling Marlowe. Again, this sequence suggests perhaps more of a virtual journey than an actual one, the highlight reel of a documentary rather than an itinerary. After a similarly at-a-distance tour of the Roman marvels, Mephistopheles and Faustus engage in an act of espionage, by infiltrating the Pope’s chambers. There, they initially

alchemy are evolved.” “The Alchemical Theater,” *The Theater and Its Double*. Mary Caroline Richards, transl. New York: Grove Press, 1958. 48-52. 51.

observe a staple of diplomatic state theater, a public humiliation by the Pope Adrian of the deposed schismatic pope Bruno in the attendance of the cardinals of France and Padua, the archbishop of Reims, and the king of Hungary (3.1.89-110).

However, in the B-Text, Faustus and Mephistopheles soon go further and infiltrate the Pope's inner circle, entering the inner *domus* of the *paterfamilias* of Catholic Christendom in the guise of a *particeps secretorum* in order to interfere with a classic form of the Pope's *arcana imperii*. The pope plans to execute Bruno, who had threatened the Pope's life, position, and *vim* as a rival pope appointed by the Holy Roman Emperor. Mephistopheles puts the cardinals of France and Padua to sleep and creates the illusion that he and Faustus look identical to the two clerics. The Pope then asks Faustus to present the cardinals' findings on Bruno's guilt. Faustus declares Bruno and his supporters to be "Lollards and bold schismatics" (3.1.176), accuses Bruno of seeking to assassinate the Pope (3.1.181), and recommends that he should be "condemned of heresy" and "on a pile of fagots burned to death" (3.1.183-184). Meanwhile, Faustus and Mephistopheles set Bruno free so that he "on a proud-paced steed, as swift as thought, / Flies o'er the Alps" to inform the Emperor (3.2.4-6). The entire charade is an act of political arson, guaranteed to trigger war. Moreover, their covert operation leads to the discrediting and imprisoning of the two actual cardinals and the Pope's loss of his (physical) crown (3.2.30-55).

Once again, whether Faustus and Mephistopheles are meant to be part of a real event or experiencing Mephistopheles' illusion of one remains unclear. Marlowe has Faustus himself sow some doubt in this regard when Faustus commands Mephistopheles to arrange the episode with the words, "In his show let me an actor

be” (3.1.75). Likewise, Bruno’s ability to transport across the Alps “swift as thought” points more to a fantastic set of circumstances orchestrated for Faustus’ benefit, a performance rather than an experience of the real. In any case, for the ambitious Prince of Scholars, the plot against the Vatican does not achieve any strategic end except to chaos for the sake of chaos, and to stroke Faustus’ sense of self-importance. For Mephistopheles, meanwhile, the war against the Pope itself would be a political success on behalf of the Kingdom of Hell, but he instead makes light of having received the apostolic blessing of the Pope in his disguise as Cardinal: “So, so; was never devil thus blessed before” (3.1.195).

Things quickly devolve further, from costume drama to farce. Now made invisible by Mephistopheles to attend the banquet held on the Feast of Saint Peter, Faustus snatches meat and wine from the Pope’s hand, leading the clerics to conclude that “it may be some ghost newly crept out of Purgatory come to begge a pardon of your holinesse” (3.2.80-83). The Pope asks the attending friars to sing a dirge to “lay the fury of this ghost” by cursing him by “bell, book, and candle,” but Faustus reacts instead by hitting the Pope “a boxe of the eare” and then flings fireworks among the singing friars as Faustus and Mephistopheles leave. While no doubt an entertaining scene both for Faustus and Marlowe’s anti-papist audience, Faustus’ behavior here is more becoming of Robin the Clown than of a scholar who wishes to become *philos* to the gods. It is clear that Mephistopheles’ type of magic does not in any way help Faustus read the geometrical *data* of the universe, which he remains unable to do, nor to seriously interact with the arcane or with the spheres of political power or tactical

intelligence. Rather, such charades serve to distract Faustus from the fact that he is being duped into believing he has knowledge Mephistopheles will never impart.

The essential emptiness and virtual quality of Faustus' supposed magical powers continues in subsequent episodes, reinforcing this impression. At the Emperor's court in Vienna, Faustus essentially acts an illusionist magician aiming to entertain. On the Emperor's request to "raise [Alexander the Great] from hollow vaults below, / where lies intombde this famous Conquerour, / And bring with him his beauteous Paramour, / Both in their right shapes, gesture, and attire," Faustus can only conjure a weak, mute, and fleeting imitation, claiming that he cannot resurrect bodies that "long since are consumed to dust." Instead, he can request that Mephistopheles produce "such spirites as can liuely resemble Alexander and his Paramour" who "silent come and go," more holograms than actual persons (4.1.73-119). Faustus' other trick at that court consists of a slapstick revenge on the Duke of Saxony: since the duke had mocked Faustus by declaring his claims to be performing actual necromancy "as true as Diana turnd me to a stag," Mephistopheles makes stag-horns grow on the duke's head in order to humiliate him before the court, before having Mephistopheles remove them at the Emperor's request (4.1.118-167). In an unlikely turn of events, these tricks supposedly suffice to have the Emperor give Faustus "command [of] the state of Germany" (4.1.166). Such an outcome in exchange of rather feeble magic tricks smacks of fantastic wish-fulfillment for Faustus produced by Mephistopheles in an illusory performance. Marlowe's audience would have known that the "Emperor Carolus" of this play refers to the Habsburg Charles V., the first man to rule the very "empire on which the sun never sets" England, too, would aspire to, and had a

reputation as a wise and exceedingly religious monarch with a strong sense of humor. Even in a theater, such a figure would have hardly believably parted with an entire kingdom as a reward for an evening's light entertainment.

Now captivated by a desire for unrestrained excess, Faustus' ambitions soon devolve into rather mundane acts of violence, pettiness, and pointedly empty self-aggrandizing gestures, continuously relying primarily on illusions. First, evidently aware of their plan to assassinate him, he taunts Benvolio, Frederick, and the attending soldiers by walking into their midst. They duly "cut off" his head (4.2.1-68) – pointlessly, since Faustus has received twenty-four years of life by Mephistopheles in exchange for his soul (4.3.69-76). Having thus provoked their attack while never actually in any danger, Faustus punishes them with extreme sadism, having the demons Ashtaroth, Belimoth, and Mephistopheles make an example by drowning one in a lake of mud, dragging one through thorns, and breaking one's bones by rolling him down the face of a hill until he is dismembered, all before casting them from high in the sky into the depths of hell (4.2.79-81), but not before he has Mephistopheles repeat the rather feeble trick of putting horns on their heads (4.3). Faustus responds to a second assassination attempt by unnamed soldiers, equally futile from the start, by making trees appear as a barrier between them before having a band of devils blow his assailants to pieces with fireworks (4.2.97-105). Faustus' extreme reactions are more suited to a reckless sociopath than to a scholar seeking arcane knowledge. In fact, they do not even demonstrate Faustus' power: all the torture and murder is performed by Mephistopheles and fellow demons, pretending to be at his command (4.2).

Faustus' self-deception reaches its pinnacle when he turns from public performances of violence to vain and predatory private self-indulgence, which, too, contradicts any dedication to a Pythagorean-Platonic pursuit of *data*. Marlowe emphasizes this point. Towards the end of the twenty-four years of Mephistopheles' service, Faustus' greatest achievement is building an "enchanted castle in the air" (4.6.3). A derivation of "castles in Spain," the phrase was common in the later 16th Century and already meant "daydream" or "fantasy."⁸⁵⁹ Notably, the fantasy is so convincing, Faustus can tour it with the Duke of Vanholt and his duchess, but the emphasis throughout is on the visual illusion: the duke remarks, "Thanks, Master Doctor, for these pleasant *sights*" (4.6.1); Faustus, speaking about himself in the third person, refers to "that which Faustus hath performed" as "those *sights*" (4.6.8-9). Once again, a sense of virtual rather than actual experience prevails. It seems Faustus' castle in the clouds can be seen, but not actually touched.

Finally, Faustus turns to carnal desire and summons a shade representing the famously beautiful Helen of Troy, "the face that lancht a thousand shippes / And burnt the toplesse Towres of Ilium" (5.1.93-94), to have as his paramour. Like all the conjured figures in the play, Helen is mute and obedient, more holographic avatar than any true Heléné of Sparta and Troias, who in Homer's *Iliad*, too, was likely never more than a male fantasy, her abduction by Paris from Sparta a convenient *casus belli* for a Homeric plot in search of an initiating event.⁸⁶⁰ Even if there had been a

⁸⁵⁹ "castle" 11. Def. "castle in the air," *OED*.

⁸⁶⁰ The term is an Early Modern one and was introduced in its modern sense by Huig de Groot (Hugo Grotius, 1583-1645), the Holland-Dutch jurist, in his foundational work on international law, *De jure belli ac pacis* of 1625, who refers to it as *causa in bella*. In Book 2, Ch. 22 on unjust causes of war ("De Causis Iniustis"), for example, Grotius translates the Bithynian-Greek philosopher Dion of Prusa (Dio

historical Helen in the *kosmos* of the play, Faustus would have been aware that a true resurrection of Helen would have been impossible. According to Gabriel Harvey Marlowe was “a Lucian,”⁸⁶¹ and the line about a thousand ships is a quotation from Lucian’s *Dialogues of the Dead*, which Marlowe may have read in Erasmus’ and More’s joint translation from Greek into Latin.⁸⁶² It occurs in a scene when Hermes is guiding the Cynic and satirist Menippus of Gadara, whose historical counterpart wrote in Greek Syria in the 3rd Century BCE, through the Underworld. They come across a pile of “bones and bare skulls.” When Hermes points out Helen’s decayed skull, the poet quips darkly, “Was it then for this that the thousand ships were manned from all Greece, for this that so many Greeks and barbarians fell, and so many cities were devastated?”⁸⁶³ Since Faustus is citing the Lucian episode, since no Early Modern theology held that demons could resurrect the dead from their bare bones except as illusions, and since God is unlikely to do Faustus the favor, Faustus would have been aware that this Helen was at best an artificial substitute.

Chrysostomos, 40-115 CE) in his *Orationes*, 38.17-18 (“On Concord with the Nicaeans”): “Nam sine causa in bella ac pugnas ferri, mera est insania malum sibi quarens.” Original phrasing: “τὸ δὲ καὶ χωρὶς ὑποθέσεως πολεμεῖν καὶ μάχεσθαι τί ἄλλο ἢ μανία παντελῆς ἐστὶ καὶ διὰ ταύτην κακῶν ἐπιθυμία.” English: “But the waging of war and fighting even without occasion, what is that but utter madness and a craving for evils which is occasioned by madness?” Transl. Henry Lamar Crosby. *Discourses 37-60*. Loeb Classical Library 376. Cambridge, Mass.: Harvard UP, 1946. It is interesting to note that “occasion” / “causa” here is a translation of *hypothesis*, which seems more apt for the typical situational, strategic, and tactical planning at the beginning of any act of warfare.

⁸⁶¹ Gabriel Harvey, *A New Letter of Notable Contents*. London: John Wolfe, 1593. D1r. “Though Greene were a Iulian, and Marlow a Lucian: yet I would be loth, He should be an Aretin.”

⁸⁶² *Luciani Opuscula ab Erasmo et Thoma Moro Interpretibus*. Paris: Josse Badius, 1506.

⁸⁶³ Lucian, *Dialogues of the Dead* 5 (18): “Εἶτα διὰ τοῦτο αἱ χίλια νῆες ἐπληρώθησαν ἐξ ἀπάσης τῆς Ἑλλάδος καὶ τοσοῦτοι ἔπεσον Ἕλληνές τε καὶ βάρβαροι καὶ τοσαῦται πόλεις ἀνάστατοι γεγόνασιν.” Transl. M.D. MacLeod; Frederick Tupper, “Legacies of Lucian.” *Modern Language Notes* 21.3 (March 1906), 76-77. 76.

Indeed, the nature of Faustus' relationship with the Helen avatar appears to be largely fantastical roleplay at best, and moreover completely derivative. The self-imagined great scholar and magician wishes to spend his time with Helen reenacting the Homeric adventures of Paris, with himself in the role of the princeling, destroying his own domain through by giving in to his basest desires, for transgressive and adulterous sex, for murder-lust, and for fame in war: "I wil be Paris, and for loue of thee, / Insteede of Troy shal Wertenberge be sackt, / And I wil combate with weake Menclaus, / And weare thy colours on my plumed Crest: / Yea I wil wound Achillis in the heele, / And then returne to Helen for a kisse" (5.1.100-105). In this moment, shortly before his eventual demise, Faustus' reach appears to outreach his grasp in every possible way: He wishes to count as an equal to princes like Paris and Menelaus and to heroes like Achilles, but can only achieve this with a mute shade he pretends is Helen. He can only mimic a legend in his imagination without engaging with the realities of his own place and time. By indulging Mephistopheles' distractions and mimicries of Faustus' true desires, Faustus has lost the core tenants of a geometrical *logos* – a sense of proportion, time, distance to his subject, and a commitment to find the true Forms and harmonies that animate the universe, its secret *arcana*.

In his bibliophage pursuit of heaps of demonic *data* containing neither knowledge nor wisdom, in the heaping on of imitations of true experience, Faustus has so far been unable to comprehend that he has never gained any insight into the arcane truths that animate the *kosmos*. He has never learned to read the "Lines, circles, sceanes, letters and characters" of the "necromantic books." There has always been a demon in his *data*, and in the end that demon is not Mephistopheles, but the frailty of

Faustus. Faustus does become able face the truth in the end, however. That truth is that Faustus began his quest in search of a true and heavenly *logos* but ends in hell because the geometrical *logos* is not simultaneously amenable to the fulfillment of vices in the mundane. The *data* of these *arcana* cannot account for “differences that make a difference,” and instead always eludes the adept, retracting into abstract spheres. It cannot describe practical knowledge, only the theoretical. It cannot be lived or mastered or harnessed for power or to assess the probabilistic vagaries of life, it can only be known or not known, for its own sake.

Indeed, in his last moments, Faustus learns that he is, and always has been, reduced to complete powerlessness. As Mephistopheles’ targeting plot directed at Faustus’ soul and the Kingdom of God comes to its close, Faustus attempts to independently harness the geometrical *logos* and interfere with the celestial spheres, in a desperate attempt to stave off his own eternal death: “Now hast thou but one bare hower to liue, / And then thou must be damnd perpetually: / Stand stil you euer moouing spheres of heauen, / That time may cease, and midnight neuer come” (5.2.133-136). Faustus’ pursuant quote from Ovid’s *Amores* 1.13, “O lente lente curite noctis equi” (5.2.141), “Oh run slowly, slowly, horses of the night,” echoes this sudden discovery of having been deceived in more ways than one.

Not only is the realization that time continues to pass as if Faustus had never spoken an expression of the futile attempt to access the power of the *logos*. It is also a sudden and despairing inversion of his climactic delusion that Faustus can become Paris. In Ovid’s original, the phrase is part of the poet’s appeal to Aurora, goddess of the dawn, to delay her chariot ride across the sky so that he can remain longer with his

young, rich, and beautiful lover, Corinna. The poet references two lovers of Aurora, Cephalus of Athens, whom she had herself raped because of his beauty, an inversion of Faustus' abuse of the Helen avatar, and Tithonus, prince of Troy, for whom Aurora had begged eternal life from Jupiter, making him *philos* to the gods much like Faustus had hoped to "Be ... on earth as Ioue is in the skie, Lord and commaunder of these Elements." Faustus may be calling on Aurora because, like Faustus, she had displayed a fatal lack of judgement: She had forgotten to ask Jupiter to also grant Tithonus eternal youth, so that the splendid Prince of Troy eventually wasted away into the shape of a cricket and spent eternity begging for death, rather than immortalized as a lover and hero.⁸⁶⁴

Faustus' allusion is, in other words, an admission that being "Lord and commaunder of these Elements" is a role only divinities can possess, not "divines in show." Even if Faustus had not become distracted by vice and instead insisted on a pursuit of the geometrical *logos*, the knowledge he would have gained would not have made him truly capable of reading the *arcana* of the Kingdom of God. And like a triangular shape within the sensible world reflects the true Form of the triangle in the highest spheres, so, as a strategy for discovering the secrets of the *kosmos* and gaining the power of kings, the geometrical *logos* fails. It fails under any circumstance. Its form of *data* is no basis for an intelligence meant for the fleeting and contingent political secrets of worldly kingdoms, much less celestial ones.

Faustus is therefore quite deliberate when he chooses his final words. Already in his final conversation with his fellow scholars, Faustus had acknowledged the

⁸⁶⁴ *Homeric Hymn to Aphrodite* 218-238; Vergil,

futility of his greed for geometrical *data*, realizing that the boasts of having read heaps of books in his first monologue were the root of his error: “O would I had neuer seene Wertemberge, neuer read booke” (5.2.45-46). In fact, it was not the act of reading, but neglecting to notice the demon in the *data* that led to Faustus’s self-deception: Mephistopheles himself tells Faustus at the end of that conversation, “When thou took’st the book, / to view the Scriptures, then I turned the leaves / and led thine eye” (5.2.94-96), and Faustus followed where his inner demon led. It is no surprise that Faustus’ very last words are a futile promise to destroy that very *data*: “Ile burne my bookes, ah Mephastophilis” (5.3.185).

The horses of day and night now gallop past midnight. In Hesiod’s *Theogeny*, there exists a version of the Cephalus legend in which the prince of Athens is the father of Aurora’s son Phaethon,⁸⁶⁵ and others make his father out to be Tithonus instead.⁸⁶⁶ It is in one of the foundational texts of the Pythagorean-Platonic geometrical *logos*, the *Timaeus*, that Phaethon plays a proto-Faustian role that speaks to Faustus’s final situation also. Plato prefaces the story of Atlantis, sunk into the sea for its desire to become *philos* to the gods, by paralleling it to the story of Phaethon’s

⁸⁶⁵ Hesiod, *Theogeny* 984c-990a: “Τιθωνῶ δ’ Ἡὼς τέκε Μέμνονα χαλκοκορυστήν, Αἰθιοπῶν βασιλῆα, καὶ Ἡμαθίωνα ἄνακτα. αὐτὰρ ὑπαὶ Κεφάλῳ φιλύσατο φαίδιμον υἱόν, ἴφθιμον Φαέθοντα, θεοῖς ἐπιείκελον ἄνδρα. τόν ῥα νέον τέρεν ἄνθος ἔχοντ’ ἐρικυδέος ἡβῆς παῖδ’ ἀταλά φρονέοντα φιλομμειδῆς Ἀφροδίτῃ ὄρτ’ ἀναρυσσάμενη, καὶ μιν ζαθέοις ἐνὶ νηοῖς νηοπόλον νύχιον ποιήσατο, δαίμονα δῖον.” English: “And Eos bore to Tithonus brazen-crested Memnon, king of the Ethiopians, and the Lord Emathion. And to Cephalus she bore a splendid son, strong Phaethon, a man like the gods, whom, when he was a young boy in the tender flower of glorious youth with childish thoughts, laughter-loving Aphrodite seized and caught up and made a keeper of her shrine by night, a divine spirit.” Transl. Hugh G. Evelyn-White.

⁸⁶⁶ Apollodorus, *Bibliotheca*, 3.14.3: “Ἐρσης δὲ καὶ Ἑρμοῦ Κέφαλος, οὗ ἔρασεθεῖσα Ἡὼς ἤρπασε καὶ μυγεῖσα ἐν Συρίᾳ παῖδα ἐγέννησε Τιθωνόν, οὗ παῖς ἐγένετο Φαέθων.” English: “Herse had by Hermes a son Cephalus, whom Dawn loved and carried off, and consorting with him in Syria bore a son Tithonus, who had a son Phaethon.”

death. Phaethon had attempted to steer the chariot of Apollo to prove that the god was his true father, “and because he was unable to drive it along the course taken by [Apollo], burnt up all that was upon the earth and himself perished by a thunderbolt.”⁸⁶⁷ Ovid describes Phaethon’s fall as that of a falling star, “Which though it doe not fall in deede, yet falleth to our sight,”⁸⁶⁸ recalling the Fallen Light-Bringer to whom Faustus cries, “Come not, Lucifer.” In the end, just as Phaethon lies charred in his grave, and the nymphs weeping over him “incessantly did call / The buried Phaeton day and night, who heard them not at all,”⁸⁶⁹ Faustus, whose “waxen wings did mount aboue his reach, / And melting heauens conspirde his ouerthrow / For falling to a diuelish exercise,” (Prologue.21-23) cannot hear the scholars who come looking for him in his chamber. When midnight strikes, the devils have torn Faustus limb from limb, and as the choir finally declares, “burned is Apolloes Laurel bough, / That sometime grew within this learned man: / Faustus is gone” (Epilogue.2-4). In the ancient world of the geometrical *logos* and its *arcana*, the demon in the *data* kills.

⁸⁶⁷ Plato, *Timaeus* 22c-d: “τὸ γὰρ οὖν καὶ παρ’ ὑμῖν λεγόμενον, ὡς ποτε Φαέθων Ἡλίου παῖς τὸ τοῦ πατρὸς ἄρμα ζεύξας διὰ τὸ μὴ δυνατὸς εἶναι κατὰ τὴν τοῦ πατρὸς ὁδὸν ἐλαύνειν τὰ τ’ ἐπὶ γῆς συνέκαυσεν καὶ αὐτὸς κεραυνωθεὶς διεφθάρη, τοῦτο μύθου μὲν σχῆμα ἔχον λέγεται, τὸ δὲ ἀληθές ἐστι τῶν περὶ γῆν κατ’ οὐρανὸν ἰόντων παράλλαξις καὶ διὰ μακρῶν χρόνων γιγνομένη τῶν ἐπὶ γῆς πυρὶ πολλῷ φθορά.” English: “For in truth the story that is told in your country as well as ours, how once upon a time Phaethon, son of Helios, yoked his father's chariot, and, because he was unable to drive it along the course taken by his father, burnt up all that was upon the earth and himself perished by a thunderbolt,—that story, as it is told, has the fashion of a legend, but the truth of it lies in the occurrence of a shifting of the bodies in the heavens which move round the earth, and a destruction of the things on the earth by fierce fire, which recurs at long intervals.” Transl. W.R.M. Lamb.

⁸⁶⁸ Transl. Arthur Golding.

⁸⁶⁹ Transl. Arthur Golding.

CHAPTER 4: INTELLIGENCE AS SECRETUM

From Arcana Imperii to Intelligence in Hamlet

Having covered the contributions of the *mysterium* and the *arcana imperii* to an Early Modern concept of political secrecy, Chapter 3 of this dissertation engaged one of two competing *data* concepts in that era, the geometrical *logos*. The chapter demonstrates through Marlowe's *Doctor Faustus* how the "demons in the *data*" ultimately lead to the failure of that geometrical type of *data* as a useful tool for describing the arcane, Faustus' particular version of secrecy of the *arcana imperii* type. In Chapter 4, the discussion will now turn to the development of a competing *data* concept, one which makes possible the diaphoric type of *data* necessary for modern intelligence – one that probabilistically evaluates "lacks of uniformity," and which can sufficiently accommodate a re-fusion of language with empirical observation to allow intelligence to approximate a strategic and tactical representation of reality. As this probabilistic type of *data* relies on the structure of binary mathematics (and increasingly algorithmic computing), it will be necessary to discuss the mathematical innovations that made the transition from a geometrical to an arithmetical *data* concept possible. This chapter will employ this moment in the history of *data* to read Shakespeare's *Hamlet* as an example of this transition in forms of political secrecy tied to sovereignty. In this constellation, the Ghost of Old Hamlet operates in the context of *mysterium* and *arcana imperii*. Old Hamlet stages a targeting plot of the *arcana imperii* type against Claudius, attempting to employ Prince Hamlet as both counsellor and executive function. Prince Hamlet, on the other

hand, appears committed to acting a different version of political secrecy, which uses a framework that is recognizable as modern *secret intelligence* based on the “liquid” realities of constantly changing, diaphoric *data*.⁸⁷⁰

The chapter will conclude that in contrast to Old Hamlet, Prince Hamlet exemplifies a rightful sovereign attempting to act on the modern intelligence concept. As his *data*, Prince Hamlet requires factual evidence, which he can account for and leverage effectively at the tactically most opportune moment. Prince Hamlet’s famed doubting and delay are not evidence of a lack of will or *vim*, but rather inherent in an epistemological method built on contingent, ever-evolving tactical knowledge. Notably, Prince Hamlet decides that the only means by which he can establish sound intelligence is through the theatrical staging, in the play within the play, of the *arcana imperii* Old Hamlet has disclosed to him. If the data Prince Hamlet gathers about Claudius’ reaction matches his strategic hypothesis, he is (even formally by law, as per Grotius⁸⁷¹) justified in eliminating Claudius. Prince Hamlet succeeds in finding the opportune moment and strikes, strategically taking advantage of an earlier tactical miscalculation, namely his underestimating the depth of Laertes’ vengefulness over the deaths of Polonius and Ophelia. In the moment Claudius dies, both the Ghost of Old Hamlet and Prince Hamlet achieve their goals, revealing the newer concept of

⁸⁷⁰ I borrow the metaphor (though not necessarily the entire concept) from Zygmunt Bauman, *Liquid Modernity*. Cambridge, UK: Polity Press, 2000: “We are presently moving from the era of pre-allocated ‘reference groups’ into the epoch of ‘universal comparison,’ in which the destination of individual self-constructing labours is endemically and incurably underdetermined, is not given in advance, and tends to undergo numerous and profound changes before such labours reach their only genuine end: that is, the end of the individual’s life ... Ours is, as a result, an individualized, privatized version of modernity, with the burden of pattern-weaving and the responsibility for failure falling primarily on the individual’s shoulders.” (7-8).

⁸⁷¹ See Ch. 3 n349.

intelligence as one that dovetails and interacts with, rather than erases, the ghosts of its past: the logics of the *mysterium* and *arcana imperii*. Accordingly, modern intelligence and the arithmetic *data* concept represent an adaptation of the various ancestor concepts to the emerging modern realities of the Britain of the 17th Century and beyond, including those of Empire and the New Science.

V. Early Modern Departures from the Geometrical *Logos*

As with the geometrical *logos*, establishing the emergence of the arithmetical, computational *logos* underlying the modern *data* concept – and therefore, that of modern intelligence as based on *data* – will require a stint into the Early Modern history of mathematical thought. In the later Early Modern period, the quest to mathematize knowledge pervades the thought of natural philosophers like René Descartes (1596-1650), Isaac Newton (1642-1726), and Leibniz. Each sought to establish a mathematically-based *mathesis universalis*, or “universal science” and an attendant mathematically-based *characteristica universalis*, or “universal language,” which can accurately describe that knowledge: these are the prerequisites for the modern concept of diaphoric *data*, information built on that *data*, and therefore *intelligence*. In his 1628 *Rules for the Direction of the Mind*, for example, Descartes asserts that human perception and experience are prone to error, and therefore deductions made from observations relying on the senses or from accepted scientific authorities are at best approximate, and always uncertain. Moreover, so Descartes, whether motivated by laziness or a false grandiosity, scholars are often tempted by the expediency of sacrificing strict and demonstrable accuracy for pareidolic claims to

have discovered much more wide-reaching, philosophically rooted patterns underlying reality than are actually there. In summary,

[Arithmetic and geometry] are most open and transparent, and have the exposable nature we require, since with these types of knowledge it is scarcely humanly possible to err, other than inadvertently.

Nevertheless, it should be unsurprising if many would rather be drawn to apply their minds to other arts, or to philosophy: This happens because one has more license to divine confidently about obscure things than about evident things, and because it is far easier to conjecture about speculative questions than to arrive at an exact truth about a specific question, no matter how straightforward.⁸⁷²

The results of such non-mathematical speculations are not knowledge, Descartes argues, but at best outcome-interested guesswork that revels in obscurity, and rhetorically passes off that obscurity as depth, complexity, and sophistication.

However, to Descartes, true scientific knowledge must adhere to a higher standard of verifiability:

We must think about only those objects regarding which our minds are capable of having certain and indubitable cognition. ... we reject all merely probable cognition and make it a rule to trust only what is

⁸⁷² “[Arithmetica et Geometria] sunt igitur omnium maxime faciles et perspicuae, habentque obiectum quale requirimus, cum in illis citra inadvertentiam falli vix humanum videatur. Neque tamen ideo mirum esse debet, si multorum ingenia se sponte potius ad alias artes vel Philosophiam applicent: hoc enim accidit, quia confidentius sibi quisque dat divinandi licentiam in re obscura, quam in evidenti, et longe facilius est de qualibet quaestione aliquid suspicari, quam in una quantumvis facili ad ipsammet veritatem pervenire.” René Descartes, *Regulae ad directionem ingenii*. Amsterdam: Janssonius-Waesbergios, Boom & Goethals, 1701. 4-5.

perfectly known and about which there can be no doubt ... in our search for the direct road towards truth we should tackle no object of which it is not possible to have certitude that equals that of arithmetic or geometric demonstrations.⁸⁷³

Consequently, Descartes, echoing Faustus' "lines, circles, sceans, letters and characters," finds that in order to count as knowledge, all observations should be understood in light of a *mathesis universalis*, "whether numbers, shapes, stars, sounds, or any other object of knowledge."⁸⁷⁴

What initially might present itself, as it did to Pascal, as a professional preference for the elegant, strict, and inevitably demonstrable deductions of mathematics over the less tightly arguable inferences of other sciences eventually evolves into a much more expansive claim. In his discussion of physics in the *Principles of Philosophy* of 1644, Descartes declares that mathematical knowledge – and *only* mathematical knowledge – not only can apply to *all* other fields of non-metaphysical philosophy, but also can serve to accurately describe *all* their

⁸⁷³ "Circa illa tantum obiecta oportet versari, ad quorum certam et indubitam cognitionem nostra ingenia videntur sufficere. ... rejicimus illas omnes probabiles tantum cognitiones, nec nisi perfecte cognitae, et de quibus dubitari non potest, statuimus esse credendum ... tantummodo rectum Veritatis iter quarentes circa nullum obiectum deber occupari, de quo non possint habere certitudinem Arithmeticis et Geometricis demonstrationibus aequalem." Descartes, *Regulae ad directionem ingenii*, 2-5.

⁸⁷⁴ "Quod attentius consideranti tandem innotuit, illa omnium tantum, in quibus ordo vel mensura examinatur, ad Mathesim referri, nec interesse utrum in numeris, vel figuris, vel astris, vel sonis, aliove quovis obiecto talis mensura quaeranda sit; ac proinde generalem quamdam esse debere scientiam quae id omne explicet, quod circa ordinem et mensuram nulli speciali materiae addicta quaeri potest, eandemque, non ascitio vocabulo, sed iam inveterato atque usu recepto, Mathesim universalim nominari, quoniam in hac continetur illud omne, propter quod aliae scientiae et Mathematicae partes appellantur. Quantum vero haec aliis sibi subditis et utilitate et facilitate antecellat, patet ex eo, quod ad eadem omnia, ad quae illa, et insuper ad alia multa extendatur, difficultatesque, si quas contineat, eaedem etiam in illis existant, quibus insuper et aliae insunt ex particularibus obiectis, quas haec non habet." Descartes, *Regulae ad directionem ingenii*, 11-12.

phenomena: “I do not admit, nor wish for, any other principles in physics than those of geometry, or of abstract mathematics, since all the phenomena of nature can be thus explained, and definitive demonstrations can be given from them.”⁸⁷⁵ To Descartes, accurate knowledge is mathematical knowledge.

The brightest luminaries of the subsequent generation of Early Modern natural philosophers, Newton and Leibniz, followed where Descartes had led. Newton agreed with Descartes’ assessment that mathematics constitutes the most accurate type of knowledge, which undergirds all others. In his treatise “Researches into the Greeks’ ‘Solid Locus’” from the late 1670s, Newton claims that this is evident when one considers the inability of regular language to intelligibly capture mathematical truths and criticizes the habit of attempting to do so prevalent among his ancient and medieval predecessors and many of his Early Modern contemporaries, including Descartes himself: “For he completed the algebraic calculus resolved into words (as was the habit of the Ancients), which is so tedious and perplexing that it creates nausea, nor is it possible to understand.”⁸⁷⁶ Even within types of mathematical knowledge, Newton argues, there are hierarchies among the various types of mathematical languages that can best match mathematics’ elegance and precision. As he puts it in his 1680 treatise, “The ‘Geometry of Curved Lines,’” “For these computations, progressing by means of arithmetical operations alone, often express in

⁸⁷⁵ “LXIV. Non alia principia in Physica, quàm in Geometriâ, vel in Mathesi abstractâ à me admitti, nec optari. Quia sic omnia naturæ phænomena explicantur, & certa de iis demonstrations dari possunt.” René Descartes, *Principia philosophiae*. Amsterdam: Ludovico Elzevirius, 1644. 69.

⁸⁷⁶ “Ille rem peregit per calculum Algebraicum qui in verba (pro more Veterum scriptorum) resolutus adeo prolixus et perplexus evaderet ut nauseam crearet nec possit intelligi” (2, 2, §1). Isaac Newton, “Researches into the Greeks’ ‘Solid Locus.’” D.T. Whiteside, ed. *The Mathematical Papers of Isaac Newton*, Vol. 4. Cambridge: Cambridge UP, 1971. 274-321. 274-276.

an intolerably roundabout way quantities which in geometry are designated by the drawing of a single line.”⁸⁷⁷ In summary, as per Newton, scientific knowledge should be expressed in mathematical language, and ideally specifically in the language of geometry. It should come as no surprise (Chapter 3), then, that Newton’s preference for the geometrical *logos* leads the great physicist to become a latter-day occultist, collecting and writing texts aimed at discovering the arcane Philosopher’s Stone.⁸⁷⁸ That Faustian quest predictably failed.

Newton’s more polymathic rival Leibniz, in turn, recognized the potential for mathematics to provide not just a scientifically accurate language, but, as such, a universally intelligible one. In the margins of his 1677 essay *Dialogus*, Leibniz had noted, “When God calculates and exerts thought, the world is made.”⁸⁷⁹ Leibniz eventually arrived at his own particular intervention in the mathematization of

⁸⁷⁷ “Nam hæc computa per operationes Arithmeticas solummodo progressa, sæpissime per ambagas haud ferendas exprimunt quantitates quæ in Geometriâ ductu unius lineæ designantur” (3, 1, §1). Isaac Newton, “The ‘Geometry of Curved Lines.’” D.T. Whiteside, ed. *The Mathematical Papers of Isaac Newton*, Vol. 4. Cambridge: Cambridge UP, 1971. 420-505. 420-422.

⁸⁷⁸ This aspect of Newton’s work was not widely known until Gerard Wallop, then-Viscount Lymington and later the 9th Earl of Portsmouth (1898-1984), put a large collection of Newton’s papers up for sale at Sotheby’s in 1936, cf. *Catalogue of the Newton Papers Sold by the Order of The Viscount Lymington*. London: H. Davy, 1936. That catalogue included such alchemical texts as *The Hunting of ye Green Lyon & putrefaction of the body according to the number of the eagles*, MS 38195(b), St Andrews University Library, St Andrews, Fife, UK; *Artephius his secret Book* and *The Epistle of Iohn Pontanus, wherein he beareth witness of ye book of Artephius*, Keynes MS 14, King’s College, Cambridge, UK; and collections of extracts from various alchemical writers (Keynes MS 25, King’s College, Cambridge, UK. It also included, among many other texts by Newton and various alchemists, Newton’s personal translation of the *Tabula Smaragdina* [Emerald Tables], Keynes MS 28, King’s College, Cambridge, UK; and treatises by Newton with titles like *Four alchemical verse allegories, in English*, Keynes MS 15, King’s College, Cambridge, UK; *Clavis* [Key], Keynes MS 18, King’s College, Cambridge, UK; *Pearce the black Monck upon ye Elixir*, Keynes Ms. 42, King’s College, Cambridge, UK; and *Several Questions concerning the Philosopher’s Stone*, Keynes MS 43, King’s College, Cambridge, UK.

⁸⁷⁹ “Cum Deus calculat et cogitationem exercet, fit mundus.” Handwritten marginal note in Leibniz’ personal manuscript of his essay “Dialogus” of 1677. Carl Immanuel Gerhardt, ed. *Die philosophischen Schriften von Gottfried Wilhelm Leibniz*, Vol. 7. Berlin: Weidmannsche Buchhandlung, 1890. 191 n1.

knowledge along a more worldly route than Newton, one directly tied to colonial ambition, diplomacy, and the gathering of *intelligence*. Leibniz was an enthusiastic participant in the Republic of Letters; between 1663 and 1716, he received more than 20 000 letters and wrote about as many, to around 1 100 correspondents from across Europe.⁸⁸⁰ One of these correspondents was Ernst von Cochenheim (d. 1719), privy counsellor to Friedrich Christian von Plettenberg (1644-1706), the Catholic Prince-Bishop of the ancient Westphalian cathedral city of Münster.

On Cochenheim's suggestion, in March 1697 a local Jesuit priest, Johannes Clerff, sent Leibniz letters and other materials pertaining to China, which had recently been sent to him from Rome after a visit at the Papal Court by a representative of the Jesuit mission in Beijing, Miguel de Amaral (1657-1730).⁸⁸¹ Apart from copies of several letters, Clerff's parcel also included a manuscript by the Jesuit José Soares (1656-1736), which outlined an edict the Chinese emperor Kangxi (1654-1722) had issued in 1692, formally tolerating Christianity in his realm.⁸⁸² This edict *de jure* reversed the ban on Christianity in China enacted in 1369, when the nativist, Buddhist, and Han Ming dynasty had replaced the religiously tolerant Mongol Yuan dynasty and

⁸⁸⁰ The letters are transcribed and collected in the ongoing *Leibniz Edition* in the Akademie-Verlag, which aims to publish all known writings by Leibniz under the auspices of the Berlin-Brandenburg Academy of Science and Humanities. The *Leibniz Edition* consists of eight topic areas (*Reihe*), of which the letters appear in areas 1-3 (1. General, political, and historical letters; 2. Philosophical letters; 3. Mathematical, scientific, and technological letters). In early 2019, Area 1 comprised 27 volumes covering years 1668-1707, Area 2 comprised 4 volumes covering years 1663-1707, and Area 3 comprised 9 volumes covering years 1672-1705. For an assessment of Leibniz' network of letters in regards to Jesuit and other contacts in the East, cf. Michael C. Carhart, *Leibniz Discovers Asia: Social Networking in the Republic of Letters*. Baltimore, Md.: John Hopkins UP, 2019.

⁸⁸¹ Johannes Clerff to Leibniz, Letter of 27 March 1697. *Sämtliche Schriften und Briefe* 1.13.2.404 & 404n.

⁸⁸² José Soares. *Libertas Evangelium Christi annunciandi & propagandi in Imperio Sinarum*. 1697.

had ended the 700-year history of indigenous Chinese Christianity in the once-extensive Nestorian Church of the East, alongside that of other “foreign” faiths in China like Manicheanism and Islam.⁸⁸³ *De facto* Jesuit missionaries had re-entered China in 1540 as part of the Portuguese trade presence in Guangzhou, had founded missions and built churches in China’s coastal cities, had gained implicit toleration, and had long served as advisors at the court of the current Qing dynasty.⁸⁸⁴ Their letters and reports had sparked a renewed interest in China across Europe, where the recent edict was read as interest by the Chinese to re-engage as equals with Christendom – that is, specifically, with Catholic and Protestants in Europe (omitting the Orthodox, Coptic, Ethiopian, and Syriac churches, which were geographically closer to China along the Silk Road).

Clerff’s materials evidently made a deep impact on Leibniz’ mind, rekindling an interest in China that had been long in the making. On his trip to Rome in 1689, Leibniz had conducted intensive conversations with the Jesuit Claudio Filippo Grimaldi (1639-1712), who had been part of the China missions since 1671 and was the president of the Jesuit Tribunale Mathematicum in Beijing.⁸⁸⁵ Leibniz’

⁸⁸³ See Arthur Christopher Moule, *Christians in China Before the Year 1550*. London: Society for Promoting Christian Knowledge, 1930. 216-240; Roman Malek & Peter Hofrichter, eds. *Jingjiao: The Church of the East in China and Central Asia*. Sankt Augustin, Germany: Monumenta Serica Institute. 2006; Rabban Sauma, *The Monks of Kublai Khan*. Wallis Budge, transl. London: Religious Tract Society, 1928; and Wilhelm Baum & Dietmar W. Winkler, *The Church of the East: A Concise History*. London: RoutledgeCurzon, 2003. 84-111.

⁸⁸⁴ Cf. George Harold Dunne, *Generation of Giants: the Story of the Jesuits in China in the Last Decades of the Ming Dynasty*. Notre Dame, Ind.: U of Notre Dame P, 1962; David E. Mungello, *Curious Land: Jesuit Accommodation and the Origins of Sinology*. Honolulu: U of Hawaii P, 1989; Liam Matthew Brockey, *Journey to the East: The Jesuit Mission to China, 1579-1724*. Cambridge, Mass.: Harvard UP, 2008.

⁸⁸⁵ Leibniz, *Sämtliche Schriften und Briefe*, 3.4.211 & 212.

conversations with Grimaldi in Rome and their subsequent letter exchanges covered a wide range of topics, including the Chinese language, which Leibniz evidently considered the linchpin for synthesizing European and Chinese cultures of knowledge. They also spoke about mathematics.⁸⁸⁶ The connection between language, mathematics, and China appears to have particularly lodged in Leibniz' brain, as he returned repeatedly to that specific combination of subject matter.

Leibniz' initial publication on China was based on Clerff's dossier and reflected the popular digest mode of his time. Leibniz had previously read, and evidently enjoyed, two previous major works on China. The first had been the 1667 *China Illustrata* by the polymath Jesuit Athanasius Kircher (1602-1680), who had been Johannes Kepler's successor as astronomer to the Imperial Court in Vienna and later taught at the Collegio Romano on behalf of the Vatican.⁸⁸⁷ In *China Illustrata*, Kircher compiled a treasure trove of Jesuit reports sent back to Rome over the previous century, including maps, ethnographies, bestiaries, botanies, geographies, architectural descriptions, dictionaries, and grammars, and which had reached bestseller status in Europe.⁸⁸⁸ The second was the third volume of a collection of travel narratives by Leibniz' long-time friend and correspondent in Paris, Melchisédech Thévenot, titled *Relations de Divers Voyages Curieux*, published 1672.⁸⁸⁹ In it,

⁸⁸⁶ See n16. See also their letters in Leibniz, *Sämtliche Schriften und Briefe*, 1.6.302, 1.7.348, 1.9.421, & 1.13.321.

⁸⁸⁷ "Kircher, Athanasius." *Allgemeine Deutsche Biographie* 16 (1882), 1-4; Fritz Krafft, "Kircher, Athanasius." *Neue Deutsche Biographie* 11 (1977), 641-645.

⁸⁸⁸ Athanasius Kircher, *China Monumentis ... Illustrata*. Amsterdam: Meurs, 1667. Leibniz mentions Kircher's work frequently, directly or indirectly, e.g. *Sämtliche Schriften und Briefe*, 1.5.454; 1.7.613 & 662; 1.8.180 & 203; 1.9.574; 1.22.362, 365 & 367; 1.23.72; 3.4.411; 4.6.385 & 407; 6.1.278. He exchanged letters with Kircher himself in 1670 (2.1.20a & 23).

⁸⁸⁹ Melchisédech Thévenot, *Relations de Divers Voyages Curieux*, Vol. 3. Paris: André Cramoisy, 1672.

