

THE INSTRUMENTAL BODY AND THE ORGANIC MACHINE:
TECHNOLOGY AS NATURE IN WEIMAR GERMANY

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This dissertation explores cultural narratives about technology in the Weimar Republic with a particular focus on tropes of the body-as-tool and the organic machine. At once the organic seat of the self and merely one instrument among others in the shaping of the natural world, the ambiguous figure of the instrumental body straddles the border between nature and technology while undermining any strong distinction between the two spheres. The technological anthropologies of Karl Marx, Ernst Kapp, and Helmut Plessner invoke radically divergent political visions from the relationship between technology, the human body, and its environment. The conflicted implications of this relationship are literalized in Alfred Döblin's emblematic novel *Berge Meere und Giganten* (1924), which pushes the trope of the body-as-tool to a breaking point by repeatedly and spectacularly rupturing the bounds of the body itself; this topological assault on the autonomous individual reflects the confluence of Döblin's monist philosophy of nature and his avant-garde critique of the novel form. I then analyze key contributions to Weimar-era photographic discourse by Döblin, Brecht, Benjamin, Kracauer, and Albert Renger-Patzsch to unfold the uneasy relationship between physiognomy – the belief in the body's inherent legibility – and the way photography as technology compels the visible body to speak. And for Ernst Jünger, future technology itself becomes a human organ, thereby closing the progression of human history in a static, elemental temporality. In contrast to accounts of

modernity that see an encroachment of a mechanical register on the organicist discourse of the body, my dissertation shows how the tropes of the body-as-tool and the organic machine destabilize any unidirectional relationship between nature and technology. By recovering the centrality of the organic body within contemporary technological imaginaries, my project intervenes in scholarship on the culture of the Weimar Republic by contributing a more complex – and non-teleological – picture of the aesthetic, philosophical, and political stakes of the discursive entwinements of nature and technology.

BIOGRAPHICAL SKETCH

Carl Gelderloos received his BA in German Literature at New York University in 2002. From 2007 to 2014 he studied in the Department of German Studies at Cornell University, receiving his MA in 2011 and his PhD in 2014; in 2011-2012 he was at the Humboldt Universität in Berlin on a Fulbright Research Grant. In September 2014, Carl joined the Department of German and Russian Studies at Binghamton University as an Assistant Professor.

for Agata, again and again

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INTRODUCTION

The instrumental body and the organic machine: technology as nature in Weimar Germany

This dissertation explores cultural narratives about technology in the Weimar Republic. The period between the wars served as a crucible for self-aware and interdisciplinary articulations, theorizations, and representations of contemporaneity, modernity, and social and technological change. Within this context, the present study focuses on texts and discourses that scrutinize the relationship between nature and technology in order to show how this engagement with a contemporary moment often took the form of shared tropes, images, and figures drawn from registers of biology, the natural sciences, and the organic world. Technology itself was depicted or theorized as originating in the natural world, and this reconfiguration of terms, which was both conceptual and metaphorical, occurred through the nexus of the instrumental human body, which had entered the twentieth century awkwardly straddling several dualisms – mind/body, Leib/Körper, organic/artificial, Geist/Leben. The corporeal shocks of rapid modernization and the First World War, as well as discipline-specific developments in fields from theoretical biology to the theory of the novel, meant that key texts of Weimar culture were able to rework, subvert, and recombine these dualisms in ways that continue to resonate. What this project therefore tries to recover is the way that an engagement with the contemporary moment played out as a self-aware dialogue about the human body. These texts present us with a kind of modernism, but it is best described as an organic modernism, a biological modernism, a bodily modernism.

Helmut Lethen's 1994 study *Verhaltenslehren der Kälte: Lebensversuche zwischen den Kriegen* serves as the major theoretical foil for my readings of the period. Lethen's book

interrogates a pervasive attitude of “Sachlichkeit” by recovering the contemporary importance of anthropology for Weimar. In dialogue with concepts such as the human being’s “natural artificiality” (Plessner), Lethen portrays strategies of polarization, differentiation, distance, and technologically-mediated perception that allowed contemporaries to navigate an uncertain present destabilized by the sudden absence of the hitherto reliable cultural codes of the Wilhemian era. Because of the way that Lethen’s work offers a kind of character sketch of Weimar through a capacious interdisciplinarity and a novel recuperation of philosophical anthropology, it continues to influence and inform critical access to Weimar culture. It therefore serves as a theoretical interlocutor for this study for two main reasons.

Firstly, by grouping the culture of the period under the organizing figure of the cold persona – an armored, technologically enhanced body that draws on distance, speed, coolness, and an outward orientation to repress and protect its vulnerable, creaturely side from the risks of immediacy, contact, and risibility – Lethen provides a strong point of contrast for readings of key figures, especially Helmuth Plessner and Ernst Jünger. By attending to the way that *Verhaltenslehren der Kälte* methodologically overemphasizes a strong nature/technology dichotomy, it becomes possible to recover how intently thinkers of the period were in fact engaged in challenging such a dichotomy and integrating nature and technology, organic and mechanical aspects more thoroughly than had been the case in previous periods. Secondly and on a more general level, Lethen’s work was one of the last scholarly projects to attempt something like a grand unified theory of Weimar culture. The present study, which seeks both to offer a counternarrative to the cold persona and armored body as the guiding figures of Weimar culture and to open up the confining periodization by recovering the role of disparate discourses in

Weimar's "laboratory for modernity"¹ that exceed the confines of the interwar period, is both indebted to Lethen's work and critical of it; indebted because Lethen showed that the heterogeneous cultural production of the 1920s was predicated on a shared dialogue about the relationship between the human and modernity with roots in a contemporary return to anthropology, and critical because of the ways in which his guiding conceptual cluster – technology/artificiality/coldness – tends to straightjacket his readings and eclipse the significance of the period's interdisciplinarity, which it was his work's contribution to have indicated. The cold persona as a foil thus informs the background of this work and recurs throughout the chapters' more specific readings.

To take a step back, a brief genealogy will help situate the figures and concerns of this dissertation. This project began as a somewhat naïve misconception. Thinking of the robot Maria from Fritz Lang's *Metropolis*, of Lethen's armored cold persona, of Anson Rabinbach's human motor, I set out looking for robots, cyborgs, and *Maschinenmenschen* in the literature and culture of the Weimar Republic. I didn't find them. More precisely, the more I looked for robots, the more I found biology; the more I looked for machines, the more I found organs and organisms; in short, the harder I looked for technology, the more I found nature. The human didn't seem to be a motor so much as motors and machines appeared as organic bodies; corporeal contours seemed less like armor and more like membranes; and even the stereotypically iconic status of *Metropolis* grew shaky when I read Thea von Harbou's novel: the robot is there, to be sure, but is dwarfed by the text's dripping insistence on metaphors and patterns of liquidity, flooding, surging, and other vitalist flows that are favored over the strictly technological to depict and connote modernity, futurity, and masses of bodies in motion. Depictions and portrayals of

1 Kaes, Jay, and Dimendberg (xvii).

technology between the wars – what I had hoped to approach as the “technological imaginary” of the period – seemed less “technological” the closer I looked.

What I found instead were instrumental bodies and organic machines, a pair of terms variously complementary and appositional. This is the body that is a tool, and the tool that is thoroughly organic, a recurring use of the human body as critique and (re)imaginative space, a body that is the site of a convergence of various discourses from social, cultural, scientific, political, philosophical domains. This instrumental body is a way of staging a dialogue about contemporaneity, the human, and technology, but the way it does so suggests that technology was seen during the period in various ways as the outgrowth of a force of nature. What this means, for one, is that dichotomies that map a division of technology and nature or organic and mechanical logics onto a chronology, value distinction, or historical teleology may miss crucial features of the period’s culture. This is because of the way that technology and modernity were theorized largely in biological and organicist terms.

In this context, then, my dissertation offers an interdisciplinary investigation of the instrumental body in German literary, philosophical, and media-theoretical texts from the mid-nineteenth to mid-twentieth centuries. My particular focus is on the Weimar-era tropes of the body-as-tool and the organic machine. I identify the figure of the body that is both technological and organic as a shared discursive tool, tasked with probing and advancing avant-garde aesthetic strategies as well as anti-bourgeois political agendas on both the left and the right.

The first chapter analyzes how the relationship between the human body and technology serves as the origin for an anthropology in the work of Karl Marx, Ernst Kapp, and Helmut Plessner; the way they arrive at their various pictures of the technological human being in turn has political, social, and methodological consequences for their theories of technology. I begin by

retracing the dialectical conception of the relationship between body and environment Marx developed in texts from the *Ökonomisch-philosophische Manuskripte* (1844) to Volume I of *Das Kapital* (1867). If technology is originally a set of organs appropriated from nature, under capitalism the worker's own body becomes merely a conscious organ in the factory system's monstrous body. Ernst Kapp's *Grundlinien einer Philosophie der Technik* (1877), by contrast, lays out a theory of technological innovation as the unconscious projection of human organs. The body in Kapp's work thus becomes the instrument of an epistemological dynamic seated in a liberal narrative of historical progress. Finally, I turn to Helmuth Plessner's philosophical anthropology of the 1920s and his definition of the human based on a complexly positional relationship to embodiment in *Die Stufen des Organischen und der Mensch* (1928). Within the broader context of technological anthropologies, I argue that Plessner's bifurcation of the human body into mechanical *Körper* and living *Leib* and the particular development of his concept of the human's "natural artificiality" prompt reconsideration of the relationship between body and technology in Weimar culture, especially with reference to Helmut Lethen's reception of Plessner.

In chapter two, I turn to Alfred Döblin's novel *Berge Meere und Giganten* (1924), a *Zukunftsroman* that spectacularly and repeatedly ruptures the boundaries of the individual body in scenes of both violence and reconciliation. I read this topological interrogation of the instrumental body in *Berge Meere und Giganten* as the intersection of an avant-garde aesthetic discourse with a philosophical monism, which allows Döblin to reimagine the implications of the avant-garde trope of the technological body in a more radical way than his contemporaries. The organic and technological body becomes the site of the novel's attack on the autonomous, contained, homogeneous subject of bourgeois humanism. The anti-bourgeois stance is neither

novel nor surprising in the context of the period, yet what Döblin's unwieldy novel shows is that this attack took the form not of an embrace of the technological, cold, distanced sides of modern life against the organic, creaturely body of a bygone era, but rather drew its force precisely from a total integration of mechanical and organic dimensions. What we find in *Berge Meere und Giganten* is not so much the armored body predicated on a polar logic of separation or *Entmischung* (Lethen) as the ecologically integrated body, home to a dispersed, distributed subjectivity.

Chapter three considers the photographic theory of the Weimar Republic in order to evaluate the relationship between the camera's purported status as a prosthesis of enhanced perception on the one hand, and the way that a discourse of physiognomy compels the visible body to speak, on the other. Figures such as Alfred Döblin, Bertolt Brecht, Walter Benjamin, Albert Renger-Patzsch, Siegfried Kracauer, and Ernst Jünger weigh the representative potential of the camera in the broader aesthetic context of a renewed and altered realism that privileges the type over the individual. My reading of Renger-Patzsch's photographic theory and practice in the context of Benjamin's and Brecht's dismissals of his work attempts to recover the dense and paradoxical interplay between notions of documentation and emphases on perceptual training that was central to debates about photography as a specifically modern medium during the 1920s.

The final chapter unfolds the way that Ernst Jünger's extended essay *Der Arbeiter* (1932) privileges a unified, totalizing form (*Gestalt*) precisely in the dynamic interplay of working bodies that are themselves instrumental components of a collective body. Neither individual nor part of a mass, Jünger's worker constitutes a *Typus* that is depsychologized not by repressing its organic, creaturely nature but rather by foregrounding it. Like Döblin, Jünger presents the reader with an organicist critique that privileges the type over the autonomous bourgeois individual, yet

in contrast to the egalitarian collectivities at the end of *Berge Meere und Giganten*, the teleological elemental forces in *Der Arbeiter* – themselves due in part to a borrowing from biology – result in a crystalline hierarchical stasis beyond history or politics.

The figures of the instrumental body and organic machine thus prove to be not just a useful way to rethink our picture of Weimar culture and thought, but also suggest unexpected connections and perhaps new kinds of periodization in the subject matter of the individual chapters. The analysis of *Berge Meere und Giganten*, for example, contributes to a broader understanding of the status of the armored body for the German avant-garde by showing how Döblin subverts and explodes that trope by recourse to a philosophical monism in the wake of *Lebensphilosophie*². In contrast to a prevailing reception of Döblin that downplays his contributions to modernism in light of his later mysticism or limits his aesthetic contribution to *Berlin Alexanderplatz*, my reading shows how Döblin's novel in fact reworks the avant-garde figure of the technological body in a way that links his programmatic avant-garde critique of the bourgeois individual and the 19th century novel, on the one hand, to his monist philosophy of nature and his eventual mysticism, on the other. In other words, once we read his novel without the anachronistic lens of a strong nature-technology dichotomy (and, as I hope to show, nothing in the novel supports use of such an optic), it becomes clear that its critique of the autonomous bourgeois individual, an individual strongly rooted in a notion of psychological interiority, uses registers both of technology (such as the futuristic technologies of food production, weapons, and geoengineering) and of nature (rampant forces of organic growth, the return of prehistoric

2 *Lebensphilosophie* is not a topic that was within this dissertation's scope to address directly. Its emphasis on the primacy of vitalistic flow of *Leben* over and against the rationality of *Geist*, as well as its radical revision of an inherited enlightenment tradition that opposes nature to culture, is present indirectly in this project, as this and other aspects of the *Gedankengut* of Dilthey, Simmel, and Klages formed a major part of the cultural and intellectual background for the figures who make up this study, particularly Plessner, Döblin, and Jünger. For an innovative treatment of the afterlife of *Lebensphilosophie*'s structures of thought ("Lebensideologie") during the Weimar period, see Martin Lindner's *Leben in der Krise* (1994).

monsters in the “Greenland” chapter) to explode the bodily bounds of the sovereign individual. More precisely, the novel shows the extent to which these two registers are in fact one and the same.

I read this as part of a longer story, still largely to be written, about a trajectory of the avant-garde that explores how biology and industry, machines and organs provided the concepts, logics, metaphors, and semantic fields to challenge the centrality of psychological interiority and the integral individual body. The body – in *Berge Meere und Giganten*, in Döblin’s programmatic essays of the 1920s on art and modernity, in his philosophy of nature articulated most fully in *Das Ich über der Natur* (1927) – stages a dialogue about incorporation, subjectivity, technology, and perception. It is both the mass body of modern urbanity and the dispersed, ecologically integrated body of philosophical monism; more precisely, it is both of these in and through each other. This multilayered body suggests ways to rethink the discursive field in which the historical avant-garde moved; it also reopens the question of an appraisal of Döblin’s work. Preliminary research on *Schicksalsreise* (1948) and on the manuscript of *Berge Meere und Giganten* held in the Deutsches Literaturarchiv in Marbach suggest that the picture of a conservative turn to mysticism and Catholicism in his later years – a turn contrasted starkly in the scholarship with his avant-garde engagement of the teens and twenties – is seriously deficient. His reflection on his conversion to Catholicism in Angelano exile partakes, in fact, of many of the same questions, tropes, and impulses of his earlier works. This in turn may present an intriguingly representative trajectory of German modernism from the teens to the postwar period, but much work still remains to be done in this area.

In chapter three, recovering the linkage between perceptual training and documentation in Renger-Patzsch’s photographic work and theory reveals deep ambivalences in the aesthetic

theory of Weimar culture. These can also be seen in Benjamin's and Brecht's own work as a tension between the necessary polyvalence of the photographic image and its possibilities for discursive critique, between its capacity to disrupt and reveal patterns of signification and its purported ideological self-evidence, between a visual logic (of showing, unmasking, and making visible) in their concepts of critique and their criticisms of the photograph's ambiguous muteness. Readings of essays by Döblin, Kracauer, and Jünger on photography seek to reconstruct a broader dialogue about aesthetics and politics that pivoted on questions of representation, the social contexts of perception, and typicality. Thus the photographic theory of the Weimar Republic invariably leads beyond the frame of the image, and touches on questions of typification, realism, documentary and epic forms central to the literary theory of the period; issues of visual representation from the natural sciences; discussions about reproducibility and the broader context of the mass media; ideas of embodiment, disruption, and physiognomy central to contemporary film theory; and more nebulous questions about modernity as such.

And my interpretation of Ernst Jünger's *Der Arbeiter* shows that the bodies in that text are not armored to protect a fragile, vulnerable male psyche, but depend on a logic of corporeal integration into a rigid totality that nevertheless depends upon both an organicist register of growth and absorption and an elemental logic of electric current. Drawing on research into Jünger's adoption of the concept of entelechy from the theoretical biology of Hans Driesch,³ I show how Jünger, like Döblin, stages his attack on the sovereign bourgeois individual through twinned registers of technology, speed, and danger, on the one hand, and elemental, biological logics connoting integration, growth, development, and teleology, on the other. I thus locate the conservative thrust of Jünger's choreography of typified bodies not in the presence of armoring

3 See Thomas Löffler and Thomas Pekar (both 2000).

(as do Helmut Lethen (1994) and Andreas Huyssen (1993)) but rather in the hierarchical stasis that results as the end of his account, a turbulent modernity that has *grown* into an eerily harmonious whole. His picture of modernity, in other words, draws on biology to configure typified, technological bodies into an elemental stasis that also results in a fantasy of perfect narrative closure.

These counternarratives, in turn, resonate well with the broader story this dissertation seeks to tell about ways of periodizing Weimar culture, the avant-garde, and German modernism more generally. Prominent accounts of the period have tended to read its culture as symptomatic – either in an etiological way, as expressing the trauma of the first World War in particular and processes of modernization in general, or in a teleological vein, with 1933, the Nazi *Machtergreifung*, the demise of the republic, and the Nazi genocide as the ultimate horizon for Weimar cultures. Either way, the emphasis on the precarity of the cultural moment often obstructs attention to the nuances and complexities in Weimar culture’s self-understanding and cultural and intellectual debts. Read with the benefit of hindsight, “Weimar” becomes the name of a unified cultural and historical narrative, an ephemeral moment of dancing on the abyss,⁴ rather than a complex of discourses from all social arenas about the meaning and experience of modernity, a complex that suggests multiply overlapping logics of period that don’t fit neatly within the bookends of 1914, 1918, 1919, and 1933 but rather reach selectively to preceding

4 In two back-to-back articles published in *Merkur* 16 (1962), Theodor Adorno and Helmuth Plessner take on the legends of the twenties in order to complicate a postwar nostalgia for this period of cultural ferment. Adorno reads Weimar as a moment of lateness, following on the energies and impulses of a prewar modernism in order to reperiodize the twenties. Plessner in turn situates Weimar culture within his broader idea of Germany as the belated nation. In challenging a nostalgic approach to the period and thus the firm confines of a logic of periodization, however, both Adorno (in the way he depicts the twenties as a moment of cultural stereotypification marked by “Phänomene der Rückbildung, der Neutralisierung, des Kirchhoffriedens” (46)) and Plessner (in his narrative of the ascendancy of “die scharfe, schnoddrige, kesse Geste Berlins, Deutschlands einziger Zitadelle der Aufklärung” (41-42) at the expense of other cities) may inadvertently reinstate a pessimistic form of periodization in place of a simplistic nostalgia. This pessimistic periodization would seem to fit quite well with the accounts of Lethen and Sloterdijk.

decades, centuries, epochs, disciplines, and forms of thought for terms, imagery, and interlocutors.

Significantly, symptomatic readings of Weimar often mobilize the human body in the service of a teleological narrative, relying in particular on sets of nesting dichotomies and polarities between technology and nature, mechanical and organic logics, modernity and organicism, progress and regression. The implicit or explicit value distinctions that are imported with these dichotomies not only obscure the way that various discourses of nature and technology were actively co-constituting each other in the Weimar Republic, but also prove politically problematic: since authors on the left and right were mobilizing instrumental bodies and organic machines against inherited notions of bourgeois subjectivity, political assessments that rely overly on an intellectual's *stance* vis-a-vis organicism or technological modernity may result in an overly simplistic picture of modernity, and also blur political distinctions where they are to be found. Put plainly, it is inadequate to assign organicism to the past, to fascism, or to a regressive rejection of "modernity." This is not only because contemporary thought, for example, drew on the advances of theoretical and empirical biology to construct ideas of modernity and the human, but also because the organic body was used as a form of critique that could be found in authors with widely divergent political commitments.

Thus when Jeffrey Herf identifies a paradox in "reactionary modernism" "an important current within conservative and subsequently Nazi ideology was a reconciliation between the antimodernist, romantic, and irrationalist ideas present in German nationalism and the most obvious manifestation of means-ends rationality, that is, modern technology" (1), it must be remarked that this is only a paradox if one presupposes a dichotomy between organic and technological logics or an anachronistic assignment of modern technology to means-ends

rationality that is not quite borne out in the culture and thought of the period.⁵ When Dagmar Barnouw assesses the intellectuals of Weimar based on their responses to “the threat of modernity” (understood in terms of a pluralistic public sphere in the context of liberal parliamentary democracy, ideological relativism, modern mass society, and conceptual complexity), we must ask not only what political assumptions are at play in seeing parliamentary democracy as the end of politics, so that figures on the radical left and far right are lumped together as “extremists” who have no thinkable agency except to refuse the complexities of modernity in a delusional desire for redemption and community.⁶ Beyond this, what deeper unexamined assumptions about the nature of “modernity” might be found if modernity, along with technology, is conceived in absolute terms?⁷ What problems are built into such an account

5 It is also instructive to note that novelist Thomas Pynchon had masterfully explored this juxtaposition in the thought of National Socialism a decade earlier. Pynchon, Thomas. *Gravity's Rainbow*. New York: Viking, 1973. While this juxtaposition can be found throughout the novel, I am thinking in particular of the incorporation of the boy Gottfried into the “00000” V-2 rocket.

The point to be made, however, is that while Herf does show a historical change that took place in the ideologies of German conservatism, the way he assumes a conceptual opposition between organicism and irrationalism on the one hand and rationalism and technophilia on the other obscures the way contemporary intellectuals, especially a figure like Ernst Jünger, were actually thinking about technology at the time. The more facile dimensions of Herf's framework are evinced in dichotomies and the resulting view of technological opportunism, here: “It is not paradoxical to reject technology as well as Enlightenment reason or to embrace technology while celebrating reason. These pairings are the customary outcomes of choosing between scientism and pastoralism. But it is paradoxical to reject the Enlightenment and embrace technology at the same time, as did the reactionary modernists in Germany. Their claim was that Germany could be both technologically advanced and true to its soul. The whole anti-Western legacy of German nationalism suggested that such a reconciliation between soul and technology was out of the question, for nothing could be more at odds with German culture. But the reactionary modernists recognized that antitechnological views were formulas for national impotence. The state could not be simultaneously strong and technologically backward. The reactionary modernists insisted that the Kulturation could be both powerful and true to its soul.” (3)

6 “To work, as an intellectual, for the KPD or the NSDAP meant the surrender of all critical distance.” (33)

7 The present study shares with Barnouw's book an interest in reading literary and cultural texts carefully as documents of intellectual history. Yet where I find her approach wanting is in the way that there seems to be little room for conceptual *and* figural renegotiation of the terms of “modernity.” An at-times sophisticated account of pluralism and relativism coexists in *Weimar Intellectuals* with a fairly course account of social change, technology, and media. Thus the conditions to which Weimar intellectuals insufficiently responded, in her view, choosing the distance of “self-protective fictions” (6) over the necessary ambivalence of engagement, are often reduced to the uncertain pair of fragmentation and mechanization (13, 38). What is lost is not merely a closer account of what these two terms mean, where they are to be located, and how they relate, but any possibility of accounting for the ways in which reworked metaphors of mechanicity and organicism could have constituted both engagement and distance, reaction to modernity and construction of modernity. In the methodological terms of this dissertation, we must ask then how much of the polarity Barnouw identifies in the political thought of Weimar intellectuals actually piggy-backs on the polarities she assumes and imports into her

from the beginning, where modernity and technology are totally detached from the subjects involved not just in living through these processes of change, but who must also necessarily co-construct them as categories and concepts in constant flux, and what kind of methodology would enable us to give a more dialectical and nuanced account of the way that modernity and technology were being constructed, imagined, reworked, deployed, and challenged? When Helmut Lethen identifies a polar logic of *Entmischung* in the period and the figure of the cold persona that armors itself both against its own creaturely nature and the external threats of risibility and exposure, we must seek to uncover the extent to which his guiding trope also guided his readings of the figures he explores, often at the cost of their specificity and complexity. The armored body is the perfect figure for a moment defined by crisis, but what kind of body do we find if we heuristically deemphasize the sustained note of crisis in order to attend to the borrowings, dialogues, and projects of the 1920s that transcend the markers of 1914, 1918, and 1919? Conversely, if we acknowledge the fundamental organic qualities of the period's technological bodies, how might this reorient our sense of crisis, and the period's horizons, interlocutors, and intellectual debts in general? For Peter Sloterdijk, Weimar is the historical case study for the cynic (*Zyniker*); drawing on the prevalence of maimed and prosthetic bodies, Sloterdijk evinces a commitment to the organic, integral body by aligning the mechanical, prosthetic body to cynical logics of control without remainder.⁸ The commitment to the

analysis, between organic and mechanical, modern and reactionary, process and revolution. This has some seriously unfortunate consequences for her reading; the category of 'failure' becomes particularly important, for example, as a way of describing the relationship of intellectuals, desiring harmony and redemption, to their turbulent moment. In a particularly disturbing implication of this moralistic framework, Barnouw in effect castigates Walter Benjamin for his suicide: "he could not muster the energy necessary for survival" (152).