Thévenot reprints, among other materials, a report by the ambassadors of the Dutch East India Company on their 1656 visit to Beijing, an essay on the Chinese language, and a summary of Confucian teachings with a short biography of Kong Fuzi [Confucius], as well as a lengthy interview with the Jesuit missionary and explorer Johann Grueber (1623-1680), who had been to Tibet and China.⁸⁹⁰ Both had paid particular attention to the Chinese language, although Leibniz doubted Kircher's assertion that the Chinese alphabet was related to Egyptian hieroglyphs, and thought there was room for improvements in method. In a 1689 letter to Grimaldi, Leibniz includes a linguistic questionnaire that he suggests the Jesuits should use during their travel, in order to collect samples of Chinese dialects more systematically.⁸⁹¹

Leibniz compiled the materials included in Clerff's 1697 missive into a booklet for immediate publication within a month of receiving them, which he titled

Johannes Heinrich Horb, in a letter from 1 July 1670, is the first to mention Thévenot's *Relations* to Leibniz: "Orientalium Relationum autor est Thevenotus, Ferrando in his studiis multo doctior, quemque ob insignem humanitatem magni facio" (*Gottfried Wilhelm Leibniz: Sämtliche Schriften und Briefe* 1.1.2.49, 95-96). Louis Ferrand mentions the work twice in subsequent letters to Leibniz, on 13 Feb 1671 (1.1.2.69, 117-121) and on 3. Juni 1671 (*ibid.* II.89, 152-153). Impressed, Leibniz mentions Thévenot to Johannes Georg Graevius in a letter from 7. June 1671 (*ibid.* II.90, 153-157). A reference in a letter by Friedrich Adolf Hansen from 12 March 1677 suggests that Hansen is sending Leibniz two volumes of the *Relations* (*Gottfried Wilhelm Leibniz: Sämtliche Schriften und Briefe*, 1.2.228, 258-259). In a letter to Paul Pellisson-Fontanier, historian of the Académie Française and of Louis XIV, written in March 1692, Leibniz refers to Thévenot as "un des plus universels que je connoisse" as "rien n'a échappé sa curiosité," and on whose behalf he expresses outrage for being dismissed from the Royal Library in Paris ("je suis bien fâché d'apprendre, qu'il quitte la Bibliothèque du Roy") *Gottfried Wilhelm Leibniz: Sämtliche Schriften und Briefe*, 2.2.A.136, 512. Leibniz and Thévenot themselves exchanged sixteen letters between 1672 and 1692, when Thévenot died.

⁸⁹⁰ Grueber had been sent on a mission to China from 1656 to 1664 with another Jesuit, Albert d'Orville (1621-1662). The two had been the first Europeans to travel to Lhasa and Kathmandu and had gone on to Peking before making their way back to India, where d'Orville died. Grueber, however, returned to Europe as a celebrated explorer, and Thévenot appears to have interviewed him. In a letter written to Thévenot in summer 1680, Leibniz discusses this section, cf. *Gottfried Wilhelm Leibniz: Sämtliche Schriften und Briefe* 1.3.346, 425-426.

⁸⁹¹ See the letter by Leibniz to Grimaldi dated 19 July 1689 and its appendix, Leibniz, *Sämtliche Schriften und Briefe*, 3.4.211 & 212.

Novissima Sinica, “Chinese News.”⁸⁹² The publication established him as an expert on China and was a commercial success: the Latin text of the *Novissima* sold out quickly, requiring a second, extended edition by December, and was translated into German and French the same year. However, Leibniz was evidently motivated by more than an appetite for novelty. In his introduction to *Novissima Sinica*, Leibniz formulates a civilizational-epistemological imperative for the cultural exchange between China and Europe, which had been largely dormant:

Through a singular decision of fortune, I believe, it has come to pass that today the highest culture and the highest technical civilization of humanity are gathered at the far ends of our continent, namely in Europe and in *Tchina* (as it is properly pronounced), which, like a Europe of the East, ornaments the opposite margin of the Earth. Perhaps, while the most civilized and simultaneously most distant peoples extend their arms towards one another, Highest Providence aims to lead all that exists between them towards a better and more rational life.⁸⁹³

In this relationship, Leibniz goes on to identify strengths and weaknesses on both sides, with China and Europe on equal footing in technical ability, Europe slightly ahead in the theoretical sciences, and China ahead in “practical philosophy,” by which

⁸⁹² Gottfried Wilhelm Leibniz, *Novissima Sinica*. Hannover: Förster, 1697. Also in *Gottfried Wilhelm Leibniz: Sämtliche Schriften und Briefe*, 4.6.61, 385-480.

⁸⁹³ “Singulari quodam fatorum consilio factum arbitror, ut maximus generis humani cultus ornatusque hodie velut collectus sit in duobus extremis nostri continentis, Europa et Tschina (sic enim efferunt), quae velut orientalis quaedam Europa oppositum terrae marginem ornat. Forte id agitat Suprema Providentia, ut, dum politissimae gentes eademque remotissimae sibi brachia porigunt, paulatim quicquid intermedium est, ad meliorem vitae rationem traducatur” (1).

he means in ethics and politics “aimed at the life and the daily habits of the humans *as they are* [*ad ipsam*].”⁸⁹⁴

Such lived wisdom results in an ongoing process of civilizing all Chinese social classes that Europe might do well to emulate, Leibniz observes. He illustrates his point with an allusion to a French 1684 *commedia dell’arte* by Anne Mauduit de Fatouville (d. 1715) that is also the source of one of the most successful plays by British playwright Aphra Behn (1640-1689). The Chinese may not have succeeded in taming every vice at every turn; “in this they resemble the People of the Moon in the play *Harlequin, Emperor of the Moon* that has been much repeated in the theater, ‘everything there is as it is here’ (*c’est tout comme icy*).” However, the Chinese have been largely successfully in tempering the “bitter fruit of human error.”⁸⁹⁵ Indeed, Leibniz thinks that while Europe sends missionaries to China in order to communicate “revealed knowledge,” Christianity, the Chinese should be sending missionaries to Europe in order to “teach us application and practice of their natural theology.”⁸⁹⁶

⁸⁹⁴ “Itaque si artibus operatricibus pares sumus, si scientiis contemplativis vicimus, certe practica philosophia (quod propemodum fateri pudet) victi sumus, id est Ethicae et Politicae praeceptis ad ipsam vitam usumque mortalium acomodatis” (3).

⁸⁹⁵ “Et licet nec avaritia nec libidine nec ambitione vacent; ut hactenus de illis verum sit, quod de Lunaribus populis apud Harlequinum Lunae Imperatorem in theatro saepe repetebatur, perinde ibi omnia ut hic agi (*c’est tout comme icy*); veramque adeo virtutem satis assecuti non sint Sinesis, quam nisi a coelesti gratia et Christiana disciplina non expectes, vitiorum tamen acerbos fructus temperavere, et cum radices peccatorum de humana natura extirpare non possent, propullantes tamen frutices malorum pro bona parte succidi ostenderunt” (5). Fatouville’s play, *Arlequin, L’Empereur dans la lune*, was first performed in 1684 and excerpts collected in the bestselling compendium by Évariste Gherardi, *Le théâtre italien*, Vol. 1. Paris: Guillaume de Luyne, 1694, 1-26. 23. Leibniz wrote to his eventual successor as librarian at the Bibliotheca Augusta in Wolfenbüttel, Lorenz Hertel (1659-1737), in 1695 that he had bought Gherardi’s book for the library collection (1.11, p. 48). The line does not appear in Behn’s 1696 rewritten version of the play, but the moral of the final scene is the same. Aphra Behn, *The Emperor of the Moon, A Farce*. London: Holt, 1687.

⁸⁹⁶ “Quod si ita pergatur, vereor ne mox omni laude Sinensibus inferiores simus; quae non ideo dico, quod illis lucem novam invidiam, cum gratuler potius, sed quod optandum sit vicissim nos discere, quae magis adhuc in rem nostrum essent, usum maxime Philosophiae practicae et emendatiorem vivendi rationem, ut de aliis eorum artibus nunc nil dicam. Certe talis nostrarum rerum mihi videntur

Initially, Leibniz extends his hierarchy of comparative knowledge to the field of mathematics. The Chinese, Leibniz observes, had independently developed a practical mathematics aimed at pragmatic tasks, but this is insufficient: “One must practice geometry not with the habits of an artisan, but with those of a philosopher; for virtue flows from wisdom, and those who have studied the proofs of geometry have grasped the nature of eternal truths and can discern the certain from the uncertain, while the rest of the mortals vacillate between conjectures, and like Pilate ask, ‘What is truth?’”⁸⁹⁷ But there was light at the end of that Chinese tunnel, so Leibniz – in the person of China’s current emperor, Kangxi. This highly educated man, whose “superior wisdom” lay in his ability to “conjoin the Chinese and European forms of knowledge,”⁸⁹⁸ and whom Grimaldi had described as a most voracious learner,⁸⁹⁹ had evidently realized that, “as Plato emphasized in our part of the world, the mysteries of science can only be grasped through geometry,” and that the Chinese were blind on the “mathematical eye.”⁹⁰⁰ Consequently, the emperor had taken it upon himself to

esse conditio gliscentibus in immensum corruptelis, ut propemodum necessarium videatur missionarios Sinensium ad nos mitti, qui Theologiae naturalis usum prinxime nos doceant, quemadmodum nos illis mittimus, qui Theologiam eos doceant revelatam” (10).

⁸⁹⁷ “Geometriam autem non operarii sed Philosophi ritu intueri oportet; et cum virtus fluat ex sapientia, sapientiae autem anima sit veritas, ii autem demum, quibus exploratae sunt Geometrarum demonstrationes, aeternarum veritatum indolem perspectam habeant et certum incerto discernere possint; caeteris mortalibus inter coniecturas vacillantibus et propemodum quod Pilatus quaerebat, quid sit veritas, nascentibus” (9).

⁸⁹⁸ “Qua ille in re mihi longius unus quam omnia tribunalia sua prospexisse videtur; tantaeque prudentiae causam hanc esse existimo, quod Sinensibus Europaea coniunxit” (7).

⁸⁹⁹ “Memini R. Patrem Claudium Philippum Grimaldum ex eadem Societate insignem virum Romae mihi non sine admiratione huius Principis virtutem et sapientiam praedicasse; nam ut de amore iustitiae, de caritate erga populum, de moderata vivendi ratione caeterisque laudibus nil dicam; mirificam sciendi cupiditatem pene fidem superare aiebat” (8).

⁹⁰⁰ “Ideo non dubium est Sinensium Monarcham praeclare vidisse, quod in nostra orbis parte Plato olim inculcabat, neminem imbui posse scientiarum mysteriis nisi per Geometriam. Nec alia re factum puto, quod Sinesis etsi ab aliquot annorum millibus miro studio doctrinam colentes et maxima doctis praemia

remove himself from the carefully choreographed court for a few hours each evening and instead staging a play of “student and magister” in his “interior chamber” [*in conclavi*]. That play consisted of mathematics lessons with a Jesuit from Bruges, Ferdinand Verbiest (1623-1688), who taught the emperor both from books and by using mathematical instruments to guide his pupil through deductions, so that Kangxi mastered Euclidean proofs and trigonometrical calculations.⁹⁰¹

The French Jesuit Louis Le Comte (1655-1728) had in fact recently reported to Europe that Kangxi had subsequently published a book on geometry in order to bestow “these important truths” and “the wisdom he had mastered for his empire” to his people, in order to “care for the happiness of his people beyond his own lifespan.”⁹⁰² It is clear from Leibniz’s overall argument and from the attention to the detail that mathematics was acquired in an *interior*, private, intimate setting evoking a religious retreat (*conclave*) and a type of literal closet drama that Leibniz intends not just to identify the general availability of geometry in China as a good thing, but to indicate that Kangxi’s greatness as a regent lies in accepting mathematics as the method of acquiring true, self-reflective, and certain knowledge itself, both as an individual and as part of the *mysterium* of his office. For Leibniz, the hallmark of

proponentes tamen ad exquisitam scientiam non parvenere, quam quod uno illo Europaeorum oculo, Geometria scilicet, caruere” (9).

⁹⁰¹ “Nam is, quem cognati Principes et maximi viri totius Imperii eminus venerantur et prope adorant, cum Verbiestio in interiore conclavi per tres quatuorve horas quotidie Mathematicis instrumentis librisque operam dabat ut discipulus cum Magistro; tantumque profecit, ut demonstrationes Euclideas perceperit et trigonometricis calculis intellectis Astrorum phaenomena numeris vincire possit” (8).

⁹⁰² “Quin et quod R.P. Ludovicus de Comitibus nuper inde redux relatione de Sinis edita nos docuit, librum ipse de Geometria confecit, ut tantae scientiae elementis et magnarum veritatum notitia liberos ipse suos imbuat Sapientiamque, quam suo Imperio intulit, in sua domo haereditariam reddat felicitate populorum etiam ultra vitam suam prospiciens; quibus consiliis quae agitari in humanis praeclariora possint, non video” (8).

advanced civilization, then, is the ability to participate in some mathematization of knowledge, particularly in regard to the knowledge of the sovereign.

In *Novissima Sinica*, Leibniz already alludes to his subsequent project, which is to inquire into the possibility that the Chinese language, and specifically, its logographic writing system, corresponds to a mathematical system. Leibniz hoped such a discovery could lead to a universal mathematical means of expressing shared insights more precisely – and, being mathematical, more accurately, truthfully, and universally – than the European languages could, thus circumventing traditional language barriers within his newly expanded bipolar sphere of civilization. In his introduction to *Novissima Sinica*, Leibniz mentions his urgent anticipation of the (in fact, never published) *Clavis Sinica* [*Key to Chinese*] by an acquaintance at the Hohenzollern court in Berlin, the Pomeranian librarian and Lutheran divine, Andreas Müller (1630-1694), who specialized in oriental languages.⁹⁰³ Müller owned the largest European collection of Chinese typographica, comprising 3287 samples,⁹⁰⁴ and Leibniz had hoped to benefit from access to them.⁹⁰⁵ In addition, Leibniz included excerpts from the mathematical work the emperor Kangxi had published with the assistance of Verbiest in his *Novissima Sinica*.

⁹⁰³ “A me Grimaldus Andreae Mulleri Pomerani orientalium rerum doctissimi promissa Clavis Sinicae acceperat” (18).

⁹⁰⁴ Lothar Noack, “Der Berliner Propst, Orientalist und Sinologe Andreas Müller (1630-1694): Ein bibliographischer Versuch.” *Nachrichten der Gesellschaft für Natur- und Völkerkunde Ostasiens* 157.1 (1995), 1-39. 10.

⁹⁰⁵ Leibniz asked the Berlin physician, botanist, and court alchemist Johann Elsholz (1623-1688) to convey a catalog of questions about the *Clavis Sinica* in 1679, a request Müller declined, cf. letter from Leibniz to Elsholz of 24 June 1679, *Sämtliche Schriften und Briefe*, 2.1.207a, 728-730, as well as 210a, 740-743.

In the end, Leibniz resolved the problem of needing to learn more about the Chinese language, without resorting to Müller's typographica. He did so by creatively combining his attempts to read Chinese writing with one of his novel theories on *arithmetical* mathematics: binary mathematics, which he referred to as *dyadica*. Such calculations use a base-2 number system rather than the common decimal (base-10) system. This system allowed Leibniz to represent all numbers in a code consisting of calculable, predictable, and account-able combinations of 0 and 1. Importantly, for all of Leibniz' admiration for geometry, this method was *arithmetical* and *algebraic*, a *techne* which, as Pascal had noted (Chapter 3), is better suited for inductive reasoning and recording observations than abstract geometry. Encoding mathematized knowledge in arithmetic would allow Leibniz to venture into those areas where the traditional, geometrical *logos* had failed.

In this regard, Leibniz was following implications of Francis Bacon's work at the beginning of the 17th Century, particularly aspects of Bacon's methodological perspective in the *New Organon*.⁹⁰⁶ Bacon had sided decidedly with induction over deduction, on the basis that the accuracy of *a priori* deductions lies in their logical construction, not in observation, which can lead to technically sound deductions whose content is patently absurd. The reason for this, Bacon argues, is the error he calls the "Idols of the Theatre:"

Coming from the fanciful stories told by philosophical theories and
from upside-down perverted rules of demonstration, they are openly

⁹⁰⁶ Francis Bacon, *Novum Organum Scientiarum*. London: Adrian Wijngaard, 1620; Francis Bacon, *The New Organon*. [S.l.]: Jonathan Bennett, 2007.

proclaimed and openly accepted. Things I have already said imply that there can be no question of refuting these idols: where there is no agreement on premises or on rules of demonstration, there is no place for argument.⁹⁰⁷

While such methods are indications of wishful thinking rather than knowledge, they logically and geometrically sound, aesthetically pleasing, and philosophically satisfying, but this, not their truthfulness, is what makes them attractive:

And something we already know about plays that poets put on the stage is also true of stories presented on the philosophical stage—namely that fictions invented for the stage are more compact and elegant and generally liked than true stories out of history.⁹⁰⁸

Consequently, such methods are indications of wishful thinking motivated by *pathos* and overconfident carelessness rather than knowledge:

Philosophers of the reasoning school snatch up from experience a variety of common kinds of event, without making sure they are getting them right and without carefully examining and weighing them; and then they let meditation and brain-work do all the rest.⁹⁰⁹

⁹⁰⁷ Bacon, *Novum Organon*, 1.61: “Sed ex fabulis theoriarum, et perversis legibus demonstrationum, plane indita et recepta. In his autem confutationes tentare et suscipere consentaneum prorsus non est illis, quae nobis dicta sunt. Quum enim nec de principiis consentiamus, nec de demonstrationibus, tollitur omnis argumentatio.” Transl. Bennet.

⁹⁰⁸ Bacon, *Novum Organum*, 1.62: “Atque hujusmodi *theatri* fabulae habent etiam illud, quod in theatro poetarum usu venit; ut narrationes fictae ad scenam narrationibus ex historia veris concinniores sint et elegantiores et quales quis magis vellet.” Transl. Bennet.

⁹⁰⁹ Bacon, *Novum Organum*, 1.62: “Rationale enim genus philosophantium ex experientia arripiunt varia et vulgaria, eaque neque certo comperta, nec diligenter examinata et pensitata; reliqua in meditatione atque ingenii agitatione ponunt.” Transl. Bennet.

Alternatively, anecdotal evidence or studies with insufficient sample sizes, but whose results happen to fit preconceived prejudices, lead to thought constructs based on mistaken assumptions:

Another class of philosophers have carefully and accurately studied a few experiments, and have then boldly drawn whole philosophies from them, making all other facts fit in by wildly contorting them.⁹¹⁰

Worse yet, those motivated by ideological commitments or nostalgia chase shadows they then pass off as knowledge:

Yet a third class consists of those who are led by their faith and veneration to mix their philosophy with theology and stuff handed down across the centuries. Some of these have been so foolish and empty-headed as to have wandered off looking for knowledge among spirits and ghosts.⁹¹¹

Bacon specifically addresses the failings of geometry in this regard, namely its desire to superimpose geometrical forms on natural phenomena, giving precedence to “forms that aren’t forms *of* anything,”⁹¹² and then seeing them everywhere:

The human intellect is inherently apt to suppose the existence of more order and regularity in the world than it finds there. Many things in

⁹¹⁰ Bacon, *Novum Organum*, 1.62: “Est et aliud genus philosophantium, qui in paucis experimentis sedulo et accurate elaborarunt, atque inde philosophias educarere et confingere ausi sunt; reliqua miris modis ad ea detorquentes.” Transl. Bennet.

⁹¹¹ Bacon, *Novum Organum*, 1.62: “Est et tertium genus eorum, qui theologiam et traditiones ex fide et veneratione immiscent; inter quos vanitas nonnullorum, ad petendas et derivandas scientias, a spiritibus scilicet et geniis, deflexit.” Transl. Bennet.

⁹¹² Bacon, *Novum Organum*, 1.65: “Inuenitur etiam hoc genus mali in partibus Philosophiarum reliquarum, introducendo formas abstractas, & causas finales, & causas primas; omittendo saepissime medias, et hujusmodi.” Transl. Bennett.

nature are unique and not like anything else; but the intellect devises for them non-existent parallels and correspondences and relatives. That is how it comes about that all the heavenly bodies are thought to move in perfect circles,”⁹¹³

while observation suggests that they move in less regular shapes. The purported result is logically and geometrically sound, aesthetically pleasing, and philosophically satisfying, but it does not match up with the observable movements of the stellar objects in the sky.

Rather, according to Bacon, the scientific method must turn to inductive methods in order to tend the untenable situation in which “we are merely lingering in nature’s outer courts, and we aren’t preparing a way into its inner chambers,”⁹¹⁴ that is to say, its privy counsel, to become “participants in the secret.” Induction, however, requires an arithmetical *logos*, one that provides a framework in which observations can be recorded *as instances* and then *tallied* so that observations of a high probability can be drawn from them – in other words, a means to conduct a *reductio ad datum* of all things. To provide a theory of physics in which the world can be conceived as made up of such countable *data*, Bacon revises the logic that had underlain the physical theories of the Ionian-Greek atomists Leukippos (Leucippus, 5th Century BCE), Demokritos (Democritus, 460-370 BCE), Epikouros (Epicurus, 341-270 BCE),

⁹¹³ Bacon, *Novum Organum*, 1.45: “Intellectus humanus ex proprietate ua facile supponit majorem ordinem et aequalitatem, in rebus, quam invenit: et cum multa sint in natura monodica et plena imparitatis, tamen affingit parallela, et correspondentia, et realtiva, quae non sunt. Hinc commenta illa, ‘In coelestibus omnia moveri per circulos perfectos,’ lineis spiralibus et daconibus (nisi nome tenus) prorsus rejectis.” Transl. Bennett, ed. Reinhardt.

⁹¹⁴ Bacon, *Novum Organum*, 2.7: “Versamur enim plane adhuc in atriis naturae, neque ad interiora paramus aditum.” Transl. Bennett.

and their intellectual Roman descendant Titus Lucretius Carus (Lucretius, 99 BCE-55 BCE). For instance, in his 1612 *Principles and Origins*, whose subtitle credits Democritus explicitly, Bacon describes the world as made (by God) of “first particles, from the multiplication whereof all the variety of things proceeds and is made up.”⁹¹⁵ Such a model fulfills the requirements of the necessary *reductio ad datum* on which induction relies, as it allows for recording all things by elementarily dividing them into either particles or nothing. Any other inductive conclusions can then be built (and counted, multiplied, and analyzed) on the basis of this model, from the bottom up, rather than the abstractions of deduction.

Leibniz had been an atomist in his earlier years, so he was familiar with such ideas, taking them up in his defense of binary thinking to Samuel Clarke;⁹¹⁶ he was also intimately acquainted with Bacon’s theories.⁹¹⁷ It is true that Leibniz would later turn reject atomism on the grounds that his monadic theories rejected the idea of a

⁹¹⁵ Bacon, “De Principiis atque Originibus.” *The Works of Francis Bacon*, Vol. 5. James Spedding, Robert Leslie Ellis, & Douglas Denon Heath, eds. London: Longmans, 1870. 459-500. 463. Original: “Lex enim summa essentiae atque naturae, quae vicissitudines rerum secatur et percurrit (id quod ex verborum complexu describi videtur; ‘opus quod operatus est Deus a principio usque ad finem’), vis scilicet primis particularis a Deo indita, ex cuius multiplicatione omnis rerum varietas emergat et conflatur, cogitationem mortalium perstringere potest, subire vix potest.” *The Works of Francis Bacon*, Vol. 9. London: Rivington et al., 1826. 248-286. 250.

⁹¹⁶ “There must be No Vacuum at all; for the Perfection of Matter is to that of a Vacuum, as Something to Nothing. And the case is the same with Atoms: What reason can any one assign for confining Nature to the Progression of Subdivision? These are Fictions merely Arbitrary, and unworthy of true Philosophy. The reasons alledged for a Vacuum, are mere Sophisms.” Samuel Clarke, “Mr. Leibnitz’s Fourth Paper.” *A Collection of Papers, Which passed between the late Learned Mr. Leibnitz, and Dr. Clarke, In the Years 1715 and 1716*. London: James Knapton, 1717. 92-119. 118-119. The original was in French and reads, “Mais ainsi il n’y aura point de vuide du tout; car la Perfection de la matière est à celle du vuide, comme quelque chose à rien. Il en est de même des Atomes: Quelle raison peut on assigner de borner la nature dans le progrès de la Subdivision? Fictions purement Arbitraires, & indignes de la vraie Philosophie. Les raisons qu’on allegue pour le vuide, ne sont que des Sophismes.”

⁹¹⁷ Mentions of Bacon abound in Leibniz’ work and correspondence. The most relevant references, including those to the *Novum Organum* and *New Atlantis*, are in *Sämtliche Schriften und Briefe* 2.3.46 & 2.3.124; 3.5.46, 59, 94; & 272; 4.1.1, 15, & 43; 6.4.78, 107, 159, 289, 348, 374, 376, 384, & 421; et al.

negative space in which atoms could move,⁹¹⁸ this does not interfere with the methodological adaptation of such principles to inductive inquiry and the mathematics that accounts for it. To the contrary, if the binary logic underlying atomic theory was freed of its constraining ties to specific physical phenomena, that logic could become applied to any set of arithmetical *data* that accounted for the world in specific, differentiated categories: either the observed instance fit the queried category (1) or not (0).

Coming up with a binary mathematics that could capture an inductively accessible world reduced to the *data* of what is (1) and what is not (0) – not as a general claim about the *cosmos*, but as a *techne* when given a certain set of categories to be investigated – required Leibniz to make some foundational changes of how the possibilities of mathematics might be conceived, in particular if he was aiming at a “mathematization of knowledge” as a form of encoding language, thought, or ideas in a post-Platonic, post-Euclidean, post-Pythagorean, and Baconian paradigm. One change was to rethink the technical possibilities offered by theoretical mathematics. While the traditional duodecimal system (base-12, or “dozen”) remained common in Europe for pragmatic uses such as measurements of distance, mass, or money until the

⁹¹⁸ Clarke, “Fourth Paper,” 116-119: “[T]o admit the void in nature is ascribing to God a very imperfect work ... I lay it down as a principle that every perfection which God could impart to things, without derogating from their other perfections, has actually been imparted to them. Now let us fancy a space wholly empty. God could have placed some matter in it without derogating, in any respect, from all other things; therefore, he has actually placed some matter in that space; therefore, there is no space wholly empty; therefore, all is full.” French original: “Toute de même, vouloir du Vuide dans la Nature, c’est attribuer à Dieu une Production tres imparfaite ... Je pose que toute perfection que Dieu a pû mettre dans les choses sans déroger aux autres Perfections qui y sont, y a été mise. Or figurons nous un Espace entierement vuide, Dieu y pouvoit mettre quelque matiere sans déroger en rien à toutes les autres choses: Donc il l’ y a mise: Donc il n’ y a point d’Espace entierement vuide: Donc, tout est plein.”

decimalization of the 19th and 20th centuries (and remains, implausibly, in place as the Imperial System in the United States and among Little Englanders in Britain even in the early 21st Century), theoretical arithmetic and geometry had long been entirely based on decimal logic. John Dee's co-editor of Euclid's *Elements*, John Briggs, for example, discovered a mathematical technique that converted other logarithms into base 10, to allow for "proper" calculation.⁹¹⁹

However, a general awareness that alternatives to the base-10 system continued to persist during the Early Modern period, especially the sexagesimal (base-6) system and the duodecimal. Sexagesimal systems had been used since Babylonian times,⁹²⁰ and had recurred in Plato's *Republic* as part of the definition of the "perfect number" governing the quality of nuptials,⁹²¹ Ptolemy's *Almagest* uses it to define musical chords,⁹²² and it was widespread due to the influential discussions of the length of the year by Yorkshire monk and later Parisian scholar John of Hollywood (Johannes de Sacrobosco, 1195-1256),⁹²³ and the 13th Century *Tabulae Alphonsinae*, compiled in Toledo, used for astronomical observations and calendar-making into the 17th Century. Indeed, the 21st Century still measures time on a sexagesimal basis for

⁹¹⁹ Henry Briggs, *Arithmetica Logarithmica*. London: William Jones, 1624.

⁹²⁰ Daniel F. Mansfield & Norman J. Wildberger, "Plimpton 322 is Babylonian exact sexagesimal trigonometry." *Historia Mathematica* 44.4 (Nov 2017), 395-419.

⁹²¹ Plato, *Republic* 8.546a-e.

⁹²² Ptolemy, *Almagest* 1.11.

⁹²³ Johannes de Sacrobosco, *De Anni Ratione*. Vienna: Hieronymus Vietor, 1517, previously in manuscript form. Sacrobosco also worked to improve the practicability of arithmetic and algebra by advocating for the Hindu-Arabic numerals, in his variously titled *Tractatus de Arte Numerandi* or *Algorismus*, which circulated widely. The text can be found in James Orchard Halliwell-Phillipps, *Rara Mathematica*. London: J.W. Parker, 1839, 1-26.

this reason (i.e. 60 seconds to a minute, 60 minutes to an hour).⁹²⁴ The sexagesimal approach had regained theoretical traction in the Early Modern trigonometric work on the sine by Swiss mathematician and clockmaker Jost Bürgi (1552-1632), an acquaintance of Kepler, John Dee, and Henry Briggs,⁹²⁵ the imperial mathematician and astronomer from the free peasant's republic of Dithmarschen on the North Sea, Nicolaus Reimers Baer (Ursus, 1551-1600),⁹²⁶ and Briggs's student Henry Gellibrand (1597-1637).⁹²⁷ An opinion was even ascribed to Newton that the sexagesimal system was a useful approach to solving a range of problems in his *Method of Fluxions and Infinite Series*, which decimal numeration might have made more difficult to solve.⁹²⁸

⁹²⁴ The original manuscript text is in Castilian and was inspired by Arabic tables, compiled at the Toledo School of Translators established by the Castilian King Alfonso X. el Sabio (1221-1284), but the tables were first published in print in Latin, by the same printer as Euclid's *Elements*, as *Tabulae Astronomicae Illustrissimi Alfontij Regis*. Venice: Erhard Ratdolt, 1483. The system of subdividing days, hours, and minutes into 60 also originates with Sacrobosco, in his 1235 text *Computus*.

⁹²⁵ Justus Bÿrgi, *Fundamentum Astronomiae*. 1586/1587. University Library of Breslau [Wrocław] in Silesia, Sig. IV Qu 38a.

⁹²⁶ Raimarus Ursus, *Fundamentum Astronomicum*. Strassburg in the Elsass: 1588.

⁹²⁷ Briggs & Gellibrand, *Trigonometria Britannica*. Gouda in Holland: Adrian Vlacq, 1632.

⁹²⁸ Isaac Newton, "De Methodis Serierum et Fluxionum." D.T. Whiteside, ed. *The Mathematical Papers of Isaac Newton*, Vol. 3 (1670-1673). Cambridge: Cambridge UP, 1969. 32-372. Newton himself only discusses alternatives to the decimal system in general, encouraging their use for approaching difficult problems (32-35). However, his translator and commentator of the first English edition of 1736, Cambridge mathematician John Colson (1680-1760), adds as a gloss, "The most remarkable of these is the Sexagenary or Sexagesimal Scale of Arithmetick, of frequent use among Astronomers, which expresses all possible Numbers, Integers or Fractions, Rational or Surd, by the power of *Sixty*, and certain numeral Coefficients not exceeding fifty-nine." Colson also mentions duodecimal numeration ("in common affairs we say a Dozen"). Unsurprisingly for a Cantabrigian enthralled with Newton, Colson additionally dismisses Leibniz' binary numeration, finding it not "convenient:" "Some have consider'd the Binary Arithmetick, or that Scale in which *Two* is the Root, and have pretended to make Computations by it, and to find considerable advantages in it. But this can never be a convenient scale to manage ... Mr. *Leibniz* imagin'd he had found great Mysteries in this Scale." (146-147). Isaac Newton, *The Method of Fluxions and Infinite Series*. John Colson, transl. & ed. London: Henry Woodfall, 1736. Given the rise of mechanical computation entirely on the basis of binary roots, Colson could, of course, not have been more mistaken. Perhaps his judgment in such matter was part of the reason Cambridgshire antiquarian William Cole (1714-1782) passes this judgment on Colson: "He was a plain, honest man, of great industry and assiduity, but the university was much disappointed in its expectations of a professor that was to give credit to it by his lectures." Thompson Cooper, "Colson, John." *DNB*, Vol. 11. London: Smith Elder, & Co., 1885-1900. 405-406.

However, the European imperial enterprises of the 16th and 17th Centuries soon contributed to the sense that the use of systems other than base six, ten, and twelve was a marker of the imperial Other. In his *De Numeris Multiplicibus* of 1654, Pascal had noted that there was no natural necessity for using the decimal system in arithmetic; the common reliance on base 10 (and to a lesser extent, the bases 6 and 12), was simply an unconsciously naturalized Occidental habit of mind.⁹²⁹ It was no surprise, then, that just like the people beyond the familiar Occident, Middle East, and India appeared to have radically different language systems than those of the reasonably well-understood Indo-European and Semitic language spheres, they also appeared to rely on different mathematics.

Lexicons recording the languages of the indigenous inhabitants of the Americas reinforced that notion. The Spanish Franciscan missionary and linguist Alonso de Molina (1514-1585), for example, had described a combination of a base-4 and base-5 system merged into a base-20 system in use among the Nahua (Aztec) people of Mexico in his *Vocabulary of the Castilian and Mexican Language* (1555).⁹³⁰ The Peruvian Jesuit Antonio Ruiz de Montoya (1585-1652) had described an apparently base-4 numerical system in use among the Guarani people of Paraguay in

⁹²⁹ Blaise Pascal, "De Numeris Multiplicibus." *Ouevres de Blaise Pascal*. Den Haag: Detune, 1779. 123-134. Esp. 133-134.

⁹³⁰ Alonso de Molina, *Un vocabulario en la lengua castellana y mexicana*. Mexico: Juan Pablos, 1555, 249-256. The section begins with "Y es de notar, que este numero de veinte, se va multiplicando dela manera de dicha, hasta quatrocientos que dizen, centzunli: y deste numero hasta ocho mil, que es el otro numero mayor, se va multiplicando la cuenta en la manera ya dicha..." The 1555 copy of the *Vocabulario* in Cornell University's Kroch Library Rare Books Collection uniquely includes not just the printed Nahuatl ("Mexican" or "Aztec") and Castellan dictionaries, but also a handwritten translation of many words into Matlatzinca, a now nearly extinct language spoken by a group indigenous to the Toluca Valley in Mexico's central highlands.

his *Thesaurus of the Guarani Language* (1639).⁹³¹ It was these reports that appear to have captured the attention of Juan Caramuel y Lobkowitz (briefly, Ch. 3).⁹³²

Caramuel first began thinking about the possibility of an arithmetic outside the inherited paradigms of six, ten, and twelve in his 1642 *Mathesis Audax*, an otherwise strange book that attempts to prove the validity of Catholic doctrine through mathematical arguments.⁹³³ These news from the Americas evidently led Caramuel to revisit the issue. He first tinkers with binary arithmetic in his *Two-Headed Mathematics*, alongside ternary, quaternary, quinary, etc. versions of arithmetic. However, like Harriot, he does not explore any practical implications or theoretical applications of this thought experiment.⁹³⁴ In fact, when turning to quaternary arithmetic, Caramuel explicitly cites the Pythagorean *tetracys* and Ruiz de Montoya's report as part of his justification: his focus is on philosophical-theological and ethnographic contexts.⁹³⁵ Leibniz read Caramuel's *Mathesis Audax* and likely also the

⁹³¹ Antonio Ruiz de Montoya, *Tesoro de la lengua guaraní*, Vol. 2. Madrid: Juan Sanchez, 1640, 7. His summary begins, "Los Numerales no son mas q̄ quatro..."

⁹³² For example, Caramuel references having read de Molina and Ruiz de Montoya in *Mathesis Biceps*, 556 & 645.

⁹³³ Juan Caramuel y Lobkowitz, *Mathesis Audax*. Leuven, Flanders: Andreas Bouvet, 1642. E.g. 109-110 & 170-173.

⁹³⁴ Caramuel, *Mathesis Biceps*, Vol. 1, "Meditatio Prooemialis," xliii-lxxviii. Article 1, "De Binaria Arithmetica," discusses binary arithmetic. Sections 2-9 discuss base 3 through base 10 (which Caramuel calls "denaria arithmetica" rather than decimal), as well as base 12 (Article 10) and base 60 (Article 11). Cf. Robert Ineichen, "Leibniz, Caramuel, Harriot und das Dualsystem." *Mitteilungen der Deutschen Mathematiker-Vereinigung* 16.1 (2008), 12-15.

⁹³⁵ Caramuel, *Mathesis Biceps*, Vol. 1 1-lii. Regarding Ruiz de Montoya's text on Paraguay, Caramuel explains that while he considers the indigenous Americans *ignorante Arithmetica*, he does learn from Ruiz de Montoyadana that their culture can function on quaternary arithmetic: "Sed qua? Ruizius. *Su numerar no llega mas, que a quatro*. Ergo, siquidem illos habere Arithmetica negare prudenter non audemus; & ultra quaternarium non procedere audimus; in numerationis progressu illos per quaternarios asseramus. Dicamus igitur illos 4. Unitates pro fundamento assumere; & postea revolutions institutere assumendo Quaternarios 4 & deinde Quaternariorum Quaternarios 4 & sic deinceps."

Two-Headed Mathematics, and evidently put his more expansive intellectual imagination to the task.⁹³⁶

As will have become clear at this point, for Leibniz (and Pascal and Caramuel), this new type of *techne* and “universal language,” and the *data* it was to rely on were arithmetical, not geometrical. A redefinition of ancestor models of *data* that could describe reality conceived under the geometrical *logos* required adjustments to a concept that had had parallels to the arithmetical *techne*. The ancients had taken great care to keep geometry and arithmetic separate, but aspects now were increasingly fusing: namely, *magnitude* (which describes geometrical ratios by comparing geometrical lengths to each other, and thus could be part of geometrical *data*) and *number* (which, being discrete and arithmetical, could never be deduced from first principles and thus what “given” *data*, but rather was a tool for describing inductions).

The 17th Century European mathematicians were fortunate in this regard. The mathematics of the geometrical *logos* had kept *magnitude* and *number* separate primarily because they had discovered *irrational numbers*, which they considered

⁹³⁶ We may infer a reasonable probability of this from the fact that Leibniz was familiar enough with Caramuel’s *opus* to either cite or allude, or have his correspondents cite or allude to thirteen different works by Caramuel. For example, on 25 September 1680 Leibniz scribbled reflections about the *ars combinatoria* on the back of a tavern bill, which include the line, “Addatur Caramuelis *Mathesis audax*, ubi etiam de quibusdam ludis.” *Sämtliche Briefe und Schriften* 6.4A.105. Meanwhile, on 5 November 1670, the Saxon-German mathematics professor at Giessen, Friedrich Nitzsch (1641-1702) responded to Leibniz’ request to help him rekindle contact with the scholars Christian Thomasius in Leipzig (1655-1728), Erhard Weigel in Weimar (1625-1699), and Friedrich Geissler in Leipzig, as well as Leibniz’ old university friends Christoph Pfautz in Leipzig (1645-1711) and Matthias Ditzel in Dresden (1640-1695): “Multam vero Tibi salutem defero a Geislero, Pfauzio, Diecelio, Weigelio item et Thomasio, quorum ille occupatus fuit in erigenda sua sphaera, qua noctu atque interdiu stellarum motum, ipsarumque scintillationem, repraesentare potest, quod inventum mire me delectavit, utut occasione hypotheseos Caramuelis id ipsi obtigisse suspicer.” The *hypotheseos Caramuelis* here appear to refer to *Mathesis Biceps*, Vol. 2, “De Globo Universim,” 1234-1237, Leibniz, *Sämtliche Briefe und Schriften*, 2.1b(1).32 & 32n. However, Leibniz’ own binary arithmetical texts differ noticeably from Caramuel’s sketch in *Mathesis Biceps*.

alogos – outside of the *logos* – and which ancient Greek geometers thus considered an affront.⁹³⁷ However, building on the algebra of al-Khwarizmi (Algorismus, 780-850 CE), the Egyptian mathematician Abū Kāmil, Shujā‘ ibn Aslam ibn Muḥammad Ibn Shujā‘ (Abu Kamil or Auoquamel, 850-930 CE), and the Arab-Mesopotamian mathematician from Baghdad, Abū Manṣūr ‘Abd al-Qāhir ibn Ṭāhir bin Muḥammad bin ‘Abd Allāh al-Tamīmī al-Shāfi‘ī al-Baghdādī (Abu Mansur or Al-Baghdadi, 980-1037 CE), had blurred the two concepts in their respective work on irrational numbers, by largely treating magnitudes as rational numbers for pragmatic purposes of calculation.⁹³⁸

This re-conception of *magnitude* and *number* made its imprint on European thought. Fibonacci had encountered these and similar texts at the polyglot Sicilian court of the Holy Emperor Frederick II of Hohenstaufen (Introduction), and integrated them into some of his work, including the *Practica geometriae* and his *Liber Abaci*.⁹³⁹ Moreover, Arab mathematics became available in Latin translation, some, like *Dixit Algorizmi* by al-Khwarizmi, translated by the same Adelard of Bath who had

⁹³⁷ In the legendarium of ancient mathematics, the discovery of irrational numbers (*alogos*) was attributed to the Pythagorean scholar Hippasos of Metapontion in Magna Graecia (Hippasus of Metapontum, 530-450 BCE), during his work on pentagrams and circles. According to Iamblichos, *Pythagorean Life*, 88, and Pappos of Alexandria (Pappus, 290-350 CE), *Commentary of Book X of Euclid’s Elements*, as cited in Proclus, *Commentary on the Republic*, 77.18, Hippasos’ fellow Pythagoreans were so incensed by the discovery of irrational numbers that they drowned Hippasos in the ocean during a voyage, claiming that it was punishment from the gods for impiety. For a more detailed explanation, cf. Kurt von Fritz, “The Discovery of Incommensurability by Hippasus of Metapontum.” *Annals of Mathematics* 46.2 (Apr 1945), 242-264.

⁹³⁸ The pertinent passages occur in Abu Kamil, *Book of Algebra* [*Kitāb fi al-jabr wa al-muqābala*, الكتاب المختصر في حساب الجبر والمقابلة] and Al Baghdadi, *Completion of Arithmetic* [*al-Takmila fi l-Hisab*, التكميل في الحساب].

⁹³⁹ Jacques Sesiano, “Islamic Mathematics.” *Mathematics Across Cultures: The History of Non-Western Mathematics*. Helaine Selin, ed. Dordrecht, Netherlands: Kluwer, 2000. 137-165. 139ff & *passim*.

translated Euclid's *Elements* from an Arabic source.⁹⁴⁰ Crucially, interest in Arabic science, literature, and mathematical theories revived in the Early Modern period, reaching new heights in the 17th Century.⁹⁴¹ This was partly due to an increased interest in Arabic as a language similar to Hebrew, and therefore useful for philological theologians making new translations of Hebrew scriptures, commentaries, and treatises,⁹⁴² partly as a missionary effort,⁹⁴³ and partly due to attempts to master Arabic to facilitate trade and diplomacy in Southeastern Europe and the Mediterranean, where the Ottoman Empire remained one of great empires of the era – albeit a tamer and increasingly more open one after the Battle of Lepanto in 1570, at least towards the French, Dutch, and European Protestants.⁹⁴⁴ (That battle has its own sovereign literary history in Britain.⁹⁴⁵)

As a result, through the scouring of medieval libraries for old manuscripts, the revived ancient trade routes through the Levant and across the Mediterranean by

⁹⁴⁰ John Newsome Crossley & Alan S. Henry, “Thus Spake al-Khwārizmī: A Translation of the Text of Cambridge University Library Ms. Ii.vi.5.” *Historia Mathematica* 17.2, 103-131; André Allard, “L'époque d'Adélarde et les chiffres Arabes dans les manuscrits Latins d'arithmétique.” *Adelard of Bath*, ed. Charles Burnett. London: Warburg Institute, 1987. 37-43.

⁹⁴¹ Cf. Jan Loop, “Introduction.” Jan Loop, Alastair Hamilton, & Charles Burnett, eds. *The Teaching and Learning of Arabic in Early Modern Europe*. Leiden: Brill, 2017. 1-12.

⁹⁴² E.g. Nicolas Cleynarts [Clenardus], *Peregrinationum ac de Rebus Machometicis Epistolae Elegantissimae*. Leuven: Plantin, 1550.

⁹⁴³ Aurélien Girard, “Teaching and Learning Arabic in Early Modern Rome: Shaping a Missionary Language.” Loop et al., *Learning of Arabic*, 189-212.