- 8 "Die medizinischen Prothesen und die mit ihnen angebotene Mentalität des rüstigen Roboters bringen nur ein allgemein verbreitetes Denkmuster an den Tag. Der Krieg löste dem latenten Herrschafts-, Medizin- und Militärzynismus die Zunge. Unter seinem Einfluß gestehen die Militär- und Produktionsapparate ihren Anspruch, das Leben der Individuen in ihrem Dienst aufzubrechen. Der menschliche Körper in der Arbeits- und Kampfgesellschaft war schon längst Prothese, ehe man ausgefallene Teile durch technischer Funktionsteile ersetzen mußte." (797)

unmanned body is admirable and necessary, I would agree, when talking about real bodies, but what does his pessimism vis-a-vis a *cultural* or *metaphoric* use of prostheses necessarily elide in its analysis of the period?⁹

My dissertation thus both draws upon and moves beyond existing readings of the discourses of the mechanical, prosthetic, or armored body. Compared to accounts of modernity that see an encroachment of a mechanical register on the discourse of the body, the tropes of the body-as-tool and the organic machine destabilize any unidirectional relationship; in authors across the political spectrum, the organic only becomes mechanical to the extent that the mechanical also becomes organic. By recovering the centrality of the organic body within contemporary technological imaginaries, my project intervenes in scholarship on the culture of the Weimar Republic by contributing a more complex – and non-teleological – picture of the aesthetic, philosophical, and political stakes of the discursive entwinements of nature and technology.

The commonalities among the various figures in this study suggest the contours of a shared discursive arena within which a self-consciously modern German culture probed, reworked, and reconfigured in tandem its ideas about the human, nature, technology, society, politics, and art. An emphatic interdisciplinarity marks the period: philosophical questions such as the relationship between subject and object, self and world, in the aftermath of German

9 Sloterdijk begins his chapter on prosthetics, in fact, by contrasting the cultural use of mechanized bodies with the graver case of actual bodily existence (“[Kynische Vitalisten] übten die Anklage oder die Bejahung des mechanisierten Daseins als Denkfigur. Den leibhaftig Entfremdeten, Verstümmelten und Ummontierten blieben solche Ausdrucksformen in beiden Richtungen eher fremd. Es macht einen Unterschied, ob man den Verlust der Individualität kulturkritisch überdenkt oder erlebt, wie einem der Krieg (oder die Arbeit) Stücke vom eigenen (‘unteilbaren’) Leib wegriißt.” (791) Yet the movement of the chapter is ultimately towards the cultural function of prosthetic bodies, which were cynically mobilized in and by fascist ideology; this depiction of Nazi cynicism seems to draw force from its selective contrast between a “merely” metaphorical, cultural use of mechanical bodies and the real, corporal suffering of these bodies. Matthew Biro (2009) and Mia Fineman (2001) have recovered some of the more positive, dynamic roles played by prostheses in the art and cultural imagination of the period.

idealism and *Lebensphilosophie*, inflected and were inflected by challenges to the autonomy of the bourgeois novel; documentary and epic strategies for modifying the form of the novel themselves drew on disciplines such as medicine, the natural sciences, and anthropology; the camera and photographic image came to serve as the site of interaction for ideas about representation, typology, modern industrial production, and ways of seeing that drew on practices of scientific illustration, to name a few examples.

For reasons I spell out in the individual chapters, the bodies found in the texts I examine are not armored bodies. They do not have the clear contours of the cold persona or the protective shell of the fascist warrior, which in Klaus Theweleit's *Männerphantasien* (1977) defends against the diffuse liquid threat of femininity, the proletarian masses, and a general oceanic dissolution. They are not the cynically-assembled prosthetic bodies identified by Sloterdijk, nor, in response to these, the autonomous, gestural monad of the kynik.¹⁰ Nor are they human motors. While Anson Rabinbach's 1990 study of the same name is a valuable exploration of a deep-seated diachronic trope that linked the way modern European and American cultures thought about bodies to the ways they thought about machines, the unidirectional nature of the discursive transfer he identifies does not really square well with the texts that make up this study. In foregrounding the trope of the human motor, his emphasis is on the way the human is a motor, and not on the way the motor is also a human. Scientific advances and tropes take precedence, such that the cultural imagination of technology and bodies is reduced to the status of a reflection of primary scientific discourses. In the case of Marx, as I will discuss in more detail in the first chapter, this leads Rabinbach to miss the political-economic specificity of Marx's critique of

10 For a discussion of how Sloterdijk's kynik depends on a problematic extraction of subjectivity from context (and thus on the supposition of an unproblematically congruous relationship between subject and body), see Adelson (1993), 4-5.

value. Where Marx was identifying the way that historic conditions of capitalism alter the nature of labor, Rabinbach sees a shift in Marx's thought about labor as such, from a theory that privileges the organic metaphor of a qualitative *Stoffwechsel* to one that sees labor as the quantitative expenditure of energy per se, modeled after the figures of the steam engine, thermodynamics, and energy transfer in general. In other words, Rabinbach ascribes to Marx as a belief a shift that Marx had ascribed to the historical development of capitalism. What is needed (and what I think Marx suggests) is an account that also moves in the other direction: how might figures of thought that arise in historical, cultural constellations (such as the necessary abstraction of wage labor, e.g.), provide the conceptual and metaphorical ground for reformulations in the natural sciences?¹¹ This is not a question that can be answered in the present context; but it suggests a valuable methodological and historical insight – that discourses of technology and nature, science and culture, the organic and the machine must be seen as in a necessarily co-constitutive relationship rather than partaking of a unidirectional influence.

The bodies I found, in the work of Döblin, Jünger, Plessner, and (in a more mediated way) in the photographic theory of the 1920s, are not really cyborgs either, although the organic integrations of this figure come much closer. Though Matthew Biro's 2009 study, *The Dada Cyborg: Visions of the New Human in Weimar Berlin*, has been very helpful in understanding how technology in general and prosthetics in particular were mobilized in creative, active ways to rethink the human as such, the bodies found in *Die Stufen des Organischen und der Mensch*,

11 Moishe Postone has already suggested as much in *Time, Labor, and Social Domination* (1993): "There are many similarities between the characteristics of these social forms, as analyzed thus far, and those of nature as conceptualized by seventeenth-century natural science, for example. They suggest that when the commodity, as a structured form of social practice, becomes widespread, it conditions the way in which the world – natural as well as social – is conceived. [...] One could describe and analyze further the points of similarity between the commodity as a form of social relations and modern European conceptions of nature (such as its impersonal, lawlike mode of functioning). On this basis, one could then hypothesize that not only the paradigms of classical physics but also the emergence of a specific form and concept of Reason in the seventeenth and eighteenth centuries are related to the alienated structures of the commodity form. One could even try to relate changes in forms of thought in the nineteenth century to the dynamic character of the fully developed capital form" (175-6).

Berge Meere und Giganten, and *Der Arbeiter* tend to undermine the very distinction between technology and nature, organs and machines on which the cyborg is necessarily based. Where is the cyborg left if the very prostheses, assemblages, and machines that constitute it are themselves already seen as biological and organic in nature?¹²

Rather, the bodies one finds in such texts exist in complexly positional relationships to their environments. Their contours could be described not as integral and closed, but integrated and open. To draw on a figure from Plessner, the border of the instrumental body is an interface that connects rather than armor that separates. The specifics of this body differ according to context, of course. In Döblin, what links bodies and subjectivities is related to a principle of organic growth that challenges corporal distinctions between individuals and conceptual and scalar distinctions between parts, wholes, particles, and masses, while Jünger tends to join the bodies of his workers more through an elemental logic of electrification, within a larger biological context of an entelechical development towards organic unity. Nevertheless, what these instrumental bodies share is an attack on the sovereign, individual, contained body of

12 While many of the key features of Donna Haraway's cyborg, and particularly its anti-dualist impulses, fit well with the figure I identify in Weimar culture, its liminality and transgressions still depend on a logic of hybridity that doesn't quite cover the textual manifestations of the organic machine and the instrumental body. Furthermore, her specific historicization, which traces the ambiguity of organisms and machines to late-twentieth century technologies such as electronics and information technologies, cannot apply to Weimar; the ambiguities of the instrumental body depend rather on different historical discourses about nature and technology. While Biro at times also seems to suggest a logic of synthesis or hybridity – both of which necessitate the convergence of previously distinct spheres – to describe the Weimar Cyborg, his focus on a logic of montage suggests a different picture, one in which the juxtaposition of elements is useful not because the isolated elements are so different, but because the changed context challenges the original reception of the separate montage elements. Montage used in this way, “to destabilize the everyday and instrumental meanings of worldly objects,” Biro dubs a “negative dialectic,” following Adorno, to indicate a non-hierarchical presentation of elements which cannot be resolved into a single reading” (1994 81). This logic of the cyborg, which he takes up in his 2009 book, fits well with the figures of the organic machine and the instrumental body in this study, where the technological and natural elements constitute each other to the extent that none can be said to be strictly one or the other. Nonetheless, the cyborg's emphasis on the *individual* body (rather than the mass or agglomerate body) and on the *liminality* of the border (rather than the positional use of the border to decenter the embodied individual) make it a somewhat different figure than those that comprise this dissertation. Therefore, to avoid the connotations of hybridity and the directionality suggested by the figure of the cyborg, I choose to bracket out the term in what follows.

bourgeois subjectivity.

In this way, the instrumental body served not merely as a way to critique the political and cultural hypocrisy of bourgeois ideology in the wake of the carnage of the World War, but thereby sought to challenge what was perceived as a deeper, structuring principle of bourgeois thought as such: the autonomous, transcendental subject. Figures of ecological integration and the dense discursive entwinement of mechanical and organic logics, the instrumental body and the organic machine undermined the idea of a centered ego and the cultural depictions of this ego that privileged psychological interiority and conscious self-reflection. In a sense, this is a materialist challenge to the primacy of *Geist*, but beyond that, the instrumental body provided various ways of relocating *Geist* and subjectivity in material bodies, in biology, and in *Leben*.¹³ The figures of the instrumental body and the organic machine, by destabilizing and undoing dichotomies between nature and technology, were also able to challenge distinctions between mind and matter, subject and object, and in this way can be seen as an early anticipation of poststructuralist critiques of the category of the human. By locating human subjectivity within bodies that could not or would not sustain either their physical separation from other bodies or a homogeneous, self-sufficient relationship to themselves, the instrumental body and the organic machine challenged not only the sovereign “I” but also the primacy of the human.¹⁴ Crucially, however, this challenge did not primarily take the form of a critique of the relationship between subjectivity and language, as did the various poststructuralisms identified with the linguistic turn, but came as a subversive exploration of spatial, topological, positional, and material

13 As Joachim Fischer describes the project of philosophical anthropology, “Im Entschluss, ‘Geist’ im ‘Leben’ aufzubauen, den Spieß des 19. Jahrhunderts mit seiner Leidenschaft des Abbauens, der Demaskierung, umzudrehen, wird die Denkungsart der unter dem Titel einer Philosophischen Anthropologie sich einfinden, einander erkennenden Denker sichtbar.” (515)

14 Petrus Liu (2012) discusses the implications of poststructuralism’s image of humanism in the context of queer human rights in China, arriving at a recuperation of the concept of the human through Marx that has greatly helped me think about, if not yet quite through, some of these issues.

embodiments of subjectivity in the context of the primacy of a discourse of *Leben*.

Ultimately, I hope this dissertation will contribute to our understanding of Weimar culture as a complexly interdisciplinary moment of self-aware modernity. The intensely self-reflective nature of Weimar culture and thought¹⁵ means that we must attend to the period's own self-understanding and to the tropes, rhetoric, and discourse it drew on in equal measure; the way it used language as much as the way language used it.¹⁶ This dense overlay of discourses from various cultural, scientific, and philosophical domains, constituting and being constituted by each other, is partly a synchronic question, in that interpreting the culture and thought of Weimar suggests the need for an interdisciplinary approach that can uncover how thinkers used photography to think through questions of literary theory, for example, or biology to think through history. Yet it is also necessarily a diachronic problem, as the various strands of aesthetic, scientific, social, political, and philosophical discourses are much longer than suggested by an interpretation of Weimar that foregrounds the sense of crisis or the teleology of collapse. Each figure in this study serves as a nexus linking various concerns over the years and decades. Döblin's *Schicksalsreise* brings a particular vein of postwar conservatism into contact with a prewar avant-garde critique of bourgeois humanism, for example, while Jünger's collaborative work with Renger-Patzsch during the 1960s enables the former to further develop a theory of typology that recalls the biological dimension of *Der Arbeiter* without being assimilable to it. In this sense, the various interdisciplinary experiments I've grouped under the tropes of the instrumental body and the organic machine are not reducible to each other under a master figure, either these two tropes or other figures, such as the armored body, kynik, or cold persona. In the

15 As Sloterdijk puts it, "Man kann nicht ohne weiteres über diese Zeit reden, als hätten ihre Zeitgenossen nicht schon genug über sich selbst gedacht." (708)

16 As Döblin writes in "Der Bau des epischen Werks," "man glaubt zu sprechen und man wird gesprochen, oder man glaubt zu schreiben und man wird geschrieben" (243).

spirit of the open contours of the instrumental body, I would like to use it to open questions about Weimar culture, rather than assimilate its articulations under a constraining master trope.

To inquire how the instrumental body and the organic machine served as a privileged site for a self-reflective, interdisciplinary critique, for the retheorization and reconfiguration of the human, and for a complex negotiation of the relationships among discourses and media – these, then, are the questions this dissertation poses.

CHAPTER ONE

Technological Anthropologies:

Human incorporation and positionality in Karl Marx, Ernst Kapp, and Helmuth Plessner

In this chapter I will consider the presence of what we might provisionally call a technological anthropology in the work of Karl Marx, Ernst Kapp, and Helmuth Plessner. While the commitments, topics, disciplines, and presuppositions of the texts *Ökonomisch-philosophische Manuskripte* of 1844, the *Grundrisse* (1857-1858), *Kapital I* (1867), *Grundlinien einer Philosophie der Technik* (1877), and *Die Stufen des Organischen und der Mensch* (1928) vary widely, all establish, in their various ways, a particular history of human subjectivity as a technological relationship between subject and environment that manifests itself in a positional way, drawing upon differing logics of incorporation and externalization. All three figures are working through subjectivity after Hegel, and each draws, to various extents, on a dialectical presentation and a dialectical conception of the relationship between subject and world, body and environment, making and knowledge. All three present a picture that is thus also an epistemological one – the way they relate human embodiment to human making bears directly on questions of self-consciousness, technological knowledge, and their vision of intersubjectivity and politics. At the risk of reductionism (but in the interest of clarity), it could be said that for Marx, Kapp, and Plessner, a spatial, positional, and relational account of human existence – rather than a strong dichotomy between the human and natural worlds – enables a theory of technology that is also to varying extents a philosophy of nature and a vision of politics. For the three writers, how humans position themselves vis-a-vis their environment is how they create; how they create is how they know; and how they know is how they exist.

Yet within this loosely shared framework, the differences of approach and purpose are even more telling. If the commonalities among Marx, Kapp, and Plessner suggest ways of thinking about technology and nature in tandem, the differences can help shed light on the far-reaching implications of competing conceptual emphases, disciplinary commitments, and varying degrees of methodological self-awareness. It matters a great deal not only that the three were thinking about technology in conjunction with other conceptual fields and disciplines (such as political economy, kinematics, state theory, and philosophical anthropology, to name only the most prominent reference points), but also to what extent they either treated technology as an autonomous field or contextualized it within a particular field for a particular purpose. What one finds in the technological anthropologies of Marx, Kapp, and Plessner is that both terms – technology and the human – grow increasingly elusive, not to mention of dubious utility, the more pressure one puts on them as autonomous conceptual fields. The purpose of this chapter, therefore, is to explore three different prominent technological anthropologies from the late 19th to the early 20th century in order to consider the implications of various configurations of the self, the body, the environment, nature, technology, and the human. While subsequent chapters on key moments in the culture and aesthetics of the Weimar Republic do not build on this chapter directly, exploration of these three versions of a post-Hegelian dialectic will allow me to explore in some depth what “technology” might actually mean, and what its various embodiments and incorporations might have to say about the instrumental bodies that follow.

Karl Marx and the organic inversion of the factory body

In a sense, Marx does not have a theory of technology. More precisely, within the

framework of Marx's critique of political economy, what is sought is not a theory of technology but rather a theory of capital, and the role of technology, knowledge, and labor within the context determined by capital. What Marx's treatment of the factory system in the *Grundrisse* and in volume I of *Das Kapital* suggests is that a theory of technology per se is meaningless outside of specific historic, social, political, and economic contexts. While Marx does offer a picture, in texts from the *Ökonomisch-philosophische Manuskripte* of 1844 to the *Grundrisse* to *Das Kapital*, of human specificity understood in terms of the intentional shaping and appropriation of the natural world, this anthropology is as much a theory of nature as it is of technology. His nuanced and dialectical portrayal of the relationship between human subject, work, and environment is a useful place to begin reconsidering modern technological imaginaries, since it disallows from the outset any facile dichotomies between nature and technology, organ and machine, subject and environment.

Yet for the purposes of this chapter, even more interesting is the way that, in building on a basic logic of appropriation, internalization, and externalization that characterizes all human labor as such, Marx offers a historically specific account of capitalism as the incorporation of human labor within a larger system that finds both concrete realization and symbolic fulfillment in the advanced factory system, where the human workers have been reduced to the "conscious linkages" (*Grundrisse*, 592) in the factory's monstrous body. This process of incorporation is not just a historical, material, or economic process, but also reflects an epistemological dynamic of alienation in a couple ways. On the one hand, the human workers caught up in this process are deskilled and dispossessed not only of agency over the process, but also of the intentionality and knowledge that characterize for Marx human labor as such. On the other hand, in his critique of the prevailing accounts in contemporary political economy of the rise of the factory system,

Marx suggests a sophisticated approach to the relationship between a given technological state of affairs and the conceptions of technology that arise to account for a present moment. His criticisms of figures like Andrew Ure already evinces a way of thinking about technological imaginaries that must make us wary of applying to Marx the same technological determinism sometimes ascribed to him, and explaining (away) the abstraction inherent to his idea of labor power, for example, as simply the result of a heightened 19th-century interest in thermodynamics, as Anson Rabinbach does in *The Human Motor*. Marx's criticisms of his contemporaries, of Andrew Ure's conflation of the possibilities of machinery of such with the function of machines under capitalism, for example,¹⁷ suggest on the contrary that we must bring a more flexible and open-ended set of approaches and inquiries to bear if we wish to ask how a given period conceived of its relationship to technology and, more importantly, what "technology" could actually mean at a particular time – how the language, discourses, metaphors, and theories of a given moment were engaged in and responsible for constructing and interweaving ideas about labor, artifice, (re)production, nature, and the human.

In this section I will reconstruct Marx's account of technology understood as a dialectical and flexible relationship between the human body and the natural environment, mediated by labor. This relationship is characterized by the appropriation and reworking of nature, which Marx dubs in the 1844 *Ökonomisch-philosophische Manuskripte* "man's inorganic body" (89). It

17 When Marx suggests that Descartes, in viewing animals as machines, "saw with the eyes of the period of manufacture" (*Das Kapital I*, 512), or when he traces the contradictions in Andrew Ure's depiction of the factory system (441-442), he exemplifies a kind of critique that views the relationship between a given historical situation and its technological imaginary in critical, flexible terms. For Marx, Ure is able to describe the factory system in opposing ways – once characterized by the Promethean subjectivity of human labor, and in the second instance marked by the monstrous, mechanical subjectivity of the machine – because he unwittingly conflates machines as such, as a new technology with vast potential, with machines as they exist under conditions of capitalism. Thus for Marx the terminology of subject and object becomes more self-aware than in Ure's unreflected use, a use that unwittingly expresses a contradiction of capitalism. Marx takes up and uses the terms as part of his immanent critique, but only to show how they are historically and economically determined, not to endorse a heroic subjectivity of labor.

is not a relationship of static or dualistic opposition, but is rather flexible and positional, and is described by Marx as a “metabolism,” or “Stoffwechsel.” The labor process common to all human societies is marked by a flow of material and use-values. It is only under capitalism that *Stoffwechsel* becomes *Formwechsel*, as Marx dubs it in the *Grundrisse*: in other words, the emphasis of human making shifts from the qualitative production of use-values to the quantitative production of exchange values, and what flows is no longer primarily the useful objects made to satisfy human needs but rather value sedimented in commodities through the process of abstract labor. This culminates in the logic of the automated factory system. If the process of human making in general depended on the incorporation and appropriation of tools and materials – “organs,” in Marx’s terms – from nature, “man’s inorganic body,” then the valorization process (“Verwertungsprozeß”) that characterizes the capitalist mode of production inverts this bodily relationship. Human workers are incorporated as organs into the machine’s monstrous body, and this inversion both results from and symbolizes a specifically capitalist progression of the gradual incorporation of living, human labor into the larger framework of commodity production. Finally, brief discussions of Anson Rabinbach and Theresa Brennan’s readings of Marx’s concept of labor power in terms of an energeticist paradigm will allow me to better illustrate the necessity of viewing the abstraction of Marx’s concept in its specific role within his account of capitalism, rather than taking him to be presenting a theory of human labor as such.

After establishing his account of the basic features and contradictions of the commodity and the exchange process in the first four chapters¹⁸ of volume I of *Das Kapital*, Marx proceeds

18 Note that the English translation of *Das Kapital* adopts a different numbering system, so that what appears as chapter four in the edition published by Dietz as volume 23 of *Marx Engels Werke* (“Verwandlung von Geld in Kapital”) is broken up into three chapters in the English edition. This also means that the chapter I will be concentrating on in this section, “Maschinerie und große Industrie,” is chapter 13 of the German edition but chapter 15 in the Penguin edition of the English translation.

to the central question of how value is produced within capitalism. Before arriving at the answer that guides the unfolding of the remainder of the volume – namely, value is the result of surplus labor, time worked over and above the necessary time to reproduce the worker’s capacity to labor – Marx discusses the necessary features of human labor as such. The specific anthropology at play¹⁹ understands the human as that species that is also able to consciously produce its own means of production, or tools: “Der Gebrauch und die Schöpfung von Arbeitsmitteln, obgleich im Keim schon gewissen Tierarten eigen, charakterisieren den spezifisch menschlichen Arbeitsprozeß, und Franklin definiert daher den Menschen als ‘a toolmaking animal,’ ein Werkzeuge fabrizierendes Tier” (*Das Kapital I*, 194). Humans are not set off from other animals in an absolute way, but are understood as a particular kind of animal characterized by a particular behavioral trait.²⁰ This idea is in line with Marx’s portrayal of the close ecological relationship between human bodies and the surrounding environment.

Die Arbeit ist zunächst ein Prozeß zwischen Mensch und Natur, ein Prozeß, worin der Mensch seinen Stoffwechsel mit der Natur durch seine eigene Tat vermittelt, regelt und kontrolliert. Er tritt dem Naturstoff selbst als eine Naturmacht gegenüber. Die seiner Leiblichkeit angehörigen Naturkräfte, Arme und Beine, Kopf und Hand, setzt er in Bewegung, um sich den Naturstoff in einer für sein eignes Leben brauchbaren Form anzueignen.” (*Das Kapital I*, 192)

19 If, that is, one may speak of an anthropology rather than a heuristic and logical minimum set of conditions necessary for the reproduction of the species through labor. In my discussion of Marx, I intend for “anthropology” to be meant in a weak sense, as a concept of the human and human labor that is also heuristic and minimalist rather than an ontological or essentialist definition of the human. In this I follow scholars such as Moishe Postone who have emphasized how Marx unfolded the effects of labor as a necessary practice on human society and subjectivity, rather than rooting the definition of the human as such in an ontology of labor. Petrus Liu (2012) expresses the distinction well when he writes, “By turning our attention to the social conditions that produce and reproduce the subject of labor, Marx does not seek to prioritize the ontological or ethical grounds of material labor over other forms of social production. Instead, Marx demonstrates the dialectical process whereby a human subject is constituted by forces and vectors of power that are beyond the immediate sense experience of the subject.” (85)

20 As John Bellamy Foster writes in *Marx’s Ecology* (2000), “In drawing this comparison between ‘natural technology’ and human technology, Marx was of course aware that the Greek word ‘organ’ (*organon*) also meant tool, and that organs were initially viewed as ‘grown-on’ tools of animals – tools, as the artificial organs of human beings. As Engels stated, ‘animals in the narrower sense also have tools, but only as limbs of their body.’ Human technology was thus distinguished from natural technology in that it did not consist of such adnated organs, but rather occurred through the social production of tools: the ‘productive organs of man in society.’ (200-1)

The use of the concept of *Stoffwechsel* indicates the necessary material exchange between humans and nature, understood as a process in which nature acts on itself. Michael Quante has suggested that, in adapting the Hegelian dialectic for his own purposes, Marx substitutes *Natur* for Hegel's *Geist*, as a kind of prime mover and unifying agential force. In human action, nature thereby gains the possibility of acting on and modifying itself.²¹ This rejection of a strong dualism in Marx's conception of the human relationship to nature continues key motifs announced two decades earlier, in the *Ökonomisch-philosophische Manuskripte*. In that text, Marx describes the process that will later come to take the name *Stoffwechsel* in terms of the relationship between the human, bodies, organs, and nature.