⁹⁴⁴ Cf. E.g. Maurits H. van den Boogert, “Learning Oriental Languages in the Ottoman Empire.” Loop et al., *Learning of Arabic*, 294-309. Cf. also G.A. Russell, *The 'Arabick' Interest of the Natural Philosophers in Seventeenth-Century England*. Leiden: Brill, 1994. 3-4.

⁹⁴⁵ Namely: King James VI. and I., “His Maiestis Lepanto, or Heroicall Song.” London: Simon Stafford & Henry Hooke, 1603. After an introductory sonnet, James opens his song with the political-theological lines: “Sing a wondrous worke of God, / I sing his mercies great, / I sing his iustice heere—withal / Powr'd from his holy seat / To wit, a cruell Martiall warre, / A bloody battell bold, / Long doubtful fight, with slaughter huge, / And wounded manifold. / Which fought was in Lepantoes gulfe.”

increasingly confident European entrepreneurs, as well as new trade routes to the Far East facilitated by early imperial exploration at sea, Arabic texts flooded into Europe.⁹⁴⁶ Here, they were often put into print for the first time, such as the Arabic version of Euclid’s *Elements* (Ch. 3) – as of 2019, the British Library alone holds 62 books printed in Arabic during the Tudor and Stuart eras, ranging from a 1564 print of Avicenna⁹⁴⁷ to a print of the first surah of the Quran, “The Opening,” published in 1714, the year Queen Anne died.⁹⁴⁸ Moreover, once again, many Arabic texts were being translated into Latin or into local vernaculars, often functioning as parallel texts included in the same editions.⁹⁴⁹ Oxford Arabists were particularly prolific in this regard.⁹⁵⁰

Importantly for Leibniz, Arabic became included in disputes over developing a universal scholarly language, one that went beyond the traditional confines of the Occident and included cultures that were now on the expanding sea-faring young empires’ horizons.⁹⁵¹ Perhaps the most interesting text in terms of literary and philosophical history is *Alive, Son of Awake* by the Iberian polymath Abu Bakr

⁹⁴⁶ Jan Loop, Alastair Hamilton, & Charles Burnett. *The Teaching and Learning of Arabic in Early Modern Europe*. Leiden: Brill, 2017.

⁹⁴⁷ Andrea Alpago, ed. *Avicenna: Libri in Medica Omnes* [رسالة في السكجيين , أدوية القلبية , أرجوزة في الطب]. Venice: Vincenzo Valgrisi, 1564.

⁹⁴⁸ *Sūrah Fātiḥat al-Kitāb* [سورة فاتحة الكتاب]. Helmstedt, Brunswick-Lüneburg: Georg Wolfgang Hamm, 1714.

⁹⁴⁹ Cf. G.A. Russell, *The ‘Arabick’ Interest of the Natural Philosophers in Seventeenth-Century England*. Leiden: Brill, 1994.

⁹⁵⁰ Cf. G.J. Toomer, *Eastern Wisdom and Learning: The Study of Arabic in Seventeenth-Century England*. Oxford: Clarendon P, 1996.

⁹⁵¹ E.g. Thomas Erpenius in 1613: “Ut linguam Hebraeam solidius intelligerem, coepi olim Arabicam discere; ut Arabicam melius, nunc Turcicam.” MS Burney 364 f.24r, British Library, London, United Kingdom. Cit. Alastair Hamilton, “Nam Tirones Sumus,” Eds., M. de Schepper & F. De Nave. *Ex Officina Plantiniana*. Antwerp: Vereniging der Antwerpsche Bibliophielen, 1989. 523-556. 581 n77.

Muhammad ibn Abd al-Malik ibn Muhammad ibn Tufail al-Qaisi al-Andalusi (Ibn Tufayl or Abubacer Aben Tofail, 1105-1185).⁹⁵² The Latin and English translations of that text,⁹⁵³ which centers on a self-taught scientist and philosopher who grows up alone on an isolated island, surrounded only by animals (in particular being raised by a gazelle, a joke about Ibn Tufayl's predecessor Al-Ghazali [Algazelus or Algazel], whose name means 'gazelle'⁹⁵⁴), influenced Occidental thought directly. Its ideas of self-fashioning knowledge from a blank slate is traceable in John Locke's theory of *tabula rasa* and his more general theories of mind,⁹⁵⁵ and contributed to the philosophical framework of Defoe's 1719 work, *Robinson Crusoe*.⁹⁵⁶

In addition, the protagonist Awake develops a natural language, which is sufficiently sophisticated to allow him to consider Aristotelian philosophy, the importance of responsible ecology, mathematics, and Sufi mystic theology – all of which Awake arrives at independently. Nevertheless, when a visitor called Absal

⁹⁵² Ibn Tufayl, *Hayy ibn Yaqdhan* [حي بن يقظان]. MS Pococke 263. Bodleian Library, University of Oxford, United Kingdom.

⁹⁵³ Ibn Tufayl, *Philosophus Autodidactus, sive, Epistola Abi Jaafar ebn Tophail de Hai Ebn Yokdhan*. Edward Pococke, transl. Oxford: H. Hall, 1671; Ibn Tufayl, *The Improvement of Human Reason Exhibited in the Life of Hai ebn Yokdhan*. Simon Ockley, transl. London: Edmund Powell & John Morphew, 1708.

⁹⁵⁴ *al-ghazal* [الغزال], "gazelle."

⁹⁵⁵ Cf. Avner Ben-Zaken, *Reading Hayy Ibn-Yaqzan: A Cross-Cultural History of Autodidacticism*. Baltimore: Johns Hopkins UP, 2011.

⁹⁵⁶ Cf. Antonio Pastor, *The Idea of Robinson Crusoe*. Watford: Gongora Press, 1930; Nawal Muhammad Hassan, *Hayy bin Yaqzan and Robinson Crusoe: A Study of An Early Arabic Impact on English Literature*. Baghdad: Al Rashid House for Publication, 1980; Shelly Ekhtiar, "Hayy Ibn Yaqzan: The Eighteenth-Century Reception of A Self-Taught Oriental Philosopher," *Studies on Voltaire and the Eighteenth-Century* 302 (1992). 217-45; Mahmoud Baroud, *The Shipwrecked Sailor in Arabic and Western Literature: Ibn Tufayl and His Influence on European Writers*. London and New York: I. B. Tauris, 2012; Srinivas Aravamudan, "East-West Fiction as World Literature: The Hayy Problem Reconfigured." *Eighteenth-Century Studies* 47.2 (Winter 2014). 195-231. 213-221.

arrives on the island and ends Awake's splendid isolation, at first they cannot communicate at all:

Now Asâl [Absal] long before, out of his earnest Desire of searching into the meaning of Things, had studied most Languages, and was well skill'd in them. So he began to speak to Hai Ebn Yokdhan [Awake, Son of Alive] in all the Languages which he understood, and ask him Questions concerning his way of Life, and took pains to make him understand him; but all in vain, for Hai Ebn Yokdhan stood all the while wondring at what he heard, and did not know what was the meaning of it.⁹⁵⁷

Absal first attempts a sort of sign language, but then settles on teaching Awake to speak Arabic, which to Muslims is the universal and perfect language of God:

He began therefore to teach him how to speak; first, by shewing him particular Things, and pronouncing their Names, and repeating them often, and perswading him to speak them: which he did applying every Word to the Thing by it signified, till he had taught him all the Nouns, and so improv'd him by degrees, that he could speak in a very short time.⁹⁵⁸

⁹⁵⁷ The translation is the first into English, made on the basis of Pococke's Latin translation into Latin, and uses variant spellings of the characters' names. Simon Ockley, transl. & ed. *The Improvement of Human Reason Exhibited in the Life of Hai Ebn Yokdhan by Ibn Tufail*. London: Edmund Powell, 1708. § 106. In the original text by Ibn Tufayl, the same passage reads:

“قد تعلم أكثر الألسن، ومهر فيها. فجعل يكلم حي بن يقظان ويسأله عن شأنه بكل لسان يعلمه ويعالج أفهامه فلا يستطيع، وحي بن يقظان في ذلك كله يتعجب مما يسمع ولا يدري ما هو. غير أنه يظهر له البشر والقبول. فاستغرب كل واحد منهما أمر صاحبه”

⁹⁵⁸ *Ibid.* § 108. In Arabic:

“فشرع أسأل في تعليمه الكلام أولاً بأن كان يشير له إلى أعيان الموجودات وينطق بأسمائها ويكرر ذلك عليه ويحمله على النطق”
“فينطق بها مقترناً بالاشارة، حتى علمه الأسماء كلها، ودرجه قليلاً قليلاً حتى تكلم في أقرب مدة”

Leibniz, too, took a strong interest in Arabic culture, literature, and science.⁹⁵⁹ He had read Ibn Tufayl's *Alive, Son of Awake* in Latin and was full of praise for Pococke and the other Arabists in Oxford.⁹⁶⁰ Leibniz expended an extraordinary amount of correspondence attempting to facilitate a new and accurate translation of the *Quran*,⁹⁶¹ and hunted for the *Geography* by the Syrian-Kurdish scholar Abu Al-fida' Isma'il Ibn 'ali ibn Mahmud Al-malik Al-mu'ayyad 'imad Ad-din (Abu'l-Fida or Abulfeda, 1273-1331)⁹⁶² for much of his scholarly career. While Leibniz himself did not speak or read Arabic, he did learn some Hebrew, and spurred by his interest in Maimonides,⁹⁶³ frequently reiterated the importance of Arabic for understanding that

⁹⁵⁹ Cf. Daniel J. Cook, "Leibniz and 'Orientalism.'" *Studia Leibnitiana* 40.2 (2008), 168-190; Avner Ben-Zaken, *Reading Hayy Ibn-Yaqzan: A Cross-Cultural History of Autodidacticism*. Baltimore: Johns Hopkins UP, 2011. 10 & 137. Cf. also Leibniz, *Sämtliche Schriften und Briefe*, 2.3.110, at some length; and Leibniz, "Pacidius Philalethi," *Sämtliche Schriften und Briefe*, 6.3.[find this essay & complete ref.], et al.

⁹⁶⁰ Leibniz, *Sämtliche Schriften und Briefe*, 1.18.358: "Non sine delectatione legi quae diss[er]is] de philosophia Muhamedanorum rationali. Profunde philosophatos Arabes non aliunde magis constat, quam ex fabula Autodidacti, id est hominis qui infans in insula deserta expositus omnes artes et scientias per se eruit, quam jam latina versione edidit Pokokius, et quae ni fallor in Anglicam et nescio an non et in Germanicam linguam versa prostat." Additionally, 6.4.322: "Ego sum qui memini, ego animus lib. 10, c. 17, addatur locus Philosophi Autodidacti a Pokokio editi, quod corpus tantum institutum;" & 6.4.351: "Abulfeda apud Pokok Specimen Historiae Arabum ... magos credidisse Deum creasse lucem et tenebras, ex his mistis mundum, donec tandem lux tenebras vincat et segregatum duos fore mundos unum plane lucidum alterum plane tenebrosum."

⁹⁶¹ Daniel J. Cook, "Leibniz and 'Orientalism.'" *Studia Leibnitiana*, 40.2 (2008), 168-190. 178-180.

⁹⁶² Abu'l-Fida, *A Sketch of the Countries* [تقويم البلدان]. Leibniz, *Sämtliche Schriften und Briefe*, 1670s [confirm this exact reference.] and his letters *passim*. until more than years later. See also Richard Bodéüs, ed. *Leibniz-Thomasius Correspondance, 1663-1672*. Paris: Vrin, 1993. 344-346. In 1700, Leibniz was still looking. Leibniz, *Sämtliche Schriften und Briefe*, 1.18A.127: "M. Jo. Gotth. Seebisch Dresdensis, amicus meus veteranus ex Gallia redux occupatur in adornanda Abulfedae Arabis Geographia perrara, latine abs se reddenda et descripta Parisiis ex Mss. Codice Bibl. Reg. Arabicis studiis, quantus est, immersus est;" 1.19A.3; 1.20.19; 1.24.62.

⁹⁶³ Leibniz, *Sämtliche Schriften und Briefe*, 6.4C.424, e.g., consists of Leibniz' annotations of Maimonides' *Dux Perplexorum* [*Guide for the Perplexed*], which he continuously read and re-read from 1677 to 1716. Leibniz' 1629 copy was a Latin translation of the Hebrew translation of the original text, which was written in Arabic using the Hebrew alphabet.

biblical language properly.⁹⁶⁴ He was interested in pre-Islamic Arabic texts as a matter of scholarly method, and, importantly for this dissertation, had a strong grasp of Arabic mathematics. Indeed, Leibniz credited Arabic mathematics with the invention of the decimal system – the very branch of mathematics his binary mathematics also engages with.⁹⁶⁵ It is therefore unsurprising that Leibniz conceived of non-European language as riddles worth decoding, preferably with implications for a *mathesis* and *characteristica universalis*.

Consequently, Leibniz arrives at the theoretical juncture that defines the complete transition of the *data* of the geometrical *logos* into the arithmetical *logos* that defines the diaphoric *data* concept underlying today's theory of information – and thus, that of secret intelligence. In his case, the turn towards binary mathematics as the new *logos* in which God calculates, thinks, and has written the universe is far from tentative, abstract, or impractical. It appears Leibniz took his first step because he had run into a problem constructing his calculator, the so-called *stepped reckoner*, which he labored to make functional between 1672 and 1694. The first mechanical calculator, the *Rechnuhr* [calculation 'clock'], had been designed and constructed in 1623 by the Swabian-German theologian and mathematician at the university in Tübingen, Wilhelm Schickard (1592-1635), who wrote to Kepler about it that year.⁹⁶⁶

⁹⁶⁴ Leibniz, *Sämtliche Schriften und Briefe*, 1.11.285, et al.

⁹⁶⁵ Leibniz, "Lettre sur la Philosophie Chinois [Discours sur la theologie naturelle des Chinois]." Christian Kortholt, ed. *Epistolae ad Diversos*, Vol. 2. Leipzig: Bernhard Christoph Breitkopf, 1735. 413-494. §70: "L'on voit dans Archimède sur le nombre du sable, qu'on entendait déjà de son temps quelque chose d'approchant de l'Arithmétique denaire, qui nous est venue des Arabes, et qui paraît avoir été apportée d'Espagne, ou du moins rendue plus connue par le célèbre Gerbert, depuis pape sous le nom de Sylvestre II."

⁹⁶⁶ Franz Hammer, "Nicht Pascal sondern der Tübinger Professor Wilhelm Schickard erfand die Rechenmaschine! 20 Jahre vor Pascal konstruierte Schickard schon eine Vier-spezies-

That machine worked with sliders and dials; could add, subtract, multiply, and divide; and was primarily design to make the calculation of logarithms easier. The second such machine, the *Roue Paschaline* (“Pascaline”), was invented by Pascal in 1642, and presented to the Chancellor of France in 1645.⁹⁶⁷ This machine used mechanical wheels, but could not directly subtract, multiply, or divide; Pascal had initially designed it to make the calculation of taxes less laborious for his father, and that task required only addition. Pascal proved adept at marketing his idea, so that like most of Europe, Leibniz had heard of the *Pascaline* (and inspected one in Paris in 1672), but evidently not of the *Rechnuhr*, which was first noted in a collection of Kepler’s correspondence in 1718.⁹⁶⁸ Both models had serious problems producing reliably accurate results.

Leibniz, meanwhile, hoped to create a machine that could complete *any* practical calculation, and indeed represent linguistic thought itself. In 1673, Leibniz presented this idea to the Royal Society in London.⁹⁶⁹ In 1679, Leibniz authored a short treatise, *De Progressione Dyadica*, in which he began to catch up with the

Rechenmaschine.“ *Büromarkt* 20 (1958), 1023-1025. Schickard was also the illustrator of Kepler’s *Harmonices Mundi* of 1619. Schickard’s sketch had been found in proximity to the pertinent letters in the Kepler Archive, Pulkovo Astronomical Observatory, St. Petersburg, Russia, in 1935 by Max Caspar (1880-1956), a renown Kepler biographer from Tübingen.

⁹⁶⁷ Blaise Pascal, “Lettre Dedicatoire” & *Advis Necessaire*. 1645.

⁹⁶⁸ Michael Gottlieb Hansch, “Epistola 463.“ *Epistolae ad Joannem Keplerum Scriptae*. 1718. 683: “Porro quod tu logistica, idem ego mechanice nuper tentavi, & machinam extruxi, undecim integris & sex mulitatis rotulis constantem, quae datos numeros statim αὐτόματος computet, addat, subtrahat, multiplicet, dividatque.” Note in the margin: “Schickardi machina arithmetica.” In the same letter, Schickard reports that he had a local artisan, Johan Pfister, build the machine, but that this first version had burnt in a house fire shortly afterwards.

⁹⁶⁹ Leibniz, *Sämtliche Schriften und Briefe* 1.1.326, 488.

machine's implications on theoretical grounds also.⁹⁷⁰ First, he explains both binary mathematics in general and how to use it practically for calculations. Next, he introduces a theoretical computing machine, one designed with holes that are either open (1) or shut (0), and through which counters fall into grooves that signify one of the two binary states, eventually producing a computational outcome in binary numeration.⁹⁷¹ For this model, Leibniz uses language that evokes probability-based games of chance: he suggests that the counters should either be “dice” (see Ch. 3) or “little balls,”⁹⁷² the latter evoking the game of roulette, invented in its earliest form by Pascal in his search for a *perpetuum mobile* in 1657.⁹⁷³

By 1688, Leibniz expanded this concept into a decidedly more philosophical dimension. In his “Project and Attempts for Advancing the Art of Invention” [alias “The Art of Discovery”],⁹⁷⁴ Leibniz notes:

⁹⁷⁰ Leibniz' mathematical texts of 1679 have not yet been published in Series 7 of *Sämtliche Schriften und Briefe*; in 2019, that series ends at 1676, with Leibniz' Parisian texts. A facsimile of *De Progressione Dyadica* and a German translation is included in Erich Hochstetter, Hermann Josef Greve, & Heinz Gumin, eds. *Herrn von Leibniz' Rechnung mit Null und Eins*. München: Siemens, 1966.

⁹⁷¹ Hochstetter et al., *Null und Eins*, 46. Facsim. 3.

⁹⁷² Hochstetter et al., *Null und Eins*, 46. Facsim. 3.

⁹⁷³ Stephen C. Bold, *Pascal Geometer: Discovery and Invention in Seventeenth-century France*. Paris: Libraire Droz, 1996. 85-94.

⁹⁷⁴ “Projet et Essais pour arriver à quelque Certitude pour finir une bonne partie des disputes, et pour avancer l'art d'inventer.” *Sämtliche Schriften und Briefe* 6.4A.205. 963-970. Often also, “Projet d'un Art d'Inventer.” *Opuscules et fragments inédits de Leibniz*. Louis Couturat, transl. & ed. Paris: F. Alcan, 1903. 175-182. In English: “The Art of Discovery.” *Leibniz: Selections*. Philip P. Wiener, transl. & ed. New York: Scribner, 1951. 50-58. NB: This text is frequently misdated in academic literature. One mistaken date, 1685, recurs in much English language literature evidently relying solely on Wiener's English translation, without recourse to the French original. Previously to the 1999 transcription in *Sämtliche Schriften und Briefe*, the main source for the French text was Couturat's *Opuscules*, which has 1686, also incorrectly. For an updated discussion about the dating of this manuscript, see note to *Sämtliche Schriften und Briefe* 6.4A.202.

We have not [yet] considered how important it would be to be able to establish principles of Metaphysics, Physics, and Ethics [*Morale*] with the same certitude as the Elements of Mathematics. ... I have found that by this means we should arrive not only at a solid knowledge of several important truths but also that we should attain the admirable Art of Discovery, and a method of analysis which would accomplish in other matters something similar to what Algebra does with numbers.⁹⁷⁵

Arriving at such certainty would require the conversion of lexical and semantic content into arithmetic representation: “I have even found an astonishing thing, which, that we can represent all sorts of truths and consequences as Numbers ... a method which leads us infallibly to the general analysis of human knowledge.”⁹⁷⁶

There follows a definitive observation of the type of probabilistic induction to which *intelligence* also belongs, based on a *data* concept that Leibniz redefines in terms of the computational *logos* as “given circumstances:” “I therefore discovered that there are certain primitive Terms which can be posited if not absolutely, at least relatively to us, and then all the results of reasoning can be determined in numerical fashion, and even with respect to those forms of reasoning in which the *given*

⁹⁷⁵ “On n’a pas considéré de quelle importance il seroit de pouvoir établir les principes de Metaphysique, de Physique, et de Morale avec le meme certitude, que les Elemens de Mathematique. Or j’ay trouvé que par ce moyen on n’arriveroit pas seulement à une connoissance solide de plusieurs importantes verités, mais encore, qu’on parviendroit à l’Art d’inventer admirable, et à une Analyse qui feroit queleque chose de semblable en d’autres matieres, à ce que l’Algebre fait dans les Nombres.” *Sämtliche Schriften und Briefe* 6.4A.202, 963. English transl. Wiener, 50.

⁹⁷⁶ “J’ay même trouvé une chose estonnate, c’est qu’on peut représenter par les Nombres, toutes sortes de verités et conséquences ... Je m’avisai d’une Methode qui nous mene infalliblement à l’analyse generale des connoissances humaines.” *Sämtliche Schriften und Briefe* 6.4A.202, 963-964. English transl. Wiener, 50-51.

circumstances or data [*circonstances données, ou data*] do not suffice for an absolute answer to the question, we could still determine mathematically the degree of probability.⁹⁷⁷ Using this method, human thinking can be made much more sure and exact:

The reason why we make mistakes so easily outside Mathematics ... is only because in ... abstract Mathematics, we can continually submit to trials or tests not only the conclusion, but also, *at any moment*, each step made from the premises, by reducing the whole to numbers. But in ... Metaphysics and Ethics, it is much worse; often we cannot submit to experiment any of the conclusions except in a very vague manner, and when it comes to the subject-matter of Metaphysics, experiment is often impossible.⁹⁷⁸

The solution is clear to Leibniz: “The only way to rectify our reasonings is to make them as tangible as those of the Mathematicians, so that we can find our error *at a glance*, and when there are disputes among persons, we can simply say: Let us calculate, without further ado, in order to see who is right.”⁹⁷⁹

⁹⁷⁷ “Je trouva donc qu’il y a des certains Termes primitifs si no absolument, au moins à nostre egard, les quels estant constitués, tous les raisonneemens se pourroient determiner à la façon des nombres, et mêmes à l’égard de ceux où les circonstances données, ou *data*, ne suffissent pas à la determination de la question, on pourroit neantmoins determiner mathematiquement le degré de la probabilité.” *Sämtliche Schriften und Briefe* 6.4A.202, 964. English transl. Wiener, 51.

⁹⁷⁸ “La cause qui fait que nous nous trompons si aisément hors des Mathematiques ... est parce que dans ... [les] Mathematiques abstraites, on peut faire des experiences our preuves continuelles non seulement sur la conclusion, mais encore à tout moment, et a chaque pas qu’on fait sur les premises en reduisant le tout aux nombres; mais ... en Metaphysique et en morale, c’est bien pis, souvent on n’y sbauroit faire des experiences sur les conclusions, que d’une manière bien vague, et en Matiere de Metaphysique l’ecperience est quelques fois tout à fait impossible.” *Sämtliche Schriften und Briefe* 6.4A.202, 964. English transl. Wiener, 51.

⁹⁷⁹ “L’unique moyen de redresser nos raisonneemens c’est de les render aussi sensibles que le sont ceux des Mathematiciens, en sorte qu’on puisse trouver son erreur à veue d’oeil, et quand il y a des disputes

Having stated a need for the transfer of semantic and lexical content into arithmetical representation, Leibniz also suggests that the surest method to ensure accuracy is to mechanize this type of mathematics: “If words were constructed according to a device [*artifice*] that I see possible, but which those who have built universal languages have not discovered, we could arrive at the desired result by means of words themselves, a fact which would be of incredible utility for human life.”⁹⁸⁰ What would those words consist of? Leibniz answers:

Of characters, which are appropriate to fix our ideas, *and* of adding to them a numerical proof. For by this means, after reducing reasoning in ethics, physics, medicine, or metaphysics to these terms or characters, we shall be able *at any moment* to introduce a numerical test in such a way that it will be impossible to make a mistake – except willfully. This is perhaps one of the most important discoveries anybody has made in a long time.⁹⁸¹

Leibniz next fused this set of ideas with the possibilities he saw in his calculating machine. As Leibniz had already written to his sponsor, Duke Johann Friedrich of Braunschweig-Lüneburg (1625-1679), in 1673, he hoped that his own

entre les gense, on puisse dire seulement: contons, sans autre ceremonie; pour voir lequel a raison.” *Sämtliche Schriften und Briefe* 6.4A.202, 964. English transl. Wiener, 51.

⁹⁸⁰ “Si les paroles estoient faits suivant un artifice que je voy possible, mais don’t ceux qui ont fait des langues universlles ne son pas avisés on pourroit arriver à cet effect par les paroles mêmes, ce qui seroit d’une utilité incroyable pur la vie humaine.” *Sämtliche Schriften und Briefe* 6.4A.202, 964-965. English transl. Wiener, 51-52.

⁹⁸¹ “Car par ce moyen ayant reduit un raisonnement de morale, de physique, de Medecine ou de Metaphysique à ces termes ou characters, on pourra tellement à tout moment l’accompagner de l’epreuve de nombres, qu’il sera impossible de se tromper si on ne le veut bien. Ce qui est peut estre une des plus importantes decouvertes, don’t on se soit avisé de long temps.” *Sämtliche Schriften und Briefe* 6.4A.202, 965. English transl. Wiener, 52.

arithmetische machine would “conduct all species [of calculations] without requiring the work of one’s own mind.”⁹⁸² Like his ideas about the computational *logos*, Leibniz describes this machine “one of the most considerable inventions of this time” whose uses “extend as far as arithmetic itself.”⁹⁸³ Leibniz assures his sponsor that his own machine’s outputs would be “to the highest degree simple, fast, and certain [*leicht, geschwind, gewiß*].” What makes them simple is that “it will take no work of one’s own mind, neither considering, remembering, speculating, in one word, no calculation.” This machine dispenses with the need to “make guesswork on paper” and will instead compute problems “inside itself.”⁹⁸⁴ What makes it fast is that Leibniz’ mechanical design that (now) included wheels, gears, and rotating cylinders, unlike the *Pascaline*, can compute additions, subtractions, multiplications, and divisions all at once, with a single crank.⁹⁸⁵ What makes it certain is that as long as the machine is intact, it cannot make errors, and does not need to be second-guessed.⁹⁸⁶

⁹⁸² “Die einstmals von mir erwähnte Arithmetische Maschine, so alle species ohne einige arbeit des gemüths verrichtet.“ *Sämtliche Schriften und Briefe* 1.1.326, 487.

⁹⁸³ “Die Arithmetische Maschine ist ... vor eine der considerabelsten Inventionen dieser zeit, ohne ruhm zu melden, gehalten worden ... die größe des Nuzens aber leicht zu erachten, so mit der Arithmetick selbst sich gleich-weit erstreckt.“ *Sämtliche Schriften und Briefe* 1.1.326, 488.

⁹⁸⁴ “Demnach, deßen zweck, und aniezo effect ist, daß die Rechnung in höchsten Grad leicht, geschwind, gewiß sey. Leicht, dieweil man keiner einigen arbeit des Gemüths, nachsinnens, im Sinn behaltens, rathens, ja mit einem worth, Rechnens, bedarff. Denn (welches gar notabel) anstatt, daß man in der Division auffn Papier oft rathen, und achtung geben muß ... so find [die Antwort] sich hier in der Maschine selbst.“ *Sämtliche Schriften und Briefe* 1.1.326, 488.

⁹⁸⁵ “Geschwind, dieweil man zum exempel eine zahl von einer ganzen Reihe Ziphern, sie sey so lang sie wolle ... in einem umgang eines Rades auff einmahl durch eine gegebene Zipher multipliciert, anstatt daß die Feder eine iede à part multiplicieren muß; Item dieweil man weder in the multiplication des addirens, noch in der division des subtrahirens bedarff: in addition und subtraction selbst, aber keines im Sinn behaltens noch übertragens vonnöthen.“ *Sämtliche Schriften und Briefe* 1.1.326, 488.

⁹⁸⁶ “Gewiß, dieweil so lange an der Maschine nichts versehret wird, ohnmüglich zu fehlen, und daher keine probe erfordert wird.“ *Sämtliche Schriften und Briefe* 1.1.326, 488.

Finally, Leibniz presciently emphasizes that a shift from the fallibilities and turpitudes of the overworked human mind to a mechanized computational *logos* frees up the minds of persons active in entire swaths of government and trade (and the funds paying for their imprecise and redundant labors).⁹⁸⁷ These persons and funds can now be redirected towards innovation and the creative expansion of human horizons, Leibniz's machine having "once and for all alleviated human labor."⁹⁸⁸ Leibniz placed particular emphasis on the production of knowledge with the aid of his machine, which could be collected in statistical or mathematical tables, which he refers to as *herrlich*, a German pun that can mean both "amazing" and "sovereign."⁹⁸⁹ This is no accident. This sort of machine and the type of knowledge-making it enables would later resurface in Leibniz' series of essays about good governance. In *Epargne d'Un Prince*, Leibniz will advise, "Everything should be administered by as few public servants as possible, including justice, police [which here means all civil administration, not just law enforcement], and similar such things. Many secretaries, few councilors. One needs universal people. Someone who is connected to all things

⁹⁸⁷ "Welches dann von Rechen-Cammern, Contoirs, Meß-Kunst, Fortification, Schiffart, ja ganze Mathesin und Mechanick, auch Commerciens, undt Financen, einen unglaublichen nuzen haben, die Menschliche Arbeit darinn auff die Helffte mindern, auch so gar unnötige Menge der dazu brauchenden Personen und viele Gagen, ersparen kann." *Sämtliche Schriften und Briefe* 1.1.326, 488.

⁹⁸⁸ "...einmal vor allemahl zu erleicherung Menschlicher arbeit..."

⁹⁸⁹ "Zu geschweigen wie allerhand Tabulae in obgedachten Scientien, einmal vor allemah zu erleicherung Menschlicher arbeit, dergestalt duch dazu bestelte Leute auszurechnen, da sonst befand, daß an den Tabulis Logarithmorum, so ein herrliches werck, unterschieden dazu besoldetet Personen über 20 Jahr zubracht." *Sämtliche Schriften und Briefe* 1.1.326, 488.

can achieve more than ten who are not.”⁹⁹⁰ It is no less than this that Leibniz aspires to: to create a computational *logos* that results in *being connected to all things*.

Among the proposals for creating a modern state administration that Leibniz prepared for the Holy Roman Emperor and the kings of Hanover and Prussia is, in fact, a full-fledged theory of information, which Leibniz developed in a number of essays in the 1680s. In one of them, “Of the Useful Establishment of an Archive,” Leibniz writes, “Just as it does not suffice for a *paterfamilias* hoping to cultivate a field well to understand only how to farm in general – for example if the type of soil of his own plot turns out to be insufficient because from place to place the soil quality diverges too strongly and too noticeably – one can boldly say that the business of governance requires not just a general knowledge [*wissenschaften*], but also special intelligence [*nachrichtungen*].”⁹⁹¹ In a second essay, “Ordering of a Registry Office,” Leibniz suggests condensing his new type of *data* into tables “which make everything easily understandable, and easy to find,” and from which “many improvements can commence that are not theoretical [“*ex theoria*”]” but rather practical.”⁹⁹² In a third essay, “Drafts of Certain Tables of State,” Leibniz advocates for tables that capture

⁹⁹⁰ “Alles durch so wenig bediente als möglich administriren; sonderlich die Justiz, Polizey und andere dergleichen sachen. Viel Secretarii, wenig Rätthe; man mus universale Leüte haben. Da kan einer der aller Dinge connexion hat, mehr thun als zehn.” *Sämtliche Schriften und Briefe*, 4.3.A.26, 329.

⁹⁹¹ “Gleich wie einem Haus-Vater zu guther bestellung des Feldes nich gnug ist, daß er den feld-bau an sich selbst verstehen, wenn er die landesart und seines eignen grund und bodens beschaffenheit nicht gnugsam weis, weilen darinn von orthen zu orthen ein großer unterschied und merckliche Veränderung sich findet; also kan man wohl kühnlich sagen, daß auch zu den Regirungs-geschäftten, nicht nur allgemeine Wißenschafften, sondern auch besondere Nachrichten, erfordert warden.“ *Sämtliche Schriften und Briefe*, 4.3.A.26, 333-334.

⁹⁹² “...nach anleitung des andern zu suppliren und summa daraus ein liecht zu nehmen ... allerhand reale Verbeßerungen erfolgen würden, die nicht *ex theoria*, sondern *media locorum aliorum praxi* genommen.” *Sämtliche Schriften und Briefe*, 4.3.A, 379-380.

“the core of all information [*nachrichtungen*, “intelligence”] that pertains to governing a particular country, so that the sovereign of that country “can easily find everything in it ... and see everything in it... at a single glance.”⁹⁹³ According to Leibniz, this is best achieved by using orderly, logically arranged columns of information that have reduced all things to data points and so allows for comparisons, by “forcing everything into its confines [*in die enge treiben*, lit. “to force into a tight spot”], and making it self-evident [*augenscheinlich*, lit. “eye-perceivable”] and apprehensible [*handgreiflich*, lit. “hand-graspable”].⁹⁹⁴ This, Leibniz argues in a third essay, “The Savings of a Prince,” leads to a sovereign who is “connected to all things.”⁹⁹⁵

Such oversight can no longer be based on narrative memoranda or letters from well-placed sources. Rather, the *intelligence* generated in this framework must be numerical, machine-able, computable, universal, and intelligible, and it must be able to turn *any* knowledge into arithmetical *data*. What better way to do this, particularly for a thinker committed to Monadology, than to employ the binary paradigm of 0 (“nothing, a thing that isn’t”) and 1 (“something, a thing that is”), which can be transferred directly into sums and columns in tables and in the counting mechanisms of arithmetic machines? What better way to facilitate a total and complete *reductio ad datum* of all things, places, and persons? By 1701, Leibniz would even expand this idea to include potential futures. In a letter to the Parisian mathematician, Guillaume

⁹⁹³ “...aller zu der Landes-Regierung gehörigen Nachrichten, so ein gewißes Land insonderheit betreffen ... Alles aber nicht allein leicht zu finden, sondern auch was zusammen gehöret, gleichsam in einen augenblick zu übersehen.” *Sämtliche Schriften und Briefe*, 4.3.A, 345.

⁹⁹⁴ “...dadurch alles in die enge getrieben, und augenscheinlich oder handgreiflich gemacht wird.“ *Sämtliche Schriften und Briefe*, 4.3.A, 345.

⁹⁹⁵ “...einer der aller Dinge connexion hat.“ *Sämtliche Schriften und Briefe*, 4.3.A, 319.

François Antoine, Marquis de l'Hôpital (1661-1704), he writes that he thinks of the binary system as “wondrous,” and calls its potential outcomes *anchora sacra*,⁹⁹⁶ a clever play on words that in Latin refers to the sheet anchor of a ship – that is, the spare anchor of last resort⁹⁹⁷ – and in Italian translates as “the sacred *also*,” the potential of things yet to come:⁹⁹⁸ it is both certain and always oriented towards the unknown. To Leibniz, the language of binary mathematics is both scientifically and philosophically the *characteristica universalis* of the arithmetic era.

Chronologically, Leibniz’s preoccupation with binary mathematics directly preceded his interest in China and the Chinese language, so that his interests in transnational, transcontinental, and transimperial exchanges of knowledge became fused with his new idea of information. Leibniz had spent 1696, the year preceding the arrival of Cerff’s dossier, in Wolfenbüttel, where he served as court librarian to the Welf [‘Guelph’] duke Ernst August of Brunswick-Calenberg (1629-1698), later Elector of Hanover and the father of the future George I. of Great Britain and Ireland (1660–1727). In May 1696, Leibniz presented his binary mathematics to Ernst August’s brother, Rudolf August (1627-1704), explaining how any calculations could

⁹⁹⁶ “Dans la progression dyadique où il n’y a de caracteres que 0 et 1 ce qui fait que tout y va dans un ordre merveilleux. Je crois de voir que par ce moyen et par les series infinies determinees mises en cette expression on aura ce qu’on ne sçauroit attendre facilement par d’autres voyes, et que ce sera comme *anchora sacra* même dans les transcendentes reduites aux cas determinés et dans ceux où nostre calcul des differences et des sommes nous abandonne.” *Sämtliche Schriften und Briefe* 3.8.231, 597.

⁹⁹⁷ “Every ship ought to have three principal anchors, viz. the sheet, maître-ancre, (which is the *anchora sacra* of the ancients); the best bower, second ancre; and small bower, ancre d’affourche, so called from their usual situation on the ship’s bows.” John Mason, Olinthus Gregory, Newton Bostworth, et al. *Pantologia*. Vol. 1. London: Kearsley et al., 1813. 2.

⁹⁹⁸ “‘Dies wird,’ hier bedient sich Leibniz in dem französischen Text seines Briefes der italienischen Worte ‘*anchora sacra*,’ ‘wie ein “heiliges Noch sein.”’ Diese nicht greifbare ‘Noch’ hat ihn immer wieder gereizt, sich mit dem Binärsystem auseinanderzusetzen.” Hermann J. Greve, “Entdeckung der binären Welt.” *Herrn von Leibniz’ Rechnung mit Null und Eins*. Berlin: Siemens, 1966. 21-31. 27.

be conducted with only 1 and 0. To please the famously pious prince, Leibniz interpreted his binary mathematics as the language of to the Book of Nature, since according to the *Genesis* narrative, everything had come into existence out of nothingness, or 0, and God's existence and his spoken word, or 1.⁹⁹⁹ This, Leibniz claims, is the true "secret of creation, since everything springs forth from God and from nothing. The essence of all things is numbers."¹⁰⁰⁰ The similarity with the Pythagorean creation account here should be self-evident (cf. Chapter 3).

For Leibniz numbers were not just the language of creation, but binary tables were the very image, the disclosure of that secret. On 2 January 1697, just weeks before Cerff's dossier became his new preoccupation, Leibniz sent the prince a pamphlet with this same content and a proposal for a medallion design to commemorate his discovery, titled *The Creation and Ordering of the World*, and in which Leibniz also emphasizes that "so much secrecy lies in these numbers" that they must be made transparent by actually spelling out the binary code for all numbers, or at least up to 16384, which is 100 000 000 000 000.¹⁰⁰¹ In the same letter, Leibniz

⁹⁹⁹ "Denn Finsternis war auf der Tiefe, und der Geist Gottes schwebte auf dem Wasser. Da sprach Gott: Es werde Licht, und es ward Licht. Und kommt solches um so mehr zu Passe, weil die leere Tiefe, und wüste Finsternis zu null und nichts; Aber Geist Gottes mit seinem Licht zum allmächtigen Eins gehöret." *Sämtliche Schriften und Briefe* 1.12.66. This is Leibniz' paraphrase of *Genesis* 1:2-3: "And the earth was without form, and void [תֹהוּ וְבוֹהוּ], Hebrew: *tohu wa-bohu*, Greek: *chaos*]; and darkness was upon the face of the deep. And the Spirit of God moved upon the face of the waters. / And God said, Let there be light: and there was light" (KJV) and of the *Gospel of John* 1:1-5: "In the beginning was the Word [*logos*], and the Word [*logos*] was with God, and the Word [*logos*] was God. / The same was in the beginning with God. / All things were made by him; and without him was not any thing made that was made. / In him was life; and the life was the light of men. / And the light shineth in darkness; and the darkness comprehended it not" (KJV).

¹⁰⁰⁰ "Wunderbarer Ursprung aller Zahlen aus 1 und 0 welcher ein schönes Vorbild gibet des Geheimnißes der Schöpfung; da alles von Gott und sonst aus Nichts, entstehet. Essentiae Rerum sunct sicut Numeri." *Sämtliche Schriften und Briefe* 1.12.1.67, 66-72. 66.

¹⁰⁰¹ "Lezlichen weil viel geheimnißen der zahlen in dieser vorstellung stecken so möchte wündschen daß sie dergestalt bis 16 000, oder vielmehr biß 16 384 würcklich geschrieben wären, das ist, nach

proposed a medallion to be cast that depicted “this secret” of binary numbers and the motto, *imago creationis* [image of creation],¹⁰⁰² as well as the inscription, *omnibus ex nihilo ducendis. sufficit unum* [“Everything was led forth from nothing. It lays the foundation for One.”]¹⁰⁰³ A clearer assertion of a new, binary computational *logos* undergirding reality is difficult to imagine.

It is in this collective state of mind, then, that Leibniz sought to extend his personal correspondence to the China he so admired, specifically to the mathematically inclined emperor Kangxi himself, via various Jesuit intermediaries. That same spring, Leibniz had once again written to Grimaldi, who was then in China. Firstly, Leibniz explains the functioning of his Arithmetic Machine, asserting that its work frees up the mental “labor of the human genus” and would allow “even a child” to calculate logarithmic algebra without paying much attention to the task, and yet end up with “secure results.”¹⁰⁰⁴ Secondly, Leibniz explains his binary mathematics and goes on to claim that “all of mathematics and also philosophy” [*tota Mathei aut etiam philosophia*] should be recast according to the numbers 0 and 1.¹⁰⁰⁵ Thirdly, Leibniz

dieser art biß auff 100 000 000 000 000 || 16384.” *Sämtliche Schriften und Briefe* 1.13.1.75. 116-121. 120.

¹⁰⁰² *Ibid.* 117. “Daher ich auch auff die entworffene Medaille gesetzt: IMAGO CREATIONIS.”

¹⁰⁰³ *Ibid.* 119. “Wegen der worth des Sinnbilds oder *Motto dell’Impresa*, habe ich meine zeitlang bedacht, und endlich guth gefunden diesen Vers zu sezen: OMNIBUS. EX. NIHILO. DUCENDIS. SUFFICIT UNUM.”

¹⁰⁰⁴ *Sämtliche Schriften und Briefe* 1.13.2.321, 515-528. 518. “Machinae Arithmeticae meae iam tertiam exemplum elaboratur, cuius vellem quantum Tibi placuit description, tantum Tibi ipsa inspectio posset satisfacere. ... Itaque iam propemodum levatum est hoc calculandi labore humanum genus, et fastidiosissimae computations nunc a puerulo velut ludente effici possunt exigua animi attentione, et securitate summa.”

¹⁰⁰⁵ *Ibid.* 518-519. “Est et aliud in Numeris a me detectum, quod magnam sie quid aliud in tota Mathesi aut etiam Philosophia. ... Mihi aliquando in mentem venit examinare quid tantem proditurum esset, si simplicissima omnium dyadica seu Binaria uteremur. Animo igitur huc verso statim vidi necesse esse,

praises the establishment of scientific societies in Europe as places where ideas can be debated and exchanged, evidently hoping Kangxi will do the same, and have it correspond with its European counterparts.¹⁰⁰⁶ Finally, Leibniz expresses the hope that Kangxi might reply, and adds an encryption code to facilitate this, so this royal letter can reach him confidentially.¹⁰⁰⁷ (No such reply ever came.)

Meanwhile, another China missionary – and additional mathematical tutor to Kangxi – had read Leibniz’ *Novissima Sinica* while on a trip home to Paris: the Maine-French Jesuit Joachim Bouvet (1656-1730). Bouvet had first written to Leibniz in October 1697.¹⁰⁰⁸ In his reply, sent on 2 December 1697, Leibniz envisioned “the means of giving abstract truths quite separate from mathematics, by means of proofs of calculation, which render them just as incontestable as those of numbers or of algebra.”¹⁰⁰⁹ This pertains to the diplomatic and cultural exchange with China and other international contact zones because “a calculus of this universal species would be independent of any language that there is, would be of marvelous benefit for

ut omnes Numeri scribe possint per has duas solas simplicissimas notas Unitatis et Nullitatis, 1 et 0 ... it necesse erat in dyadica omnia scribe posse per notes infra binarium, que non sunt aliae quam 0 et 1.”

¹⁰⁰⁶ *Ibid.* 525-526.

¹⁰⁰⁷ *Ibid.* 527. “Interea venit in mentem, si nobis largiatur Deus porro communicandi facultatem, posse nos cryptographemate quodam in nonnullis uti quale hic adjungo, quod ubi ad Te pervenisse intellexero, nihil amplius me poterit scribendi morari.”

¹⁰⁰⁸ Leibniz, *Sämtliche Schriften und Briefe* 1.14.358, 614 & 615.

¹⁰⁰⁹ Leibniz, *Sämtliche Schriften und Briefe* 1.14.470, 826-835. 834n: “Mais j’ay pensé à quelque chose de plus important, que je medite depuis longues annees, en ayant des echantillons, que je ne sçaurois assez poursviure, faute de loisir, et de personnes propres à assister. C’est que je voy le moyen de donner des verités toutes differentes des mathematiques par des demonstrations de calcul, qui les rendent aussi incontestables que pourroient estre celles des nombres ou de l’algebre.” This passage is crossed out in this letter draft manuscript, but Leibniz refers to it in a later letter to Bouvet and essentially reproduces it in his letter to the Parisian Jesuit scholar Antonie Verjus (1632-1706) on the same date, cf. 1.14.472. We can abduce that at least in Leibniz’ mind, he thus did intend for it to be included and possibly did send it in the (lost) final copy of the letter that went to Bouvet.

introducing important abstract truths to distant people, whose languages are different from our own.”¹⁰¹⁰ Leibniz saw this project as crucial in an internationalizing world because it would allow all peoples to exchange ideas equally without the vexing barriers of language: “I hold this [idea] as one of the most important, both for the propagation and verification of religion, and for the advancement of the sciences.”¹⁰¹¹

Bouvet agreed. In February 1698, Bouvet sent Leibniz a letter promising to send a copy of a Chinese dictionary then being written by a Breton-French Jesuit in Beijing, Claude de Visdelou (1656-1737), and reiterating the theory advanced by Athanasius Kircher in his 1652 *Oedipus Aegyptiacus* and his 1667 *China Illustrata* that Chinese script might derive from Egyptian hieroglyphs, and that they originally represented the unified, original human language used before Noah’s Flood.¹⁰¹²

Bouvet also included a copy of the *Book of Changes* (易經, *Yijing*, often Westernized as *I Ching*), noting the “riddle of the Chinese characters,” which in the *Book of Changes* by which he means the *yáo* (爻, which Bouvet Latinizes *gua*), 64 hexagrams made of “whole and divided horizontal lines” (i.e. also a binary structure), the unbroken lines representing *yin* (陰, “shady side”), and the broken lines representing

¹⁰¹⁰ *Ibid.* “Et le calcul philosophique nouveau de cette specieuse universelle estant independent de quelque langue que ce soit, seroit d’un merueilleux secours pour faire gouter aux peuples eloignés dont les langues different tant des nostres, les verités abstraites importantes, de la religion naturelle sur les quelles la religion revelée est comme entée.”

¹⁰¹¹ *Ibid.* “Je la tiens pour une des plus importantes, tant pour la propagation et verification de la religion que pour l’avancement des sciences.”

¹⁰¹² Athanasius Kircher, *Oedipus Aegyptiacus*. Rome: Vitalis Mascardi, 1652-1654; Kircher, *China Monumentis...Illustrata*. Amsterdam: Johan Jansson, 1667; Kircher, *Turris Babel*. Amsterdam: Johan Jansson, 1679. Leibniz, *Sämtliche Schriften und Briefe* 1.15.238, 353-358. 355: “Quelle que puisse estre la clef que Mr Müllerus a promis des caracteres chinois, je ne doute point que nous ne parvenions à en faire un jour l’analyse parfait, et à les reduire peut estre aux caracteres Ieroglyphiques des Egyptiens; et qu’on ne démontre que les uns et les autres estoit l’écriture usitée parmi les savans avant le deluge.”

yang (陽, “sunny side”).¹⁰¹³ The various *yáo* are arranged in tables similar to those Leibniz had in mind for representing information, and were used for activities ranging from divination, to Confucian philosophy and medicine.

These characters, Bouvet, notes the Chinese “attribute to Fuxi.” Fuxi was the mythical Chinese “first human” (although his lower half was that of a snake), inventor of letters and supposed first emperor of China, thought to have lived around 2000 BCE, approximately contemporary with the completion of Stonehenge in England, the first Minoan palaces on Crete, the beginning decline of the Indus Valley civilization in South Asia, and the end of Egypt’s 11th Dynasty. Bouvet, in fact, considered Fuxi equivalent of the immortal biblical figure of Enoch, an ancestor of Noah.¹⁰¹⁴ Bouvet suggested that these tables “represent in a very simple an natural manner the principles of all the sciences ... of which the Chinese, it seems, lost the knowledge a long time before Confucius.”¹⁰¹⁵

While the confluence of ideas took a few years and letters more to come to full fruition, a letter Bouvet wrote in 1701 makes the supposed connection between Leibniz’ binary *logos* and the tables of the *Yijing* explicit. Judging by the details about

¹⁰¹³ Leibniz, *Sämtliche Schriften und Briefe* 1.15.238, 353-358. 355-356.

¹⁰¹⁴ Genesis 5.22-29 ; cf. Letter by Bouvet to the Parisian-French Abbot Jean-Paul Bignon (1662-1743), sent from Beijing on 15 September 1704. Bibliothèque Nationale de France. MS Fr. 17240, fols. 17-36; cit. Janette C. Gatty, *Voyage de Siam du Pere Bouvet*. Ithaca, N.Y.: Cornell UP, 1958. Cvii.83: “Aussi sommes nous persuadez, sur de très fortes raisons, que le veritable auteur de cet ancient & mystérieux ouvrage, aussi bien que de toute la science Ieroglyphique ... n’a jamais esté que le St. Patriarche Enoch.”

¹⁰¹⁵ Leibniz, *Sämtliche Schriften und Briefe* 1.15.238, 353-358. 355-356: “Ces caracteres don’t le P^e Couplet a donné la table dans la preface de son *Confucius*, ont esté composez avec un merveilleux artifice et ils representent d’une manière tres simple et tres naturelle les principes de toutes les sciences, ou pour mieux dire c’est le systeme achevé d’une metaphysique parfait, don’t les Chinois ont perdu, ce semble, la connoissance dés long temps avant Confucius.”

the binary *logos* he references, Bouvet had evidently read a copy of Leibniz' 1697 letter about binary mathematics to Grimaldi. Bouvet realizes, firstly, that Leibniz' search for a *characteristica universalis* and his own search for an original language of humanity essentially have a common object, namely that they make all humans in all cultural spheres intelligible to one another: "Even more marvelous is the correspondence I see between your principles and those upon which I imagine the science of numbers in the ancient Chinese were founded, as well as the other sciences of which they have lost all knowledge."¹⁰¹⁶ Secondly, Bouvet notes that the binary mathematics that distinguish between 1 (something) and 0 (nothing) up to 64 match exactly to the arrangement of unbroken lines (something) and broken lines (nothing) in the 64 symbols, or *gua*, featured in the tables of the *Yijing*: "the numerical table to which you joint the double geometric progression [*dyadica*] ... is the same as the system of the *gua*."¹⁰¹⁷ The Chinese, Bouvet concludes, have simply forgotten this

¹⁰¹⁶ Leibniz, *Sämtliche Schriften und Briefe* 1.20.318, 533-555 & 1.20.319, 555-556. 535: "Mais encore à cause du merveilleux rapport que je trouve qu'ont vos principes avec ceux sur quoi je me figure qu'estoit fondée la science des nombres des anciens Chinois, et les autres sciences dont ils ont perdu la connoissance, et entr'autres la physique, ou la science qui enseigne les principes et les causes de la generation et de la corruption de toutes choses en quoy les anciens sages de la Chine trouvoient toute la mesme analogie que dans les nombres, dont toute la science estoit fondée sur un systeme, qui n'est en rien different de vostre table numeraire que vous etablissez pour fondement de vostre Calcul Numerique, d'où vous passez comme les Chinois de la generation des nombres à la production des choses, en gardant la mesme analogie dans l'explication de l'une et de l'autre."

¹⁰¹⁷ *Ibid.* 535-536: "Au reste je ne parle ici que de la Table numeraire à laquelle vous joignez la progression geometrique double, que les Chinois ont choisie comme la plus simple de toutes, et celle qui contient la plus parfaite harmonie. Et pour vous faire voir, Monsieur, que cete Table est sans y rien changer la mesme chose que le systeme des coüa, ou petites lignes du prince des Philosophes de la Chine, je veux dire de Fo-hii, je vous demande trois choses que vous m'accorderez assurément sans peine."

numerical correspondence.¹⁰¹⁸ In due time, he will present this theory to the Chinese emperor, and will inform Leibniz as soon as he has.¹⁰¹⁹

For Leibniz, this discovery made sense, and it also came at an opportune time. He was preparing his treatise on binary mathematics, *dyadica*, and his theories of a computational *logos* for discussion by the Royal Academy in Paris, which had asked that he highlight the practical implications of his theories, not just the abstract components.¹⁰²⁰ Leibniz answers Bouvet, agreeing, albeit more carefully.¹⁰²¹ He also hears from the Academy's secretary, the Norman-French author Bernard Le Bovier de Fontenelle (1657-1757), on 6 July 1703, explaining that the relationship to the Chinese figures of Fuxi should qualify his arithmetic for publication in the *Papers* of the Academy.¹⁰²² His submission, *Explanation of Binary Arithmetic*, which he sent via Bignon, was published by the Academy in 1705.¹⁰²³ In it, he claimed as fact that Fuxi's "mystery of the lines" corresponded to his binary *logos*.¹⁰²⁴ His conclusion about the latter is unequivocal: As the binary structures can stand in for, or encrypt,

¹⁰¹⁸ *Ibid.*

¹⁰¹⁹ *Ibid.* 549: "Pour vostre belle decouverte des nombres, avec la demonstration que vous en tirez pour etablir le dogme de la creation, il faut attendre quelqu'occasion favorable pour en parler à l'Emp^r, qui depuis quelques années ayant achevé de se satisfaire sur ce qu'il desiroit savoir de la Theorie de nos Sciences, ne nous donne plus la mesme facilité qu'auparavant, de l'entretenir de ces sortes de choses."

¹⁰²⁰ Leibniz, *Sämtliche Schriften und Briefe* 2.3.241 & 244.

¹⁰²¹ Leibniz, *Sämtliche Schriften und Briefe* 1.22.218.

¹⁰²² Louis Coutrat, ed. *Lettres et Opuscules Inédits de Leibniz*. Paris: Libraire Philosophique de Ladrangé, 1854. 229-231. 229.

¹⁰²³ Gottfried Wilhelm Leibniz, "Explication de l'Aritmétique Binaire." *Histoire de L'Academie Royale des Sciences* 1703. Paris: Jean Boudot, 1705. 85-89.

¹⁰²⁴ Leibniz, "Explication," 87: "Ce qu'il y a de suprenant dans ce calcul, c'est que cette Arithmetique par 0 & 1 se trouve contenir le mystere des lignes d'un ancien Roy & Philosophe nommé *Fohy* qu'on croit avoir vécu il y a plus de quatre mille ans, & que les Chinois regardant comme le Fondateur de leur Empire & de leurs sciences."

any language *on equal terms*, “every reasoning that can be derived from notions could be derived from their characters by a way of calculating, which would be one of the most important means of assisting the human mind [*l’esprit humain*].”¹⁰²⁵ This is recognizably the rhetorical promise that also underlies the supposed universalizability of computer code.

The initial reception of Leibniz’s theories was enthusiastic. The Piedmontese-Italian Jesuit papal envoy to the court in Warsaw and renown geographer Carlo Marizio Vota (1629-1715), for example, received Leibniz’s discovery in a letter from 4 April 1703,¹⁰²⁶ and in his reply on 17 April 1703 declared, “Your 0 and your 1 are eternal monuments to your Spirit, and posterity will hardly be able praise them sufficiently ... and as Columbus and Amerigo Vespucci have the glory to have discovered new lands in the Occident, you have an even larger one for having made such rare discoveries about the Orient.”¹⁰²⁷ In a letter dated that same day, Leibniz also sent his theories to the secretary of the Royal Society in London, the Ulster-Scots physician Hans Sloane (1660-1753).¹⁰²⁸ The general enthusiasm was shared by

¹⁰²⁵ Leibniz, “Explication,” 89: “Tout raisonnement qu’on peut tirer des notions, pourroit être tire de leurs Caracteres par une maniere de calcul, qui seroit un des plus importans moyens d’aider l’esprit humain.”

¹⁰²⁶ Leibniz, *Sämtliche Schriften und Briefe* 1.22.203.

¹⁰²⁷ Leibniz, *Sämtliche Schriften und Briefe* 1.22.223. 337-378. 337: “Vostre 0 et vostre 1 seront des monuments eternels de vostre Esprit et la posterite n’aura pas assés d’eloges pour les celebrer, aussi bien que vos lignes coupées qui donnent tant de rayons et de lumieres au monde litteraire non seulement de la Chine mais encore de toute l’Europe. Enfin n vous estes un Illustre et nouveau Conquerant des choses inconnues. Et si Colombo et Americ Vespuce ont la gloire d’avoir fait des decouvertes des nouvelles terres dans l’Occident, vous en avés fait une plus grande d’avoir donnée à l’Orient de si rares connoissances.”

¹⁰²⁸ Sloane MS 4039, fols. 1165-117v. British Library, London, United Kingdom. A transcript of the Latin letter can be found in E.J. Aiton, “An Unpublished Letter of Leibniz to Sloane.” *Annals of Science* 38.1 (1981), 103-107.

Leibniz's contemporaries; nevertheless, the essay was the only publication Leibniz's ever produced on his binary *logos*, or *dyadica*.

What can be said in conclusion, then, is that all the major components of the modern information concept – probability, calculability, *reductio ad datum*, mechanized calculation, and universal application – were presented by Leibniz as culminations of 17th Century scientific, linguistic, literary, and mathematical thought, its history stretching the globe. It can also be observed that this development, including Leibniz's advocacy for the use the new form of *data* by sovereigns to “apperceive the entire realm at one glance,” created the framework for an information concept that matches today's concept of *intelligence*: classified, contingent, strategic, *data*-driven, computerized, and ever evolving. When this chapter turns to *Hamlet*, then, it should come as no surprise that this 17th Century dramatic text, in its way, will also foreshadow this transition from the *arcana imperii* and the assumptions of the geometrical *logos* to *intelligence* operating within the modern framework of information. The underlying structures of 21st Century computerized epistemologies are unquestionably an Early Modern subject – and, as we will see, a literary one.

VI. The Computational *Logos* and Secrets of the Real

Given the relatively radical nature of that claim, a final historical excursus remains necessary, one that emphasizes the continuity between Leibniz' ideas and the “information society” of the 21st Century, in which the modern concept of *intelligence* plays its part. This excursus anticipates the reasonable objections that an obscure 17th Century proto-theory of information may not appear to have a direct bearing on the

21st Century version, and that while it is evident these innovations touch on philosophy, science, diplomacy, mathematics, linguistics, and technology, it is less intuitively clear what it contributes to an understanding of intelligence-based espionage in the 21st Century, and to literary criticism. Indeed, Leibniz's theories about the universality of a language mathematically encrypted in binary mathematics, calculable, mechanized as *data*, and subsequently treated as mutually intelligible information eventually faded from Enlightenment discourse in the 18th Century. Leibniz' reputation buckled under a series of caricatures, including the slanders of the Leibniz-Newton controversy, and was rather derisively etched into intellectual memory by the comedic distortion of his views on theodicy in *Candide* by the Parisian French wit François-Marie Arouet, better known as Voltaire (1694-1778). Given the inability of 17th and 18th Century calculating machines to achieve what Leibniz had hoped, much less communicate it universally, his ideas remained ahead of his time.

Over the next two centuries, Leibniz' ideas about the binary *logos* experienced a mixture of skepticism and at times outright hostility, for a variety of reasons. The Prussian-German philosopher Immanuel Kant (1724-1804) found Leibniz a valuable source of inspiration in many regards, but rejected any attempt to prove metaphysical or epistemological arguments with mathematical methods, as Kant thought metaphysics and epistemology were neither precise nor intelligible enough for mathematical proofs to apply.¹⁰²⁹ The Swabian-German philosopher Georg Wilhelm

¹⁰²⁹ Immanuel Kant, *Critik der reinen Vernunft*. Riga: Johann Friedrich Hartknoch, 1781. 726: "Da wir es uns zur Pflicht gemacht haben, die Grenzen der reinen Vernunft im transscendentalen Gebrauche genau und mit Gewißheit zu bestimmen, diese Art der Bestrebung aber das besondere an sich hat, unerachtet der nachdrücklichsten und kläresten Warnungen, sich noch immer durch Hofnung hinhalten zu lassen, ehe man den Anschlag gänzlich aufgibt, über Grenzen der Erfahrungen hinaus in die

Friedrich Hegel (1770-1831) scoffed at a different component of Leibniz's argument, claiming that China had been treated as a seductive fantasy by many thinkers, and observing that the *Yijing* was so abstract that it was empty of any content.¹⁰³⁰

Moreover, Hegel considered any binary *logos* or *dyadic* thought as symptomatic of "the religion of measure," more an Enlightenment superstition than anything else.¹⁰³¹

It is Hegel's perspectives on China and binaries that the Algerian-French philosopher Jacques Derrida (1930-2004) would later reiterate and tie to his own suspicions about binary structures in language.¹⁰³²

Nevertheless, Leibniz' concepts – if not always, in these instances, credited to him – reemerged in the in the 19th Century, in the realms of mechanics and logic.

When the London polymath Charles Babbage (1791-1871) attempted to upgrade the older calculating machines to a first mechanical computer, his never-completed

reizende Gegenden des Intellectuellen zu gelangen: so ist es nothwendig, noch gleichsam den letzten Anker einer phantasireichen Hoffnung wegzunehmen und zu zeigen, daß die Befolgung der mathematischen Methode in dieser Art Erkenntniß nicht den mindesten Vortheil schaffen könne, es müßte denn der seyn, die Blößen ihrer selbst desto deutlicher aufzudecken, daß Meßkunst und Philosophie zwey ganz verschiedene Dinge seyn, ob sie sich zwar in der Naturwissenschaft einander die Hand bieten, mithin das Verfahren des einen niemals von dem andern nachgeahmt werden könne."

¹⁰³⁰ Georg Wilhelm Friedrich Hegel, *Vorlesungen über die Geschichte der Philosophie*, Vol. 1. Ed. Karl Ludwig Michelet. Berlin: Duncker & Humblot, 1833. 142: "Die allgemeine Abstraktion geht also bei den Chinesen fort zum Konkreten, obgleich nur nach äußerlicher Ordnung, und ohne etwas Sinniges zu enthalten. Dieß ist die Grundlage aller chinesischen Weisheit und alles chinesischen Studiums."

¹⁰³¹ Georg Wilhelm Friedrich Hegel, "Die bestimmte Religion." *Vorlesungen über die Philosophie der Religion*, Vol. 1. Ed. Karl Ludwig Michelet. Berlin: Duncker & Humblot, 1832. 183-376. 245-246: "Dabei ist merkwürdig, wie das an und für sich Seiende als Ordnung und bestimmte Existenz gewußt wird. In dieser Form wird die Substanz als Maaß bewußt. Das weitere ist die Macht dieser Maaße, dieser Substanz – diese Macht ist der Kaiser. Das Maaß selbst ist eine feste Bestimmung; es heißt Tao, die Vernunft. Die Gesetze des Tao oder die Maaße sind Bestimmungen. ... Die ausführliche Angabe und Entwicklung dieser Maaße begriffe die ganze Philosophie und Wissenschaft der Chinesen. ... Die Maaße sind in ihrer abstrakten ganz einfache Kategorien: Seyn und Nichtseyn, das Eins und Zwei, welches denn das Viele überhaupt ist."

¹⁰³² Jacques Derrida, *Margins of Philosophy*. Chicago: U of Chicago P, 1997. 96; Derrida, *Positions*. London: Continuum Press, 2004. 30–31.

Difference Engine, Babbage relied on a binary structure and used punch cards to record either 1 or 0 to represent information,¹⁰³³ an idea he borrowed from contemporary mechanized looms. Like Leibniz, Babbage's goal was to automate calculations in order to eliminate human error.¹⁰³⁴ The potential of this machine, and its hypothetical successor, the Analytical Machine, was realized by the London mathematician Augusta Ada King, Countess of Lovelace (1815-1852), whose less important distinction was that she was the only legitimate daughter of the poet-adventurer George Gordon Byron, 6th Baron Byron (1788-1824). Lovelace was a mathematical prodigy and acquaintance of Babbage's, who called her the "Enchantress of Number." Lovelace formulated the first algorithm such a machine could use to calculate a desired outcome – in her case, Bernoulli numbers – which makes Lovelace the first person to come up with a mathematical-mechanical version of what today is called "software."¹⁰³⁵ In addition, Lovelace tackled the question of artificial intelligence, which she dismissed on the basis that machines can only replicate whatever humans have programmed them to do, no matter how convincing the illusion that they might be acting out of their own accord.¹⁰³⁶ Nevertheless, Lovelace agreed with Leibniz' general perspective:

¹⁰³³ Charles Babbage, *Passages from the Life of a Philosopher*. London: Longman, Green, Longman, Roberts, & Green, 1864. 112-141. See illustration on 121.

¹⁰³⁴ Babbage, *Passages*, 122: "Of course the Engine will compute all the Tables which it may itself be required to use. These cards will therefore be entirely free from error."

¹⁰³⁵ Lovelace's method for programming appeared in Richard Taylor, ed. *Scientific Memoirs*, Vol. 3. London: Richard & John E. Taylor, 1843. 666-731. They comprised her editorial notes on an essay by the Savoyard engineer (and later Italian Prime Minister) Luigi Federico Menabrea, "Sketch of the Analytical Engine invented by Charles Babbage." Menabrea lays out the general concept of algebraic uses of the Machine. Lovelace gives a detailed step-by-step program in her Note G, 722-731.

¹⁰³⁶ Taylor, *Scientific Memoirs*, 722: "The Analytical Engine has no pretensions whatever to *originate* any thing. It can do whatever we *know how to order it* to perform. It can *follow* analysis; but it has no

The ... engine is in its nature strictly arithmetical... There is no finite line of demarcation which limits the powers of the Analytical Engine. These powers are co-extensive with our knowledge of the laws of analysis itself ... Indeed we may consider the engine as the *material and mechanical representative* of analysis.¹⁰³⁷

And:

Those who view mathematical science not merely as a vast body of abstract and immutable truths, whose intrinsic beauty, symmetry and logical completeness, when regarded in their connexion together as a whole, entitle them to a prominent place in the interest of all profound and logical minds ... when it is remembered that this science constitutes the language through which alone we can adequately express the great facts of the natural world.¹⁰³⁸

Meanwhile, in 1854, Lincolnshire mathematician George Boole (1815-1864) – in a faint echo of Ibn Tufayl’s protagonist Awake, a largely self-educated mathematician – revolutionized the study of logic by introducing a type of mathematical algebra (now called ‘Boolean Algebra’) that could convert linguistic features into calculable, universalizable formulas – in essence, a successful

power of *anticipating* any analytical relations or truths. Its province is to assist us in making *available* what we are already acquainted with. This it is calculated to effect primarily and chiefly of course, through its executive faculties; but it is likely to exert an *indirect* and reciprocal influence on science itself in another manner. For, in so distributing and combining the truths and the formulae of analysis, that they may become most easily and rapidly amenable to the mechanical combinations of the engine, the relations and the nature of many subjects in that science are necessarily thrown into new lights, and more profoundly investigated.”

¹⁰³⁷ Taylor, *Scientific Memoirs*, 696.

¹⁰³⁸ *Ibid.*

implementation of a *mathesis* and *characteristica universalis* of the sort mulled over by the likes of Pascal, Descartes, and Leibniz, whom he appears to have viewed as a mixture of mathematical saint, ghostly prophet, and Great Reformer.¹⁰³⁹ These developments were later picked up the early analytical philosophers, first and foremost the Monmouthshire logician and essayist, Bertrand Arthur William Russell, 3rd Earl Russell (1872-1970). This is no coincidence: Russell was a great admirer of Leibniz.¹⁰⁴⁰ It is in this spirit that Russell, together with his colleagues the Mecklenburg-German mathematician Friedrich Ludwig Gottlob Frege (1848-1925) and the London philosopher George Edward Moore (1873-1958) and others, developed the postulate of analytical philosophy that truth might be best represented and analyzed when it is translated into the universalizable algebra of formal logic.¹⁰⁴¹

One reason that the development of the computational *logos* with its attendant *data* concept – and indeed, the emergence of modern *intelligence* – tends to be

¹⁰³⁹ George Boole, *An Investigation of the Laws of Thought on Which are Founded the Mathematical Theories of Logic and Probabilities*. London: Macmillan, 1854. Boole's wife and fellow mathematician Mary Everest Boole wrote in an epistolary essay ostensibly addressed to her daughter Antonia, "The key-note to all true Reform is: 'Seek ye the old paths'; 'Sing the old songs,' 'Tell us the old, old story.' Some one wrote to my husband to say that, in reading an old treatise by Leibnitz [*sic*] (who lived at the same time as Newton) he had come upon the same formula which the Cambridge people call 'Boole's equation.' [Specifically, this refers to Leibniz' Algebra of Concepts and Boole's Algebra of Sets.] My husband looked upon Leibnitz and found his equation there, and was perfectly delighted; he felt as if Leibnitz had come and shaken hands with him across the centuries. Afterwards one of my husband's admirers and would-be 'followers' tried to persuade me that Leibnitz did not understand as much, or mean as much, as Boole had done. But then, the person who talked in that way was not a real Reformer; my husband was a real Reformer." Mary Everest Boole, "The Prophet." *Collected Works*, Vol. 3. Ed. Eleanor Meredith Cobham. London: C.W. Daniel, 1931. 1141-1143. 1142-1143.

¹⁰⁴⁰ E.g. Bertrand Russell, *A Critical Exposition of the Philosophy of Leibniz*. Cambridge: Cambridge UP, 1900. v-ix. & 1-9. See also Ohad Nachtomy, "Leibniz and Russell." Eds. Pauline Phemister & Stuart Brown, *Leibniz and the English-Speaking World*. Dordrecht: Springer, 2007. 207-218.

¹⁰⁴¹ William Ewald, "The Emergence of First-Order Logic", *The Stanford Encyclopedia of Philosophy*, Spring 2019 Ed. Ed., Edward N. Zalta. <https://plato.stanford.edu/archives/spr2019/entries/logic-firstorder-emergence>.

perceived as a 20th Century technocratic development, is unquestionably the misperception that a mathematical structure of *data* and information is confined to the age of digital computers, and therefore the province of computer science. Indeed, that field's name in other languages like French (*informatique*), German (*informatik*), and Spanish (*informática*) points directly to the link between digital technology and information-based knowledge. In many such chronologies, the “information age” – a term coined by former US Airforce pilot and CIA operative Richard S. Leghorn (1919-2018) in an advice book for corporate managers¹⁰⁴² – properly begins in 1936. It is tied to the emergence of the “universal machine,” proposed that year by British mathematician Alan Mathison Turing (1912-1954) in response to a mathematical challenge, the so-called *entscheidungsproblem* [“decision problem”].¹⁰⁴³ Turing's theoretical machine represented a technical solution to this mathematical challenge – but it did so as the inheritor of an Early Modern history. It also presents concrete epistemological challenges that are older than the technophile 20th Century, and that should emphatically (also) be taken seriously by humanistic discourse.

This begins with the Information Age's reliance on predecessor knowledge structures. For instance, the *entscheidungsproblem* represents a thought experiment in mathematical logic formulated in 1928 by the German-Prussian mathematician David

¹⁰⁴² The *OED* considers the first documented use in print to be Richard S. Leghorn, “Top Management's Use of Operations Research.” Harold Bright Maynard, ed. *Top Management Handbook*. New York: McGraw-Hill, 1960. 1007-1024. 1024. On Leghorn's life and career at the CIA, see his obituary by Bryan Marquard, “Richard Leghorn, 98, pioneer of Cold War aerial espionage photography.” *Boston Globe*. 6 February 2018. <https://www.bostonglobe.com/metro/obituaries/2018/02/05/richard-leghorn-pioneer-cold-war-aerial-espionage-photography/C6PIYAATiFZNKx2P1La8JJ/story.html>. Retrieved 4 April 2019.

¹⁰⁴³ Alan Mathison Turing, “On Computable Numbers, with an Application to the *Entscheidungsproblem*.” *Proceedings of the London Mathematical Society* S2-42.1 (1937), 230–265.

Hilbert (1862-1943).¹⁰⁴⁴ Simply put, the problem asks whether there is an algorithm that can work on the basis of a set of logical axioms, can be given a mathematical statement derived from those axioms, and can then prove that this statement will always be true.¹⁰⁴⁵ Hilbert calls this “the central problem [*hauptproblem*] of mathematical logic.”¹⁰⁴⁶ Hilbert’s general question had been partially addressed in 1931 by the German-Bohemian mathematician and philosopher Kurt Friedrich Gödel (1906-1978) and his French-Parisian colleague Jacques Herbrand (1908-1931) in their “incompleteness theorem,” which suggested how one might arrive at the correct answer to the decision problem. Gödel and Herbrand employed a technique called Gödel Numbers to arrive at their conclusion. Their technique reduces all semantic truths to natural numbers (including all logical statements), allowing mathematicians

¹⁰⁴⁴ David Hilbert & Wilhelm Ackermann, *Grundzüge der Theoretischen Logik*. Berlin: Springer, 1928. “Unter dem *Entscheidungsproblem* versteht man, wie schon erwähnt, das Problem, die Allgemeingültigkeit von Ausdrücken festzustellen, oder auch das duale Problem der Feststellung der Erfüllbarkeit von Ausdrücken.” This oft-quoted sentence does not occur in the 1928 edition. There, Hilbert defines the problem much less straightforwardly, as follows: “Eine ausgebildete ‘Algebra der Logik’ begegnete uns in Aussagenkalkül (man vgl. insbesondere § 4-9 des I. Kapitels). Die wichtigsten der dort erwähnten und gelösten Probleme waren das der *Allgemeingültigkeit* und der *Erfüllbarkeit* eines logischen Ausdrucks. Beide Probleme zusammen pflegt man auch kurz als *Entscheidungsproblem* zu bezeichnen” (72). The more elegant, better known formulation is Ackermann’s, who includes it in the 4th edition of 1959, p.119.

¹⁰⁴⁵ “Das Entscheidungsproblem ist gelöst, wenn man ein Verfahren kennt, das bei einem vorgelegten logischen Ausdruck durch endlich viele Operationen die Entscheidung über die Allgemeingültigkeit bzw. Erfüllbarkeit erlaubt” (73). Perhaps more accessibly put by the put by the Jewish-Polish and U.S. American mathematician Alfred Teitelbaum (alias Alfred Tarski, 1901-1983) in a summary introduced to the expanded 1941 English edition, with translation help by Olaf Helmer, of his 1936 *O logice matematycznej i metodzie dedukcyjnej*. Lviv: Książnica-Atlas, 1936. In that English edition, *Introduction to Logic*: “It is the problem which consists of finding, for the given deductive theory, a general method which would enable us to decide whether or not a particular sentence formulated in the terms of this theory can be proved within this theory. This important problem is known as the *decision problem*.” 136.

¹⁰⁴⁶ Already in the 1928 edition, Hilbert states the high stakes of the *Entscheidungsproblem*: “Die Lösung des Entscheidungsproblems ist für die Theorie aller Gebiete, deren Sätze überhaupt einer logischen Entwickelbarkeit aus endlich vielen Axiomen fähig sind, von grundsätzlicher Wichtigkeit” (73-74) and “Das Entscheidungsproblem muss als das Hauptproblem der mathematischen Logik bezeichnet werden” (77).

to consider any logical formula completely arithmetically, by using an algorithm.¹⁰⁴⁷ They did not, however, themselves apply their technique to a search for a solution of Hilbert's *entscheidungsproblem*.

Following the train of thought formulated by Gödel and Herbrand, two mathematicians independently arrived at their respective answers to the *entscheidungsproblem* in 1936: it is “undecidable,” i.e. it is not possible to construct an algorithm that always leads to a yes or no answer correctly. (Although there are exceptions for specific mathematical systems where it can, such as Euclidean geometry.¹⁰⁴⁸) One of the mathematicians who came to this conclusion was Turing's future PhD supervisor at Princeton University, the Virginian mathematician Alonzo Church (1903-1995), who arrived at it using the so-called λ -calculus.¹⁰⁴⁹ The other, Turing, meanwhile, arrived at his alternate solution by proposing his “Turing machine:” a digital universal computer.

Turing's design of the machine was motivated by a mathematical-logical principle called “effectiveness.” In logic and in mathematics, a method for achieving a particular result is “effective” when it is “set out in terms of a finite number of exact instructions;” “will, if carried out without error, produce the desired result in a finite number of steps;” “can (in practice or in principle) be carried out by a human being unaided by any machinery except paper and pencil;” and “demands no insight,

¹⁰⁴⁷ Kurt Friedrich Gödel, “Über Formal Unentscheidbare Sätze der ‘Principia Mathematica’ und Verwandter Systeme I.” *Monatshefte für Mathematik und Physik* 38 (1931), 173-198.

¹⁰⁴⁸ Teitelbaum (alias Tarski) demonstrated this exception for Euclidean geometry in his *A Decision Method for Elementary Algebra and Geometry*. Berkeley, Calif.: Rand, 1948. 43-45.

¹⁰⁴⁹ Alonzo Church, “An Unsolvable Problem of Elementary Number Theory.” *American Journal of Mathematics* 58.2 (April 1936), 345-363.

intuition, or ingenuity, on the part of the human being carrying out the method.”¹⁰⁵⁰

Turing observes that, however, “human memory is necessarily limited” and observes that the problem is better addressed if one realizes that “we may compare a man in the process of computing a real number to a machine.”¹⁰⁵¹

In this and following papers, Turing then formulates a new version of an “effective method,” in which a machine replicates the human activity of simple calculations, just at a faster, untiring rate, and more capable of remembering long calculations already conducted, so as not to unnecessarily replicate work¹⁰⁵² — a sort of advanced version of Leibniz’ stepped reckoner. Turing envisions these machines to be able to “carry out any operations which could be done by a human computer,”¹⁰⁵³ and refers to them as “electronic computers” or “digital computers.” The function of such a machine is to solve any problem requiring logic and an “effective method:” “The class of problems capable of solution by the machine can be defined fairly specifically. They are those problems which can be solved by human clerical labour,

¹⁰⁵⁰ B. Jack Copeland, “The Church-Turing Thesis.” *The Stanford Encyclopedia of Philosophy*. Online. <https://plato.stanford.edu/archives/spr2019/entries/church-turing>. Accessed 9 April 2019.

¹⁰⁵¹ Turing, “On Computable Numbers,” 231.

¹⁰⁵² “The idea behind digital computers may be explained by saying these machines are intended to carry out any operations which could which could be done by a human computer. The human computer is supposed to be following fixed rules; he has no authority to deviate from them in any detail. We may suppose that these rules are supplied by a book, which is altered whenever he is put on a new job. He has also an unlimited supply of paper on which he does his calculations. ... A digital computer can usually be regarded as consisting of three parts: (i) Store. (ii) Executive unit. (iii) Control. The store is a store of information, and corresponds to the human computer’s paper, whether this is the paper on which he does his calculations or that on which his book of rules is printed. In so far as the human computer does calculations in his head a part of the store will correspond to his memory. ... The ‘book of rules’ supplied to the computer is replaced in the machine by a part of the store. It is then called the ‘table of instructions’. ... The reader must accept it as a fact that digital computers can be constructed, and indeed have been constructed, according to the principles we have described, and that they can in fact mimic the actions of a human computer very closely.” Alan Mathison Turing, “Computing Machinery and Intelligence.” *Mind* 59.236 (Oct. 1950), 433-460. 436-437.

¹⁰⁵³ Turing, “Computing Machinery,” 436.

working to fixed rules, and without understanding, provided that... the instructions must cover every possible eventuality.”¹⁰⁵⁴

Turing’s specific proposal is to create a machine that calculates on the basis of the simplest possible means, namely by “printing” a series of symbols – in his initial proposal, on a very long paper tape. These symbols consist entirely of 0 and 1.¹⁰⁵⁵ In later versions of the machine – the electromechanical computer – are represented not by marks on tape but by vacuum tubes, transistors, or switches turned either into an “on” position (1) or an “off” position (0), for instance in the first “Turing complete” computers, the Z2 and Z3, evolved from Turing’s general model by Prussian-German civil engineer Konrad Ernst Otto Zuse (1910-1995) in 1938 and 1941.¹⁰⁵⁶ Following the logic of the Gödel Numbers, in Turing’s machine, all semantic content, as well as all numbers, are converted into a binary code consisting of 0 and 1 so that they can be represented, stored, and read by the machine. In Leibniz’ sense, the machine had taken over vital mental functions normally reserved for human brains.

The binary code is governed by the analogous logic of binary mathematics, a base 2 system that also calculates entirely in 0 and 1. When the 0 or 1 stands for semantic or numerical content, it is referred to as a “bit,” a contraction of the words “binary digit.”¹⁰⁵⁷ The bit represents the *data* of the digital, calculable medium of

¹⁰⁵⁴ Alan Turing, “Proposed Electronic Calculator.” 1946. AMT/C/32. Public Record Office, The National Archives, Kew, Surrey, UK. 14.

¹⁰⁵⁵ Turing, “On Computable Numbers,” 232: “If an *a*-machine [i.e. automatic machine] prints two kinds of symbols, of which the first kind (called figures) consists entirely of 0 and 1 (the others being called symbols of the second kind), then the machine will be called a computing machine.”

¹⁰⁵⁶ Paul E. Caruzzi, “The First Computers, 1935-1945.” *Computing: A Concise History*. Cambridge, Mass.: MIT Press, 2012. 23-48.

¹⁰⁵⁷ Claude Elwood Shannon, “A Mathematical Theory of Communication.” *Bell System Technical Journal* 26.3 (July 1948), 379-423. 380: “The choice of a logarithmic base corresponds to the choice of

knowledge referred to as “information.” In terms of computable knowledge, no other form of truth (1) or non-truth (0) can exist, since the Turing machine cannot “think” or “perceive” outside of the binary and mathematical logic of its basic structure. Thus all information represents a mathematized form of knowledge, and all knowledge transmitted through a computer is structured as information based on this basic structure.

The fact that this constellation of mathematics and knowledge has imaginative and philosophical value beyond the mere construction of machines that can store and process information was immediately apparent to Turing, and also to Zuse. In 1945, Zuse, for example, was masquerading as an artist interested in the Alpine landscapes surrounding the remote Swabian mountain village of Hinterstein,¹⁰⁵⁸ in order to evade being abducted (and having his disassembled and hidden Z4 computer stolen) by French and American troops, the latter in particular targeting German scientists and their innovative technologies for extraction to the United States as part of “Operation Overcast” and “Operation Paperclip.”¹⁰⁵⁹ Simultaneously, Zuse was attempting to avoid being shot by roving units of Hitler’s Protection Squadron [the “SS,”

a unit for measuring information. If the base 2 is used the resulting units may be called binary digits, or more briefly bits, a word suggested by J. W. Tukey. A device with two stable positions, such as a relay or a flip-flop circuit, can store one bit of information. N such devices can store N bits, since the total number of possible states 2^N and $\log_2 2^N = N$.”

¹⁰⁵⁸ Thomas Nierhörster, “Konrad Zuse: Der Vater des Computers.“ *Hindelanger Hefte* 3 (2007).

¹⁰⁵⁹ John Gimbel, *Science Technology and Reparations: Exploitation and Plunder in Postwar Germany*. Stanford University Press, 1990; Linda Hunt, *Secret Agenda: The United States Government, Nazi Scientists, and Project Paperclip, 1945 to 1990*. London: St. Martin's Press, 1991; Matthias Judt & Burghard Ciesla, *Technology Transfer Out of Germany After 1945* Newark, N.J.: Harwood Academic Publishers, 1996; Annie Jacobsen, *Operation Paperclip*. New York: Little, Brown: 2014; Brian E. Crim, *Our Germans: Project Paperclip and the National Security State*. Baltimore, Md.: Johns Hopkins UP, 2018.

schutzstaffel], who had orders to keep German scientists from falling into Allied hands, at all costs.¹⁰⁶⁰ While in Hinterstein, Zuse discussed space travel with the baron Wernher von Braun (1912-1977), the Prussian-German aerospace engineer who shortly thereafter would himself be taken to the United States and would play a major role in the development of missile technology and space travel.¹⁰⁶¹ This combination of circumstances gave Zuse excess free time to meditate on various scientific questions, including his later famous *plankalkül* [“plan calculation”], an early computer programming language.¹⁰⁶²

Importantly for this dissertation, Zuse also used his forced leisure in the Alpine forests to contemplate the philosophical question of free will and causality, and to give his answers a computational bent. Zuse was particularly motivated by the Prussian-German philosopher Arthur Schopenhauer (1788-1860) and his essay “On the Freedom of the Human Will.”¹⁰⁶³ In that essay, Schopenhauer follows Prussian-German philosopher Immanuel Kant (1724-1804) in recognizing that the simple logic

¹⁰⁶⁰ Konrad Zuse, *Der Computer – Mein Lebenswerk*. Berlin: Springer, 1993. 83-84; Konrad Zuse, *The Computer – My Life*. Patricia McKenna & J. Andrew Ross, transls. Hans Wössner, ed. Berlin: Springer, 1993. 94.

¹⁰⁶¹ Zuse, *Der Computer*, 83; Zuse, *The Computer*, 93-94.

¹⁰⁶² Zuse, *Der Computer*, 91; Zuse, *The Computer*, 101; Konrad Zuse, “Über den allgemeinen Plankalkül als Mittel zur Formulierung schematisch-kombinativer Aufgaben.” *Archiv der Mathematik* 1.6 (1948), 441-449; Konrad Zuse, *Der Plankalkül*. Bonn: Gesellschaft für Mathematik und Datenverarbeitung, 1972; Wolfgang Giloi, “Konrad Zuse's Plankalkül: The First High-Level ‘non von Neumann’ Programming Language.” *IEEE Annals of the History of Computing* 19.2 (1997): 17-24; Carla Petrocelli, “Konrad Zuse and his *Plankalkül*: The Hope to Emerge from the sleep of *Sleeping Beauty*.” *International Journal of Humanities and Arts Computing* (2017), 1-27.

¹⁰⁶³ Zuse, *Der Computer*, 92-93; Zuse, *The Computer*, 104; Arthur Schopenhauer, “Ueber die Freiheit des menschlichen Willens.” *Die beiden Grundprobleme der Ethik*. Frankfurt: Johann Christian Hermann: 1841. 1-100; Arthur Schopenhauer, “On the Freedom of the Human Will.” David Cartwright, Edward E. Erdmann, & Christopher Janaway, transls. & eds. *The Two Fundamental Problems of Ethics*. Oxford: Oxford UP, 2010. 35-120.

of cause-and-effect defines all things, and that nothing happens without necessarily being caused by an effect.¹⁰⁶⁴ Consequently, Schopenhauer comes to the conclusion that all things happen inevitably – including human actions, which are effects caused by our motives, based on the simple yet ultimately irresistible logics our innate character. While humans have “an unshakeable certainty that we are the doers of our deeds,” this is an expression of an innate character that includes a sense of responsibility, not of reality *per se*.¹⁰⁶⁵ The appeal to a computer scientist is self-evident; it is only a small inferential step from Schopenhauer’s type of determinism to the logics of executing a predetermined code, even one that gives a program “free will” in decision making, within parameters over which it has no say.

¹⁰⁶⁴ “Nothwendig ist, was aus einem gegebenen zureichenden Grunde folgt ... Je nachdem nun dieser zureichende Grund ein logischer, oder ein mathematischer, oder ein physischer, genannt Ursache, ist, wird die Nothwendigkeit eine logische (wie die der Konklusion, wenn die Prämissen gegeben sind) eine mathematische, (z.B. die Gleichheit der Seiten des Dreiecks, wenn die Winkel gleich sind) oder eine physische, reale (wie der Eintritt der Wirkung, sobald die Ursache da ist) seyn: immer aber hängt sie, mit gleicher Strenge, der Folge an, wenn der Grund gegeben ist. Nur sofern wir etwas als Folge aus einem gegebenen Grunde begreifen, erkennen wir es als nothwendig; und umgekehrt, sobald wir etwas als Folge eines zureichenden Grundes erkennen, sehn wir ein, daß es notwendig ist: denn alle Gründe sind zwingend.” Schopenhauer, “Freiheit,” 7-8.