Die Natur ist der *unorganische Leib* d[es] Menschen, nämlich die Natur, so weit sie nicht selbst menschlicher Körper ist. Der Mensch *lebt* von der Natur, heißt: die Natur ist sein *Leib*, mit dem er in beständigem Prozeß bleiben muß, um nicht zu sterben. Daß die physische und geistige Leben d[es] Menschen mit der Natur zusammenhängt, hat keinen andern Sinn, als daß die Natur mit sich selbst zusammenhängt, denn der Mensch ist ein Theil der Natur. (89-90)

Here again we see the idea that the human represents the space where nature interacts with and acts upon itself, yet the presence of a corporal vocabulary in the earlier text will help us make sense of the way that the factory system in *Capital* will come to incorporate and absorb the living

21 Tracing the different aspects of Marx's concept of nature, Quante writes, "Natur fungiert als Nachfolger und materialistische Alternative zum Hegelschen Geistbegriff" (*Ökonomisch-philosophische Manuskripte*, 303). However, this lineage exists in tension, both in Marx's thought and in the subsequent legacy of Marxist-Leninism, with a more materialist, scientific concept of nature. "Eine an den Naturwissenschaften ausgerichtete Naturkonzeption paßt gut zu einem realistischen Naturverständnis, in dem der Natur die ontologische Unabhängigkeit vom Denken zugesprochen wird. Dagegen steht die erste Dimension der Marxschen Naturkonzeption, in welcher der Naturbegriff die Funktion des Hegelschen Geistbegriffs übernimmt, im Gegensatz zur dritten Dimension, da die Naturwissenschaften für diese philosophische Funktion des Marxschen Naturbegriffs keinen Platz haben." (310) Yet, as Quante continues (and I follow this interpretation of the role of *Stoffwechsel* in Marx's late work), "Wie gerade der letzte Satz dieses Zitats [from *Das Kapital I*, 528] belegt, liegt auch im *Kapital* noch die Dimension der Naturkonzeption als ein Selbstverhältnis vor, auch wenn Marx dies nicht mehr mit anthropologisch-philosophischen Kategorien, sondern mit der naturwissenschaftlichen Kategorie des 'Stoffwechsels' umschreibt" (312).

The idea that human activity is a relationship of nature to itself, and that human thought and activity is where nature becomes self-aware, is one that will have an interesting trajectory in the popularization of science in the twentieth century, most memorably in Carl Sagan's dictum that we are "starstuff, pondering the stars."

worker. Central to the relationship between human and nature in the 1844 manuscripts is the way that the natural environment serves as a sort of second body, an inorganic *Leib* to the human's organic *Körper*. The distinction between the organic and the inorganic in this context arises from the fact that non-human nature is not part of the human body proper, but nevertheless necessary to its survival, in a constant process of material ecological exchange.²² "Inorganic" thus denotes a component of a process of material exchange that stands outside of the body proper but is nonetheless necessary to its functioning. This vocabulary and its underlying logic are crucial for understanding Marx's depiction of the factory system, and how the modern machine is both a liberation from the "organic limits" ("organische Schranke") of the human and how humans themselves come to be organs of a machine body. For if the human relationship to nature, in the labor process as such, is defined as the constant appropriation of elements of the human's "inorganic body" in the form of tools ("So wird das Natürliche selbst zum Organ seiner Tätigkeit, ein Organ, das er seinen eignen Leibesorganen hinzufügt, seine natürliche Gestalt verlängernd, trotz der Bibel" (*Kapital I*, 194)), and is thereby understood as a technological relationship, the functioning of technology under capitalism and the dominance of exchange- over use-values inverts this relationship such that human products absorb not only human labor but human knowledge and agency as well, making tools of the tool-makers. This is not just a rhetorically dramatic portrayal of the 19th-century factory, but has specific economic reasons in Marx's account of the shift from the labor process to the valorization process, as we will see.

22 As Foster argues: "From the *Economic and Philosophical Manuscripts* on, for the rest of his life, Marx always treated nature, insofar as it entered directly into human history through production, as an extension of the human body (that is, 'the inorganic body' of humanity). The human relationship to nature, according to this conception, was mediated not only through production but also, more directly, by means of the tools – themselves a product of the human transformation of nature through production – that allowed humanity to transform nature in universal ways. For Marx, the relationship was clearly an organic one but one that physically transcended, while at the same time practically extending, the actual bodily organs of human beings – hence the reference to nature as the 'inorganic body of man.'" (72-73)

What this means for Marx's account of the human relationship to nature is that *Stoffwechsel* is the norm, rather than the exception; like animals, humans are characterized in the first instance by an ecological relationship with their surroundings rather than one of alienation, exceptionalism, or a fundamental, metaphysical lack. As Marx puts it in the *Grundrisse*:

Nicht die *Einheit* der lebenden und tätigen Menschen mit den natürlichen, unorganischen Bedingungen ihres Stoffwechsels mit der Natur, und daher ihre Aneignung der Natur – bedarf der Erklärung oder ist Resultat eines historischen Prozesses, sondern die *Trennung* zwischen diesen unorganischen Bedingungen des menschlichen Daseins und diesen tätigen Dasein, eine Trennung, wie sie vollständig erst gesetzt ist im Verhältnis von Lohnarbeit und Kapital. (389)

Thus *Stoffwechsel* characterizes human existence and human labor as such. Capitalism interrupts this process because of its emphasis on exchange-values over use-values, but the metabolic exchange of material can only be interrupted because it is still a necessary part of the labor process as such. Thus it is inadequate to see in the terminology and concept of *Stoffwechsel* a way to periodize Marx's thought as Rabinbach does:

Until 1857, Marx took as his model of nature the *metabolic exchange of substances and forces*, which reflected both the pantheism and the “metaphysical” materialism of his generation. We recall, for example, that the early Marx viewed nature as man's “inorganic body,” mediated through society as society is mediated through nature. The metabolism between man and nature is the framework for Marx's view of labor as the paradigm of nature and led him to characterize this relation as a process of exchange. But nature is also a mirror of labor, insofar as “the exchange of commodities is the process in which the social metabolism takes place.” Labor is the model for all creative, life-generating, activity.

After 1859 Marx gradually redefined labor from a metabolic exchange of substances between man and nature to a conversion of force. (Rabinbach, 77)

Apart from the fact that Marx refers to nature as man's “inorganic body” in the *Grundrisse*, Rabinbach's strong periodization elides, in my view, the distinction between the labor process and the valorization process, to be discussed in more detail below. Only by eclipsing the specific economic reasons behind the abstraction of labor power under capitalism

can Rabinbach assimilate labor power to energy expenditure. Marx does not abandon *Stoffwechsel* in his late work to adopt a new model of human labor influenced by the historical rise of thermodynamics,²³ but rather develops an account of labor specific to capitalism that maintains *Stoffwechsel* as a necessary process fundamental to human labor as such, even if it is disrupted by results of capitalist production and exchange. As John Bellamy Foster has argued, much of Marx and Engel's ecological thought in general, and their development of the concept of *Stoffwechsel* in particular, was based on an ecological critique that drew upon the nascent soil science of Justus von Liebig. The language of *Stoffwechsel* that provides Marx with a way to think about the necessary a priori ecological integration of human existence also provided a tool to critique agricultural practices, for example, that extracted more nutrients from the soil than they returned to it, as in this passage from *Capital*:

Mit dem stets wachsenden Übergewicht der städtischen Bevölkerung, die sie in großen Zentren zusammenhäuft, häuft die kapitalistische Produktion einerseits die geschichtliche Bewegungskraft der Gesellschaft, stört sie andererseits den Stoffwechsel zwischen Mensch und Erde, d.h. die Rückkehr der vom Menschen in der Form von Nahrungs- und Kleidungsmiteln vernutzten Bodenbestandteile zum Boden, also die ewige Naturbedingung dauernder Bodenfruchtbarkeit. (528)²⁴

The fact that a passage like this fits into Marx's complex theoretical account of contemporary capitalism suggests that the concept of *Stoffwechsel* provided both a way to think about the sine qua non of human labor and human existence in ecological terms, and a point of critique with which to address fundamental contradictions of capital. The basic idea is that developments in the way human production and exchange are organized under capitalism tend to work against and

23 Rabinbach: "We recall, for example, that the early Marx viewed nature as man's 'inorganic body,' mediated through society as society is mediated through nature. The metabolism between man and nature is the framework for Marx's view of labor as the paradigm of nature and led him to characterize this relation as a process of exchange. [...] After 1859 Marx gradually redefined labor from a metabolic exchange of substances between man and nature to a conversion of force." (77)

24 For a discussion of the impact of Liebig's discovery of chemical soil depletion on Marx's theory of metabolism, see Foster, especially 149-170.

undermine the necessary conditions for human labor, production, and exchange as such.

Metabolism thus serves as a model of circulation, both in the primal scene of human labor as the process of human appropriation, interaction, and reworking of nature as “inorganic body,” and in more complex ways to show how the flows of material, goods, and use values must be seen as a dynamic system. Among other things, this reinforces one of the core ideas of *Das Kapital*, that labor and exchange are always social processes, even when the objects under investigation are only objects. Describing the labor process as such (i.e., apart from any particular mode of production), Marx writes,

Im Arbeitsprozeß bewirkt also die Tätigkeit des Menschen durch das Arbeitsmittel eine von vornherein bezweckte Veränderung des Arbeitsgegenstandes. Der Prozeß erlischt im Produkt. Sein Produkt ist ein Gebrauchswert, ein durch Formveränderung menschlichen Bedürfnissen angeeigneter Naturstoff. Die Arbeit hat sich mit ihrem Gegenstand verbunden. Sie ist vergegenständlicht, und der Gegenstand ist verarbeitet. Was auf seiten des Arbeiters in der Form der Unruhe erschien, erscheint nun als ruhende Eigenschaft, in der Form des Seins, auf seiten des Produkts. Er hat gesponnen, und das Produkt ist ein Gespinst. (*Das Kapital I*, 195)

This shows the fundamentally positional and relational nature of *Stoffwechsel*, in the sense that human making and the made artifacts together constitute a flexible relationship, whereby the products of past processes go into future processes and other products. The logic here is one of flows and incorporation, where past work is embodied in present products, which themselves become part of a future labor process, etc. This logic, as we will see shortly, will be central to the transition to the rest of *Kapital*, where it becomes the abstract and quantified (exchange) value as measured by labor time that comprises the flows of capital and exchange, but here it is essential to mark the way that a kind of ecological metabolism characterizes human making and labor as such for Marx. One can even see this in the language Marx uses, and in particular the play of past participles (“gesponnen,” “vergegenständlicht,” “verarbeitet,” even

“Produkt,” if we take the Latin etymology). Human labor is necessarily a dialectical and ongoing relationship between process and product for Marx, a relationship that meshes neatly with the metabolic logic of *Stoffwechsel*. Just as human existence as such is characterized by a constant exchange between humans and their inorganic body, or nature (“Der Mensch *lebt* von der Natur, heißt: die Natur ist sein *Leib*, mit dem er in beständigem Prozeß bleiben muß, um nicht zu sterben” (*Ökonomisch-philosophische Manuskripte* 89-90)), labor as such is marked by a continual reworking of the environment that externalizes and concretizes the process of work into the products of work, which themselves feed into new processes, and so on. This metabolic circulation applies to the labor, the products produced, and to the use-values embedded in these products: “Wenn ein Gebrauchswert als Produkt aus dem Arbeitsprozeß herauskommt, gehen andre Gebrauchswerte, Produkte früherer Arbeitsprozesse, als Produktionsmittel in ihn ein. Derselbe Gebrauchswert, der das Produkt dieser, bildet das Produktionsmittel jener Arbeit. Produkte sind daher nicht nur Resultat, sondern zugleich Bedingung des Arbeitsprozesses” (*Das Kapital I*, 196).

It should be emphasized that, rather than describing a pristine state of nature, Marx is abstracting in order to characterize the logical minimum of what constitutes human labor as such. As suggested in the passage above on the depletion of the soil and stated explicitly in the following quotation, *Stoffwechsel* is a logic that applies to all human social forms.