¹⁰⁶⁵ “Es giebt nämlich noch eine Thatsache des Bewußtseyns, von welcher ich bisher, um den Gang der Untersuchung nicht zu stören, gänzlich abgesehn habe. Diese ist das völlig deutliche und sichere Gefühl der Verantwortlichkeit für das, was wir thun, der Zurechnungsfähigkeit für unsre Handlungen, beruhend auf der unerschütterlichen Gewißheit, daß wir selbst die Thäter unsrer Thaten sind. Vermöge dieses Bewußtseyns kommt es Keinem, auch dem nicht, der von der im Bisherigen dargelegten Nothwendigkeit, mit welcher unsre Handlungen eintreten, völlig überzeugt ist, jemals in den Sinn, sich für ein Vergehn durch diese Nothwendigkeit zu entschuldigen und die Schuld von sich auf die Motive zu wälzen, da ja bei deren Eintritt die That unausbleiblich war. Denn er sieht sehr wohl ein, daß diese Nothwendigkeit eine subjektive Bedingung hat, und daß hier objective, d.h. unter den vorhandenen Umständen, also unter der Einwirkung der Motive, die ihn bestimmt haben, doch eine ganz andere Handlung, ja, die der seinigen gerade entgegengesetzte, sehr wohl möglich war und hätte geschehn können, wenn nur Er ein Anderer gewesen wäre: hieran allein hat es gelegen. Ihm, weil er dieser und kein Anderer ist, weil er einen solchen und solchen Charakter hat, war freilich keine andere Handlung möglich: aber an sich selbst, also objective, war sie möglich. Die Verantwortlichkeit, deren er sich bewußt ist, trifft daher bloß zunächst und ostensibel die That, im Grunde aber seinen Charakter: für diesen fühlt er sich verantwortlich.” Schopenhauer, “Freiheit,” 91-92.

Schopenhauer's views had not just influenced seminal subsequent philosophers like the Saxon-German Friedrich Wilhelm Nietzsche (1844-1900)¹⁰⁶⁶ and the Castilian-American Jorge Agustín Nicolás Ruiz de Santayana y Borrás (1863-1952),¹⁰⁶⁷ composers like the Saxon-German Wilhelm Richard Wagner (1813-1883)¹⁰⁶⁸ and the Ukrainian-Russian Sergei Sergeievich Prokofiev (1891-1953),¹⁰⁶⁹ and writers as diverse as the Muscovite-Russian Leo Tolstoy (1828-1910),¹⁰⁷⁰ the Norman-French Henri René Albert Guy de Maupassant (1850-1893),¹⁰⁷¹ the Hanseatic-German Paul Thomas Mann (1875-1955),¹⁰⁷² and the Bonaerenses-Argentine Jorge Francisco Isidoro Luis Borges Acevedo (1899-1986).¹⁰⁷³ Schopenhauer had also found a receptive audience in the scientific community of Berlin in the earlier 20th Century, where his devotees included the Jewish-German physicist Albert Einstein (1879-1955)¹⁰⁷⁴ and the Austrian-German physicist Erwin

¹⁰⁶⁶ This was clear even to early interpreters of Nietzsche's work, e.g. Grace Neal Dolson, "The Influence of Schopenhauer upon Friedrich Nietzsche." *Philosophical Review* 10.3 (May 1901), 241-250.

¹⁰⁶⁷ Michael Brodrick, "Santayana and Schopenhauer." *The Ethics of Detachment in Santayana's Philosophy*. London: Palgrave Macmillan, 2015. 84-106.

¹⁰⁶⁸ Bryan Magee, "Schopenhauer and Wagner." *The Philosophy of Schopenhauer*. Oxford: Oxford UP, 1983. 350-402.

¹⁰⁶⁹ E.g. Sergey Prokofiev, *Diaries 1915–1923: Behind the Mask*. Anthony Phillips, transl. London: Faber & Faber, 2008. 194, 201-202, 204-205, 230, 240, 296-297, et. al.

¹⁰⁷⁰ David Becker, "Tolstoy and Schopenhauer and War and Peace: Influence and Ambivalence." *Canadian-American Slavic Studies* 48.4 (2014), 418-447.

¹⁰⁷¹ Dorian Bell, "Maupassant and the Limits of the Self." *The Romanic Review* 101.4 (2010), 781-801.

¹⁰⁷² Herbert Lehnert, "Zur Biographie Thomas Manns: Religiosität oder mehr?" *Orbis Litterarum* 70.1 (February 2015), 67-83.

¹⁰⁷³ Ivan Almeida, "De Borges a Schopenhauer." *Variaciones Borges* 17 (2004), 103-141.

¹⁰⁷⁴ Raymond B. Marcin, "Ontological Oneness." *In Search of Schopenhauer's Cat*. Washington, D.C.: Catholic U of America P, 2012. 45-65.

Rudolf Josef Alexander Schrödinger (1887-1961).¹⁰⁷⁵ Einstein, in fact, famously summarized Schopenhauer's standpoint in its popularized, much paraphrased, and frequently misquoted form in 1929: "We can do what we wish, but we can only wish what we must."¹⁰⁷⁶ Zuse's turn to Schopenhauer for inspiration was therefore a natural one.

Inspired by Schopenhauer's treatment of causality, Zuse asked himself whether by extension the entire cosmos might be best understood as a "gigantic computing machine" whose innate character, dictating its simple logics, is essentially a mathematically and logically based operating program. In particular, Zuse thought of relay computers, which contain chains of relays. The impulse caused by activating one relay causes a ripple effect through the entire chain. This, Zuse thought, appears to also be how photons propagate; if so, the logic of relay computers might be analogous to space itself, and everything in the cosmos might be understood in terms of quantum theory. Zuse's idea of a "calculating space" – that is, a cosmos that calculates [*rechnender raum*] – thus took its beginning.¹⁰⁷⁷

¹⁰⁷⁵ Walter J. Moore, *Schrödinger: Life and Thought*. Cambridge: Cambridge UP, 2014. 109-112 & 407-411.

¹⁰⁷⁶ George Sylvester Viereck, "What Life Means to Einstein." Interview with Albert Einstein. *Saturday Evening Post* (26 October 1929), 17, 110, 113-114, & 117. 114.

¹⁰⁷⁷ Zuse, *Der Computer*, 93: "Es geschah bei den Betrachtungen über die Kausalität, daß mir plötzlich der Gedanke auftauchte, den Kosmos als eine gigantische Rechenmaschine aufzufassen. Ich dachte dabei an die Relaisrechner: Relaisrechner enthalten Relaisketten. Stößt man ein Relais an, so pflanzt sich dieser Impuls durch die ganze Kette fort. So müßte sich auch ein Lichtquant fortpflanzen, ging es mir durch den Kopf. Der Gedanke setzte sich fest; ich habe ihn im Laufe der Jahre zur Idee des 'Rechnenden Raumes' ausgebaut;" Zuse, *The Computer*, 104: "While considering causality it suddenly occurred to me that the universe could be conceived of as a gigantic computing machine. I had the relay calculator in mind: relay calculators contain relay chains. When a relay is triggered, the impulse propagates through the entire chain. The thought went through my head that this must also be how a quantum of light [*lichtquant*, photon] propagates. The thought settled firmly; over the years I have developed it into the concept of the *Rechnender Raum*, or 'computing universe.'"

In his fuller account of that theory, the 1967 *Calculating Space*, Zuse argues that the cosmos is an output of a Schopenhauer-like deterministic computation, performing its calculations on a cellular automaton.¹⁰⁷⁸ In this regard, Zuse recalls Leibniz' theory of "divine automata," the *monads*, which also work constitute apparently complex systems on the basis of changing their states according to certain simple rules; "Leibniz strongly believed that God created a digital world of automata with states of 0 and 1," the basis of the binary mathematics he had invented.¹⁰⁷⁹ Zuse's theory makes for an ongoing productive philosophical paradox, as it is not physically falsifiable; indeed, it is the basis of philosophically serious 21st Century speculations that everything that appears to exist is actually a computer simulation, i.e. that all of reality is virtual, the product of an automaton.¹⁰⁸⁰ What "reality" actually is becomes indeterminable to those who can think of no other reality than that which they believe to know, which is neither real, nor does it produce knowledge.

Once again, Zuse was not alone in arriving at similar results. In 1966, Jewish-Hungarian mathematician and physicist Neumann János Lajos (1903-1957, alias "John von Neumann"¹⁰⁸¹) had been inspired by the mathematical model underlying the

¹⁰⁷⁸ Konrad Zuse, *Rechnender Raum*. Wiesbaden: Vieweg & Teubner, 1969; Konrad Zuse, *Calculating Space*. Anonymous, transl. Cambridge, Mass.: MIT P, 1970.

¹⁰⁷⁹ Leon Chua & Klaus Mainzer, *The Universe as Automaton*. Berlin: Springer, 2012. 1-2.

¹⁰⁸⁰ E.g. Zenil Hector, ed., *A Computable Universe*. Singapore: World Scientific Publishing, 2013. 345-582; Mainzer & Chua, *Universe as Automaton*, 105-107.

¹⁰⁸¹ Hungarian names state the family name first. Neumann's personal names János and Lajos are the equivalents of "John" (or *Johannes* in German) and "Louis" (or *Ludwig* in German). The "von," like its French equivalent "de," denotes gentry or noble status in the German-speaking world, a status which von Neumann and his family held in the Austro-Hungarian Empire since 1913. Cf. *q.v.*, Béla Kempelen, *Magyar Nemes Családok*, Vol. 7 (Maár-Nizsnyay). Budapest : Grill Károly Könyvkiadóvállalata, 1913; *q.v.*, János Gudenus, *A Magyarországi Főnemesség XX. Századi Genealógiája*. Budapest: Natura, 1990; Norman Macrae, *John von Neumann: The Scientific Genius who Pioneered the Modern Computer, Game Theory, Nuclear Deterrence, and Much More*. New York: Pantheon, 1992. 57-58.

conduction of impulses in the cardiac muscle to develop a model – namely, the “tessellation model” of two-dimensional cellular automaton called the “von Neumann universal constructor” – that could self-replicate endlessly according to simple algorithmic rules.¹⁰⁸² Zuse had cited this model as logically similar to his own.¹⁰⁸³ Based on this parallel, von Neumann would go on to develop significant contributions to computer science, among many others, in closely related fields like artificial intelligence,¹⁰⁸⁴ computer engineering,¹⁰⁸⁵ cybernetics theory,¹⁰⁸⁶ and to develop the theory of a “technological singularity” still popular with transhumanists.¹⁰⁸⁷ The idea that not just knowledge, but *all of reality* is mathematical, logical, and computational was definitively once again “in the air.”

The consequence of these innovations is a field of inquiry called “digital physics”¹⁰⁸⁸ or alternatively “pancomputationalism,”¹⁰⁸⁹ which posits quite seriously that the entire cosmos is either the output of a computer program, itself an enormous computer, or mathematically shaped like one. Surprising as it may be from the

¹⁰⁸² Neumann János Lajos alias “John von Neumann,” *The Theory of Self-Reproducing Automata*. Urbana, Ill.: U of Illinois P, 1966.

¹⁰⁸³ Zuse, *Rechnender Raum*, 68-69.

¹⁰⁸⁴ Gualtiero Piccinini, “Computation in Physical Systems,” *The Stanford Encyclopedia of Philosophy* (Summer 2017 Edition), Edward N. Zalta, ed. <https://plato.stanford.edu/archives/sum2017/entries/computation-physicalsystems/>. Accessed 25 April 2019. 3.1-3.4.

¹⁰⁸⁵ Esp. the “Von Neumann architecture.” Cf. John von Neumann, *First Draft of a Report on the EDVAC*. Contract No. W-670-ORD-4926. University of Pennsylvania and United States Ordnance Department. 30 June 1945.

¹⁰⁸⁶ Clarissa Ai Ling Lee, “Non-Trivial Philosophy.” *Kybernetes* 44.8-9 (2015), 1310-1323.

¹⁰⁸⁷ Vernor Vinge, “Technological Singularity.” *Whole Earth Review* 81 (1993), 88-95; Calum Chace, *Artificial Intelligence and the Two Singularities*. New York: CRC Press, 2018. 97-98.

¹⁰⁸⁸ Anderson Beraldo-de-Araújo & Lorenzo Baravalle, “The Ontology of Digital Physics.” *Erkenntnis* 82.6 (2017), 1211-1231.

¹⁰⁸⁹ Gualtiero Piccini, *Physical Computation*. Oxford: Oxford UP, 2015. 51-53.

perspective of the traditional humanities, this theory – and in particular, Zuse’s version of it – has proved scientifically plausible, and remains ontologically feasible.¹⁰⁹⁰ Adherents to such theories and their various derivatives include some of the heavyweights of 20th and 21st Century scientific philosophy and physics, such as David Elieser Deutsch (b. 1953), Luciano Floridi (b. 1964), Edward Fredkin (b. 1934), Gerardus ‘t Hooft (b. 1946), Seth Lloyd (b. 1960), Jürgen Schmidhuber (b. 1963), Max Shapiro, alias “Max Erik Tegmark” (b. 1967), Carl Friedrich, Baron von Weizsäcker (1912-2007), John Archibald Wheeler (1911-2008), Stephen Wolfram (b. 1959), and Paola Zizzi. Digital physics also plays an important role in multiverse theory.¹⁰⁹¹ The foundational thought of the Information Age represents not just the mathematization of knowledge, in other words, but potentially the mathematization of all things. Taken seriously, then, this elevates models of knowledge like *intelligence* as quasi-tantamount to *any* reflection of reality. On the other hand, it posits questions about the nature of reality, thought, and representation that are literary to their core.

Turing, meanwhile, was focusing less on the universe – that is, the object of knowledge – and more on the human mind, the subject of knowledge. Turing was, however, just as prone to mathematizing that mind as Zuse had been keen to mathematize the cosmos. Like Zuse had after first building his Z2, Turing had spent the time after his 1936 paper on the *entscheidungsproblem* navigating the effects of World War II. Beginning earlier in 1939, Turing began working part-time at the

¹⁰⁹⁰ Jürgen Schmidhuber, “Alle berechenbaren Universen.” *Spektrum der Wissenschaft* (March 2007), 75-79.

¹⁰⁹¹ David Deutsch, “The Structure of the Universe.” *Proceedings of the Royal Society of London. Series A: Mathematical, Physical and Engineering Sciences*. 458.2028 (2002), 2911-2923.

British Government Code and Cypher School on codebreaking, located first in London and then famously at Bletchley Park,¹⁰⁹² and joined the effort full-time after German troops crossed the post-Versailles borders of the Polish Republic in the first days of September 1939.¹⁰⁹³ Turing's focus there was on breaking the German military codes generated by the complex Enigma Machine, primarily by designing so-called *bombe* [German, "bomb"] machines that could imitate the Enigma Machines' settings and attempt to decode messages.¹⁰⁹⁴ This allowed Turing and his collaborators to help conduct signals espionage against the German armed forces for the duration of World War II – a biographical fact that is central to Turing's posthumous reputation.

However, Turing's academic work on the *entscheidungsproblem* also generated interest from figures like the Viennese-Austrian philosopher Ludwig Josef Johann Wittgenstein (1889-1951), whom Turing had sent a copy of his 1936 article in February 1937,¹⁰⁹⁵ and with whom that same year Turing had discussed the Gödel

¹⁰⁹² Jack Copeland, "Colossus and the Dawning of the Computer Age." Ralph Erskine & Michael Smith, eds. *Action This Day*. London: Bantam, 2001. 342-369. 352.

¹⁰⁹³ Jack Copeland, *The Essential Turing*. Oxford: Clarendon P, 2004. 217. The pertinent letter documenting his arrival is Foreign Office (FO) 336/1059, Public Records Office, The National Archives, Kew, Richmond-Upon-Thames, UK.

¹⁰⁹⁴ Alan Mathison Turing, "Untitled [Mathematical Treatise of ENIGMA machine by A.M. Turing]" (1940). GCHQ (HW) 25/3, Public Records Office, The National Archives, Kew, Surrey, UK; Turing, "Visit to National Cash Register Corporation of Dayton, Ohio" (December 1942). 5750/441, Box 183, Converged Network Services Group (CNSG) Library, Records of the Office of the Chief of Naval Operations (RG) 38, Crane, Records of the Naval Security Group Central Depository, National Archives and Records Administration, College Park, Maryland, USA; Hugh Alexander Patrick Mahon, "The History of Hut 8, 1939-1945" (1945). GCHQ (HW) 25/2, Public Records Office, The National Archives, Kew, Surrey, UK, et al. cf. Copeland, ed. *Alan Turing's Automatic Computing Engine*. Oxford: Oxford UP, 2005. 110-111, 123, 175-176; Copeland, *Essential Turing*, 217-337. On this time in Turing's life, Cf., among many others: contextually, Christopher Andrew, *The Secret World*. New Haven: Yale UP, 2018. 603-668; directly, Andrew, *Secret Service*. London: Heinemann, 1985. 452-453; Ralph Erskine & Michael Smith, eds. *Action This Day*. New York: Bantam, 2001; Andrew Hodges, *Alan Turing: The Enigma*. New York: Simon & Schuster, 1983; Sara Turing, *Alan M. Turing*. Cambridge: Cambridge UP, 2012. 67-87.

¹⁰⁹⁵ Alan Turing, Letter to His Mother Ethel Sara Turing née Stoney. 11 February 1937. AMT/K/1/54 & 54a, Public Record Office, The National Archives, Kew, Surrey, UK.

Numbers and related topics, evidently alongside the later infamous Cambridge Five spy ring associate and mathematician, Alister George Douglas Watson (1908-1982).¹⁰⁹⁶ In 1939, after Turing had begun working at Bletchley Park but before open hostilities between the European nations began, he attended Wittgenstein's lectures in Cambridge on the foundations of mathematics.¹⁰⁹⁷ Transcripts of these lectures exist, including comments and questions raised by Turing.¹⁰⁹⁸

These conversations between Wittgenstein and Turing are important in understanding some basic assumptions of the information age, and its attendant "mathematization of knowledge." Soon after reading Turing's paper, Wittgenstein seized on Turing's method for arriving at his idea of a machine that could perform calculations normally conducted by humans. Until the 1940s, the term "computer" referred to a person who conducts the labor of lengthy calculations,¹⁰⁹⁹ and Turing's paper explicitly uses the machine as a metaphor or analog to such a human being to set up his mathematical thought experiment: "We may compare a man in the process of computing a real number to a machine."¹¹⁰⁰ This includes a mental state: "The behaviour of the computer at any moment is determined by the symbols which he is

¹⁰⁹⁶ Alister George Douglas Watson, "Mathematics and Its Foundations." *Mind* 47.188 (October 1938), 440-451. 445. On Watson's spying, cf. Nigel West, *Historical Dictionary of British Intelligence*, 2nd ed. Lanham, Md.: Scarecrow P, 2014. 624; Peter Wright, *Spycatcher*. New York: Viking, 1987. 250-260.

¹⁰⁹⁷ "You're quite right, a mathematician by name of Turing attended my lectures in '39." Letter by Ludwig Wittgenstein to Norman Malcolm, 1 December 1950. *Wittgenstein: Gesamtbriefwechsel / Complete Correspondence (2nd Release) (2011)*. Innsbrucker Electronic Edition. Charlottesville, Va.: IntelLex Corporation, 2011.

¹⁰⁹⁸ Cora Diamond, ed. *Wittgenstein's Lectures on the Foundations of Mathematics: Cambridge, 1939*. Ithaca, N.Y.: Cornell UP, 1976.

¹⁰⁹⁹ "computer, n." *OED Online*. March 2019. Oxford University Press. <http://www.oed.com/view/Entry/37975?redirectedFrom=computer> (accessed 19 April 2019).

¹¹⁰⁰ Turing, "On Computable Numbers," 231.

observing, and his ‘state of mind’ at that moment.”¹¹⁰¹ This type of imaginative move was tied to the particular intellectual mathematical milieu in Cambridge that Wittgenstein had helped shape,¹¹⁰² and which, as per Turing’s own explanations,¹¹⁰³ attempted to overcome the intellectual limitations of thinking in terms of pure mathematical, symbolic, and abstract logic by considering what English mathematician Godfrey Harold Hardy (1877-1947) had in 1929 called the “mathematician in the street.”¹¹⁰⁴

Soon after reading Turing’s paper, Wittgenstein noted the humanistic tenor of this mathematical mode in his notebook: “The mathematician is no discoverer, but

¹¹⁰¹ Turing, “On Computable Numbers,” 250.

¹¹⁰² See Engelmann 2013b in Floyd

¹¹⁰³ Alan Turing, “The Reform of Mathematical Notation and Phraseology.” Ca. 1944. AMT/C/12. Archive Center, King’s College, University of Cambridge, Cambridge, UK. Most clearly on pp. 1 & 6-7: “It has long been recognised that mathematics and logic are virtually the same and that they may be expected to merge imperceptibly into one another. Actually this merging process has not gone at all far, and mathematics has profited very little from researches in symbolic logic. The chief reasons for this seem to be a lack of liaison between the logician and the mathematician-in-the-street. [For example,] we are taught that the theory of types is necessary for the avoidance of paradoxes, but we are not usually taught how to work the theory of types into our day-to-day mathematics: rather we are encouraged think that it is of no practical importance for anything but symbolic logic. This has a most unfortunate psychological effect. We tend to suspect the soundness of our arguments all the time because we do not know whether we are respecting the theory of types or not. Actually it is not difficult to put the theory of types into a form in which it can be used by the mathematician-in-the-street without having to study symbolic logic, much less use it. The type principle is effectively taken care of in ordinary language by the fact that there are nouns as well as adjectives. We can make the statement ‘All horses are four-legged,’ which can be verified by examination of every horse, at any rate if there only a finite number of them. If however we try to use words like ‘thing’ or ‘thing whatever’ trouble begins. Suppose we understand ‘thing’ to include everything whatever, books, cats, men, women, thoughts, functions of men with cats as values, numbers, matrices, classes of classes, procedures, propositions, ... Under these circumstances what can we make of the statement ‘All things are not prime multiples of 6.’ We are of course inclined to maintain that it is true, but that is merely a form of prejudice. What do we mean by it? Under no circumstances is the number of things to be examined finite. It may be that some meaning can be given to statements of this kind, but for the present we do not know of any.”

¹¹⁰⁴ G.H. Hardy, “Mathematical Proof.” *Mind* 38.149 (January 1929), 1-25. 4.

rather an inventor.”¹¹⁰⁵ In the fall of 1937, Wittgenstein further elaborates on what it is that the mathematician might invent *qua* Turing. In a foreword draft to his *Philosophical Remarks*, Wittgenstein uses a mathematical metaphor to grapple with the difficulty of ordering his thoughts: “I have often attempted to order [my thoughts] in a satisfactory way or to thread them along a line of thought. ... The only representation of which I am still capable is to connect these observations *in a network of numbers* in such a way that their exceedingly complicated connections become visible.”¹¹⁰⁶ In a strikingly similar way to Turing’s model of a machine that can use logical statements converted into Gödel numbers to calculate logical conclusions, Wittgenstein also imagines the means by which such a mathematization of his thoughts might be possible as a machine: “It is inherent in the machine [that I have in mind] that it can move in such a way. This case is analogous to that in which we retrieve something out of a container, something that was lying there.”¹¹⁰⁷ Elsewhere, Wittgenstein considered whether machines could have a memory (with a nod to

¹¹⁰⁵ “Der Mathematiker ist kein Entdecker, sondern ein Erfinder.” Ludwig Wittgenstein, MS-157b [Notebooks, Year 1937]. *Wittgenstein’s Nachlass. The Bergen Electronic Edition*. Oxford: Oxford UP, 2000. 18v.

¹¹⁰⁶ “Ich habe oft vergebens versucht [meine Gedanken] in eine befriedigende Ordnung zu bringen oder am Faden eines Gedankengangs aufzureihen. ... Die einzige Darstellung, deren ich noch fähig bin, ist die, diese Bemerkungen durch ein Netz von Zahlen so zu verbinden, daß ihr äußerst komplizierter Zusammenhang sichtbar wird.” Ludwig Wittgenstein, MS-118 [Notebooks, Philosophische Bemerkungen XIV]. *Wittgenstein’s Nachlass. The Bergen Electronic Edition*. Oxford: Oxford UP, 2000. 95r-95v.

¹¹⁰⁷ “Ich habe gemeint ... heißt hier: ich habe dies in petto gehabt. Aber dies ist doch ein Bild. Die Maschine hat es in sich, sich so zu bewegen. Der Fall wird also verglichen dem, daß wie etwas aus einem Behälter holen, was dort lag.” Wittgenstein, MS-118, 95v-96r.

Herakleitos' River),¹¹⁰⁸ feel pain,¹¹⁰⁹ have a human-like language,¹¹¹⁰ or have thoughts,¹¹¹¹ and also warns that such a machine could become a self-serving and

¹¹⁰⁸ “Warum können wir uns keine Maschine mit einem Gedächtnis denken? Es wurde oft gesagt, daß das Gedächtnis darin besteht, daß Ereignisse Spuren hinterlassen, in denen nur gewisse Vorgänge vor sich gehen müßten. Wie wenn Wasser sich ein Bett macht und das folgende Wasser in diesem Bett fließen muß; der eine Vorgang fährt das Gleise aus, das den andern führt. Geschieht dies nun aber in einer Maschine, wie es wirklich geschieht, so sagt niemand, die Maschine habe Gedächtnis, oder habe sich den einen Vorgang gemerkt.” Ludwig Wittgenstein, MS-213 [The “Big Typescript”]. *Wittgenstein's Nachlass. The Bergen Electronic Edition*. Oxford: Oxford UP, 2000. 212r-213.

¹¹⁰⁹ “Nun ist das aber ganz so, wie wenn man sagt, eine Maschine kann nicht denken, oder kann keine Schmerzen haben. Hier kommt es darauf an, wie der Ausdruck ‘Schmerzen haben’ angewandt wird. Es ist klar, daß ich mir eine Maschine nennen, die Schmerzen hat, d.h.: den andern Körper. Und ebenso, natürlich, meinen Körper. Dagegen hat das Phänomen der Schmerzen, wie es auftritt, wenn ‘ich Schmerzen habe,’ mit meinem Körper, d.h. mit den Erfahrungen, die ich als Existenz meines Körpers zusammenfasse, gar nichts zu tun. (Ich kann Zahnschmerzen haben ohne Zähne.) Und hier hat nun die Maschine gar keinen Platz. — Es ist klar, die Maschine kann nur einen physikalischen Körper ersetzen. Und in dem Sinne, wie man von einem solchen sagen kann, er ‘habe’ Schmerzen, kann man es auch von einer Maschine sagen. Oder wieder, die Körper, von denen wir sagen, sie hätten Schmerzen, können wir mit Maschinen vergleichen, und auch Maschinen nennen. Und ganz ebenso verhält es sich mit dem Denken und dem Gedächtnis.” Wittgenstein, MS-213, 213.

¹¹¹⁰ “Man kann natürlich die Sprache als einen Teil eines psychologischen Mechanismus betrachten. Am einfachsten ist das wenn man den Sprachbegriff so einschränkt daß die Sprache aus Befehlen besteht. Man kann sich denken, daß ein Mensch die Sprache erfindet; daß er die Erfindung macht andere menschliche Wesen statt seiner arbeiten zu lassen indem er sie durch Strafe und Belohnung abrichtet auf Zurufe hin gewisse Tätigkeiten zu verrichten. Diese Erfindung wäre analog der Erfindung einer Maschine. Das System von Zurufen, Signalen, welches er verwendet, wäre analog dem System der Durchlöcherung des Papierstreifens eines Pianolas. (Ich denke mir hier übrigens ein solches welches auch Stärke und Schwäche des Tons selbsttätig nach den ‘Zeichen’ auf dem Papierstreifen regelt.) Der Mensch der nach Noten spielt kann dann auch als eine Spielmaschine aufgefaßt werden und wir könnten uns auch eine Spielmaschine denken, die das Musikstück von den gewöhnlichen gedruckten Noten ‘herunterläse’. (Jede solche Vorrichtung wie der gelochte Streifen eines Pianolas ist dem Bart eines Schlüssels zu vergleichen, und man könnte von der Sprache des Schlüsselbarts reden.) Kann man sagen die Grammatik beschreibe die Sprache; die Sprache, jenen Teil des psycho-physischen Mechanismus mittels dessen wir durch das Aussprechen von Worten gleichsam wie durch das Drücken auf die Knöpfe einer Tastatur eine menschliche Maschine für uns arbeiten machen? Die Grammatik nun beschreibe jenen Teil der ganzen Maschine. Diejenige Sprache, dann, wäre die richtige, die die gewünschte Tätigkeit veranlassen würde die also funktionierte, eine Sprache die das nicht tut, wäre wie eine nach falschen Prinzipien gebaute Dampfmaschine (also eigentlich keine Dampfmaschine).” Ludwig Wittgenstein, MS-114 [Proto-Tractatus X, Philosophische Grammatik]. *Wittgenstein's Nachlass. The Bergen Electronic Edition*. Oxford: Oxford UP, 2000. 162-163.

¹¹¹¹ “Aber eine Maschine kann doch nicht denken! Ist das ein Erfahrungssatz? Nein. Wir sagen nur vom Menschen, und was ihm ähnlich ist, es denke. Wir sagen es auch von Puppen und wohl auch von Geistern. Sieh das Wort ‘denken’ als Instrument an!” Ludwig Wittgenstein, MS-228 [Bemerkungen I]. *Wittgenstein's Nachlass. The Bergen Electronic Edition*. Oxford: Oxford UP, 2000. 97-98.

dangerous tool, an “all-pervading ethereal mechanism” that its programmers consider capable of replacing all other forms of thought.¹¹¹²

During the 1939 lectures, finally, Wittgenstein and Turing argued about whether mathematicians were indeed inventors rather than discoverers – that is, whether mathematicians’ calculations and mathematical logic are experiments revealing a reality that has been hitherto gone undescribed, or whether they are a logically airtight but ultimately self-referential language game that creates that reality. Wittgenstein’s famous and somewhat oracular statement in his 1922 *Tractatus Logico-Philosophicus* that “logic must take care for itself” had come with the explanation that “a possible sign must also be able to signify” something beyond itself [or more precisely, “must be able to assign a possible sign,” *ein mögliches Zeichen bezeichnen können.*] After all, a statement like “‘Socrates is identical’ means nothing.”¹¹¹³ In their 1936 papers, Turing (and Church) had demonstrated, however, that under some circumstances certain mathematical signs could no longer *reliably* signify anything beyond themselves, leading to uncertain outcomes in the calculations.

¹¹¹² “[Es] ist die heute herrschende Auffassung der Mathematik, der das Überraschende, das Erstaunliche, darum als Wert gilt, weil es zeigt, in welche Tiefe die mathematische Untersuchung dringt; wie wir den Wert eines Teleskops daran ermessen könnten, daß es uns Dinge zeigt, die wir ohne dieses Instrument nicht hätten ahnen können. Der Mathematiker sagt gleichsam: ‘Siehst Du, das ist doch wichtig, das hättest Du ohne mich nicht gewußt.’ So als wären durch diese Überlegungen, als durch eine Art höheren Experiments, erstaunliche, ja die erstaunlichsten Tatsachen ans Licht gefördert worden. Der Mathematiker ist kein Entdecker, sondern ein Erfinder. ‘Ich kann doch nur folgern, was wirklich folgt!’ – D.h.: was die logische Maschine wirklich hervorbringt. Die logische Maschine das wäre ein Art Weltäther; ein alles durchdringender ätherischer Mechanismus. – Und vor diesem Bild muß man warnen.” Ludwig Wittgenstein, MS-221b [Typescript, Pt. 2, Vorkriegsfassung der Untersuchungen]. *Wittgenstein’s Nachlass. The Bergen Electronic Edition*. Oxford: Oxford UP, 2000. 215.

¹¹¹³ “5.473 Die Logik muss für sich selber sorgen. Ein mögliches Zeichen muss auch bezeichnen können. ... ‘Sokrates ist identisch’ heisst darum nichts.” Ludwig Wittgenstein, *Tractatus Logico-Philosophicus*. London: Routledge & Kegan Paul, 1922 (8th reprint 1960). 126-129.

To better understand Wittgenstein's perspective, it is useful to take more closely into account some of the variants of his dictum. In his *Notebooks* of 1914, Wittgenstein had written, once, as above, but without the second statement, "Logic must care for itself."¹¹¹⁴ Later he had mused over a variant: "Logic cares for itself; we just have to observe how it does so."¹¹¹⁵ The shift in meaning is two-fold. Firstly, whereas the statement in the *Tractatus* and the first in the *Notebooks* is in the affirmative (*must care for itself*), the second is a simple observation (*cares for itself*). Secondly, the added independent clause suggests that mathematics functions independently of the observer, and that the mathematician discovers its workings through scientific observation, or experimentation. This second sentence would have been more in line with the common idea among Hardy's "mathematicians in the street," which is that mathematics discovers and describes an abstract reality. Discarding this draft statement, Wittgenstein instead returns to his first formulation in the *Tractatus*. Its wording, "logic *must* care for itself," instead suggests that there is agency involved: those who are reminded that they *must* do something are on the verge of a real possibility of not doing it. Wittgenstein, in other words, considers mathematical logic foremost as a type of language game that "must" do things in order to work properly, not as a symbolic system that simply records what it discovers about something supposedly beyond itself.

¹¹¹⁴ "Die Logik muß für sich selber sorgen." Ludwig Wittgenstein, 22.8.1914, MS-101 [Notebooks, 1914]. *Wittgenstein's Nachlass. The Bergen Electronic Edition*. Oxford: Oxford UP, 2000. 8r.

¹¹¹⁵ "Die Logik sorgt für sich selbst; wir müssen ihr nur zusehen, wie sie es macht." Wittgenstein, 13.10.1914, MS-101, 39r.

Consequently, Wittgenstein and Turing argued in particular about the ontology of mathematics itself. Their technical disagreement centers, in essence, on the question of whether finite symbolic systems like mathematics can reasonably claim to accurately *describe* a theoretically infinite reality – for instance mathematical infinity, ∞ – or whether such a finite symbolic system actually *invents* what it represents, like a language does.¹¹¹⁶ As Wittgenstein points out, there are moments when the mathematical sign and the thing it signifies cannot, in fact, correspond to each other: for example, “the ‘propositions about infinite numbers’ are all represented by means of finite signs.”¹¹¹⁷ That is, mathematics (and by extension, formal logic) require imaginative leaps: in some respect, they *invent* that reality. Turing, on the other hand, repeatedly indicates that in his view this represents a shortcoming of the technology of mathematical notation, or of the technology conducting the calculation, or of the framing of the mathematical problem, or of the human logical-mathematical imagination, not of mathematics, which operates independently of whether or not a mathematician has managed to describe it.

An exemplary exchange on this topic occurs in “Lecture X.”¹¹¹⁸ To begin, Wittgenstein presents a problem:

¹¹¹⁶ Paul M. Livingston, “Wittgenstein, Turing, and the ‘Finitude’ of Language.” *Linguistic and Philosophical Investigations* 9 (2010), 215-247; Paul M. Livingston, “Wittgenstein and Turing.” *The Politics of Logic*. London: Routledge, 2012. 148-183.

¹¹¹⁷ “Bedenke, daß die ‘Sätze von den *unendlichen* Anzahlen’ alle mit *endlichen* Zeichen dargestellt sind!” Ludwig Wittgenstein, “11.10.14” [11 October 1914]. *The Collected Works of Ludwig Wittgenstein: Notebooks, 1914-1916*. Georg Henrik von Wright, ed. & Gertrude Elizabeth Margaret Anscombe, ed. & transl. New York: Harper, 1961. 10-10e.

¹¹¹⁸ Diamond, *Wittgenstein’s Lectures*, 92-102.

Sometimes it seems as though mathematical discoveries are made by performing what one might call a mathematical experiment. For example, the mathematician first notices a certain regularity and then proves that it *had* to be so. And this seems to point against what I said [in an earlier lecture], that perhaps what we call discoveries in mathematics, would better be called inventions. You might say, ‘Come, a child when he calculates 25×25 and gets 625 doesn’t *invent* it. He finds it out. ... But the analogy which springs to mind is that of finding something by making an experiment. Now is the child making an experiment?’¹¹¹⁹

In this framing of the question, “experiment” stands for a method that establishes objective validity based on demonstrable, repeatable empirical observation, the perspective Turing represents.

Next, Wittgenstein suggests a circumstance when the child might write down the answer 6935 for 25×25 . If mathematical calculation is, in fact, a form of scientific experiment, can this answer now be called *incorrect*? After all, it *is* simply the recorded outcome of that child’s experiment.¹¹²⁰ The aforementioned Watson, also present at these lectures, intervenes: “One might say in Turing’s defence that one wanted to see what he would do if he obeyed certain rules.”¹¹²¹ Wittgenstein replies: “We can say, ‘We’ve taught him these rules; let us see what he results he gets if he

¹¹¹⁹ Diamond, *Wittgenstein’s Lectures*, 92.

¹¹²⁰ Diamond, *Wittgenstein’s Lectures*, 93-94.

¹¹²¹ Diamond, *Wittgenstein’s Lectures*, 94.

obeys them.”¹¹²² But this, he concludes, would then not, in fact, be an experiment to find the result of 25×25 . Rather, it would be one that tests the boy’s proficiency at following the rules of a game that were already established for him to play:

Suppose you made the calculation beforehand. Then you will already know already know what he will *have* to get if he obeys the rules. Then it will not be an experiment to see *whether* he gets so-and-so *if* he obeys the rules, but to see whether or not he obeys the rules. And one cannot then say, ‘This experiment has taught me that if he obeys the rules he will get this result.’¹¹²³

To conclude: “I cannot make the result of the experiment at the same time into the result of the calculation.”¹¹²⁴ Turing replies with a counter-example to underscore that in his opinion experimentation is nevertheless how mathematics functions: “What about the case of a man who can count and who cuts nine sticks into fifteen parts each and counts the number of parts. Then that is an experiment.” Wittgenstein replies with a rhetorical question, “But does it depend on the circumstances? Your man chops sticks and utters words; is that *always* an experiment?”¹¹²⁵ In this particular instance, Turing concedes: “I see that won’t do.”¹¹²⁶ Human intelligence, no matter its method, not even if it appears as objective and descriptive as mathematical logic, cannot escape the strengths and shortcomings of language.

¹¹²² Diamond, *Wittgenstein’s Lectures*, 94.

¹¹²³ Diamond, *Wittgenstein’s Lectures*, 94.

¹¹²⁴ Diamond, *Wittgenstein’s Lectures*, 94.

¹¹²⁵ Diamond, *Wittgenstein’s Lectures*, 95.

¹¹²⁶ Diamond, *Wittgenstein’s Lectures*, 96.

Turing eventually comes up with his rather famous proposition, which resolves the type of question raised by his own paper and Wittgenstein on the one hand, and the strict mathematical calculability he himself favors, and which he ascribes to the mechanical workings of his “universal machine.” Turing fuses the two modes, proposing a “machine intelligence” that can convincingly imitate the more humanistic perspective advanced by thinkers like Wittgenstein, but does so on the basis of the logical-mathematical models that Turing developed for his machine in the 1936 paper on the *entscheidungsproblem*. In a 1948 report for the National Physical Laboratory in London titled “Intelligent Machinery,” Turing proclaimed, “I propose to investigate the question as to whether it is possible for machinery to show intelligent behavior.”¹¹²⁷ He ascribes goes on to ascribe resistance to such a project as motivated not by rational objections, but by a combination of biases, which include human exceptionalism, religious fear of Promethean projects, a lack of technological imagination, a belief that the human mind is uniquely flexible in solving problems, and the idea that “in so far as a machine can show intelligence this is to be regarded as nothing but a reflection of the intelligence of its creator.”¹¹²⁸ To Turing, this reflects not just a misapprehension of how machines work, but also of how human intelligence works. Essentially, Turing’s “universal machine” operates by “searches:” the machine is told what mathematical pattern to identify, and finding a matching pattern yields the result – using the Gödel Numbers, potentially for any semantic or logical content as

¹¹²⁷ Turing, “Intelligent Machinery.” Report for the National Physical Laboratory, 1948. 1. The draft of this report is AMT/C/11. Archive Center, King’s College, University of Cambridge, Cambridge, UK.

¹¹²⁸ Turing, “Intelligent Machinery,” 1.

well. That content, Turing differentiates into the categories “intellectual” (“searches carried out by brains for combinations with particular properties”), “genetical” (“a combination of genes is looked for, the criterion being survival value”), and “cultural” (a person absorbs the techniques of others during his first 20 years, then “may do a little research of his own and make a very few discoveries which are passed on to other men. From this point of view the search for new techniques must be regarded as carried out by the human community as a whole”).¹¹²⁹ Subsequently, when discussing “possible ways in which machinery might be made to show intelligent behaviour... the analogy with the human brain is used as a guiding principle.”¹¹³⁰

This eventually leads to the so-called Turing Test for measuring the success of a machine-based artificial intelligence. Already in the 1948 report, Turing had identified that intelligence can also be “an emotional concept.” He wrote, “The extent to which we regard something as behaving in an intelligent manner is determined as much by our own state of mind and training as by the properties of the object under consideration.” To overcome this bias, Turing proposed a blind test, where one “rather poor chess player” labeled “C” plays two others, but cannot see them: one, “A,” is another “rather poor chess player,” the other, “B” is a “paper machine which will play not a very bad game of chess.” In experiments he himself had conducted, “C may find it quite difficult to tell which he is playing.”¹¹³¹ In other words, “C” may ascribe

¹¹²⁹ Turing, “Intelligent Machinery,” 17 & 18.

¹¹³⁰ Turing, “Intelligent Machinery,” 20.

¹¹³¹ Turing, “Intelligent Machinery,” 19.

intelligence to either man or machine as long as “C” has no recourse to knowing which one is which.

Turing elaborates this further in his more famous 1950 paper, “Computing Machinery and Intelligence,”¹¹³² in which he proposes his famous “Turing Test” or “Imitation Game.”¹¹³³ Turing states at the outset: “I propose to consider the question, ‘Can machines think?’” Rather than settling on the “normal use” of the words “machine” and “to think” in order “to escape the conclusion that the meaning and answer to the question ... is to be sought in a statistical survey like a Gallup poll,” he decides to restate his proposition with a game. An interrogator, “C,” must ask two interlocutors he cannot see, “A,” and “B,” questions to establish which one is a man and which one is a woman. They give their answers typewritten, so their voice and handwriting do not give them away, and they may lie. Meanwhile, “A” is replaced by a machine. The Imitation Game is won by the machine if the interrogator “C” decides “wrongly as often when the game is played like this as he does when the game is played between a man and a woman.”¹¹³⁴ That is, a machine can be said to think when it can produce an effect that fools a human into believing that the machine is a human, or is thinking like one.

¹¹³² Alan Turing, “Computing Machinery and Intelligence.” *Mind* 59.236 (October 1950), 433-460.

¹¹³³ The phrase “Turing’s test” is first used for the “Imitation Game” in Maurice Vincent Wilkes, *Automatic Digital Computers*. New York: Wiley, 1956. 291; the now-common variant “Turing Test” first occurs in James L. McKenney, “Critique of: ‘Verification of Computer Simulation Models.’” *Management Science* 14.2 (October 1967), B-102 & B-103. B-103; cf. “Turing test, n.” *OED Online*. March 2019. Oxford UP. <http://www.oed.com/view/Entry/263628> (accessed 25 April 2019).

¹¹³⁴ Alan Turing, “Computing Machinery and Intelligence,” 433-434.