Der Arbeitsprozeß, wie wir ihn in seinen einfachen und abstrakten Momenten dargestellt haben, ist zweckmäßige Tätigkeit zur Herstellung von Gebrauchswerten, Aneignung des Natürlichen für menschliche Bedürfnisse, allgemeine Bedingung des Stoffwechsels zwischen Mensch und Natur, ewige Naturbedingung des menschlichen Lebens und daher unabhängig von jeder Form dieses Lebens, vielmehr allen seinen Gesellschaftsformen gleich gemeinsam. (*Das Kapital I*, 198)

Stoffwechsel provides a way to think about human labor that sees it in terms of a system of

material flows in a way that also accounts for the logic of incorporation and appropriation central to the conception of nature as the human's "inorganic body." Just as material from nature is incorporated into the laboring human apparatus in the form of tools crafted from natural material that then become part of the labor process, human labor can be purchased as a commodity and incorporated into the production process: "Der Kapitalist hat durch den Kauf der Arbeitskraft die Arbeit selbst als lebendigen Gärungsstoff den toten ihm gleichfalls gehörigen Bildungselementen des Produkts einverleibt" (*Das Kapital I*, 200). In other words, the idea of *Stoffwechsel* provided Marx with a way of thinking about the basic human situation vis-a-vis nature in terms of an ecological dialectic, but it also establishes labor as a constant flow of material and values.

This dual flow is essential in understanding the transition from the labor process to its specifically capitalist form, which Marx calls the "valorization process" ("Verwertungsprozeß"). If the relationship between process and product that characterizes the system of human work in general can be seen as a circulation of use-values, then the circulation of exchange-values that characterizes capitalism can superimpose itself in a parasitic fashion on the basic logic of human labor as such. This is a palimpsestic logic, in a way, where human labor never ceases to be predicated upon the basic metabolic circulation. Under capitalism, however, it takes on a formative emphasis that relies upon the circulation of useful things as a necessary substrate, but shifts the focus to exchange-values in a way that can disrupt the essential conditions necessary for its functioning.

The relationship between the labor process and the valorization process can be seen as part of an extended functional analogy as well. Where the focus and result of the labor process is use-value, or the particular utility of a thing that satisfies a particular human need, the product of the valorization process is exchange-value, an abstract quantity with no necessary connection to

the type of object that serves as its material substrate.²⁵ And while the circulation of useful things produced in the labor process is a part of the *Stoffwechsel* Marx describes, exchange-values circulate in a way largely detached from their specific material bearers; hence the term *Formwechsel*, which Marx uses in the *Grundrisse* to characterize this sort of exchange. If what circulates is not material so much as abstract quantities of exchange value, then this value can be seen to move through the production process in a way that involves the flow of units of value through various forms. To take his famous example from the chapter on the *Verwertungsprozeß*, all the components that go to make up yarn – the value of the cotton, the value of the spindle, the value of the labor – pass their values into the finished product, even though only some (like the cotton) pass materially into the yarn while others (like the spindle and the labor) do not. Where the focus of the circulation described as *Stoffwechsel*, drawing on ecological processes of exchange, is on the particular objects, materials, and their concrete uses, the focus of capitalist production is on the quantities of values and how they can best be harnessed to create surplus values, entirely irrespective of what is actually being made or why. The two sides constitute a dialectical unity, in which both are necessary but they are also often at odds with each other. Marx's presentation in *Das Kapital* heuristically brackets out one aspect or another for consideration, a kind of immanent view that has often led commentators to take one side or another of the presentation – rather than their contradictory relationship – for Marx's position. “In der Tat, da es sich hier um Warenproduktion handelt, haben wir bisher offenbar nur eine Seite des Prozesses betrachtet. Wie die Ware selbst Einheit von Gebrauchswert und Wert, muß ihr Produktionsprozeß Einheit von Arbeitsprozeß und Wertbildungsprozeß sein” (*Das Kapital*,

25 “Gebrauchswerte werden hier überhaupt nur produziert, weil und sofern sie materielles Substrat, Träger des Tauscherts sind” (*Das Kapital I*, 201).

201).²⁶

So it is not the case that *Stoffwechsel* is a different model of labor and exchange than that found in capitalism; both *Stoffwechsel* and *Formwechsel* are present in capitalism, but describe different aspects. “Bei der Zirkulation des Kapitals findet gleichzeitig statt Formwechsel und Stoffwechsel” (*Grundrisse* 559). It is useful to dwell on the distinction between *Stoffwechsel* and *Formwechsel* in order to see precisely where the abstraction of labor power originates. What for Anson Rabinbach are competing paradigms and periods in Marx’s view of labor from an early metabolic model (specific labor) to a late thermodynamic one (abstract labor power) can more accurately be seen as complementary aspects of labor. Considered from the material, *stofflichen* side, a specific product is produced, circulated, and consumed. Considered from the formal side, commodities are merely the vehicles of value and money merely a measure of self-valorizing capital: “Nach der stofflichen Seite des Kapitals betrachtet, erscheint das Geld bloß als Zirkulationsmittel; nach der Formseite, als das nominelle Maß seiner Verwertung und für eine bestimmte Phase als für sich seiender Wert” (560). And as the measure of value, abstract labor becomes a substance incorporated into all commodities and forms their common measure. Thus Marx describes the capitalist labor process as the process of setting “living labor,” that is, present-tense human labor, to work on “dead labor,” the other inputs such as raw materials or tools that as exchange-values already embody a quantum of past labor (*Das Kapital I*, 209).

26 On the relationship between Marx’s dialectical mode of presentation and his method of immanent critique, see Postone, 141-5, 174-6. Several passages can be usefully read in dialogue with approaches such as Rabinbach’s and Brennan’s:

“The drawback of such a presentation is that Marx’s reflexive, immanent approach is easily subject to misinterpretation. If *Capital* is read as anything other than an immanent critique, the result is a reading that interprets Marx as affirming that which he attempts to criticize (for example, the historically determinate function of labor as socially constitutive)” (142).

“The problem, then, is to move beyond the physiological definition of abstract human labor provided by Marx and analyze its underlying social and historical meaning. An adequate analysis, moreover, must not only show *that* abstract human labor has a social character; it must also investigate the historically specific social relations that underlie value in order to explain *why* those relations appear and, therefore, are presented by Marx, as being physiological – as transhistorical, natural, and thus historically empty” (145).

Elsewhere he describes this process as a zymurgy of labor-power (*Das Kapital I*, 200) in which the yeast of living labor is pitched into the wort or grapes of dead labor to produce the ferment of surplus value; while this biological register could lead one to suppose that the capitalist production process is a *Stoffwechsel* like any other, the key difference is that here, all commodities are dead labor in the sense that, as exchange-values they are quantifiable embodiments of past abstract labor, not qualitatively specific use-values.

The switch from concretely useful human labor, seen as the production of use-values, to the abstract labor that characterizes capitalism, means that the function of labor is no longer primarily to produce useful objects in a metabolic exchange with nature, but rather to produce surplus value in the valorization process. The basic reason for this is that, once human labor power is capable of being bought and sold like other commodities, it becomes the only commodity whose use-value (a full day of labor) quantitatively exceeds its exchange-value (the time necessary to reproduce the worker's capacity to labor). In other words, it takes less time in a day to reproduce the worker's capacity to labor (defined as the time needed to produce the basic "wage bundle" of food, clothing, housing, etc.) than the worker is capable of working in a day; this is the source of the surplus-value that makes capitalist accumulation possible in the first place. The result of this switch to abstraction, in the context of technology, means that, rather than using the tool, the worker's capacity to labor itself becomes the tool of the machine. The role of "living labor" as the engine of value guides Marx's account, in chapter 13 of *Das Kapital*, of the seeming paradox that labor-saving machines under capitalism in fact contribute to a lengthening and intensification of the working day. At heart, this shift from use-values to exchange-values is the origin of the organic inversion that takes on its concrete material form in the depiction of the factory system.

“Alle entwickelte Maschinerie besteht aus drei wesentlich verschiedenen Teilen, der Bewegungsmaschine, dem Transmissionsmechanismus, endlich der Werkzeugmaschine oder Arbeitsmaschine. [...] Dieser Teil der Maschinerie, die Werkzeugmaschine, ist es, wovon die industrielle Revolution im 18. Jahrhundert ausgeht” (*Das Kapital I*, 393).²⁷ Marx begins his long chapter on “Machines and heavy industry” by defining what makes a machine a machine. “Mathematicians and mechanics” and, following them, English economists, had tended to make a merely gradual distinction between a machine and a tool, according to Marx. The tool was a simple machine, the machine simply a composite tool. Even the simple mechanical aids – lever, inclined plane, and so on – were called machines (392). While granting the mechanical point that all machines are indeed composed of such basic principles, Marx nevertheless rejects this explanation as economically worthless, because ahistorical. Another possible explanation he weighs draws on the distinction between human motive power and nonhuman motive power: a tool is that which is set into motion by a human, whereas a machine is set into motion by a non-human force of nature. This is also woefully inadequate:

Danach wäre ein mit Ochsen bespannter Pflug, der den verschiedensten Produktionsepochen angehört, eine Maschine, Claussens Circular Loom, der von der Hand eines einzigen Arbeiters bewegt, 96 000 Maschen in einer Minute verfertigt, ein bloßes Werkzeug. Ja, derselbe loom wäre Werkzeug, wenn mit der Hand, und Maschine, wenn mit Dampf bewegt. Da die Anwendung von Tierkraft eine der ältesten Erfindungen der Menschheit, ginge in der Tat die Maschinenproduktion der Handwerksproduktion voraus. (392)

This example makes clear that for Marx, it is precisely the tool end of the machine that differentiates it from a simple tool, and not the source of the power.²⁸ The working machine, in replacing the human worker at the site of application of the “active organs,” constitutes the

27 “All fully developed machinery consists of three essentially different parts, the motor mechanism, the transmitting mechanism and finally the tool or working machine. [...] It is this last part of the machinery, the tool or working machine, with which the industrial revolution of the eighteenth century began.” (494)

28 For a thought-provoking historicization of the tripartite discussion of machines, see Müller-Sievers (14-15).

machine in the first place, because it overcomes the organic limits of the human body. “Die Anzahl von Arbeitsinstrumenten, womit er gleichzeitig wirken kann, ist durch die Anzahl seiner natürlichen Produktionsinstrumente, seiner eignen körperlichen Organe, beschränkt. [...] Die Anzahl der Werkzeuge, womit dieselbe Werkzeugmaschine gleichzeitig spielt, ist von vornherein emanzipiert von der organischen Schranke, wodurch das Handwerkszeug eines Arbeiters beengt wird” (394). Thus the distinction between the tool and the machine is both a technological one – the machine allows for a much greater scale unimpeded by the organic limits of the human body – and a political-economic one, in that the machine, thus unimpeded, facilitates and demands an intensification of the absorption of value from living labor in the production process.²⁹ While the basic conditions of human existence necessitate a metabolic interplay between the organic human body and nature as the “inorganic human body,” the liberation from the “organische Schranke” of the human body comes to constitute an organic inversion as well, resulting in the bodily incorporation of the human worker as a conscious appendage in the machine system and the violent rupture of the natural limits of the working day.³⁰

So it is not just that, in replacing the human worker as a tool-wielder, the machine now comes into competition with this worker, or even that, in reducing the human worker to a machine-minder, it makes the human into a machine; both of these are common tropes in nineteenth century technological discourse and can be found in Marx’s own early writings. In the

29 The relevant sections in *Kapital I* would be, in addition to chapter 13, the sections on absolute and relative surplus value, especially chapters six through ten (214-340). See also Fine and Saad-Filho (40-46) and Bottomore (331-332 and 528-531).

30 “Wenn die Maschinerie das gewaltigste Mittel ist, die Produktivität der Arbeit zu steigern, d.h. die zur Produktion einer Ware nötige Arbeitszeit zu verkürzen, wird sie als Träger des Kapitals zunächst in den unmittelbar von ihr ergriffenen Industrien zum gewaltigsten Mittel, den Arbeitstag über jede naturgemäße Schranke hinaus zu verlängern. [...] Als Kapital, und als solches besitzt der Automat im Kapitalisten Bewußtsein und Willen, ist es daher mit dem Trieb begeistert, die widerstrebende, aber elastische menschliche Naturschranke auf den Minimalwiderstand einzuzwängen.” (*Das Kapital I*, 425)

Economic and Philosophic Manuscripts, for example, he writes, “Die Maschine bequemt sich der Schwäche d[es] Menschen, um den *schwachen* Menschen zur Maschine zu machen –” (137). Rather, at the site of the organ that can now be used regardless of the organic limitations of the human, an inversion takes place: the human laborer becomes the organ of an organ. Breaking the organic limits on the use of tools allows for a monstrosity of scale, work performed by systems rather than organisms, in which human, living labor is reduced to the role of minder, as in this passage from *Das Kapital*.