Again, Turing anticipates objections: the theological belief that thinking is the province of an immortal soul;¹¹³⁵ the “heads in the sand” rejection of artificial intelligence out of fear;¹¹³⁶ the mathematical objection, which raises the issue that Gödel, Church, and Turing himself had demonstrated that a machine might be unable to answer certain questions at all;¹¹³⁷ the argument from consciousness, which suggests human thinking is uniquely inspired, for example in its ability create literature or music;¹¹³⁸ the argument that some behaviors, ranging from being kind or experiencing love to self-reflection cannot be achieved by a machine;¹¹³⁹ “Lady Lovelace’s Objection,” which claims a machine can only perform what humans can imagine and program it to perform, not ever originate anything;¹¹⁴⁰ the mechanical differences between human neurons and machine circuits and their consequences for differences in outputs;¹¹⁴¹ the inability to encapsulate the complexity of human behavior into set mechanical rules and machine commands;¹¹⁴² and the inability for machines to imitate cognitive activity we ourselves do not understand, such as extra-sensory perception.¹¹⁴³ These questions, conceptually spanning essentially from Pythagoras to today’s digitized worlds are doubtlessly pressing ones. The

¹¹³⁵ Alan Turing, “Computing Machinery and Intelligence,” 443-444.

¹¹³⁶ Alan Turing, “Computing Machinery and Intelligence,” 444.

¹¹³⁷ Alan Turing, “Computing Machinery and Intelligence,” 444-445.

¹¹³⁸ Alan Turing, “Computing Machinery and Intelligence,” 445-447.

¹¹³⁹ Alan Turing, “Computing Machinery and Intelligence,” 447-450.

¹¹⁴⁰ Alan Turing, “Computing Machinery and Intelligence,” 450-451.

¹¹⁴¹ Alan Turing, “Computing Machinery and Intelligence,” 451-452.

¹¹⁴² Alan Turing, “Computing Machinery and Intelligence,” 452-453.

¹¹⁴³ Alan Turing, “Computing Machinery and Intelligence,” 453-454.

epistemological effects of the systemic logic undergirding information itself must be considered seriously as a development with its own literary-critical value, *on its own terms*.

VII. Enter *Hamlet*: What Is Real?

While a literary history of the emergence of *intelligence* as a *techne* of espionage of course carries a certain rhetorical mystique of its own, it is, then, also a reflection of this underlying evolution of information. Following the chapter on *Faustus* and the two excursuses above, it should have become clear that moments in the history of secrecy correspond instructively with contemporary literary representations. Consequently, turning to a 17th Century play, *The Tragedie of Hamlet, Prince of Denmarke* by William Shakespeare,¹¹⁴⁴ might provide one example of such a shift. To make this argument, the chapter will take advantage of recent philosophical work by Agamben that relies on precisely the same epistemological developments outlined in this dissertation: his 2016 *What is Real?*¹¹⁴⁵ This analysis will demonstrate the literary utility of both the *mysterium* and *arcana imperii* traditions, in particular the targeting plot, in understanding the actions of Old Hamlet, as well as the literary and epistemological implications of Young Hamlet's evident shift to a modern version of *intelligence* – and the consequences, which are self-erasure of the *data* that is Hamlet, in both forms.

¹¹⁴⁴ Unless referring lines from the B-Text omitted from that version, all quotes will be from the version of *Hamlet* included in the First Folio.

¹¹⁴⁵ Giorgio Agamben, *Che Cos'è Reale?* Vicenza: Neri Pozza, 2016; Giorgio Agamben, *What is Real?* Lorenzo Chiesa, transl. Palo Alto: Stanford UP, 2018.

This aspect of the relationship between *data*, *intelligence*, sovereignty, knowledge, and reality is thus a question of theory and of theatricality, in the sense Samuel Weber employs those terms in *Theatricality as Medium* (Chapter 1). In this case, it concerns a theatrical performance on a public stage. The text by Agamben is particularly helpful in this regard because it, too, treats a kind of sovereign ghost, and it, like Marlowe's *Edward II*, constructs itself around "pointed letters" of a similar type to those that killed Young Mortimer. It also demonstrates the overlap between the Leibnizian shift to the arithmetical, probabilistic *logos* and the necessity to describe the world in ever-calculating, ever-shifting modes that blossom in the "calculating space" of information science – and which can be observed in *Hamlet*.

Agamben begins by recounting the fate of the Sicilian-Italian theoretical physicist, Ettore Majorana (1906-?), a student of Lazio-Italian physicist Enrico Fermi (1901-1954) and one of the crown princes of Italian physics, who already had had several discoveries named after him despite his young age.¹¹⁴⁶ Majorana was, appropriately for this dissertation, an avid reader of Shakespeare.¹¹⁴⁷ Central to Agamben's narrative, however, is Majorana's disappearance on 25 March 1938 while

¹¹⁴⁶ These include, e.g., the Majorana Equation, Majorana Mass, the Majorana Basis, Majorana Neutrinos, and the Majorana fermion; fermions in the general sense were named after his mentor, Fermi.

¹¹⁴⁷ According to his sister Maria, as reported by Romeo Bassoli, "Prodigio di famiglia – L'ultima intervista a Maria, sorella di Ettore Majorana," *l'Unità* 27 January 1998. 3: "Alla sera, le lunghe sere estive, lui usava leggere i libri ad alta voce ai suoi figli, ed era una cosa che a me ed agli altri piaceva moltissimo. Gli interessi spaziavano molto tra Dostoevskij, Shakespeare, Goldoni."

on a ship going from Palermo to Naples, after having withdrawn all of his savings from his bank account.¹¹⁴⁸

The disappearance was preceded by a series of letters, sent to Majorana's mentor, the Neapolitan-Italian physicist Antonio Carrelli (1900-1980), and to Majorana's parents. The first letter was a farewell note to Carrelli, which apologizes for a "decision that was by now inevitable" and his own "sudden disappearance," and asks Carrelli to be remembered to his colleagues and friends, whom Majorana "shall preserve the dearest memories at least until eleven o'clock this evening, and possibly later, too."¹¹⁴⁹ Was this a suicide note, Agamben asks? Perhaps, but if so, it is a decidedly evasive one, particularly the last line. Majorana's letter to his parents is darker, and appears more definitively suicidal, as it includes the lines, "I have one desire, that you do not wear black. If you want to follow custom, then bear some sign of mourning, but not for more than three days."¹¹⁵⁰

However, Carrelli received a telegram signed by Majorana the next day that told him not to be alarmed, and that a letter would follow.¹¹⁵¹ When that letter, also dated to 26 March, arrived, it stated that "the sea has rejected me, and I will be back tomorrow," and goes on to state that Majorana would like to give up on teaching

¹¹⁴⁸ *Real*, 3; *Reale* 7: "E che, in realtà, Majorana non pensasse a un suicidio, sembra provato dall'unico altro dato sicuro: prima di partire, egli aveva ritirato una cospicua somma di denaro e portato con sé il passaporto."

¹¹⁴⁹ *Real*, 2-3. *Reale*, 6-7: "Caro Carrelli, ho preso una decisione che era ormai inevitabile. ... ma mi rendo conto delle noie che la mia improvvisa scomparsa porta procurare a te agli studenti. ... Ti prego anche di ricordami a coloro che ho imparato a conoscere e ad apprezzare nel tuo Istituto, particolarmente a Sciuti; dei quali tutti conserverò un caro ricordo almeno fino alle undici di questa sera, e possibilmente anche dopo."

¹¹⁵⁰ *Real*, 4. *Reale*, 8: "Ho un solo desiderio: che non vi vestiate di nero. Se volete inchinarvi all'uso, portare pure, ma per non più di tre giorni, qualche segno di lutto."

¹¹⁵¹ *Real*, 4. *Reale*, 8: "Non allarmati. Segue lettera. Majorana."

students, and not to think of him “like an Ibsen heroine, because the case is different,” promising “further details.”¹¹⁵² A later investigation found that Majorana had indeed bought a ticket back to Naples, and witnesses claim to have seen him there after his arrival that day, but Majorana never reappeared after that: “Now he had truly disappeared forever.”¹¹⁵³

Intensive police inquiries followed, but they remained inconclusive, both as to Majorana’s motives and as to what had in fact happened. Theories later developed about Majorana’s fate range from suicide (probably during the return voyage from Palermo),¹¹⁵⁴ which was the favored explanation among the colleagues who knew him best,¹¹⁵⁵ to secretive relocations to Argentina¹¹⁵⁶ or Venezuela,¹¹⁵⁷ anonymous entry into a monastery,¹¹⁵⁸ and kidnapping and murder, the latter three possibly because of Majorana’s foresight about his potential involvement in developing atomic weapons for the Axis.¹¹⁵⁹ Most exotically, it has even been proposed that Majorana ended up a voluntary vagrant, the so-called “dog man.”¹¹⁶⁰ Officially, the Venezuela option was

¹¹⁵² *Real*, 4. *Reale*, 8: “Caro Carrelli, spero che ti siano arrivati insieme il telegramma e la lettera. Il mare mi ha rifiutato e ritornerò domani all’albergo Bologna, viaggiando forse con questo stesso foglio. ... Non mi prendere per una ragazza ibseniana, perché il caso è differente.”

¹¹⁵³ *Real*, 5. *Reale*, 9: “Era ora veramente scomparso – e per sempre.”

¹¹⁵⁴ Gianni Amelio, *I ragazzi di Via Panisperna*. Television movie, 1988; Bruno Russo. *Ettore Majorana: un giorno di marzo*. Palermo: Flaccovio Editore, 1997.

¹¹⁵⁵ Edoardo Amaldi, “Biographical Note.” *La vita e le opere di Ettore Majorana*. Rome: Accademia Nazionale dei Lincei, 1966; Emilio Segrè, *Autobiografia di un Fisico*. Bologna: Il Mulino 1995.

¹¹⁵⁶ Erasmo Recami, *Il caso Majorana*. Rome: Di Renzo Editore, 2000.

¹¹⁵⁷ Ester Palma, “La Procura: Ettore Majorana vivo in Venezuela fra il 1955 e il 1959.” *Corriere della Sera* 4 February 2015.

¹¹⁵⁸ Leonardo Sciascia, *La scomparsa di Majorana*. Milan: Adelphi, 1997.

¹¹⁵⁹ Umberto Bartocci, ed. *La scomparsa di Majorana: un affare di stato?* Bologna: Andromeda, 1999.

¹¹⁶⁰ Ignazio Bascone, *Tommaso l'omu cani: Amara e miserabile ipotesi sulla scomparsa di Ettore Majorana*. Mazara del Vallo: Libridine, 2010.

finally declared the most likely. Agamben, however latches onto the conclusions of a biography on Majorana by Sicilian intellectual Leonardo Sciascia (1921-1989), who argues that Majorana, who had discussed advanced nuclear physics with Heisenberg while visiting Germany, could foresee the impending disaster of nuclear armament, and eliminated himself from the field (and his previous life) to prevent its outcome, as a sort of metaphysical sacrifice.¹¹⁶¹

Agamben's interest in Majorana's disappearance is, of course, not (entirely) sensationalistic enthusiasm about conspiracy theories and true crime narratives. Rather, Agamben observes that Majorana's story reveals much about the contingent nature of certain types of knowledge, the "known unknowns" and "unknown unknowns."¹¹⁶² As Agamben puts it, "the reality of facts never duly corresponds to the realities they invoke, which in turn lends itself to divergent interpretations, of which the author could not be unaware."¹¹⁶³ Majorana's own proclaimed timeline does not add up, neither regarding his disappearance and the possibly implied suicide, nor his failure to reappear. "The only certain thing is that he disappeared ... in ways other than those suggested by the letters."¹¹⁶⁴ Why is this significant? Because the

¹¹⁶¹ *Real*, 6-8; *Reale*, 10-12.

¹¹⁶² See "Introduction."

¹¹⁶³ *Real* 5; *Reale* 9: "Una prima conclusione che si può trarre dall'esame delle lettere è che la realtà dei fatti non corrisponde mai puntualmente a quella in esse evocate, la quale si presta, d'altra parte, a interpretazioni divergenti, di cui l'autore non poteva non essere consapevole."

¹¹⁶⁴ *Real* 5; *Reale* 9-10: "La sola cosa certa, tuttavia, è che egli è effettivamente e irrecovabilmente scomparso e ha altrettanto irrecovabilmente rinunciato all'insegnamento di Fisica teorica, ma, in entrambi i casi, non nelle modalità suggerite dalle lettere."

disappearance “is equally certain and improbable (in the literal sense of the term, it cannot be proved and ascertained at the level of facts).”¹¹⁶⁵

That very subject was at issue in one of two surviving papers by Majorana, published posthumously in 1942 in *Scientia* and titled “The Value of Statistical Laws in Physics and the Social Sciences.” Only a few years earlier, in his 1931 polemic *The Scientific Outlook*, Russell had explained that physics was a particularly certain science, its outcomes best expressed with the equally certain logic and language of mathematics: “Ordinary language is totally unsuited for expressing what physics really asserts, since the words of everyday life are not sufficiently abstract. Only mathematics and mathematical logic can say as little as the physicist means to say. As soon as he translates his symbols into words, he inevitably says something much too concrete, and gives the reader the cheerful impression of something imaginable and intelligible, which is much more pleasant and everyday than what he is trying to convey.”¹¹⁶⁶ What might sound like a gesture in service of precision is, however, in fact an example of what John Fauvel (1947-2001), writing about a comparable rhetorical moment in the *Geometry* of René Descartes (1596-1650), characterizes as “a rhetorical act of intimidation, both elevating [the writer] further in his readers’ eyes and bolstering the scientific ideology that ... mathematics, in particular, is too hard for ordinary folk to understand.”¹¹⁶⁷ As Majorana’s essay points out, it is also an opinion

¹¹⁶⁵ *Real* 6; *Reale* 10: “La scomparsa di Majorana è, cioè, altrettanto certa quanto improbabile (nel senso letterale del termine: essa non può essere in alcun modo provata e accertata sul piano dei fatti).”

¹¹⁶⁶ Bertrand Russell, *The Scientific Outlook*. London: Allen & Unwin, 1931. 85.

¹¹⁶⁷ John Fauvel, “Cartesian and Euclidean Rhetoric.” *For the Learning of Mathematics* 8.1 (Feb 1988), 25-29. 26. The Cartesian quotation is the “Advertissement” preceding the *Geometrie*: “Iusques icy i’ay tasché de me rendre intelligible a tout le monde; mais, pour ce traité, ie crains qu’il ne pourra estre leu que par ceux qui sçauent deslors qui est dans le liures de Geometrie: car, d’autant qu’ils contiennent

decidedly behind the times in the early 20th Century state of the fields of physics and mathematics.

Agamben draws particular attention to Majorana's conception of reality after the discovery of quantum physics. In the early 20th Century quantum physics could only emerge after the field opted for "the abandonment of the determinism of classical mechanics," as it became clear that quantum states could not be adequately described by the rules of that system. Rather, they must be inferred through "a purely probabilistic conception of reality."¹¹⁶⁸ As Majorana puts it himself:

There are no laws in nature that express an inevitable series of phenomena; even basic laws concerning elemental phenomena (atomic systems) have a statistical character. They only allow us to establish the *probability* that a measurement performed on a system prepared in a given way will give a given result.¹¹⁶⁹

plusieurs verités fort bien démontrées, i'ay creu qu'il seroit superflus de les repeater, & n'ay pas laissé, pour cela de m'en servir." René Descartes, "Geometrie," in Charles Adam & Paul Tannery, eds. *Oeuvres de Descartes*, Vol. 6. Paris: Cerf, 1902. 367- 486. 368. Fauvel translates: "So far I have tried to make my meaning clear to everyone; but I doubt if this treatise can be read by anyone not familiar with geometry books, for I've thought it superfluous to repeat the demonstrations contained in them," 26.

¹¹⁶⁸ *Real* 9; *Reale* 13: "L'analogia fra le leggi statistiche della fisica e quelle della scienze sociali suggerita dal titolo ha, nel testo, degli svolgimenti su cui vale la pena di riflettere. L'articolo contiene, infatti, una riflessione sulla trasformazione della fisica in conseguenza dell'abbandono del determinismo della meccanica classica a favore di una concezione puramente probabilistica della realtà,"

¹¹⁶⁹ Ettore Majorana, "Il Valore delle Leggi Statistiche nella Fisica e nelle Scienze Sociali." *Scientia* 71.358/359 (1946), 58-66. 65: "Non esistono in natura leggi che esprimano una successione fatale di fenomeni; anche le leggi ultime che riguardano i fenomeni elementari (sistemi atomici) hanno carattere statistic, permettendo di stabilire soltanto la *probabilità* che una misura eseguita su un Sistema preparato in un dato modo dia un certo risultato, e ciò qualunque siano i prezzi di cui disponiamo per determinare con la maggior esattezza possibile lo stato iniziale del sistema." Transl. Rosario Nunzio Mantegna.

Moreover, and more worryingly to Majorana (and Agamben), Heisenberg's uncertainty principle describes that fact that because quantum particles at any given time can only be defined by two of the three necessary factors velocity, position, and energy, "at any given moment, the particle may therefore be said to have a host of *possible* positions and momenta, each of which has a given probability of being found on measurement."¹¹⁷⁰ Consequently, Heisenberg's principle suggests that reality is continually "led" by the observer, and takes no objectively measurable state:

Any experiment performed on an atomic system exerts a finite perturbation on it that cannot be eliminated or reduced for reasons of principle. The result of any measurement seems, therefore, to be concerned with the state the system *is led to* during the experiment rather than with the unknowable state of the system before being perturbed.¹¹⁷¹

Majorana, Agamben carefully points out, will later use "commanded" to express the same process, which parallels (in both Majorana's and Agamben's argumentation, and recalls Leibniz) the way social statistics "aim not at the knowledge of social phenomena but at their very 'government.'"¹¹⁷²

¹¹⁷⁰ *Real*, 24 ; *Reale*, 31: "Possiede per così dire a ogni istante tutta una serie di posizioni e di stati possibili di movimento, che possono attualizzarsi al momento della misura secondo una certa probabilità."

¹¹⁷¹ *Real*, 10. Transl. Lorenzo Chiesa; Majorana, "Il Valore," 65: "Qualunque esperienza eseguita in un sistema atomico esercita su di esso una perturbazione finite che non può essere, per ragioni di principio, eliminate e ridotta. Il risultato di qualunque misura sembra perciò riguardare piuttosto lo stato in cui il sistema viene portato nel corso dell'esperienza stessa che non quello inconoscibile in cui si trovava prima di essere perturbato."

¹¹⁷² *Real*, 14 ; *Reale*, 31: "La frase in apparenza enigmatica che conclude l'articolo ('La cui interpretazione richiede un'arte speciale, non ultimo sussidio dell'arte di governo') acquista in questa prospettiva un significato particolare: come le leggi probabilistiche della meccanica quantistica mirano

Agamben next turns to an interpretation of the same set of facts by Alsatian-Jewish philosopher (and at this point, aspiring Résistance fighter), Simone Adolphine Weil (1909-1943), in her 1941 essay, “Science and Us.” Weil notes:

To us, the people of the West, a very strange thing happened at the turn of the century: without noticing it, we lost science, or at least the thing that had been called by that name for the last four centuries. What we now have under this name is something different, radically different, and we do not know what it is.¹¹⁷³

Weil explains further: “We have subtracted from [science] the analogy between the laws of nature and the conditions of work [i.e. energy, entropy, etc.], which is to say, its very principle; it is this that the quantum hypothesis has decapitated.”¹¹⁷⁴ Whereas classical physics postulates continuity, “Planck’s formula and constant introduced discontinuity into energy at the precise point at which ... it cannot take place.”¹¹⁷⁵ To Weil, this closes the long arc to antiquity:

Discontinuity, number, smallness; this is enough to make the atom appear, and the atom has come back to us along with its inseparable

non a conoscere, ma a ‘comandare’ lo stato dei sistemi atomici, così le leggi della statistica sociale mirano non alla conoscenza, ma al ‘governo’ dei fenomeni sociali.”

¹¹⁷³ *Real*, 14-15; *Reale*, 19-20, transl. Lorenzo Chiesa. In the original French, Simone Weil, “La Science et Nous.” *Sur la Science*. Paris: Édition Gallimard, 1966. 125-131. 125: “Il s’est passé pour nous, gens d’Occident, une chose bien étrange au tournant de ce siècle ; nous avons perdu la science sans nous en apercevoir, ou tout au moins ce que depuis quatre siècles on appelait de ce nom. Ce que nous possédons sous ce nom est autre chose, radicale-ment autre chose, et nous ne savons pas quoi.”

¹¹⁷⁴ *Real*, 17; *Reale*, 22-23, transl. Lorenzo Chiesa. Weil, “Science et Nous,” 147: “On en a retiré l’analogie entre les lois de la nature et les conditions du travail, c’est-à-dire le principe même ; c’est l’hypothèse des quanta qui l’a ainsi décapitée.”

¹¹⁷⁵ *Real*, 17; *Reale*, 23: “La formula di Planck, con la sua costante, ha introdotto la discontinuità nell’energia, cioè proprio là dove, secondo Simone Weil, essa non può aver luogo.”

entourage, that is, chance and probability. The appearance of chance in science has been seen as scandalous; we asked where it came from and did not realize that the atom brought it; we forgot, already in the ancient world, chance went along with the atom, and failed to realize it could not have been otherwise.¹¹⁷⁶

Indeed, Weil claims, “what introduced discontinuity is not experience ... but only the usage of the notion of probability.”¹¹⁷⁷ Weil links Planck’s discovery to the logic of nothing else than probability’s originating metaphor, games of dice, bringing this dissertation increasingly full circle. (see Chapter 3).

Agamben next traces this problem through the history of quantum physics, touching on insights by Einstein, the Danish physicist Niels Bohr (1885-1962), and of course the famed cat experiment postulated by Schrödinger, which emphasizes the consequences of just such a probabilistic throw of the dice in the moment the cat in his box is equally likely to be dead, alive, or both. Agamben also traces some of the same history of probability this dissertation has already presented in Chapter 3, ending with Bernoulli’s observation that certainty is simply the infinitely probable.¹¹⁷⁸ One is Agamben’s revisiting of Aristotle’s concepts of possibility (*dynamis*), actuality

¹¹⁷⁶ *Real*, 17-18; *Reale*, 23, transl. Lorenzo Chiesa. Weil, “Science et Nous,” 150: “Discontinuu, nombre, petitesse, c'est assez pour faire surgir l'atome, et l'atome est revenu parmi nous avec son cortège inséparable, à savoir le hasard et la probabilité. L'apparition du hasard dans la science a fait scandale ; on s'est demandé d'où il venait ; on n'a pas réfléchi que l'atome l'avait amené ; on ne s'est pas souvenu que déjà dans l'antiquité le hasard accompagnait l'atome, et l'on n'a pas songé qu'il n'en peut être autrement.”

¹¹⁷⁷ *Real*, 18; *Reale*, 24, transl. Lorenzo Chiesa. Weil, “Science et Nous,” 155: “Il apparaît clairement dans ces lignes de Planck que ce qui introduit ici la discontinuité, ce n'est nullement l'expérience ... mais uniquement l'usage de la notion de probabilité.”

¹¹⁷⁸ *Real*, 28-32; *Reale*, 36-40.

(*energeia*), and chance (*tuche*), which Aristotle considers a “non-cause.” Agamben concludes that in Aristotle’s terms, probability “is a potency emancipated from its hierarchical subjection to the act.”¹¹⁷⁹ Taken with Aristotle’s idea in *De Anima* that the intellect is “‘a being whose nature is potential being’ ... a writing tablet on which nothing has yet been actually written,” Agamben concludes that under the regime of probability-as-reality, “the writing tablet – pure possibility – replaced reality, and knowledge only knows knowledge itself.”¹¹⁸⁰

Agamben concludes that this realization, and not high-minded scruples about nuclear war, is the true reason that Majorana chose to erase himself, as an exemplum of just that throw of the dice: “Majorana immediately realized that, as soon as we assume that the real state of a system is in itself unknowable, statistical models become essential and cannot but replace reality... reality must be eclipsed by probability.”¹¹⁸¹ Consequently, “Majorana turned his very person into the exemplary cipher of the status of the real in the probabilistic universe... and render ambiguous every experimentally detectable trace of his disappearance.”¹¹⁸² He disappeared “to ask science the question that still awaits its unrequestable [*inseguibile*] and yet

¹¹⁷⁹ *Real*, 38; *Reale*, 47: “La Potenza (che Aristotele riferisce soprattutto alle tecniche e ai saperi umani) è, cioè, definita costitutivamente dalla possibilità del suo non esercizio, dal suo potere essere e non essere, passare o non passare all’atto.”

¹¹⁸⁰ *Real*, 40; *Reale*, 50: “Ciò che è avvenuto nella statistica moderna e nella fisica quantistica è che la tavoletta per scrivere – cioè la possibilità pura – si è sostituita all’ realtà e ciò che la conoscenza conosce è ora soltanto la conoscenza stessa.”

¹¹⁸¹ *Real*, 42; *Reale*, 52: “Majorana capisce immediatamente che, una volta che si assuma che lo stato reale di un sistema sia in sé inconoscibile, i modelli statistici diventano essenziali e non possono che sostituirsi alla realtà.”

¹¹⁸² *Real*, 43; *Reale*, 52-53: “Majorana ha fatto della sua stessa persona la cifra esemplare dello statuto del reale nell’universo probabilistico della fisica contemporanea e ha prodotto in questo modo un evento insieme assolutamente reale e assolutamente improbabile. Decidendo, quella sera di marzo del 1938, di sparire nel nulla e di confondere ogni traccia sperimentalmente rilevabile della sua scomparsa.”

ineluctable answer: *What is the real?*”¹¹⁸³ These, then, are the questions that will undergird the analysis of the *arcana imperii* and *intelligence* in *Hamlet*, asking, with Bacon, Leibniz, Zuse, Turing, Wittgenstein, and Agamben to what degree Hamlet erases all versions of himself in his own attempt to answer the same question posed by Majorana – just about the state of sovereignty in the Kingdom of Denmark.

VIII. Hamlet’s Dog-Man and Hamlet’s King

From the very beginning of Shakespeare’s *Hamlet*, it is clear that two worlds are colliding, and that they are doing so under circumstances directly linked to both sovereignty and the perceived nature of reality, of the governing *logos* of the world of the play, and of the characters within the play. In the very first scene, the first character to speak is the sentinel Barnardo, in darkness, when encountering Marcellus. Barnardo’s first words are the question, “Who’s there?” His second utterance is: “Long live the King” (1.1.1-4). In this moment, Barnardo establishes the themes that will drive the plot of *Hamlet*. Firstly, the question of who is who, specifically who is king. Secondly, the question whether, and in what form, the sovereign house of Denmark (“the king”) can survive. Such a constellation immediately recalls the distinction Kantorowicz makes between “the king’s two bodies,” which encapsulates the type political secret most closely associated with the *mysterium* (Chapter 1). Barnardo’s first question, “Who’s there?,” is about which person legitimately held (the fathers Old Fortinbras and Old Hamlet), holds (Claudius), should hold (Prince Hamlet,

¹¹⁸³ *Real*, 43; *Reale*, 53: “...egli ha posto alla scienza la domanda che aspetta ancora la sua inesigibile e, tuttavia, ineludibile risposta: *che cos’è reale?*”

the son), and will hold (Prince Fortinbras, the son) the office of King of Denmark. Barnardo's second exclamation, "Long live the King" is about the body politic, the continual stability of the office of the king, whom he is, as a soldier, pledged to serve regardless of which person holds the office.

This world of political conflicts over sovereignty collides, however, with another. This second world is that of two conflicting epistemologies of political secrecy, of the *mysterium* and the *arcana imperii* on the one hand, and that of the modern concept of *intelligence* on the other. Both the *mysterium* and the *arcana imperii* are types of knowledge which are secret because they are intimately associated with the person of the sovereign. They are also figured as certain, in the sense of the deducible nature of knowledge under the theological logic of the *mysterium* and the tight circle of *particeps secretorum* and the *geometrical logos* governing the *arcana imperii*. Their full instantiations are, by their very nature, always in the shadows, barely discernable and only tentatively discernable to non-sovereign observers. Thus, when Marcellus asks, "What, has this thing appear'd againe to night?" (1.1.30), the "thing" he is talking about is conceptually as well as theatrically a ghost.

The younger generation of Prince Hamlet and his peers, on the other hand, is decidedly more Baconian in its worldview. Thus Hamlet's friend and presumably fellow nobleman, Horatio, dismisses the sentinels' experience as the result of an overactive imagination and superstitious fears: "Horatio saies, 'tis but our Fantasie, / And will not let beleefe take hold of him / Touching this dreaded sight, twice seene of vs" (1.1.32-34). As someone socially and formally closer to the sovereign than they are, the sentinels hope Horatio might be able to confirm both its existence and interact

with it in ways they cannot: “Therefore I haue intreated him along / With us, to watch the minutes of this Night, / That if againe this Apparition come, / He may approue our eyes, and speake to it” (1.1.35-38). Horatio, predictably, rejects the very thought: “Tush, tush, ‘twill not appeare” (1.1.39). The real, in the sense of the arithmetical, binary *logos*, pegs the probability of ghostly apparitions vanishingly low.

However, the unlikely does occur: “*Enter the Ghost.*” The secrets of the kingdom, both old and new, are about to burst onto the stage: “Looke where it comes againe... In the same figure, like the King that’s dead ... Thou art a Scholler; speake to it Horatio. / Lookes it not like the King? Marke it Horatio” (1.1.52-55). Horatio does mark it: “Most like: It harrowes me with fear & wonder” (1.1.56). Horatio in fact experiences the very dread and awe typically associated with public royal appearances where the only available categories to confirm the *mysterium tremendum et fascinans* of the king is to ask, almost liturgically, “looks it not *like* the king?” and to reply “most *like*.”

Moreover, Horatio experiences the effects of the *arcana imperii*. He attempts to interrogate the apparition: “What art thou that usurp’st this time of night, / Together with that Faire and Warlike forme / in which the Maiesty of buried Denmarke / Did sometimes march: By Heauen I charge thee speake” (1.1.59-62). However, the methods and counsels of the king are not for the public to know, touching, as they most decidedly do in this case, on the *vim* of the sovereign: this information belongs to the *oikonomia* of the royal household, and only another royal can read its accounts. The “thing” does not speak to the sentinels or to the non-royal nobility. As far as the public spectators are concerned, the apparition is incensed by Horatio’s presumption

and fades immediately back out of sight: “It is offended. ... See, it stalkes away. ... ‘Tis gone, and will not answer” (1.1.63-66).

Alternatively, Horatio’s proclamation that the “thing” is “like the king” could reflect a probabilistic outlook, one that attempts to account for calculable fact. To Horatio, who hails from the same generational, noble, educational, and therefore epistemological paradigm as Hamlet, the cognitive dissonance between the appearance of this ancient type of secrets and his expectations of Baconian verifiability is unsettling precisely because that type of “thing” ought not to exist at all: “Before my God, I might not this beleue / Without the sensible and true auouch / Of mine owne eyes” (1.1.71-73). In fact, even if taken as real in some sense, this particular “thing” is thoroughly confusing in its nature: It does not fit any Protestant paradigm for ghosts current in the era,¹¹⁸⁴ or even imagined on the theater stage.¹¹⁸⁵ The “thing,” in all its ancient, sanctimonious trappings, is either a theological mistake or something entirely new.

Horatio would agree. To him, who operates within the Baconian mindset that truth is what he can subject to “the sensible and true auouch / Of mine owne eyes,” another detail glaringly stands out. It is the appearance of the ghost, who imitates an

¹¹⁸⁴ Cf. Wolfgang Neuber, “Poltergeist the Prequel: Aspects of Otherworldly Disturbances in Early Modern Times.” Christine Göttler & Wolfgang Neuber, eds. *Spirits Unseen: The Representation of Subtle Bodies in Early Modern European Culture*. Leiden: Brill, 2007. 1-17.

¹¹⁸⁵ This has been a long-standing critical observation. Cf. e.g. Clive Staples Lewis, “Hamlet: The Prince or the Poem?” *Proceedings of the British Academy* 28 (1942), 139-155. 147-148: “This ghost is different from any other ghost in Elizabethan drama—for, to tell the truth, the Elizabethans in general do their ghosts very vilely. It is permanently ambiguous. Indeed the very word ‘ghost,’ by putting it into the same class with the ‘ghosts’ of Kyd and Chapman, nay by classifying it at all, puts us on the wrong track. It is ‘this thing,’ ‘this dreaded sight,’ an ‘illusion,’ a ‘spirit of health or goblin damn’d,’ liable at any moment to assume ‘some other horrible form’ which reason could not survive the vision of.”

earlier form of Hamlet the Father, not, as one might expect, the spectral image of a dead man buried in his death-shroud:

Marcello: Is it not like the King?

Horatio: As thou art to thy selfe,

Such was the very Armour he had on,

When th' Ambitious Norway combatted:

So frown'd he once, when in an angry parle

He smot the sledded Pollax on the Ice.

'Tis strange. (1.1.74-80)

That is, the “thing” appears like Old Hamlet at the height of his sovereign power, not at the moment of his death, burial, or as his private self – a form that does not appear until the Closet Scene, when Hamlet sees the “thing” in its night-clothes. The “thing” is the memory of “Hamlet” as an incarnation of the body politic in its full power.

It is no wonder, then, that Horatio attempts to arrest the “thing” long enough so he can examine it further. When, shortly after its first appearance and in the same scene, the stage directions announce, “*Enter Ghost againe,*” Horatio once again attempts to apply his post-Baconian expectations to the apparition, and once again, he fails: “But soft, behold: Loe, where it comes againe: / Ile crosse it, though it blast me. Stay Illusion” (1.1.144 & 145). Increasingly frustrated, Horatio assails the unknowable apparition differently than one might expect, more like a nobleman demanding intelligence from another who is privy to that knowledge than as someone who is addressing either a ghost or, for that matter, a deceased king:

If thou hast any sound, or use of Voyce,

Speake to me. If there be any good thing to be done,

That may to thee do ease, and grace to me; speak to me.

If thou art priuy to thy Countries Fate

(Which happily foreknowing may auoyd) Oh speake. (1.1.147-154)

Given his own political stature and training, however Horatio can nevertheless deduce correctly what is at stake: “In what particular thought to work, *I know not*: / But in the grosse and scope of my Opinion, / This boades some strange erruption to our State” (1.1.83-85). Horatio also intuitively can “read the accounts” of this particular sovereign visitation: “Let us impart what we haue seene to night / Unto yong Hamlet. For upon my life, / This Spirit dumbe to us, will speake to him” (1.1.192-194).

The eruption is shortly to follow, and at its heart is nothing short of a targeting plot of the classic *arcana imperii* type. *Enter Hamlet*, the character C.S. Lewis calls “Man with his mind on the frontier of two worlds,”¹¹⁸⁶ a frontier that includes both past and present, sanity and deception, both the visible world and the shadow-world of secrecy. Accordingly, Prince Hamlet does not enter the play on the walls of Elsinore, but rather in the locale of Denmark’s *realpolitik*. He enters the throne room, where the usurper Claudius and Hamlet’s mother Gertrude are holding court. Unlike the battlements, where the shades of political secrecy appear gray but visible, this throne room is one of ceremony, concealment, and politic obfuscation, where light and shadow confuse rather than reveal. As Claudius himself declares, the kingdom is nominally in mourning: “yet of Hamlet our deere Brothers death / The memory be greene: and that it us befitted / To beare our hearts in greefe, and our whole Kingdome / To be

¹¹⁸⁶ Lewis, “Hamlet,” 152.

contracted in one brow of woe” (1.2.201-204). Yet, Claudius has proceeded to combine the “loss” of Old Hamlet marked by his brother’s hasty funeral with wedding celebrations as Claudius rushes to marry the widowed queen, Gertrude:

Therefore our sometimes Sister, now our Queen,
Th’ Imperiall Ioyntresse of this warlike State,
Haue we, as ‘twere, with a defeated ioy,
With one Auspicious, and one Dropping eye,
With mirth in Funerall, and with Dirge in Marriage,
In equall Scale weighing Delight and Dole
Taken to Wife. (1.2.208-214)

Rather than dwelling on the legitimacy of his subsequent claim to Denmark’s throne, which is not self-evident in a system predisposed towards primogeniture,¹¹⁸⁷ Claudius

¹¹⁸⁷ The chain of succession in the Denmark in the world of *Hamlet* is not entirely clear. Three options appear to be suggested by the text. The first is the system of Denmark in Shakespeare’s time, which was technically an elective monarchy, in which the nobility chose a king; candidates were always member of the royal house, meaning that technically both Claudius and Young Hamlet would have been eligible. However, in practice the firstborn of the previous king was elected, meaning Claudius’ election would have been acceptable *de jure*, it would have been both surprising and a jarring break with tradition. This would make sense of Hamlet’s claim that Claudius “Popt in betweene th’ election and my hopes.” The play presents a contradictory model, when Claudius refers to Gertrude as “our sometimes Sister, now our Queen, / Th’ Imperiall Ioyntresse of this warlike State.” Jointure was a legal innovation of the Tudor period, allowing men to designate their wives as the heirs of their estates, displacing their sons. Claudius might mean two different arrangements. On the one hand, he could be claiming that Old Hamlet had designated Gertrude as his heir, so that Gertrude’s new husband (himself) would have a claim *through* her, and Hamlet have none of all. On the other hand, Claudius could be stating that he himself had arranged jointure with Gertrude, so that she would inherit the throne should Claudius die, and Hamlet would remain cut off from the line of succession. However, whether or not this is true is another question; it could be another one of Claudius’ polemic claims underscoring his own claim. The third option is one suggested by the sources of *Hamlet*, including the *Gesta* by Saxo Grammaticus and the *Histoires Tragiques* by Belleforest. After all, Shakespeare follows these sources very closely in all other regards. In those texts, the equivalents of Old Hamlet and Claudius, Horwendil/Horvendile and Fengo/Fengon, are initially co-regents, meaning that Claudius was already a co-king before the militarily more powerful Old Hamlet died. Claudius is now returning Denmark to one-man rule, cutting Young Hamlet out of a shared regency. In any of these cases, it would be reasonable that Hamlet would have felt robbed of his inheritance.

then promptly pivots to flattering his courtiers and conjuring an outside threat, in classic demagogic fashion:

Your better Wisedomes, which haue freely gone
With this affaire along, for all our Thankes.
Now followes, that you know young Fortinbras,
Holding a weake supposall of our worth;
Or thinking by our late deere Brothers death,
Our State to be disioynt, and out of Frame,
Colleagued with the dreame of his Aduantage;
He hath not fayl'd to pester vs with Message,
Importing the surrender of those Lands
Lost by his Father. (1.2.215-224)

It is clear that Claudius is aware his assuming the throne was due to political maneuvering that requires frequent rhetorical justification, and is thus neither a completely settled matter nor the most obvious choice.

Prince Hamlet appears to be the only one who ignores these displays and ironically points out Claudius' questionable generosity. When Claudius declares Prince Hamlet "my Cosin Hamlet, and my Sonne" (1.2.266), Hamlet's reply "A little more then kin, and lesse then kinde" (1.2.267), might appear like a quip about overly close family relations, but in fact suggests that while Claudius is related to the royal line of succession ("kin"), he is a pretender to the crown (acting as if he were "more then kin"), even though he is not in fact made of the same stuff as Old Hamlet ("lesse than kinde"). This latter comment additionally suggests that Claudius has no access to

the eucharistically established, body-and-soul-based *mysterium* of true kingship (Chapter 1), comparable to the Eucharist including a “communion under both kinds.” Such a reference to “kinds” would have been immediately recognizable to Shakespeare’s audience. After all, one central debate of the Reformation was about the Eucharist, with the Catholic Council of Trent,¹¹⁸⁸ the Eastern Orthodox Churches,¹¹⁸⁹ Calvin,¹¹⁹⁰ Luther,¹¹⁹¹ and the Anglican Church¹¹⁹² insisting on the presence of both kinds (albeit in different ritual variations) as essential to the god-ordained order of “true worship” and thus of the world. Only the sects of Protestantism inspired by the Swiss-German reformer Huldrych Zwingli (1484-1531),¹¹⁹³ such as the Baptists and Anabaptists,¹¹⁹⁴ view the Eucharist as a merely symbolic act. Whether this, by implication, makes Claudius not just a usurper but also a heretic depends, accordingly, on one’s view of whether symbolic pretense suffices to evoke the legitimacy of the *mysterium*, and whether or not kings are themselves god-ordained, or simply inhabiting a god-ordained office.

Hamlet’s subsequent retort touches less on the *mysterium* and more directly on the logic of the *arcana imperii* itself. Claudius asks, “How is it that the Clouds still

¹¹⁸⁸ “Sessio XXI” & “Sessio XXII.” *Canones et Decreta Sacrosancti Oecumenici et Generalis Concilii Tridentini*. Rome: Paolo Manuzio, 1564. 183-216.

¹¹⁸⁹ “Liturgy of St. John Chrysostom.” [*Θεία Λειτουργία Ιωάννου Χρυσοστόμου*.]

¹¹⁹⁰ Calvin, *Institutes*, 4.17.48.

¹¹⁹¹ *Formula Concordiae Lutheri et Buceri*. 29 May 1536.

¹¹⁹² “Of Both Kindes,” *Articles, whereupon it was agreed by the Archbishops and Bishops of both Prouinces, and the whole Cleargie, in the Conuocation Holden at London in the Yere of our Lorde God 1562*. London: Richard Jugge & John Cawood, 1571. 19.

¹¹⁹³ Huldrych Zwingli, *De vera et falsa religione*. Zürich: Christopher Froschauer, 1525. 221-297.

¹¹⁹⁴ *Brüderliche Vereynigung Etzlicher Kinder Gottes / Siben Artickel Betreffend*. Worms: Peter Schöffler the Younger, 1527. 8-10 & 14.

hang on you?” Hamlet replies, “Not so my Lord, I am too much i’ th’ Sun” (1.2.268-269). Apart from the common reading that Hamlet puns in order to express the view that Claudius is counterfeiting their relationship (“too much the son” to Claudius) in order to bolster his claim to the throne, the Prince of Denmark might be seen as also evoking another narrative. He may be referencing the story of Alexander the Great and the Cynic and “dog-man” (κυνικός, *kynikos*) Diogenes (412-323 BCE). In that rather famous episode related by Plutarch, Alexander the Great, the first Occidental *imperator*, receives the devotion of Greece’s statesmen and philosophers. Diogenes, however, ignores him. Incensed, Alexander decides to seek Diogenes out himself, and finds him lying in the sun. When Alexander asks Diogenes what he might want, Diogenes asks the emperor to “stand a little out of my sun.” Alexander is impressed by Diogenes’ confidence and proclaims, “If I weren’t Alexander, I’d wish I were Diogenes.”¹¹⁹⁵

Hamlet’s reference is two-edged. If he is “too much i’ th’ Sun,” Hamlet corresponds to the legitimate *imperator*, Alexander, and Claudius would correspond to Diogenes, the dog-man who lives in a clay jar he calls his palace, and cynic. In that reading, the equivalent rendering of the banter would be that Hamlet decries, “If I weren’t Hamlet, I’d wish I were Claudius,” an acknowledgement that for the moment

¹¹⁹⁵ Plutarch, *Alexander*, 14.1-3: “εἰς δὲ τὸν Ἴσθμὸν τῶν Ἑλλήνων συλλεγόντων καὶ ψηφισαμένων ἐπὶ Πέρσας μετ’ Ἀλεξάνδρου στρατεῦειν ἡγεμῶν ἀνηγορεύθη. πολλῶν δὲ καὶ πολιτικῶν ἀνδρῶν καὶ φιλοσόφων ἀπνητηκότων αὐτῷ καὶ συνηδομένων, ἤλπιζε καὶ Διογένην τὸν Σινωπέα ταῦτ’ ποιήσῃν, διατρίβοντα περὶ Κόρινθον. ὡς δὲ ἐκεῖνος ἐλάχιστον Ἀλεξάνδρου λόγον ἔχων ἐν τῷ Κρανείῳ σχολῆν ἦγεν, αὐτὸς ἐπορεύετο πρὸς αὐτὸν ἔτυχε δὲ κατακείμενος ἐν ἡλίῳ. καὶ μικρὸν μὲν ἀνεκάθισεν, ἀνθρώπων τοσοῦτων ἐπερχομένων, καὶ διέβλεψεν εἰς τὸν Ἀλέξανδρον. ὡς δὲ ἐκεῖνος ἀσπασάμενος καὶ προσειπὼν αὐτὸν ἠρώτησεν εἴ τις οὐκ ἐπιθυμῶν εἰς τὸν Ἀλέξανδρον, ‘μικρὸν’ εἶπεν, ‘ἀπὸ τοῦ ἡλίου μετὰ στήθι’ πρὸς τοῦτο λέγεται τὸν Ἀλέξανδρον οὕτω διατεθῆναι καὶ θαυμάσαι καταφρονηθέντα τὴν ὑπεροψίαν καὶ τὸ μέγεθος τοῦ ἀνδρός, ὥστε τῶν περὶ αὐτὸν, ὡς ἀπήεσαν, διαγελόντων καὶ σκωπτόντων, ‘ἀλλὰ μὴν ἐγὼ,’ εἶπεν, ‘εἰ μὴ Ἀλέξανδρος ἦμην, Διογένης ἂν ἦμην.’”

he has been outwitted by a man who might be formidable in his own way, but who has no legitimate claim to rule. If, on the other hand, Hamlet is implying that in the view of the current king (i.e. Claudius as Alexander), Hamlet is “too much i’ th’ Sun” and not enough on his knees, as Diogenes also was, then Hamlet might be hinting at his Wittenberg-born understanding that the Greek word *kynikos* does not represent the falsified understanding of his own age that *cynic* has retained in the 21st Century: the hard-nosed exercise of power.