Als gegliedertes System von Arbeitsmaschinen, die ihre Bewegung nur vermittelt der Transmissionsmaschinerie von einem zentralen Automaten empfangen, besitzt der Maschinenbetrieb seine entwickeltste Gestalt. An die Stelle der einzelnen Maschine tritt hier ein mechanisches Ungeheuer, dessen Leib ganze Fabrikgebäude füllt und dessen dämonische Kraft, erst versteckt durch die fast feierlich gemeßne Bewegung seiner Riesenglieder, im fieberhaft tollten Wirbeltanz seiner zahllosen eigentlichen Arbeitsorgane ausbricht. (402)

The corporeal inversion means that the body at issue is no longer the human body but the monstrous body of the machine system whose limbs, or “working organs,” include both human laborers and the individual working machines. Transgression of, or emancipation from, the organic limits of the human body yields a monstrosity of strength, scope, and size. For further elaboration of this *mechanisches Ungeheuer* that incorporates and appropriates living labor as its own organs, one must turn to the so-called “Fragment on Machines” from the *Grundrisse*.

The fragment on machines occurs in the context of a lengthy discussion of fixed capital, i.e. the means of production, such as machines, that do not materially reenter the circulation process.³¹ Analyzing the increasing importance to capitalism of fixed capital, Marx writes:

31 The distinction between fixed and circulating capital was one Marx had adopted from the classical political economists, and is prevalent throughout the *Grundrisse*; by the first volume of *Capital*, Marx will have shifted to the terminology of constant and variable capital, a change that will come to have important implications. Where the distinction between fixed and circulating capital pertains to the sphere of circulation, the later difference between constant (capital that merely transfers its own value to the commodity without adding a surplus) and variable capital (labor power, which adds a surplus to the value of the commodity) pertains to the production process. For more on these terms, see Bottomore (68-71) and Harvey (127-134).

In den Produktionsprozeß des Kapitals aufgenommen, durchläuft das Arbeitsmittel aber verschiedene Metamorphosen, deren letzte die *Maschine* ist oder vielmehr ein *automatisches System der Maschinerie* (System der Maschinerie; das *automatische* ist nur die vollendetste adäquateste Form derselben und verwandelt die Maschinerie erst in ein System), in Bewegung gesetzt durch einen Automaten, bewegende Kraft, die sich selbst bewegt; dieser Automat bestehend aus zahlreichen mechanischen und intellektuellen Organen, so daß die Arbeiter selbst nur als bewußte Glieder desselben bestimmt sind. (*Grundrisse* 592)

If in preindustrial production the tool had been a part of the production process characterized primarily by human labor, here it is the laborer who is used by the machine. Again the ambiguity of “organ” is significant. The human worker is literally incorporated into the machine system as a conscious organ, or more precisely as a conscious linkage between organs, and by the same token becomes an instrument of the instrument.

Nicht wie beim Instrument, das der Arbeiter als Organ mit seinem eignen Geschick und Tätigkeit geseelt, und dessen Handhabung daher von seiner Virtuosität abhängt. Sondern die Maschine, die für den Arbeiter Geschick und Kraft besitzt, ist selbst der Virtuose, der eine eigne Seele besitzt in den in ihr wirkenden mechanischen Gesetzen und zu ihrer beständigen Selbstbewegung, wie der Arbeiter Nahrungsmittel, so Kohlen, Öl etc. konsumiert (*matières instrumentales*). Die Tätigkeit des Arbeiters, auf eine bloße Abstraktion der Tätigkeit beschränkt, ist nach allen Seiten hin bestimmt und geregelt durch die Bewegung der Maschinerie, nicht umgekehrt. (*Grundrisse* 593)

The element of human labor, formerly the body that appropriated from nature with its natural or artificial organs, is now itself literally incorporated as an organ into the machine body. With this corporeal inversion comes an inversion in instrumentality marked by an externalization and alienation of soul, skill, and activity. Where previously the worker had controlled and guided the tool, here it is the human worker and his activity that is hemmed and regulated by the mechanical laws of the machine:

Der Produktionsprozeß hat aufgehört Arbeitsprozeß in dem Sinn zu sein, daß die Arbeit als die ihn beherrschende Einheit über ihn übergriffe. Sie erscheint vielmehr nur als bewußtes Organ, an vielen Punkten des mechanischen Systems in einzelnen lebendigen Arbeitern; zerstreut, subsumiert unter den Gesamtprozeß der Maschinerie selbst, selbst nur ein Glied des Systems, dessen Einheit nicht in den lebendigen Arbeitern, sondern in

der lebendigen (aktiven) Maschinerie existiert, die seinem einzelnen, unbedeutenden Tun gegenüber als gewaltiger Organismus ihm gegenüber erscheint. *In der Maschinerie tritt die vergegenständlichte Arbeit der lebendigen Arbeit im Arbeitsprozeß selbst als die sie beherrschende Macht gegenüber, die das Kapital als Aneignung der lebendigen Arbeit seiner Form nach ist.* (*Grundrisse* 593, some italics added)

With industrial production, the working machine transcends the organic limitations of the human organism, allowing for the proliferation of a monstrous system of automated machinery that incorporates human labor as one of its many organs. The objectified, past labor represented in the machine and material inputs come to dominate the living labor of the human workers, yet crucially, this domination corresponds to a formal characteristic of capital.

Marx's footnote from page 392 of *Das Kapital* had proposed a Darwinian lineage for human technology,³² capitalism thus makes for a strange evolution indeed by flipping the relationship between organism and organ inside-out. The inversion described in *Grundrisse* is also explicit in *Das Kapital*:

Die Maschinerie wird mißbraucht, um den Arbeiter selbst von Kindesbeinen in den Teil einer Teilmaschine zu verwandeln. [...] In Manufaktur und Handwerk bedient sich der Arbeiter des Werkzeugs, in der Fabrik dient er der Maschine. Dort geht von ihm die Bewegung des Arbeitsmittels aus, dessen Bewegung er hier zu folgen hat. In der Manufaktur bilden die Arbeiter Glieder eines lebendigen Mechanismus. In der Fabrik existiert ein toter Mechanismus unabhängig von ihnen, und sie werden ihm als lebendige Anhängsel einverleibt. (445)

The conceptual and material inversions and incorporations are reinforced by the repetition of the chiasmic parallelisms of this passage in a way that solidifies the overarching idea that the factory system under capitalism represents a structural inversion of the basic conditions of human labor

32 "Eine kritische Geschichte der Technologie würde überhaupt nachweisen, wie wenig irgendeine Erfindung des 18. Jahrhunderts einem einzelnen Individuum gehört. Bisher existiert kein solches Werk. Darwin hat das Interesse auf die Geschichte der natürlichen Technologie gelenkt, d.h. auf die Bildung der Pflanzen- und Tierorgane als Produktionsinstrumente für das Leben der Pflanzen und Tiere. Verdient die Bildungsgeschichte der Produktiven Organe des Gesellschaftsmenschen, der materiellen Basis jeder besondern Gesellschaftsorganisation, nicht gleiche Aufmerksamkeit? Und wäre sie nicht leichter zu liefern, da, wie Vico sagt, die Menschengeschichte sich dadurch von der Naturgeschichte unterscheidet, daß wir die eine gemacht und die andre nicht gemacht haben? Die Technologie enthüllt das aktive Verhalten des Menschen zur Natur, den unmittelbaren Produktionsprozeß seines Lebens, damit auch seiner gesellschaftlichen Lebensverhältnisse und der ihnen entquellenden geistigen Vorstellungen." (392-393)

and existence. Furthermore, since Marx repeatedly insists that machine production is the materialization of the essence of capitalist production, the physical appropriation of the laborer into the machine system must be seen as the physical manifestation of a prior formal appropriation of living labor in the labor process. In Marx's analysis, capitalism can be defined as the mode of production that appropriates living labor because, unlike production for use-values, in which labor appropriates from nature as part of the human "metabolism" with nature, commodity production is geared towards the production of surplus value. From the standpoint of capital, the specific type of labor being performed is as irrelevant as the specific product being produced: the commodity is just a vehicle for surplus value, and the production process is just a way for the product to "soak up" living labor and, with it, value.³³ "Die Aneignung der lebendigen Arbeit durch die vergegenständlichte Arbeit – der verwertenden Kraft oder Tätigkeit durch den für sich seienden Wert –, die im Begriff des Kapitals liegt, ist in der auf Maschinerie beruhenden Produktion als Charakter des Produktionsprozesses selbst, auch seinen stofflichen Elementen und seiner stofflichen Bewegung nach gesetzt" (*Grundrisse* 593). Here "vergegenständlichte Arbeit," or objectified labor (which Marx will later come to call "dead labor"), means the product of past labor, namely, what enters the production process as, say, raw materials or the instruments of production. "Lebendige Arbeit" is the actual labor at work in the production process. This inverted appropriation "lies in the concept of capital" because, as Marx discusses in detail in the chapter from *Das Kapital* on "Der Arbeitsprozeß und der Verwertungsprozeß," capital is concerned with the production of exchange values; the production of use-values, that is, of specific things with specific functions that serve specific needs, is only

33 *Das Kapital I*, 204.

incidental.³⁴ In lay terms, capital exists to make a profit, not to provide goods.³⁵

The physical incorporation of the human worker as an instrumental component of machinery is the material expression of a formal process whereby specific labor to produce specific use-values is incorporated as a qualitatively indifferent moment in the service of producing surplus-value. To use the language of *Kapital*, the monstrous inversion detailed in the “Fragment on Machines” is a particularly visceral correlate of the appropriation of the production process by the valorization process. By the time this appropriation appears in volume I of *Das Kapital*,³⁴ the vocabulary has changed but the gist has not: “Durch seine Verwandlung in einen Automaten tritt das Arbeitsmittel während des Arbeitsprozesses selbst dem Arbeiter als Kapital gegenüber, als tote Arbeit, welche die lebendige Arbeitskraft beherrscht und aussaugt” (446). In both cases, the worker is dominated by the product of past labor; capital, in the form of dead labor or an automatic system of machinery, absorbs the living labor as surplus value. More precisely, the way the machine in the factory system incorporates living labor, becomes the agent of the process, and even absorbs the collected social knowledge and skill necessary for production³⁶ serves as the physical, material embodiment of the way that capitalism by its very

34 In this I follow the reading of Moishe Postone, who sees Marx as primarily providing a critique of labor in capitalism rather than a critique of capitalism from the standpoint of labor, which for Postone is the view of “traditional Marxism.”

35 “Das Aufnehmen des Arbeitsprozesses als bloßes Moment des Verwertungsprozesses des Kapitals ist auch der stofflichen Seite nach gesetzt durch die Verwandlung des Arbeitsmittels in Maschinerie und der lebendigen Arbeit in bloßes lebendiges Zubehör dieser Maschinerie als Mittel ihrer Aktion. [...] [D]er in der Maschinerie vergegenständlichte Wert erscheint ferner als eine Voraussetzung, wogegen die verwertende Kraft des einzelnen Arbeitsvermögens als ein unendlich kleines verschwindet; durch die Produktion in enormen Massen, die mit der Maschinerie gesetzt ist, verschwindet ebenso am Produkt jede Beziehung auf unmittelbaren Gebrauchswert; in der Form, wie das Produkt produziert wird, und in Verhältnissen, worin es produziert wird, ist schon so gesetzt, daß es nur produziert ist als Träger von Wert und sein Gebrauchswert nur als Bedingung hierfür.” (*Grundrisse* 593-594).

36 “Die Natur baut keine Maschinen, keine Lokomotiven, Eisenbahnen, electric telegraphs, selfacting mules etc. Sie sind Produkte der menschlichen Industrie; natürliches Material, verwandelt in Organe des menschlichen Willens über die Natur oder seiner Betätigung in der Natur. Sie sind *von der menschlichen Hand geschaffne Organe des menschlichen Hirns*; vergegenständlichte Wissenskraft. Die Entwicklung des capital fixe zeigt an, bis zu welchem Grade das allgemeine gesellschaftliche Wissen, knowledge, zur *unmittelbaren Produktivkraft* geworden ist, und daher die Bedingungen des gesellschaftlichen Lebensprozesses selbst unter die Kontrolle des general intellect gekommen, und ihm gemäß umgeschaffen sind. Bis zu welchem Grade die gesellschaftlichen

logic appropriates and harnesses living labor as the source of value. In this sense, the vivid depiction of factory conditions in 19th-century England is not primarily a graphic compendium of social commentary, but rather represents the material and historical culmination of the logic of capital and value production as such. What is being inverted is more than simply the relationship between the worker and the machine, although the image of the human workers serving as the organs of their own tools certainly represents a high point in this relationship. Rather, the monstrous inversion detailed in Marx's account of the factory system goes much deeper, and must for this reason be read in dialogue with the basic condition of human labor as such as a metabolic exchange with humanity's inorganic body. The factory system's monstrous body, in which human workers only fit in as conscious linkages, is the logical fulfillment of capitalism's shift from the production of use-values in the labor process to the production of exchange-values in the valorization process, and is therefore a vivid (though not merely rhetorical) demonstration of the basic logic that incorporates living labor as the source of surplus value.