The first use of *that* definition in a (partly) Shakespearean text occurs in the *Edward III* of 1596, when the Earl of Warwick, in response to a royal complaint about flatters, declares about his own *realpolitik*-al advice to the king, “Far be it from the honor of my age, / That I should owe bright gould and render lead, / Age is a cyn[i]cke, not a flatterer.”¹¹⁹⁶ That type of cynicism is Claudius’ wheelhouse, not Hamlet’s. The ancient term *kynikos* more closely denoted ironic irreverence towards the dominant powers that be, with the aim to demonstrate the emptiness of power’s pretensions.¹¹⁹⁷ The quintessential Cynic hero was Hercules, not least because in his Twelfth Labor, he had brought the hell-hound Cerberus out of the underworld;¹¹⁹⁸ Lucian, for example, in his *Dialogues of the Dead*, has the Cynic Menippus address Cerberus with the words, “My dear Cerberus—I’m a relation, being a Dog myself, ...

¹¹⁹⁶ *The Raigne of King Edvvard the third*. London: Cuthbert Burby, 1596. C4r.

¹¹⁹⁷ Cf. Sloterdijk (below); Slavoj Žižek, *The Sublime Object of Ideology*. London: Verso, 1989. 28-30.

¹¹⁹⁸ Diogenes Laërtius, *Lives*, 6.2.71: “This was the gist of [Diogenes’] conversation; and it was plain that he acted accordingly, adulterating currency in very truth, allowing convention no such authority as he allowed to natural right, and asserting that the manner of life he lived was the same as that of Heracles when he preferred liberty to everything.” Transl. R. D. Hicks. Original Greek: “τοιαῦτα διελέγετο καὶ ποιῶν ἐφαίνετο, ὄντως νόμισμα παραχαράττων, μηδὲν οὔτω τοῖς κατὰ νόμον ὡς τοῖς κατὰ φύσιν διδούς· τὸν αὐτὸν χαρακτῆρα τοῦ βίου λέγων διεξάγειν ὄνπερ καὶ Ἡρακλῆς, μηδὲν ἐλευθερίας προκρίνων.”

Seeing that you're a god, you can be expected not merely to bark, but also to talk like a human when you wish."¹¹⁹⁹ It is for this reason that Young Hamlet, when he is feigning insanity in Act V, will quite sensibly observe, in response to Claudius' pronouncement that "This is meere Madnesse:" "Let Hercules himselfe doe what he may, / The Cat will Mew, and Dogge will haue his day" (5.1.3629 & 3637f). The dog is the *kynic* Hamlet, who has been "too much i' th' Sun," and what the false Alexander Claudius perceives as madness has been a *kynical* announcement that there is a hellhound coming.

Recognizing the *kynical* component in Young Hamlet's actions helps shed light on the differing answers to Agamben's question "what is the real?" under which Young Hamlet and the generation of his elders – Old Hamlet, Claudius, Gertrude, even Polonius and Old Fortinbras – seem to labor. On the one hand, the latter appear to subscribe to the dictum of Wiltshire-English philosopher Thomas Hobbes (1588-1679), *auctoritas, non veritas facit legem*: "Authority, not the truth, makes the law."¹²⁰⁰ On the other hand, it appears essential to each of them to define that authority over Denmark *through* the person of Old Hamlet: self, brother, husband, dead king, dead rival, and father. It is in this sense (and, for the sake of this argument, in this sense only) that "the real" in *Hamlet* can be cast in a form of an observation by Westphalian-German political theorist Carl Schmitt (1888-1985): "The interpretation

¹¹⁹⁹ Lucian, *Dialogues of the Dead*. Loeb Classical Library 431. Transl. M. D. MacLeod. Cambridge, Mass.: Harvard UP, 1961. 19. The Greek original reads: "ὦ Κέρβερε—συγγενῆς γάρ εἰμί σοι κύων καὶ αὐτὸς ὄν— ... εἰκὸς δέ σε θεὸν ὄντα μὴ ὑλακτεῖν μόνον, ἀλλὰ καὶ ἀνθρωπίνως ἰ φθέγγεσθαι, ὅπουτ' ἐθέλοις" (1.417 & 419-420).

¹²⁰⁰ Thomas Hobbes, *Leviathan*. London: Andrew Croke, 1651. 143: "For though it be naturally reasonable; yet it is by the Sovereigne Power that it is Law." The Latin byword is from the Latin translation, Thomas Hobbes, *Opera Philosophica*. Amsterdam: Joan Blaeu, 1668. 133.

of *Hamlet* and its symbolizations is not limited to the psychology of a single human individual; entire nations can appear as Hamlet.”¹²⁰¹ The question of the destiny of Denmark, then, becomes the question which of the versions of Hamlet prevails: Hamlet the Older, Hamlet the King, or Hamlet the Younger.

At this point, it may be useful to briefly consider Peter Sloterdijk’s three forms of cynicism, and how they interact with Leibniz’, Turing’s, Zuse’s, and Agamben’s perspectives. In his introduction to the second volume of *Critique of Cynical Reason*, titled “Phenomenological Main Text,” Sloterdijk differentiates between *cynicism*, *kynicism*, and *naked truth*. The first volume of the *Critique* concerns, firstly, cynicism as “enlightened false consciousness,”¹²⁰² and, secondly, cynicism in its “historical dimension,”¹²⁰³ where cynicism is the rulers’ and ruling culture’s intellectual and discursive response (“from above”) to the challenge of the original, physical “kynical provocation” in the sense Diogenes practiced it (“from below”).¹²⁰⁴ In the second

¹²⁰¹ “Übrigens beschränken sich die Hamlet-Deutungen und Symbolisierungen nicht etwa auf die Psychologie des einzelnen menschlichen Individuums. Auch ganze Nationen können als Hamlet erscheinen.” Carl Schmitt, *Hamlet oder Hekuba: Der Einbruch der Zeit in das Spiel*. Düsseldorf: Eugen Diederichs Verlag, 1956. 11. Transl. Reinhardt.

¹²⁰² “das aufgeklärte falsche Bewußtsein,” see Sloterdijk, Peter. *Kritik der zynischen Vernunft*. Vol. 2. Frankfurt am Main: Suhrkamp, 1983. 399; Sloterdijk, Peter. *Critique of Cynical Reason*. Theory and History of Literature, Vol. 40. Michael Eldred, transl. Minneapolis: University of Minnesota Press, 1987. 217.

¹²⁰³ “eine historische Dimension,” see Sloterdijk, *Kritik*, 400; Sloterdijk, *Critique*, 217.

¹²⁰⁴ One example claims Shakespeare as a representative of kynical reasoning: “The aristocratic programming of a heightened self-consciousness, however, comprises more than just what is too hastily called vanity or arrogance. It provides at the same time a high level of character formation and education that works to form opinions, etiquette, emotionality, and cultural taste. All these moments are still encompassed in the old concept of *courtliness* (*Hoflichkeit*, politeness). The courtly person (*cortegiano*, *gentilhomme*, *gentleman*, *Hofmann*) has gone through a training in self-esteem that expresses itself in many ways: in aristocratically pretentious opinions, in polished or majestic manners, in gallant or heroic patterns of feeling as well as in a selective, aesthetic sensitivity for that which is said to be courtly *or pretty*. The noble, far removed from any self-doubt, should achieve all this with a complete matter-of-factness. Any uncertainty, any doubt in these things signifies a slackening in the nobility's cultural "identity." This class narcissism, which has petrified into a form of life, tolerates no irony, no exception, no slips, because such disturbances would give rise to unwelcome reflections. The

volume, Sloterdijk turns, thirdly, to cynicism as “a phenomenology of polemical forms of consciousness.”¹²⁰⁵ Sloterdijk considers this a question of the “naked truth:”

Cynical thinking ... can arise only when two views of things have become possible, an official and an unofficial view, a veiled and a naked view, one from the viewpoint of heroes and one from the viewpoint of valets. In a culture in which one is regularly told lies, one wants to know not merely the truth but the *naked* truth. Where that cannot be that is not allowed to be, one has to draw out what the ‘naked’ facts look like, no matter what morality has to say about it. In a certain way, ‘ruling’ and ‘lying’ are synonyms. The truth of rulers and that of servants are different.¹²⁰⁶

This question of the naked truth within the dichotomies of cynicism, so Sloterdijk, expresses itself both in the truths of espionage and in the idea of “dark empiricism.” While Sloterdijk does not himself use this analogy, his view of the nature of knowledge acquired through espionage bears striking similarities to the afterlife of Turing’s approach to the *entscheidungsproblem* and, in Agamben’s sense, the problem

French nobles did not turn up their noses at Shakespeare’s ‘barbarism’ without reason. In his plays one already ‘smells’ the human ordinariness of those who want to stand before society as the best.” Sloterdijk, *Critique*, 62.

¹²⁰⁵ “eine Phänomenologie polemischer Bewußtseinsformen,” Sloterdijk, *Kritik*, 401. Sloterdijk, *Critique*, 218.

¹²⁰⁶ “Die Polemik dreht sich allemal um die richtige Erfassung der Wahrheit als ‘nackter’ Wahrheit. Das zynische Denken nämlich kann nur erscheinen, wo von den Dingen zwei Ansichten möglich geworden sind, eine offizielle und eine inoffizielle, eine verhüllte und eine nackte, eine aus der Sicht der Helden und eine aus der Sicht der Kammerdiener. In einer Kultur, in der man regelmäßig belogen wird, will man nicht bloß die Wahrheit wissen, sondern die *nackte* Wahrheit. Wo nicht sein kann, was nicht sein darf, muß man herausbringen, wie die ‘nackten’ Tatsachen aussehen, egal, was die Moral dazu sagen wird. In gewisser Weise sind ‘herrschen’ und ‘lügen’ Synonyme. Herrscherwahrheit und Dienerwahrheit lauten verschieden.” Sloterdijk, *Kritik*, 401. Sloterdijk, *Critique*, 218.

of Schrödinger's Cat: without opening the box by use of spies, the inevitable appearance of a Pandora notwithstanding, the state would have to assume, so Sloterdijk, that strategic information disclosed by a rival state or organization is both true and not true, that its military positions, units, and battle plans are both in place and not, and thus plan for all possible outcomes and scenarios, avoiding the misinformation and feints of the rival without any means to assess their veracity, which would be both impossible and paralyzing. In Leibniz' words, it would fail to be able to "drive the facts into a corner" to "make them eye-perceivable." In Zuse's terms, it would run contrary to the structure of the realities of "calculating space."

Making use of the fact that in German, the word for "enlightenment" (*aufklärung*) and "reconnaissance" (*aufklärung*) are identical, Sloterdijk observes:

It is thus part of the logic of survival of each side in a dyad of opponents to see through and circumvent the deceptive maneuvers of the opponent through enlightenment in the sense of espionage and to outdo him with one's own exposures, counterdeceptions, and operative measures. Espionage in its most immediate form is set up as a science of survival ... Enlightenment as espionage is research on the enemy [*feindforschung*] – the accumulation of knowledge about an object to which I am bound not through well-wishing, or through disinterested neutrality, but through a direct, hostile tension with a threatening effect. It nourishes a special kind of wanting-to-know and necessitates a series of peculiarly 'indirect' methods of research: dissimulation, secrecy, infiltration of positions of trust, misuse of friendships. Espionage

exercises the art of getting the other to talk, works through surveillance and searches, spies on others' intimate and private domains, seeks levers for extortion, looks for vulnerable points and the weak link in the opponent's chain.¹²⁰⁷

That is to say, knowledge acquired through espionage and surveillance is not, in the empirical sense, objective, but always strategic and tactical, always aimed at identifying political or military advantage. Intelligence is not data in the sense of the *geometrical logos*, but rather the strategic deployment of contingent information to an end: the survival of the state.

In that view, Sloterdijk views ignorance as a category of knowledge that is conflated with the rhetoric of deadly competition: “War channels curiosity into a polemical course and equates what is unknown about the enemy with his dangerousness.”¹²⁰⁸ Within the thought algorithms of this particular “real,” it is not important whether there actually is anything worth knowing about the enemy; the imperative is to know for the sake of knowing, because an enemy who is thoroughly known is an anticipatable and therefore neutralized – that is, essentially defeated –

¹²⁰⁷ “So gehört es zur Überlebensraison jeder Seite einer Gegnerdyade, durch Aufklärung im Sinn von Spionage die Täuschungsmanöver des Gegners zu durchschauen, zu unterlaufen oder durch eigene Entlarvungen, Gegentäuschungen und operative Maßnahmen zu überbieten. Spionage ist daher am unmittelbarsten als Überlebenswissenschaft angelegt. ... Aufklärung als Spionage ist Feindforschung – Akkumulation von Wissen über ein Objekt, mit dem mich nicht Wohlwollen verbindet, auch nicht desinteressierte Neutralität, sondern eine direkte und als Drohung wirksame feindliche Spannung. Sie speist ein Wissenwollen besonderer Art und macht eine Reihe eigentümlich ‘indirekter’ Forschungsmethoden notwendig: Verstellung, Verheimlichung, Gewinnung von Vertrauenspositionen, Ausbeutung von Freundschaften. Spionage übt die Kunst, die andern zum Sprechen zu bringen, arbeitet mit Überwachungen und Dursuchungen, späht fremde Intim- und Geheimbereiche aus, sucht nach Ansatzpunkten für Erpressungen, erforscht die verwundbaren Stellen und das schwache Glied in der gegnerischen Kette.” Sloterdijk, *Kritik*, 606-607. Sloterdijk, *Critique*, 332.

¹²⁰⁸ “Der Krieg kanalisiert die Neugier ins polemische Gleis und setzt das Unbekannte am Gegner mit seiner Gefährlichkeit gleich.” Sloterdijk, *Kritik*, 612. Sloterdijk, *Critique*, 335.

enemy. The need for calculable *data* outpaces the need for a correspondent to that *data* because probability has no definite correspondent facts other than that the dice are in the air. Consequently, “Out of enmity, specialized domains of curiosity, areas of research and epistemic interests are built up: through the keyhole to the naked facts.”¹²⁰⁹ A version of this idea regarding *Hamlet* is Derrida’s point about the “visor effect” developed in his *Specters of Marx*;¹²¹⁰ the difference in this analysis will become that it is Prince Hamlet, not his father, who will reduce “the real” to the principles of a knowledge-concept that allows Prince Hamlet, and only Prince Hamlet, to calculate the probability of action.

The tactic that allows anyone to access the “naked truth” in this requires what Sloterdijk terms “darkening,” essentially the *inventio* of the opposing counterpart:

Without making enemies and a corresponding concealment, there is no unmasking; without darkening, there is no naked truth. The striving of ‘enlightenment’ to reveal the truth obeys a dialectical principle: Only through specific, polemically forced concealment does a space ‘behind’ arise – the ‘naked facts.’ What is naked is what was previously secret:

¹²⁰⁹ “Aus der Feindschaft bilden sich spezialisierte Neugierbezirke aus, Forschungsbereiche und Erkenntnisinteressen: durchs Schlüsselloch zu den nackten Tatsachen.” Sloterdijk, *Kritik*, 612-613. Sloterdijk, *Critique*, 335.

¹²¹⁰ Jacques Derrida, in *Spectres de Marx*, identifies old King Hamlet's ghost as the quintessence of *l'effet de visière*, the helmet-visor effect, one where “*nous ne voyons pas qui nous regarde*,” we cannot see the thing that looks at us, in Hamlet's case from behind the visor of the spectral armor's helmet. Orrin N.C. Wang clarifies Derrida's general point helpfully, explaining that the “visor effect” amounts to the “prosthetic ability of a ghost to see without quite being seen in any absolute fashion, while giving Hamlet the injunction to correct a primal wrong to family and state.” Hamlet’s father is absent in body, like all ghosts, but present in spirit, and it is that body Hamlet imagines when he guesses what goes on behind the visor – fatherly approval or disapproval. Derrida, *Specters of Marx*. Transl. Peggy Kamuf. New York: Routledge, 1994. 6-7; Derrida, *Spectres de Marx*. Paris: Editions Galilée, 1993. 26; Orrin N.C. Wang, “Ghost Theory.” *Studies in Romanticism* 46.2 (2007), 203-225. 204.

the enemy, eavesdropped on in his privacy; the hidden power here, the conspiracy there; the naked women, the genitals made visible; the confessions of the amoral; the true intentions, the real motives, the hard statistics, the relentless standards.¹²¹¹

And, Sloterdijk concludes, “the enemy is everywhere,”¹²¹² whether it be powers of nature, ruthless rivals, or traditions that obfuscate our minds – this slipperiness of reliability will also concern, and at times overwhelm, Prince Hamlet. To Sloterdijk, the logic of espionage is inherent in empirical knowledge: The naked facts “must be naked because they are supposed to help keep the object in its dangerous enmity in its sights. The subjects must thus dissemble in order to eavesdrop on the (‘naked’) objects. Dissimulation of the subject is the common denominator of espionage and modern philosophy.”¹²¹³ The calculated, targeted truth is the only available *naked* truth.

The ability to see this “naked truth,” to “drive facts into a corner” and make them “eye-perceivable,” consequently results in Sloterdijk’s category of “dark empiricism.” To Sloterdijk, the requirement to simultaneously know and un-know is

¹²¹¹ “Ohne Verfeindung und entsprechende Verhüllung keine Entblößung; ohne Verdunkelung keine nackte Wahrheit. Das Streben der ‘Aufklärung’ nach der verhüllten Wahrheit gehorcht einem dialektischen Prinzip: erst durch ein spezifisches, polemisch erzwungenes Zudecken entsteht der Raum ‘dahinter’ – die ‘nackten Tatsachen.’ Das Nackte ist das zuvor Geheime: der Feind, in seiner Privatheit belauscht; die verborgene Macht hier, die Konspiration dort; die nackten Frauen, die sichtbar gemachten Genitalien; die Geständnisse der Amoralischen; die wahren Absichten, die wirklichen Motive, die harten Zahlen, die unerbittlichen Meßwerte.“ Sloterdijk, *Kritik*, 613. Sloterdijk, *Critique*, 335.

¹²¹² “Der Feind ist überall.” Sloterdijk, *Zynische Vernunft*, 613; Sloterdijk, *Critique*, 335.

¹²¹³ “Nackt müssen sie sein, weil sie helfen sollen, das Objekt in seiner gefährlichen Feindlichkeit im Visier zu behalten. So müssen die Subjekte sich verstellen, um die Objekte (‘nackt’) zu belauschen. Subjekverstellung ist der gemeinsame Nenner von Spionage und neuzeitlicher Philosophie.” Sloterdijk, *Kritik*, 615-616. Sloterdijk, *Critique*, 336.

the natural consequence of scientific, Baconian skepticism. The problem is inherent in the very transparency that enlightenment demands and seeks to develop:

All too many insights are fear inducing. If knowledge is power, then today, what was once eerie, inscrutable power, confronts us in the form of insights, transparency, obvious connections. If at one time enlightenment – in every sense of the word – lessened fear through the increase of knowledge, then today we have reached a point where enlightenment turns into what it undertook to hinder: the increase of fear. The uncanny that was supposed to be banned comes to the fore again out the means used to protect against it.¹²¹⁴

In terms of *Hamlet*, this helps account for the sudden appearance of the “thing,” the ghost that should not exist, the dead king who should be buried, the doubts the kingdom should not have about the legitimacy of the king. The “thing” is the uncanny that comes to the fore out of the means used to protect against it: political murder.

That is the case because “rationalism and mistrust are related impulses.”

Sloterdijk cites Descartes’ idea of the *genius malignus*, the worst case scenario that the world is all illusion created by malignant powers convincing us to believe in their illusions,¹²¹⁵ as quintessentially constitutive of the form of knowledge discussed here.

¹²¹⁴ “Zuviel ‘Wissen’ gibt es, von dem man aus den verschiedensten Gründen wünschen dürfte, wir hätten es nicht gefunden und keine ‘Aufklärung’ darüber gewonnen. Unter den ‘Erkenntnissen’ sind allzuvielen angsterregende. Wenn Wissen macht ist, so begegnet uns heute das einstige Unheimliche, die undurchschaute Macht in der Form von Erkenntnissen, von Transparenz, von durchschaubaren Zusammenhängen. Wenn einst Aufklärung – in jedem Wortsinn – der Angstminderung durch Mehrung von Wissen diente, so ist heute ein Punkt erreicht, wo Aufklärung in das einmündet, was zu verhindern sie angetreten war, Angstmehrung. Das Unheimliche, das abgewendet werden sollte, kommt aus dem Schutzmittel wieder zum Vorschein.” Sloterdijk, *Kritik*, 602-603. Sloterdijk, *Critique*, 330.

¹²¹⁵ “Hence, it seems to me that I would do well to deceive myself by turning my will in completely the opposite direction and pretend for a time that these opinions are wholly false and imaginary, until

Alluding to Giambattista Vico,¹²¹⁶ Sloterdijk concludes, “For the deceptions that the enlightener expects are considered artful but nevertheless transparent, exposable maneuvers. *Verum et fictum convertuntur*. The deceptions are transparent because they are self-made. ... Truth is not ‘discovered’ innocently and without struggle, but rather is won in a toilsome victory over its predecessors, which are its concealment and antipode.”¹²¹⁷ Consequently, dark empiricism is a conversion of enlightenment thinking: “I am deceived, therefore I am. And: I unmask deceptions, I myself deceive; therefore, I preserve myself. The Cartesian *cogito, ergo sum* can also be translated in

finally, as if with prejudices weighing down each side equally, no bad habits should turn my judgment any further from the correct perception of things. For indeed I know that meanwhile there is no danger or error in following this procedure, and that it is impossible for me to indulge in too much distrust, since I am now concentrating only on knowledge, not on action. Accordingly, I will suppose not a supremely good God, the source of truth, but rather an evil genius, supremely powerful and clever, who has directed his entire effort into deceiving me.” Descartes, René. “Meditations on First Philosophy – Meditation One.” In *Meditations, Objections, and Replies*. Edited and translated by Roger Ariew and Donald Cress. Indianapolis: Hackett, 2006. 12. For the final sentence, the Latin has, “Supponam igitur non optimum Deum, fontem veritatis, sed genium aliquem malignum, eundemque summe potentem & callidum, omnem suam industriam in eo posuisse, ut me falleret,” and the French has, “Je supposerai donc qu’il y a, non point un vrai Dieu, qui est la souveraine source de vérité, mais un certain mauvais genie, non moins ruse et trompeur que puissant, qui a employé toute son industrie à me tromper.” Descartes, René. *Oeuvres philosophiques*. Vol. II. Edited by Ferdinand Alquié. Paris: Garnier Frères, 1967. 181 & 412.

¹²¹⁶ “Human science comes from a vice of our mind, namely, from its limited scope, by which all things are outside it and by which it does not contain that which it tries to know (and because it does not contain them, it does not produce as works the truths it strives after); subsequently, those sciences are most certain which atone for this original vice and turn out to be similar to divine science in their operative dimension inasmuch as in them the true and the made are convertible.” The Latin: “Cum igitur scientia humana nata sit ex mentis nostrae vicio, nempe summa ejus brevitate, qua extra res omnes est, & qua quae noscere affectat non continet: & quia non continet, vera, quae studet non operatur; eae certissimae sunt, quae originis vicium luunt, & operatione scientiae divinae similes evadunt, utpote in quibus verum & factum convertantur.” Vico, Giambattista. *On the Most Ancient Wisdom of the Italians, Drawn out from the Origins of the Latin Language*. Translated by Jason Taylor. New Haven: Yale University Press, 2010. 26-27.

¹²¹⁷ “Denn die Täuschungen, mit denen der Aufklärer rechnet, werden als zwar raffinierte, aber doch durchschaubare, entlarvbare Manöver eingeschätzt. *Verum et fictum convertuntur*. Die Täuschungen sind durchschaubar, weil sie selbstgemacht sind. ... Wahrheit wird nicht harmlos und kampfflos ‘entdeckt,’ sondern errungen in einem mühseligem Sieg ihre Vorgänger, die ihre Maskierung und ihr Gegenteil sind.” Sloterdijk, *Kritik*, 603-604. Sloterdijk, *Critique*, 330.

this way.”¹²¹⁸ In a world understood according to the arithmetical, probability-reliant *logos* anticipated by Leibniz and discussed in its various implications by Turing, Wittgenstein, Zuse, Weil, and Majorana, this form of truth is the only available truth..

Keeping Sloterdijk’s oracle in mind will aid a more precise reading of the moment the two Hamlets meet. This moment occurs immediately after the scene in the throne room and the subsequent “Oh that this too too solid Flesh, would melt” monologue (1.2.333-364), when Horatio joins Prince Hamlet. After complaining about his freshly widowed mother’s rush to marry Claudius – “the Funerall Bakt-meats / Did coldly furnish forth the Marriage Tables” (1.2.387) – Hamlet suddenly interrupts himself and proclaims, “My father, me thinkes I see my father.” Horatio replies, “Oh where my Lord?” Hamlet explains, “In my minds eye” (1.2.391-392). This detail is important because of the question what, who, or where Old Hamlet actually is meant to be: We will see him return only in Hamlet’s mind eye for the rest of the play, pointing strongly to the intertwined natures of the “two worlds” along whose frontier Hamlet moves. Only Prince Hamlet can evidently make the “thing” “eye-perceivable,” and only to himself.

Horatio, who is still preoccupied with the memory of the incomprehensible “thing” he has seen the night before, seizes the moment to inform Hamlet: “My Lord, I thinke I saw him yesternight. ... the King your Father” (1.2.396-398). Hamlet is naturally both incredulous and eager to hear more, and Horatio relates the experience of Marcellus and Barnardo: “A figure like your Father, / Arm’d at all points exactly,

¹²¹⁸ “Ich werde getäuscht, also bin ich; und: ich entlarve Täuschungen, ich täusche selbst, also erhalte ich mich. Auch so läßt sich das Cartesische *cogito, ergo sum* übersetzen.” Sloterdijk, *Kritik*, 604. Sloterdijk, *Critique*, 330-331.

Cap a Pe, / Appeares before them, and with sollemne march / Goes slow and stately” (1.2.408-411). We note that Horatio distances himself a small step from his initial declaration that he has seen the king: now, the sentries have seen “a figure *like* your father.” Horatio describes the news about this event as classified intelligence: “This to me / In dreadfull secrecie impart they did” (1.2.415 & 416). To verify whether their claims were true or not, Horatio then joined them:

I with them the third Night kept the Watch,
Whereas they had deliuer'd both in time,
Forme of the thing; each word made true and good,
The *Apparition* comes. I knew your Father:
These hands are not more *like*. (1.2.418-422).

Horatio is rhetorically underscoring his own skepticism that what his observations suggest is a probable version of the real. Horatio is aware that *Verum et fictum convertuntur*, “the truth and the made are convertible,” and that he is struggling to drive the facts into a corner: “forme of the thing” rather than the thing itself, “apparition” rather than “the king,” and he is “*like*” that which is real. Consequently, while he can experience this *mysterium*, Horatio acknowledges that he lacks the access to the *oikonomia* of the royal household required to properly read the accounts of the royal family: “I did [speake to it]; but answere made it none... the Morning Cocke crew lowd; And at the sound it shrunke in hast away, and vanish from our sight.” Like Horatio had, Hamlet observes, “Tis very strange” and “this troubles me” (1.2.425-432).

Even within the Early Modern context, without an extended concept of a calculating space or a virtual existence whose rules may not apply elsewhere, Hamlet knows at the very least that in order to understand how a memory who ought to exist only “in his mind’s eye” might have slipped onto the battlements of Elsinore at night. The logic of these events must take care of itself: Hamlet interrogates the sources of the original intelligence that his father may have been sighted, asking the Horatio and the sentinels about the “thing’s” exact appearance. They report that it was “arm’d ... from head to foote,” but “wore his Beauer up” so they could see its face, which was a “countenance more in sorrow then in anger,” “very pale,” with a beard “a Sable Siluer’d,” like Horatio had “seene it in [Old Hamlet’s] life” (1.2.439-459). Prince Hamlet, however, is still left to assume that this can only be a reality that operates in an improbable space. He must himself observe the “thing” in order to fully accept that they are not deceived, and in order to properly read this account: “Ile watch to Night” (1.2.460).

Hamlet does well to be wary. As noted earlier, in Shakespeare’s time, ghosts were not what we imagine them to be in the fictions of the 21st Century, “an apparition of a dead person... typically as a nebulous image,”¹²¹⁹ a representation of their unique soul, imprinted on the air, unable or unwilling to rest in the afterlife. They are neither truth-speakers from an “other world” in the way proposed by the modern theosophists in their séances, nor are they the allegorical figures of ancient and medieval dream visions. The ghosts of Shakespeare’s world come in the variations described, for

¹²¹⁹ Oxford University Press. “Oxford Dictionaries Online – Ghost.” Oxford Dictionaries. oxforddictionaries.com/definition/english/ghost?q=ghost (accessed October 10, 2012).

example, in a text written nearly contemporaneously: Book III of the 1597 *Daemonologie*¹²²⁰ of King James VI of Scotland. James presents four different kinds of troublesome spirits: uncanny experiences in desolate places that are figments of the imagination, the paranoid feeling of being followed, the presumed reason why some humans suddenly act erratically or against their character, and imaginary folktale creatures.¹²²¹ In all of these cases, these “ghosts” are deceptions, not just implausible, but overtly intended to mislead into false realities.

For instance, in that chapter of the *Daemonologie*, King James describes “spirites that haunted some houses, by appearing in diuers and horrible formes ... If they appeared in likenesse of anie defunct to some friends of his, they wer called *umbræ mortuorum*,”¹²²² shadows of the dead. These are not the souls of the deceased, but rather creatures that *appear to* look like a familiar person who has died, “wraithes in our language.”¹²²³ James explains these wraiths are illusions the devil employs in a cunning fashion that “easeliē deceiued the *Gentiles*..., [and] he now appeares in that maner to some ignorant Christians.”¹²²⁴ The deception works on the gullible, James argues, because the devil’s agents “make them beleue that it was

¹²²⁰ James VI. Stuart, King of Scotland, *Daemonologie, in forme of a dialogue diuided into three bookes*. Edinburgh: Printed by Robert Waldgrave, 1597. A second edition was published in London in 1603 by W. Cotton and W. Aspley, after James VI of Scotland also ascended the English throne, as James I of England.

¹²²¹ “The first is, where spirites troubles some houses or solitarie places: The second, where spirites followes upon certaine persones, and at diuers houres troubles them: The thirde, when they enter within them and possesse them: The fourth is these kinde of spirites that are called vulgarlie the Fayrie.” *Daemonologie*, 57.

¹²²² *ibid.*

¹²²³ Stuart, *Daemonologie*, 61.

¹²²⁴ *ibid.*

some good spirite that appeared to them then, ether to forewarne them of the death of their friend; or else to discouer unto them, the will of the defunct, or what was the way of his slauchter.”¹²²⁵ James’ ghosts do not so much haunt as they afflict, specifically those minds that suspect foul play in someone’s death, preying on the obsessive desire of the survivors to know a certain truth about a forever uncertain event. Insofar as Lucifer is an enemy seeking to act against the *imperium* of heaven, these apparitions are disinformation, psychological warfare. They are lies told by holographs of the dead. Tactically, they parallel a 21st Century virtual apparition whose goal likewise is not to present a convincing alternative to the truth, but rather to disrupt certainty in *any* truth, by giving plausible alternatives that prey on the doubtful. James would have been familiar with them from his Scottish island dominions of the Shetlands and Orkney: The last execution of witches in Scotland occurred outside Scalloway, where a woman named Catherine Jonesdochter was “taken by the lockman to the place of execution, abone Birrie, used & wont, wirryet at an stake while she be dead, & thereafter to be burnt in ashes,” for, among other things, “airt and pairt of witchcraft and sorcerie, in hanting and seeing the Trollis ryse out of the kyrk yeard of Hildiswick & Holy Cross kirk of Eshenes” (and also for lying with the devil and receiving his mark).¹²²⁶ Trolls are a Stuart-era phenomenon as much as they are one of the information age.

¹²²⁵ *ibid.*

¹²²⁶ Entry of 2 October 1616, Court and Act Books f.33, Orkney & Shetland Sheriff Court Records, GB234/SC10, National Records of Scotland, Edinburgh, Scotland, UK.

King James was mostly synthesizing commonly held beliefs.¹²²⁷ The medieval Catholic orthodoxy on ghosts had been determined by St. Augustine in *De cura pro mortuis gerenda*. Augustine explains that an apparition of a dead person is never an actual appearance of a dead person him- or herself, but rather dream vision. If instigated by angels, that apparition would be an *imago*, or imitation, of the dead person. If instigated by demons, it would be a *fantasma*, or deception.¹²²⁸ Thorough explanations of this Catholic concept of ghosts were still current in Shakespeare's time. One highly popular example is the Jesuit Martin Delrio's *Disquisitiones magicae*, which underwent 24 editions from 1600 to 1755.¹²²⁹ In it, Delrio explains that differentiating between angelic and demonic apparitions is easy enough. If the initial feeling of alarm turns into joy, the vision comes from God; if it persists as horror, on the other hand, it comes from the Devil.¹²³⁰ This thinking situates ghostly apparitions solidly within the literary tradition of classical dream visions as described by Cicero,¹²³¹ Boethius,¹²³² and Macrobius.¹²³³ Chaucer, for example, uses such

¹²²⁷ Cf. Elizabeth Mack, "The Malleus Maleficarum and King James: Defining Witchcraft." *Voces Novae* 1.1 (2009), 181-204.

¹²²⁸ The full treatment is to be found in sections 12-16 of *De cura pro mortuis gerenda*, in which Augustine cites numerous examples.

¹²²⁹ Neuber, Wolfgang. "Poltergeist the Prequel: Aspects of Otherworldly Disturbances in Early Modern Times." *Spirits unseen the representation of subtle bodies in early modern European culture*. Leiden: Brill, 2008. 2-17. 3.

¹²³⁰ "Non est difficilis bonorum malorumque spiritum discretio, si enim post timorem successerit gaudium, a Domino sciamus venisse auxilium: si autem incusse formido permanserit, hostis est qui videtur."

¹²³¹ *De divinatione*, starting in section 24 of Book 1, and *Somnium Scipionis*, the sixth book of *De re publica*.

¹²³² *Consolatio Philosophiae*, Poem 1.

¹²³³ *Commentarii in Somnium Scipionis*

visions several centuries earlier as a narrative frame in works like *The Parliament of Fowls* and *The Book of the Duchess*, and discusses in *The Nun's Priest's Tale*, where the rooster Chauntecleer discourses at length about an example from Cicero's *De Divinatione*, in which a dead man appears to his friend in a dream to reveal that he had been murdered in the night, much in line with Augustine and Delrio's ideas about how a ghost should behave.¹²³⁴

There is one popular alternative: the "thing" is Old Hamlet's soul, returned from purgatory. This reading is based on the fact that the "thing" in *Hamlet* itself claims to have to return to "sulphurous and tormenting Flames," where he is "of the day confin'd to fast in Fiers, / Till the foule crimes done in my days of Nature / Are burnt and purg'd away," but refuses to explain further: "I am forbid / To tell the secrets of my Prison-House" (1.5.734-750). It ought to be noted that this description can apply to a demon, an angel in his "days of Nature," in which he committed the "foule crimes" of rebelling with Lucifer against God and is now in the "Prison-House," hell, where he must remain until his crimes "are burnt and purg'd away" – namely by his oblivion during the Battle of Armageddon. A clue to such a reading might lie in the fact that in the standard reading of purgatory, for instance in Dante's *Purgatorio*, the burning away of sins is painful, but is followed by an ascent through a series of disciplining tasks aimed at learning the Seven Virtues, not, as the "thing" says, a place that would "harrow up thy soule; freeze thy young blood / Make thy two

¹²³⁴ Edward Wheatley, "The Nun's Priest's Tale." *Sources and Analogues of the Canterbury Tales*, Vol. I. Cambridge, UK: D.S. Brewer, 2002. 449-489.

eyes like Starres, start from their Spheres” (1.5.752 & 753). That description sounds rather like hell.

There was a version of medieval Catholic belief in ghosts that viewed some of them as souls returned from purgatory to ask the living to take action on their behalf. Thomas More, for example, in his 1529 *Supplicacyon of Soulys*, claims that “many haue by godd moste aracyouse fauour appered unto theyre frendys after the deth and shewed theym selfe holpen and delyuered hense by pilgrimage almoyses dede / and prayour / and specyall by the sacred oblacyon of that holy sacrament offred for theym in the masse.”¹²³⁵ However, the “thing” does not ask for this at all; rather he tells Hamlet to “pitty me not” (1.5.740). It is thus evident that these particular Catholic orthodoxies do not apply to the “thing” in *Hamlet*. While the “thing” appears only at night, everyone who sees the ghost is very much awake, and not experiencing dream visions. Nor does the “thing” evoke the terrified joy or persistent dread that would indicate angelic or demonic origins; rather, it inspires curiosity. Finally, it does not ask the Protestant Prince Hamlet for pilgrimages, prayers, or masses to escape purgatory; rather, the “thing” has evidently resigned itself to its imprisonment.

In any case, by the accession of James, these views had become simply anachronistic. By the time Shakespeare wrote *Hamlet*, Protestantism had been tightening its grip on most of England for nearly a hundred years, and the Church of England had formally abolished purgatory for about forty, calling the doctrine “a fond thing vainly invented”¹²³⁶ in the *Thirty-Nine Articles* of 1563. If there was no

¹²³⁵ Thomas More, *The Supplicacyon of Soulys*. London: William Rastell, 1529. 34v.

¹²³⁶ Article XXII of *The Thirty-Nine Articles*, as published by the bishops of the Church of England in compliance with the command of Queen Elizabeth I in 1563: “The Romish doctrine concerning

purgatory, no souls could return from it in the form of ghosts. Consequently, ghostly apparitions could only be devils or demons. As so often, Martin Luther had led the charge. In his *Tischreden*,¹²³⁷ Luther describes *polter geyster*, which afflict him with noises and physical attacks while he is attempting to sleep. He banishes them by showing no fear, instead naming them as the devils they are and invoking the name of Christ.¹²³⁸ To show utter contempt for these fiends of hell, which attempt to threaten good Christians with the terror of death, he even praises a woman he had heard of who banished such apparitions with a loud fart, simultaneously directed at the specter of Papists, who were in league with the devil.¹²³⁹ Needless to say, this is not how one might treat a deceased relative or friend seeking eternal rest, and it is not how Prince Hamlet treats the “thing.”

The only plausible conclusion is that the “thing” is not some form of Old Hamlet, the man, as defined by his “body natural” and personal soul, but rather a manifestation of Old Hamlet the King, as defined by his “body politic.” The first interaction between Old Hamlet and Prince Hamlet may, in fact, be more accurately read if considered in light of an observation by Schmitt’s fellow Westphalian-German, the literary theorist Anselm Haverkamp (b. 1943): “The phantom is the spirit that

Purgatory, Pardons, worshipping and adoration as well of Images as of Relics, and also Invocation of Saints, is a fond thing vainly invented, and grounded upon no warranty of Scripture; but rather repugnant to the word of God.” The Latin text is: “Doctrina Romanensium de Purgatorio, de Indulgentiis, de veneratione tum Imaginum tum Reliquiarum, nec non de Invocatione Sanctorum, res est inutilis, inaniter conflictata, et nullis Scripturarum testimoniis innititur; imo verbo Dei contradicit.”

¹²³⁷ Luther, Martin. *Werke: Kritische Gesamtausgabe V*. Weimar: Böhlau, 1967 [1912].

¹²³⁸ Luther, 5358b.

¹²³⁹ Luther, 2412a.

enters the stage with the Ghost; it is history as a phantom.”¹²⁴⁰ Specifically, as we will now see, it is the phantom of a historical form of political secrecy, the *arcana imperii*. Prince Hamlet narrates the scene, which he begins with the question just discussed:

Be thou a Spirit of health, or Goblin damn'd,
Bring with thee ayres from Heauen, or blasts from Hell,
Be thy euentz wicked or charitable,
Thou com'st in such a questionable shape
That I will speake to thee. (1.4.669-673)

Unlike Horatio, Prince Hamlet is, however, part of the imperial household, and a rightful claimant to the position of Denmark's sovereign. Consequently, Prince Hamlet moves past demonology and instead “reads the account” of this secret: “Ile call thee Hamlet, / King, Father, Royall Dane.” He also lays claim to the right to become a *particeps secretorum*:

Answer me,
Let me not burst in Ignorance; but tell
Why thy Canoniz'd bones Hearsed in death,
Haue burst their cerments, why the Sepulcher
Wherein we saw thee quietly enurn'd
Hath op'd his ponderous and Marble iawes,
To cast thee up againe? What may this meane? (1.4.674-681)

¹²⁴⁰ Anselm Haverkamp, *Hamlet: Hypothek der Macht*. Berlin: Kadmos, 2001. 30: “Das Phantom ist der Geist, mit dem der Geist auf die Bühne tritt, es ist die Geschichte als Phantom.”

Old Hamlet acknowledges their shared standing in regard to this secret knowledge, and “beckons” Prince Hamlet, so that the two Hamlets enter their own “inner chamber” or conclave, a theatrical space where the others on the stage can no longer hear them. Horatio, who is not privy to the workings of political secrecy, attempts to warn Hamlet off:

What if it tempt you toward the Floud my Lord?
Or to the dreadfull Sonnet of the Cliffe,
That beetles o’re his base into the Sea,
And there assumes some other horrible forme,
Which might depriue your Soueraignty of Reason,
And draw you into madnesse thinke of it? (1.4.704-707)

As Sloterdijk has already noted, what looks like madness to a subject, however, can be calculation to the sovereign. Hamlet insists that he is “called” and forces his way into conference with the Old Hamlet; to him, the “thing” speaks sense.

The conversation that follows must, accordingly, be read as a similar constellation as that between Tiberius and Passienus in Chapter 2. As there, the sovereign has the initiative, telling Prince Hamlet to “Marke me” and to “lend thy serious hearing / To what I shall unfold” (1.5.734-741). Prince Hamlet acknowledges his role as the recipient of the secret, replying “I will,” an exchange that confirms the hierarchy implied in the prince’s preceding question, “Where wilt thou lead me? Speak” (1.5.733). Old Hamlet then proceeds to rhetorically establish a sense of urgency by remarking “My hower is almost come, / When I to sulphurous and tormenting Flames / Must render up my selfe.” Hamlet dutifully replies, “Speake, I am

bound to heare,” and Old Hamlet issues not so much an insight as a command: “So art thou to reuenge ... Reuenge his foule and most unnaturall Murther” (1.5.743 & 761). When Prince Hamlet, clearly startled, replies, “Murther?” Old Hamlet doubles down: “Murther most foule, as in the best it is; / But this most foule strange, and unnaturall” (1.5.762-764).

Having clarified the stakes for the Hamlets – father, son, and ghost – Old Hamlet then tells Prince Hamlet a story, one that he gives (*datum*) as an axiomatic declaration from which Prince Hamlet’s actions against Claudius ought to be logically and linearly *deduced*, a principle of truth-value reminiscent of the geometrical *logos* of the *arcana imperii*. Like all axioms, and like all *arcana* of the royal household its content cannot be verified, but rather has to be taken at its word – in this case, the sovereign word of the spectral king as body politic:

It’s giuen out, that sleeping in mine Orchard,
A Serpent stung me: so the whole eare of Denmarke,
Is by a forged processe of my death
Rankly abus’d: But know thou Noble youth,
The Serpent that did sting thy Fathers life,
Now weares his Crowne ...
That incestuous, that adulterate Beast
With witchcraft of his wits, hath Traitorous guifts. (1.5.772-781)

These are, of course, *pointed* words, ciphered and dark, but as a legitimate *particeps secretorum*, Hamlet can indeed deduce who the target of this revenge plot will be: “O my Propheticke soule: mine Uncle?” (1.5.778f). Like Tiberius, Old Hamlet neither

confirms this explicitly by mentioning his brother's name; like the Roman emperor, this Danish sovereign remains in the position to deny having given the order to commence any specific targeting plot. The deduction is implied. So is the person who is to carry out the executive *oikonomia* of the targeting plot, and who must dissolve his individuality in order to achieve this goal: Prince Hamlet. The prince knows it, too, abstracting himself into the executive act: "Hast me to know it, / That with wings as swift / As meditation, or the thoughts of Loue, / May sweepe to my Reuenge" (1.5.765-767). As it happens, the retaliation Old Hamlet suggests also suits Prince Hamlet's own sense of insult and disenfranchisement. Consequently, Prince Hamlet lays claim to both forms of the "my" here: that of the body politic, and that of his body natural. He is now fully royal.

It is only then, when Prince Hamlet has, in today's terms, accepted his mission, that Old Hamlet gives a fuller account of the classified details of the case. Old Hamlet now designates "thy Uncle" as the enemy, explaining how Old Hamlet himself became the target of a treasonous targeting plot: taking advantage of "My custome alwayes in the afternoone" to sleep in his orchard, Claudius used a "leaperous Distilment; whose effect / Holds such an enmity with bloud of Man / That swift as Quick-soluer, it course through" (1.5.778-804). Consequently, Old Hamlet was "by a Brothers hand, / Of Life, of Crowne, and Queene at once dispatcht" (1.5.812f). Old Hamlet then reinforces that Prince Hamlet's future actions, "howsoeuer thou pursuest the act," touch the very heart of sovereignty in Denmark, one in which the Hamlets are of the true "blood" and must rid the kingdom of a current disease: "If thou hast nature in thee beare it not; / Let not the Royall Bed of Denmarke be / A Couch for Luxury

and damned Incest” (1.5.819-824). Having set the targeting plot against Claudius in motion, Old Hamlet then exits the stage, “Aduē, adue, Hamlet: remember me” (1.5.829). It is his last appearance in a form anyone other than Prince Hamlet can see (having been seen by Horatio); *all* Prince Hamlet does going forward is “remember” Old Hamlet, with whom these actions merge him.

For all the father-son *pathos* of this scene, an astute reader of political secrecy and its attendant plots should note not just the purported *givenness* of these supposed facts, but also the carefully staged acts of persuasion that lead Hamlet to agree to assassinate his uncle: In a very clear sense, Old Hamlet as body politic is instrumentalizing Prince Hamlet to act out its logic. Recalling Sloterdijk’s “Dark Empiricism,” a skeptical reader might point out that there is a distinct cynicism to the actions of Old Hamlet, who rather carefully shares knowledge that focuses Prince Hamlet on a “keyhole-view” of the true circumstances. Contrary to his own *kynical* performance in the throne room, Prince Hamlet is so taken in by this particular account of events, and by the imperious and uncanny performance of the Sovereign in this instance, that he fails to realize the double-edged nature of Old Hamlet’s plot. Prince Hamlet, who just a few scenes earlier had complained about being “too much in the sun” in Claudius’ presence appears to have been taken in entirely by Old Hamlet’s exploitation of this particular father-son dynamic. Asking Prince Hamlet both to avenge his murder and so prove that he has a royal “nature in thee,” Old Hamlet appears to motivate a desire in the prince to prove that has in fact been “too little in the sun.” What Prince Hamlet fails to fully see is that Old Hamlet may have rhetorically promoted him to *particeps secretorum*, given him a sovereign task, and implicitly

restored him as rightful heir, in practice Old Hamlet has demoted him to pure executive function and thus instigated his erasure at the completion of the task.

As the *telos* of targeting plots in the context of the *arcana imperii* dictates, the prince must become pure executive function and take the plot to its inevitable outcome, but then disappear, so as not to tarnish the sovereign accounts. Prince Hamlet even appears to intuit this logic:

Yea, from the Table of my Memory,
Ile wipe away all triuiall fond Records,
All sawes of Bookes, all formes, all presures past,
That youth and obseruation coppied there;
And thy Commandment all alone shall liue
Within the Booke and Volume of my Braine,
Vnmixt with baser matter. (1.5.836-842)

Nevertheless, with nothing to go on but a piece of spectral theater, a rousing speech, a conspiracy theory, and unverifiable data, Prince Hamlet at this stage insists that Old Hamlet is “an honest Ghost” and makes his narrative the basis of an oath to act. We may chalk it up to the persuasive theatre of Old Hamlet’s appearance that the Wittenberg-educated Prince Hamlet does this *despite* knowing full well that all of the models of ghosts available to him – especially as a Protestant – *should* have alerted him to the circumstance that Old Hamlet *cannot* actually represent any form of his actual father.

Whatever is behind the targeting plot may follow a sovereign logic, but it is not King Hamlet. It is a “thing” that has no form, but nevertheless generates a compelling

logic of deduction and of action. It has no substance, but nevertheless *appears* in its own performance, is *given* as substantive because its audience takes it to be so. It has no personhood, but acts out the sovereign logic of the body politic. It is, in other words, an instantiation of political secrecy within the framework of the geometrical *logos* (*mysterium, arcanum*), it is sovereignty, Denmark, and history as an actor on the stage. It need be no more. As Horatio tells Prince Hamlet when the prince declares “There’s nere a villaine dwelling in all Denmarke / But hee's an arrant knaue:” “There needs no Ghost my Lord, come from the Graue, to tell us this” (1.5.868-871).

This reading is a compelling one because the targeting plot proceeds exactly according to its Odyssean *telos*: the arrow flies straight at the target of Old Hamlet. This becomes evident when one focuses one’s reading of the play only on actions, and understands that the plethora of obfuscations, feigned madness, and dia- and monologues that pack the five acts of *Hamlet* hide Prince Hamlet’s intentions from his opponents – but also, at times, from the audience, who is thus theatrically experiencing how such plots are staged. At its core, this particular plot line remains narrow, its actors few. Having set the plot in motion, Old Hamlet never reappears in the play except twice to Prince Hamlet, his *particeps secretorum*, and then only in his mind. Both interventions are reminders to Prince Hamlet to focus on the assassination of Claudius rather than become sidetracked in other matters. In the first instance, Old Hamlet is only an off-stage voice, urging Prince Hamlet to coerce oaths of secrecy from the sentinels and from Horatio and get on with it all. In the second instance, Old Hamlet appears to Prince Hamlet during the Closet Scene to remind him to spare Gertrude – who does not herself see the “thing” – and focus on his true target.

In this reading of the “naked truth” of the bare targeting plot, Prince Hamlet causes collateral damage to himself and to others only as a means to execute his goal. He spurns Ophelia so as not to become entangled in a romantic liaison that might take his attention off his aim. He stages the play within the play in order to disorient and isolate his target, Claudius, by exacerbating the usurper’s shame at his guilt. He resists stabbing Claudius when he prays alone because a successful assassination that obliterates his uncle’s claim to sovereignty over Denmark would preclude sending him straight to heaven, the very source of the *mysterium* of the kingship the two Hamlets claim to share. Prince Hamlet stabs Polonius because he represents a non-*particeps* attempting to overhear sovereign secrets. Having himself become the target of a targeting counterplot, Prince Hamlet successfully evades its executors, Rosencrantz and Guildenstern, and sends them to their own deaths. He underestimates Laertes’ desire for revenge, but provokes and accepts Laertes’ challenge to a duel for tactical reasons: It will place him near Claudius while armed. When finally presented with the opportunity at the end of the play, he capitalizes on the chaos triggered by Gertrude’s accidental poisoning and assassinates his uncle.

In close alignment with the *arcana imperii* targeting plot, Hamlet erases himself at its completion. Having himself been mortally wounded at this point, he has ceased to be Prince Hamlet in his body natural and has instead become pure executive function of the body politic. As the targeting plot closes, Hamlet ends, too. The winner of the plot is no member of the dynasty of the Hamlets – Old Hamlet, Claudius, Gertrude, or Young Hamlet – but rather the body politic of Denmark itself. The office of king is taken over by the only person alive in the play who has a legitimate claim to

it *and* is already a true, god-ordained king descended from kings, and therefore can lay legitimate claim to the *mysterium* of the office: Fortinbras. The king is dead, long live the king.

IX. Hamlet: Intelligencer and Assassin

There is, however, another reading of how political secrecy functions in *Hamlet*, one that suggests Prince Hamlet's actions might be better read in the framework of the arithmetical *logos*, one in which probability, a computational view of reality, and the modern concept of *intelligence* structure his behavior. Making such a reading persuasive would require that Prince Hamlet's actions can be read to follow the logics of modern *intelligence*. Firstly, they would have to rely on a modern concept of information, one that translates all things into a binary structure of 1 (is) and 0 (is not). Secondly, Prince Hamlet would be beholden to the perspectives of induction and of computation, specifically that of probability. Third, the knowledge generated in this way must be taken to represent reality, in the form of information based on diaphoric *data*. Fourth, the reality represented must take on a decision problem based on *plausible* assumptions, one which is *qua* method impossible to solve completely, leading to an excess of possibilities, the perpetual fear of error, and thus the tendency towards decision paralysis – there will be no claim here that Prince Hamlet somehow has access to a computer, conceptually or otherwise. Consequently, this overwhelming heap of information must eventually allow for the impression that all is “calculable space,” that all is virtual in this sense, and that a virtual representation might be more accurate than one that can never be taken as completely

actual. Like Majorana and Weil, the vexing problem of uncertainty must seem to collapse any order *other than* the tactical, contingent, “naked truth” of the knowledge allowing for assessing the ever-changing situation at hand, specifically in terms of the state of Denmark and its king. And finally, like Agamben, Prince Hamlet ought to be consumed with the question, *What is the real?* Such a reading is not just possible, but compelling, thus anchoring the imaginary of *Hamlet* as a key stage in a conceptual history of political secrecy, particularly *intelligence*.

Indeed, the opening scenes can be read to support the claim that such a concept is legible in the play. The scenes on the battlements of Elsinore take place, quite literally, in the dark, or at best in the deceptive flickering half-light of torches. None of the characters observes, because they cannot see. They inquire and speculate, assessing their ever-changing situation. The opening line of the play is Bernardo’s “Who’s there?,” a question which goes unanswered. Rather, Francisco demands that Bernardo unveil himself: “Nay answer me: Stand & unfold your selfe.” Falling back on a conversational non sequitur, Bernardo then proclaims, “Long liue the King,” an exclamation that buys him time but carries no identifying content – a soldier serving *any* king could say these words and honestly so, even one that might turn out to be an enemy imposter on the Danish walls, serving his own, foreign king. In other words, Bernardo is weighing his probabilities and hedging his bets. Francisco, evidently speculating he may recognize the voice, then inquires, “Barnardo?” Only then do the facts become resolved: Barnardo confirms, “He.”

This situation might at first appear commonplace, even a touch comedic. However, sentinels have a specific purpose. They are on duty to ensure that no one

unauthorized scales Elsinore's walls, and that no enemies are approaching. Their exchange is, in fact, highly tactical: unable to see clearly whom they have encountered, both attempt to determine the identity of the other without immediately revealing their own. For sentinels, this is a game in terms of its probabilistic logic, but not in regard to its consequences: arriving at the correct answer is a matter of life or death. If they turn out to be mistaken, if their intelligence and their inferences turn out to be incorrect, they are likely to be killed. It is within this paradigm of a sentinel's military utility that we must also read the next exchange, that of Francisco with Horatio and Marcellus. In parting, Barnardo has told Francisco, "If you do meet Horatio and Marcellus, the Riuals of my Watch, bid them make hast." Francisco then announces, "I *think* I hear them," or alternatively, "I think I hear *them*." Seeking more *data*, he then cries out: "Stand: who's there?" Like Francisco before them, the two newcomers do not answer directly: "Friends to this ground," and "Leige-men to the Dane." When they catch up to Barnardo, a similar exchange unfolds. When Marcellus cries out, "Holla Barnardo," Barnardo does not respond to Marcellus, nor does he confirm that he is, in fact, Barnardo. Instead, Barnardo seeks confirmation in more *data*: "Say, what is Horatio there?" If Horatio were to be there, this information makes it more probable that the man addressing Barnardo is, indeed, Marcellus. When Horatio confirms his whereabouts with a quip that appears to characterize him more firmly as his witty self, "A peece of him," Barnardo finally designates the two as safe to encounter: "Welcome Horatio, welcome good Marcellus" (1.1.14-29). From the very beginning of *Hamlet*, the stage is thus set for a world in which appearances,

verifiability, calculation, confirmation, and the seeking out of additional *data* to aid in assessing a tactical situation is the primary *modus operandi*.

Having established this fact, the sentinels' and Horatio's reactions to the "thing" serve to underscore the paradigm. First, to state the obvious, from the perspective of a group of sentinels and their officer Horatio, *no* unrecognized figures at all should appear on the battlements. If they do, this marks a military emergency: The safety of the castle, king, and kingdom is under immediate threat, the sentinels themselves are imperiled by a threat of imminent armed violence, and it is their purpose to take immediate countermeasures, by raising an alarm and by charging, detaining, or eliminating the intruder, and by ensuring that more intruders are not arriving in his wake. As this is a high-risk moment from a soldiering standpoint, it is therefore imperative that the sentinels properly assess the situation and carefully determine that they are, in fact, observing an intruder, one who is an enemy.

These watchman's priorities determine the reactions the group has both to the memory of the "thing" from a previous night and to its reappearance. Barnardo and Marcellus are concerned that the figure might reappear, but so far, Barnardo says, almost relieved, "I haue seen nothing." Horatio, who has himself no confirmation of this rumor and who does not expect the castle to be assaulted by apparitions, has understandably dismissed their account: "Horatio saies, 'tis but our Fantasie, / and will not let beleefe take hold of him / Touching this dreaded sight, twice seen of us." Barnardo reacts like a good sentinel should: he begins to reiterate his confusing *data* to a superior calculator, his university-trained military superior, Horatio. Barnardo's account is interrupted by the appearance of the "thing" itself, and Barnardo can insist

that Horatio confirm his observations, and make his own additional *data* part of his computations of what is probably indeed on the battlements: “Looke where it comes againe. / In the same figure, *like* the King’s that’s dead.”

It is this *like*-ness that stays their sentinel hands. Rather than a stranger, the “thing” on the wall mimics the familiar. It projects itself as a virtual representation of the very King of Denmark whom they profess to serve, at least his body politic. However, it simultaneously confuses these calculations, by presenting as the physical form of a previous king, Old Hamlet. The defunct king’s apparition questions the truth content of what the sentinels think they see – dead kings do not generally walk battlements. Moreover, if the sentinels *are* observing accurately, then, by implication, the fact that the dead royal Dane appears as King of Denmark and not the current regent, Claudius, suggests that the king whom they wish a long life may not be the true king at all. As sentinels, how charge such a “thing”? How detain and question it? How resolve their own *entscheidungsproblem*, their decision problem? In a sense, that problem becomes just as irresolvable as that posed by Hilbert, a problem whose many possible iterations a Turing machine would find, in the end, irresolvable. The sentinels cannot induce or calculate a certain answer. Should they let the intruder-“thing” walk the battlements freely, and risk failing their military purpose as sentinels? Or should they confront the “thing” and possibly – if this is a version of the king in either of his two bodies – commit a form of treason?

When in doubt, turn to the learned. “Thou art a Scholler,” Marcellus says, “speake to it Horatio.” Barnardo spells out the issue, asking for a diaphoric decision: “*Lookes* it not *like* the King? *Marke* it Horatio.” Horatio, however, is also incapable of

resolving the question, of establishing *data* that goes beyond the probable: “Most *like*.” And, when in doubt and a soldier, turn to your officer and ask him to take the initiative as head sentinel: “It would be spoke too,” “Question it Horatio.” Instead, the “thing” “stalkes away,” and Horatio is bereft of any chance to question the intruder, and instead left to question himself, and his facilities to properly account for his observations and come to the appropriate tactical conclusion: “What art thou that usurp’st this time of night, / Together with that Faire and Warlike forme / In which the Maiesty of buried Denmarke / Did sometimes march. ... I might not this beleue / Without the sensible and true auouch / Of mine owne eyes.” The problem appears to be that the *data* points at an impossible conclusion. Marcellus asks, “Is it not *like* the King?” Horatio confirms, “As thou art *to thy selfe*.” The three cannot arrive at any certain conclusion, or at least not one that goes beyond a reasonable doubt. Worse, the least probable outcome is, jarringly, the most likely.

The result is that the sentinels accept that they are insufficient calculators of this *data*. They report upwards along the chain of command, hoping to eventually arrive at *particeps* of the current, living sovereign, who can read this *data*, all at one glance. Their preferred candidate is the person with the most direct link to Old Hamlet, Prince Hamlet. The prince indeed has a very different interaction with the stranger on the walls. In part, this may be due to his frame of mind. Hamlet encounters the “thing” after his “Oh that this too too solid flesh would melt”-monologue. In this monologue, Hamlet, too, arrives at a computational impasse. He cannot make sense of his father’s sudden death in his prime, his uncle’s unexpected rise to kingship, his mother’s overly quick change of allegiances, and his own displacement as heir to the

throne. The outcome appears to be a relentless series of apparently improbable events, suggesting a gap in his *data* which he cannot yet define. Consequently, the language Hamlet uses in this monologue suggests the assembling, disassembling, sifting, and constant calculation of his *data* set. Thus, the prince mentally “melts” himself so he can reorganize his own reality at the level of the atomic bit, shifting his perspective from one state of matter to the next: “O that this too too solid Flesh, would melt, / Thaw, and resolve it selfe into a Dew.” Prince Hamlet evokes a similar disintegration when he turns to the other person he considers to hold a legitimate share in royal sovereignty, his mother Gertrude. Hamlet compares her to “Niobe, all teares” (1.2.353). In the Greek mythological canon, Niobe offends Leto, mother of Apollo and Artemis, by mocking her for her supposedly paltry offspring compared to Niobe’s seven perfect sons and daughters. Apollo and Artemis avenge their mother’s hurt pride by hunting down and slaughtering all fourteen of Niobe’s children. Subsequently, Niobe turns into an ever-weeping rock on Mount Sipylus in Ionia.¹²⁴¹ Gertrude, however, resists her own disintegration. She refuses to remain Niobe: “Ere yet the salt of most unrighteous Teares / Had left the flushing of her gauled eyes, / She married” (1.2.357-360). Gertrude turns into neither rock nor dew, quickly reassembling as queen to the next king. Thus, her actions remain incalculable for Prince Hamlet.

Following this monologue, Prince Hamlet encounters Horatio. Their initial exchange of quips focuses on the correct interpretation of intelligence. Prince Hamlet asks, “But what in faith make you from Wittemberge?” Horatio first refuses to give an

¹²⁴¹ Ovid, *Metamorphoses* 6.145–310.

earnest answer: “A truant disposition, good my Lord.” Prince Hamlet refuses to accept this answer, employing the language normally referring to an intelligencer’s report: “I would not haue your Enemy say so; / Nor shall you doe mine eare that violence, / To make it truster of your owne report / Against your selfe. I know you are no Truant.” Horatio then revises his report, stating, “My Lord, I came to see your Fathers Funerall.” Hamlet revises this information as well, reinterpreting the *data*: “I thinke it was to see my Mothers-Wedding.” Horatio points out that neither is an incorrect calculation of the facts: “Indeed my Lord, it followed hard upon.” There follows a curious turn by Prince Hamlet: “Would I had met my dearest foe in heauen, / Ere I had euer seene that day Horatio. My father, me thinkes I see my father” (1.2.370-390). The implication of Hamlet’s logic here is not entirely clear. Is the second sentence an abrupt break? Or does it, at least at some level, equate his “dearest foe in heauen” with his father? This latent question will drive Prince Hamlet’s initial confrontation with the “thing,” as well as Prince Hamlet’s actions throughout the rest of the play. So will the implications of the phrase with which Prince Hamlet clarifies *how* he has seen his father: “In my minds eye.” That phrase establishes Prince Hamlet’s claim that he alone can properly “see” his father, the king, in his princely mind. That idea can easily be read as a Leibnizian conception of the royal prerogative to see the true state of a body politic “all at one glance.”

As if taking Prince Hamlet up on this pronouncement, Horatio relates that Marcellus, Barnardo, and he have recently seen a figure “*like*” Hamlet’s father. Horatio identifies this *data* as “dread secrecy,” not least because the strange, confusing “thing” is “arm’d at all points.” Is this figure friend or foe? Prince Hamlet proceeds

empirically, attempting to induce an answer from a series of facts. He attempts to elicit diaphoric *data* in order to calculate the most probable answer. Was the “thing” indeed “arm’d ... from top to toe?” Could they make out “his face,” and whether that face “lookt ... frowningly?” Was that face “pale, or red?” Did the “thing” “fix his eyes upon [them]?” How long did it stay? Was “his Beard ... grisly?” Prince Hamlet second-guesses some of their answers, asking them to clarify. How could they see the face if the “thing” was armed “from head to foote?” Answer: “He wore his Beauer up.” This is good news for the sentinels, since it allows them to better identify the *like-ness* of the “thing,” and because no attacking imposter in the old king’s armor would approach with his visor up, exposing one of the most vulnerable areas of his body. Indeed, the “thing” seemed to be frowning, but “more in sorrow than in anger” – again, a good sign from a military standpoint. Its face was “very pale,” not red, which is a clue that the “thing” was not a ruddy-faced, living pretender, nor a fiery demon from hell. The beard was “sable siluer’d,” exactly like Old Hamlet used to wear. From the sentinels’ perspective, all of this *data* bodes well, as it reduces the chance that they had failed to challenge an attacker staging a charade.

On the other hand, the increasingly probable conclusion that the sentinels and Horatio have seen a “thing” that is non-human is no less unsettling. Prince Hamlet understands the emergency caused by circumstances in which the King’s form appears to depart from the established order. He decides he will assess the “thing” himself, as the only one who can observe that type of reality accurately:

My Fathers Spirit in Armes? All is not well:

I doubt some foule play: would the Night were come;

Till then sit still my soule; foule deeds will rise,

Though all the earth orewhelm them to mens eies. (1.2.476-479)

The ambiguity of the “thing” indeed is Prince Hamlet’s motivator for engaging it once he, too, encounters it on the battlements of Elsinore:

Angels and Ministers of Grace defend vs:

Be thou a Spirit of health, or Goblin damn'd,

Bring with thee ayres from Heauen, or blasts from Hell,

Be thy euent wicked or charitable,

Thou com'st in such a questionable shape

That I will speake to thee. (1.4.668-673)

Almost as if extending a diplomatic courtesy, the prince is even willing to go along with the theatre of this virtual version of reality:

Ile call thee Hamlet,

King, Father, Royall Dane: Oh, oh, answer me,

Let me not burst in Ignorance; but tell

Why thy Canoniz'd bones Hearsed in death,

Haue burst their cerments, why the Sepulcher

Wherein we saw thee quietly enurn'd

Hath op'd his ponderous and Marble iawes,

To cast thee vp againe? What may this meane?

That thou dead Coarse againe in compleat steele,

Reuisits thus the glimpses of the Moone,

Making Night hidious? ...

Say, why is this? wherefore? what should we doe? (1.4.674-686)

As one would expect, the prince's overtures lead the "thing" to engage *in conclavi*, away from the non-royals who ought not be privy to matters of state intelligence.

Ghost beckens Hamlet. Prince Hamlet acknowledges his crossing over into the *kynical-cynical* world of dark empiricism, once again by evoking Hercules: "My fate cries out, / And makes each petty Artire in this body, / As hardy as the Nemian Lions nerue: / Still am I cal'd" (1.4.717-719). Notably, the prince figures himself not as tantamount to the demigod of the *kynics*, but rather as his monstrous prey. When the *data* and the probable no longer generate any certain explanation of the goings on, Prince Hamlet cannot tell what is "the real," whether he is Schrödinger or his cat.

Consequently, Prince Hamlet appears to decide to determine the truth of the matter with whatever diaphoric *data* he can generate and compute, to give him an answer that is probable and actionable *intelligence* in terms of the security of the Danish state. When the "thing" demands that Prince Hamlet "Reuenge his foule and most vnnaturall Murther," Hamlet ends their exchange by promising to take the "thing" up on pursuing the question. "Adue, adue, Hamlet: remember me," the "thing" pleads as he disappears back into the night. Prince Hamlet replies with language evidently reminiscent of a modern, computational *techne*:

Remember thee?

Yea, from the Table of my Memory,

Ile wipe away all triuiall fond Records,

All sawes of Bookes, all formes, all presures past,

That youth and obseruation coppied there;

And thy Commandment all alone shall liue
Within the Booke and Volume of my Braine,
Vnmixt with baser matter; yes, yes, by Heauen.

Prince Hamlet will free the hard drive of his mind and the processing power of his intellect entirely to pursue the “thing’s” hypothesis.

The pursuant conversation between Prince Hamlet and Horatio reinforces that Hamlet will treat his inquiry on the basis of the type of *intelligence* gained through observation, tactical assessment, and even covert espionage. This will not be the deduced certain knowledge of the geometrical *logos*: “There are more things in Heauen and Earth, Horatio, / Then are dream't of in our Philosophy.” Instead, Prince Hamlet will be utilizing tactical misdirection to disorient his possible opponents and to gain access to arithmetical, probabilistic *data* he cannot pursue more forthrightly. He might be taking his cue from the “thing” itself; as Prince Hamlet is speaking to the sentinels, the “thing” speaks from below the stage, and the prince compares him to the sappers who covertly tunnel under Early Morning fortifications in order to place gunpowder to an explosion and collapse them, breaching the wall, “Old Mole, can'st worke i' th' ground so fast? / A worthy Pioner.” The prince will become a mole in his own way:

But come,
Here as before, neuer so helpe you mercy,
How strange or odde so ere I beare my selfe;
(As I perchance heereafter shall thinke meet
To put an Anticke disposition on:)

That you at such time seeing me, neuer shall

With Armes encombred thus, or thus, head shake;

Or by pronouncing of some doubtfull Phrase...

... this not to doe:

So grace and mercy at your most neede helpe you. (1.5.916-932)

Around the same time Shakespeare wrote *Hamlet*, Bacon also employed the term as a metaphor for “spy;” the various Hamlets’ actions are most definitely an issue of espionage.¹²⁴²

This need for misdirection and absolute discretion has its causes in the evidently spy-prone atmosphere at the Danish court. Claudius himself asks Polonius to spy on Hamlet, and directs Rosincrance and Guildensterne to do the same. Polonius in turn employs Reynoldo to shadow his son Laertes abroad in Paris, lurks behind Gertrude’s curtains, and manipulates his daughter Ophelia to encourage Prince Hamlet’s affections and report back to him anything that she hears. When Voltumand appears before the court and reports intelligence gathered from Norway, it takes the form of a classic intelligence report, focusing in particular on the covert activities of Prince Fortinbras, whose “leuies” were first only feinted “gainst the Poleak” but “better look’d into” found to be aimed at Claudius, then redirected by Old Norway against the Polish once again. This turns out to be faulty intelligence. When the Danes

¹²⁴² Francis Bacon, *The Historie of the Raigne of King Henry the Seuenth*. London: William Stansby, Matthew Lownes, & William Barret, 1622. 240: “As for his secret Spialls, which hee did imploy both at home and abroad, by them to discouer what Practices and Conspiracies were against him, sure his Case required it: Hee had such Moles perpetually working and casting to undermine him. Neither can it bee reprehended. For if Spialls bee lawfull against lawfull Enemies, much more against Conspirators, and Traitors.”

see Fortinbras move his troops ostensibly against Poland in Act 5, Fortinbras in fact turns up at the Danish court and follows through on his original plan. Voltumand is a naive intelligencer, or a turned one, acting in the interests of Norway by spreading misinformation at the Danish court.

Prince Hamlet appears to know about this tendency towards spying at the Danish court, that the atmosphere there is tantamount to a “calculating space.” The prince strategically uses this knowledge against Claudius and particularly Polonius, whom he appears to have identified as the most susceptible target. He acts mad around Ophelia first, who is led to ask, “O what a Noble minde is heere o're-throwne?” This primes Polonius to pride himself in his cleverness and exaggerate to the court just how far “Hamlets Lunacie” has progressed. Immediately afterwards, the Prince performs his cover for Polonius directly, calling him a “Fishmonger,” going on about maggot-ridden dogs lying in the sun (*kynical* indeed), and mocking him with pointed speeches. One part of this exchange even appears to be a parody of ciphers. When Polonius asks the prince, “What do you read my Lord?,” Hamlet describes precisely what a ciphered message appears to be without its key: “Words, words, words.” Polonius asks the question asked by anyone wishing to decode such a message: “What is the matter, my Lord?” Hamlet asks, “Betweene who?” Polonius follows up, “I meane the matter you meane, my Lord.” Hamlet’s long and nonsensical reply about “Satyricall” wit, old men, and crabs walking backwards then sounds precisely like a falsely decoded message, one that relays nothing. Nevertheless, Polonius realizes there is an underlying code: “Though this be madnesse, / Yet there is Method in’t” (2.2.1294-1307).

This exchange is followed by a similar performance for Rosinrance and Guildensterne, in which Prince Hamlet essentially confides his particular *logos* in these two courtiers also: “There is nothing either good or bad, but thinking makes it so” (2.2.1350f). Under the paradigm of probable intelligence, *data* is neutral until it is computed and tactically deployed to account for a given situation, in which nothing is good or bad *per se* but rather only possibility (1) and lack thereof (0). Rosinrance and Guildensterne, like Prince Hamlet of the younger generation, appear to understand Prince Hamlet quite well. When the prince proclaims about his current understanding of Denmark that “to me, it is a prison,” Rosinrance suggests he may be calculating from an overly confined *data* set: “Why then your Ambition makes it one: ‘tis too narrow for your minde.” Hamlet acknowledges the truth in this statement, pointing out that it is bad *data* that is interfering, mingling the real with the non-real, relegating the “thing” to the stuff of dreams: “O God, I could be bounded in a nutshell, and count my selfe a King of infinite space; were it not that I haue bad dreames.” Guildensterne suggests that the “thing’s” supposed *data* may be little more than fantasy, aimed at a power play in Denmark: “Which dreames indeed are Ambition: for the very substance of the Ambitious, is meerey the shadow of a Dreame.” They banter on before Prince Hamlet heads them into the direction all three of them know this game is headed, acknowledging one more time that he feels he does not have enough *data* to calculate probable intelligence: “Shall wee to th’ Court: for, by my fey I cannot reason?” (2.2.1345-1363).

Taking this exchange into account in this particular way helps make sense of a part of Prince Hamlet’s Hecuba speech. Prince Hamlet “cannot reason” because he

cannot be sure that the *data* provided by the “thing” is accurate, given its questionable provenance:

The Spirit that I haue scene
May be the Diuell, and the Diuel hath power
T' assume a pleasing shape, yea and perhaps
Out of my Weaknesse, and my Melancholly,
As he is very potent with such Spirits,
Abuses me to damne me. (2.2.1673-1658)

The only thing Prince Hamlet can be sure of at this point in the play is that no probable reality has yet become sufficiently likely to allow a well-calculated decision.

The prince is growing increasingly frustrated:

Yet I,
A dull and muddy-metled Rascall, peake
Like Iohn a-dreames, unpregnant of my cause,
And can say nothing: No, not for a King,
Upon whose property, and most deere life,
A damn'd defeate was made. Am I a Coward? (2.2.1640-1645)

Prince Hamlet evokes this same sense of paralysis again in the “To Be Or Not To Be” speech, where it presents masked as a crisis of conscience:

Thus Conscience does make Cowards of us all,
And thus the Natiue hew of Resolution
Is sicklied o're, with the pale cast of Thought,
And enterprizes of great pith and moment,

With this regard their Currants turne away,
And loose the name of Action. (3.1.1776-1781)

The prince knows he is always caught between the imperatives of probable calculation and tactical action, a position that does not lend itself to heroic action.

Hamlet's eventual tactic to complete his *data* set and break this stalemate of intelligence is, essentially, a virtual war game, a performance playing through one of the possible scenarios, the one reported by the "thing." He bases this plan on an empirical theory of *mimesis*:

I haue heard, that guilty Creatures sitting at a Play,
Haue by the very cunning of the Scoene,
Bene strooke so to the soule, that presently
They haue proclaim'd their Malefactions. (2.2.1663-1667)

The performance Prince Hamlet plans will take place in front of Claudius, and will produce evidence that appears almost material,¹²⁴³ that the prince can evaluate diaphorically, by noting anything at all that is distinct from an uneventful play, and thus represents *data*:

For Murther, though it haue no tongue, will speake
With most myraculous Organ. Ile haue these Players,
Play something like the murder of my Father,
Before mine Unkle. Ile obserue his lookes,
Ile tent him to the quicke: If he but blench

¹²⁴³ Cf. James A. Knapp, "Static and Transformative Images in Shakespeare's Dramatic Art." *Criticism* 54.3 (Summer 2012), 377-389. 380-382.

I know my course. ...

...The Play's the thing,

Wherein Ile catch the Conscience of the King. (2.2. 1668-1680)

The prince takes great care with his method. He asks Horatio to independently duplicate his own empirical observations:

There is a Play to night before the King,

One Scoene of it comes neere the Circumstance

Which I haue told thee, of my Fathers death.

I prythee, when thou see'st that Acte a-foot,

Euen with the verie Comment of my Soule

Obserue mine Unkle. ...

Giue him needfull note,

For I mine eyes will riuet to his Face:

And after we will both our iudgements ioyne,

To censure of his seeming. (3.2.1954-1966)

This will allow the two of them to determine whether the *data* offered by the “thing” represents a basis for a calculation of verified intelligence, or whether it is misinformation – that is to say, non-information:

If his occulted guilt,

Do not it selfe vnkennell in one speech,

It is a damned Ghost that we haue seene:

And my Imaginations are as foule

As Vulcans Stythe. (3.2.1959-1963)

In the end, Claudius does react to the play like a guilty man, and Horatio confirms he saw the same, “upon the talke of the poisoning.” This allows Prince Hamlet to conclude that the most probable truth is, indeed, the *intelligence* he received from the “thing:” “Ile take the Ghosts word for a thousand pound” (3.2.2173f). Based on this more complete *data*, the prince can calculate his next steps, and act like a sovereign who has properly assessed the situation Denmark finds itself in.

The conclusion is obvious. The prince must reassert the proper order of the state, correcting its accounts. Prince Hamlet receives his first chance to do so when he finds Claudius by himself, praying. However, killing Claudius now would not in fact erase this usurper, this corrupted piece of *data*, from the true sovereign’s “Table of Memory,” which is the only means to correct the accounts of the body politic. Instead, it would save him permanently: “A Villaine killes my Father, and for that / I his foule Sonne, do this same Villaine send / To heauen. Oh this is hyre and Sallery, not Reuenge” (3.3.2359-2362). The prince will need an opportunity that is better suited. From now on, Prince Hamlet acts quite tactically, first attempting to estrange Gertrude from Claudius. When the Queen cries out for help, fearing Hamlet will turn violent, Polonius behind the curtain also cries out, “What hoa, helpe, helpe, helpe.” Prince Hamlet then eliminates the king’s most important courtier, declaring, “How now, a Rat? dead for a Ducate, dead.” Acting out of impulse rather than calculation, Prince Hamlet at first thinks he might have succeeded in killing a hidden Claudius, asking “Is it the King?” When Gertrude reprimands him and Prince Hamlet turns on her, the “thing,” “a King of shreds and patches,” once more intervenes, once again only in Prince Hamlet’s “mind’s eye,” reminding the prince to keep his mind on the *data* of

state rather than his personal sentiments: “this Visitation / Is but to whet thy almost blunted purpose” (3.4.2407-2509). The “thing” does not reappear after this exchange, suggesting there is no more *data* to correct, that the prince is now operating on the best *intelligence* empirical evidence and probabilistic inference can provide.

Indeed, the pursuant acts of the play suggest that Prince Hamlet has become far more excellent at intelligencing than anyone else in Denmark. The prince is, in fact, the only one who manages to properly preestablish the strategic and political circumstances that end the play, and he does so by piecing together diaphoric information of the modern *intelligence* type. At first, the prince converses with the Norwegian captain who returns him to Denmark. In a classic moment of intelligence-gathering, Prince Hamlet elicits *data* about a possible Norwegian invasion (4.4.2796-2816). The captain sticks to the official cover story, namely that the “powers” of Norway are headed for “some part of Poland” under the command of the “nephew to old Norway, Fortinbras.” When Prince Hamlet revisits some of the details, however, the captain’s answers quickly become less plausible. When the prince inquires, “Goes it against the main of Poland, sir, / Or for some frontier?” the captain becomes evasive, and provides an unlikely explanation for such an impressive deployment of troops: “We go to gain a little patch of ground / That hath in it no profit but the name,” which he claims is heavily “garrison’d.” Prince Hamlet can infer that the Polish invasion is a ruse.

Prince Hamlet subsequently formulates a sort of theory of probabilistic intelligence in his “How Do All Occasions Inform Against Me”-monologue (4.4.2821-2855). He declares that when he finds himself “thinking too precisely on th’ event, ... I

do not know / Why yet I live to say 'This thing's to do,' / Sith I have cause, and will,
and strength, and means / To do't." He explains that he anticipates "the invisible
event" that is presaged by "examples gross as earth," such as "this army of such mass
and charge, / Led by a delicate and tender prince, / ... with divine ambition puff'd."
Assessing this information properly allows the prince, by "Exposing what is mortal
and unsure / To all that fortune, death, and danger dare." Prince Hamlet knows that the
Norwegians are coming for Denmark.

Prince Hamlet also excels at counterintelligence in the modern sense. At first,
the prince "gropes" and "fingers" in the dark of the England-faring ship in order to
find the letters carried by Rosincrance and Guildensterne and to

vNSEALE

Their grand Commission, ...

... An exact command,

Larded with many seuerall sorts of reason;

Importing Denmarks health, and Englands too,

... Not to stay the grinding of the Axe,

My head shoud be struck off. (5.2.3663-3675)

After dispatching Rosincrance and Guildensterne to their deaths and foiling Claudius'
bungled assassination plan, Prince Hamlet returns to Denmark, and the end game
begins.

The end game, in fact, comprises of a decision to take advantage of a tactical
impasse that will allow the prince to become pure executive function and kill
Claudius, but that is also decidedly dangerous and includes incalculable, unpredictable

elements. In essence, the prince's dice are in the air. The uncertainty arises from Laertes. When Osrice – the courtier of “let a Beast be Lord of Beasts, and his Crib shall stand at the Kings Mess” quality – informs Prince Hamlet of Laertes' challenge to a duel, the prince admits that Laertes' motivations and precise plans are harder for him to compute, especially given Laertes' evident determination to act quickly: “His refinement suffers no perdition in you; though, I / know, to divide him inventorially would dozy th' arithmetic of / memory, and yet but yaw neither in respect of his quick sail.” In fact, the prince employs language that aligns Laertes most closely with the “thing:” “In the verity of extolment, I take him to be a soul of great article.” Like the “thing,” Laertes presents an initially incalculable, incomplete data set: “His infusion of such dearth and rareness as, to make true diction of him.” Consequently, the prince is unsure whether the problem of Laertes will eventually more closely align with his own ambitions and their dream-like, mirror-like nature, or with that of the “thing,” who is a shadow, a dream within a dream: “His semblable is his mirror, and who else would trace him, his umbrage [Lat. *umbra*, “shadow, shade, ghost, faint outline”], nothing more” (5.2.3736-3769).

However, as the *alea iacta est*,¹²⁴⁴ Hamlet is caught in the consequence of the logics of any *arcana imperii* plot: once action *is* taken, it replaces probability with its own momentum, what in military jargon is referred to as initiative clouded in the “fog

¹²⁴⁴ “The dice are cast.” Caesar's words when crossing the Rubicon according to Suetonius, “Divus Iulius,” *De Vita Caesarum*, 1.32: “Tunc Caesar: ‘Eatur,’ inquit, ‘quo deorum ostenta et inimicorum iniquitas vocat. Iacta alea est,’ inquit.”

of war:” “War is the territory [*gebiet*, “area, realm”] of chance.”¹²⁴⁵ Hamlet accepts this situation as an inevitable consequence:

We defie Augury; there’s a speciall Prouidence in the fall of a sparrow.
If it be now, ‘tis not to come: if it bee not to come, it will bee now: if it
be not now; yet it will come; the readinesse is all, since no man ha’s
ought of what he leaues. (5.2.3853-3856)

Indeed, the assassination of Claudius itself ends in a highly improbable disaster. At first, Hamlet maintains the initiative; the duel allows him to stand before Claudius with weapons drawn, and he scores the first two hits in the duel with Laertes. Claudius, who intends to poison Hamlet by offering him a deadly cup of wine at the end of the duel, cannot prevent Gertrude from using the same cup to toast Hamlet’s initial success, turning that very success into the occasion of her death. With Hamlet distracted, Laertes in turn seizes the initiative and deploys his own secret assassination plot against the prince, slashing him with a poison blade. However, in the “fog of war” of the continuing duel, Hamlet uses Laertes’ own weapon to cut his opponent, too. Both have now induced their own elimination as part of their covert act. Laertes then turns double agent, clueing Hamlet in on new *data*: Claudius’ plan. This gives the

¹²⁴⁵ This term was coined by Prussian-German military reformer Carl Philipp Gottfried von Clausewitz (1780-1831) in his seminal *Vom Kriege*: “Der Krieg ist das Gebiet der Ungewißheit; drei Vierteile derjenigen Dinge, worauf das Handeln im Kriege gebaut wird, liegen im Nebel einer mehr oder weniger großen Ungewißheit. Her ist es also zuerst, wo ein feiner, durchdringender Verstand in Anspruch genommen wird, um mit dem Takte seines Urteils die Wahrheit herauszufühlen. ... Der Krieg ist das Gebiet des Zufalls.” Carl von Clausewitz, *Vom Kriege*, Vol. 1. Berlin: Ferdinand Dümmler, 1823. 3.1. In English: “War is the realm of uncertainty; three quarters of the factors on which action in war is based are wrapped in a fog of greater or lesser uncertainty. A sensitive and discriminating judgment is called for; a skilled intelligence to scent out the truth. ... War is the realm of chance.” Carl von Clausewitz, *On War*. Michael Howard & Pater Paret, eds. & transls. Princeton: Princeton UP, 1981. 3.1.

dying Hamlet the last impetus to complete his own plot arc as both assassin and as rightful sovereign, finally executing Claudius for his crimes.

In his dying words, Prince Hamlet restates the dominant paradigm of a political reality made of *intelligence* as *data*-based information. Announcing, “O I dye Horatio,” the prince laments that he lacks the time to calculate the probable outcome of the play’s *katastrophe*: “The potent poyson quite ore-crowes my spirit, / I cannot liue to heare the Newes from England.” Nevertheless, in his last breath, Prince Hamlet ventures a probable computation based on the diaphoric *data* he does have: “I do prophesie th' election lights / On Fortinbras, he ha's my dying voyce.” Preventing Horatio’s suicide largely serves the passing on of this entire *data* set from one rightful sovereign, The Hamlets, to another, The Fortinbras: “So tell him with the occurrents more and lesse, / Which haue solicited. The rest is silence” (5.2.4014-4020). There is nothing outside the *data*, outside the *intelligence* of the arithmetical *logos*, outside the calculable, probable, tactical reality structured by 0 and 1.

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