To recount the account thus far, then: I have focused on two key areas in Marx's account of labor as such and the specific form it takes under capitalism, namely the idea of *Stoffwechsel* and the relationship between bodies, organs, and environment. These two areas are intricately related, as the dynamic relationship between humans and nature that characterizes human existence as such – a process of appropriation, reworking, and incorporation – is portrayed as a metabolic circulation in a way that undermines from the outset any easy dichotomies between human and nature, body and technology. Technology itself is rather understood as a bodily process whereby natural material is worked on, becomes an added human organ, and participates in the process of production and working on nature, humanity's "inorganic body." At the same

Produktivekräfte produziert sind, nicht nur in der Form des Wissens, sondern als unmittelbare Organe der gesellschaftlichen Praxis; des realen Lebensprozesses. (*Grundrisse* 602)

time, *Stoffwechsel* establishes a logic of flows and circulation that also comes to account for – and eventually be supplanted by – the circulation of exchange values that characterizes capitalism in particular. Because capitalism is marked by the production of exchange-values in the service of creating surplus value, and thus entails for Marx a historical process of the intensification of the appropriation of living labor by dead labor, this decentering of *Stoffwechsel* as an ecological exchange culminates in the factory system, where the basic picture of human labor as such is inverted, such that human workers become conscious organs in the machine body, and agency, knowledge, and skill are externalized into the machines. For Marx, the picture certainly neither ends nor begins here. In his dialectical account, the externalization of knowledge is also a socialization of knowledge that can ultimately take on a positive function, and the role of industrial technology is not limited *to* its function in capitalism, but only limited *by* this function.

Yet this cursory sketch of the technological body in Marx’s thought already suggests two related insights. Firstly, the historical and economic specificity of his account of the labor and valorization processes make it difficult if not impossible to understand this account in terms of an energeticist paradigm, as Anson Rabinbach and Teresa Brennan do. I have already discussed some problems with Rabinbach’s historicist account. Teresa Brennan offers another example of an energeticist reading of Marx. In developing a feminist revision of Marx’s theory of value, Brennan has asserted that, because Marx relied on a strong subject/object dualism and because he privileged the role of living, subjective, human labor power in the production of profit to the exclusion of an appreciation of the productive power of nature, he cannot but overlook the fundamental contradiction of capitalism, namely that contradiction between “the reproduction time of natural energy and the time or speed of exchange for profit” (177). By ignoring the

economic motivations for Marx's reflective use of the terms "subject" and "object," and by thus effacing the difference between Marx and his predecessors, treating his account of labor power as an unreflective valorization of human labor rather than an immanent critique of this very view, an analysis like Brennan's risks falling back to the level of the classical political economists; the only difference is that the signs are reversed. If for them, labor is the sole source of value, for Brennan, labor isn't the sole source of value. Crucially, Brennan's criticism of Marx is compelled to maintain the very separation between humans, nature, and technology that Marx's own account of this relationship renders untenable. Reducing the language of "living" and "dead" labor to a simple vitalist metaphoric, Brennan writes: "But it comes down to this: labour power is living energy, and its livingness distinguishes it from constant capital, (nature and technology) which is ostensibly dead. Its value accordingly is precisely constant. Being ostensibly 'dead', nature and technology can give no more than they cost" (177). Brennan thus transforms what for Marx is a positional, relational, economically specific relationship into a fixed opposition based upon a value judgment supposedly delivered in advance. Not only does this transformation obscure the specific contribution of Marx's conception of labor power, but it relies on a preservation of a set of fixed oppositions – between subject and object, humanity and nature, humanity and technology, organisms and organs – which it was the contribution of Marx's account of technology to have problematized.

There is an economic reason for the abstraction of his concept labor-power, and it has to do with the immanent unfolding of the logic of the commodity. Human labor-power for Marx is an abstract quantity because the value of all commodities is based upon the time needed to produce them, and not because Marx was borrowing from a new discourse of thermodynamics that saw all energy expenditure as qualitatively equivalent, or because he had an anthropocentric

commitment to only the subjective aspect of the labor process, as Brennan reads him.³⁷ For many reasons, labor-power for Marx cannot be equated to energy expenditure. This realization also necessitates a more nuanced account of the relationship between discourses of the natural sciences and discourses of the human sciences than the unidirectional transfer implied by Rabinbach. Marx does not abandon *Stoffwechsel* for energy as his dominant paradigm, but capitalism does; part of his point is to show the intrinsic processes of capitalism themselves responsible for this shift of emphasis.

Secondly and more generally, the ways in which Marx's account is historically, politically, and economically specific suggest the problems with a philosophy of technology as such, outside of any specific context. The force of Marx's theory in this context is that it can

37 What the energeticist focus of Brennan's and Rabinbach's accounts share, in their reduction of labor-power to a question of energy expenditure, is that they focus only on the sphere of production at the expense of a consideration of exchange. Yet the account of surplus value is unintelligible unless one considers both circulation and production, the "freedom, equality, property, and Bentham" of the market (*Das Kapital I* 189) and the compulsion and unfreedom of the factory. Natural forces may well be "productive" in a general sense, and Marx's account acknowledges this. They cannot, however, take themselves to market. For a more recent thorough account of why Marx's theory of value does not make sense unless one considers both production and circulation, see Clover, Joshua. "Value | Theory | Crisis." *PMLA* 127.1 (2012): 107-114.

Helmut Müller-Sievers does something similar to Rabinbach by running Marx through the interpretive matrix of a guiding technological trope (in this case, the cylinder) and finding him to be deficient. The massive technological change wrought by kinematics, as depicted by Müller-Sievers, should certainly not be underestimated and it is the contribution of his book to have recovered the mechanical and rhetorical linkages enabled by this figure. Yet it is not at all clear why Marx should run afoul of this account. In suggesting that it was Marx's innate anthropocentrism that led to his suspicion of modern machines like the self-acting lathe or the slide rest, Müller-Sievers seems to want to assimilate Marx to a theory of organ projection (96-97). Yet Marx is quite clear that the slide rest replaces – but does not imitate – the human hand in the very general, functional sense of the ability to produce a given form (*Das Kapital I* 406). For Marx, the emphasis is much more on the economic factors that determine labor time (factors that cannot be reduced to the "capitalist desires to shrink the workforce" (Müller-Sievers 92), but which rather stem from heterogeneous yet immanent necessities built into the dynamics of commodity production and exchange). So while any technological advance will generate its own set of constraints on production, it misses the thrust of Marx's argument, in my opinion, to write the history of labor in the 19th century in terms of demands imposed strictly by the material. Marx in fact frequently discusses time needs imposed by the material of different processes of production, whether these are the natural cycles of agricultural production and winemaking or newer industrial phenomena of chemical production. Yet for Marx these time constraints provide a frame for struggles over value and time, but not an unambiguous determination of how work is arranged. To return to Müller-Sievers' example, the needs of the production process – the qualities of hot steel, for example (69) – may well dictate how and how quickly the material needs to be worked at a given moment (this was also true of traditional hand-smithing); yet it is other, not strictly technological conditions that govern whether the machinery is to run all night, how long the shift of the individual worker is, how many people will be assigned to one task, and what kind of safety precautions are in place.

account for the way that a human relationship to nature, mediated by artifacts and organs, can become its opposite, and this includes specific details of the picture (such as the way that labor-saving devices under capitalism tend to result in the intensification and lengthening of the working day) as well as the larger narrative of organic inversion I've reconstructed above. In this context, it is important that Marx is sensitive not just to economic nuance but also, through this nuance, to questions of agency. The awareness that the modern factory system externalizes agency and knowledge from the human laborers to the machines they serve, on both the level of graphic social detail and on a deeper functional level with roots in commodity production per se, sets Marx's account off starkly from that of Ernst Kapp. This difference stems from Kapp's failure to consider questions of economic and historical specificity, favoring instead a longer, continual ontology of technology. In narrative terms, Kapp's account seems to only ever consider the single human as an agent, even when the artifactual worlds he describes are invariably social. This inevitably results in a picture of technology where the creation and use of technology feeds back into an epistemological accumulation of knowledge such that technology is ultimately always empowering. Where Marx's account of political economy shows the fractured nature of human agency, knowledge, and technology under capitalism, Kapp's grandiose picture doesn't leave any room for specific economies, nor for consideration of the questions of agency and conflict, so that human making becomes a triumphant narrative of self-realization, from the stone hammer to the Prussian state. Yet Kapp's account of technology as organ projection is also a story of appropriation and incorporation, and the strong Hegelian influence here too means that his picture of the human troubles any easy dualisms between human and environment. It is precisely the boundaries of the organic human body that for Kapp form a productive interface between internal and external worlds, in a way that generates the progression of technology,

society, and human knowledge, and it is to his account that I now turn.

The kinematics of harmony: Ernst Kapp and organ projection

Ernst Kapp is known as one of the first thinkers to attempt a systematic theory of technology as such, and his 1877 *Grundlinien zur Philosophie einer Technik* stands as a foundational text in the history and theorization of technology. Like Marx, Kapp left Germany in the aftermath of the 1848 revolution; unlike Marx, he went further abroad, settling as a pioneer in one of the German “Latin Settlements” in central Texas. His nearly two decades there left their mark on his work,³⁸ and in 1865 he returned to Düsseldorf, where he took up a position as *Privatdozent* and wrote *Grundlinien*. His early liberal aspirations found, in that book, comfortable accommodation within a theory of the Prussian state as the fullest teleological self-realization of the dialectical subject. Because his theory of organ projection grapples with the relationship between the mechanical and the organic across the interface of the working human body, his account is essential to setting the stage for a consideration of early 20th-century technological imaginaries. For Kapp, the human body is not only the origin of all tools, but exists in a reciprocal relationship with technology, since the unconscious projection of organs as tools into the physical world provides the structures and analogies necessary for understanding the human body. In this upward spiral of internalization and externalization, technology and knowledge, projection and realization, the human is, as Kapp says in an early methodological section, “the measure of things.”³⁹ Kapp’s work is interesting for the way that it relates bodily action and dynamics of thought: the dialectic he unfolds between tools, organs, and knowledge,

38 Most explicitly in *Grundlinien* in the depiction of the American ax, a tool superior for Kapp than its German cousin because of its closer adherence to the laws of harmony derived from the proportions of the human body (241-244).

39 “Der anthropologische Maasstab” (1-28)

is an epistemological one as much as it is a historical, material, and technological one. Yet his circular insistence on an absolute primacy of the human and his theory's blindness towards social antagonism, class dynamics, or any sort of intersubjective relations at all apart from the harmonious *Gliederung* of castes means that, for all its inventiveness in bringing different strands of contemporary science together to create a total picture of the human, his account remains curiously stuck in the 19th century, if one considers the political imaginary that results from his narrative of human progress.⁴⁰ In this section, then, I will reconstruct Kapp's theory of technology as organ projection, with a particular emphasis on the slippage between morphology and metaphor, in order to show how his anthropomorphic theory of technology results in a theory of society and the state that privileges harmony, discipline, and subordination.

Grundlinien einer Philosophie der Technik is organized in part according to a developmental logic. While the book begins with the human ("Der anthropologische Maasstab") and ends with "Der Staat," most chapters unfold the logic of the thesis of organ projection in view of technologies of increasing complexity and the relationship between the human body and the perception or measuring of the external world. Other chapters along the way present excursions on topics such as language, the golden ratio, and the implications of kinematics in a way that reinforces what must be described as an anthropocentric cosmology.⁴¹ The human being is not just a culmination of a natural development for Kapp, but is on every level the measure of all things. His account is a history of *Geist*, but it ties this history to human corporeal morphology, proportion, and movement. Like Marx, Kapp emphasizes the material, bodily

40 And given the strong teleological drive of his theory, without which the basic features of organ projection would not really make sense, it seems that one cannot avoid considering the politics of his anthropology.

41 The names of the chapters of Kapp's book are instructional: "I. Der anthropologische Maasstab; II. Die Organprojection; III. Die ersten Werkzeuge; IV. Gliedmaassen und Maasse; V. Apparate und Instrumente; VI. Die innere Architektur der Knochen; VII. Dampfmaschine und Schienenweg; VIII. Der elektromagnetische Telegraph; IX. Das Unbewusste; X. Die Maschinentchnik; XI. Das morphologische Grundgesetz; XII. Die Sprache; XIII. Der Staat."

aspects of the human subject:

Das Selbst hat aufgehört, der Inbegriff eines nur geistigen Verhaltens zu sein. Eine wunderliche Täuschung geht mit der Einsicht zu Ende, dass der leibliche Organismus der nächste und der eigentliche Bestand des Selbst ist. [...] Erst mit der Gewissheit der leiblichen Existenz tritt das Selbst wahrhaft ins Bewusstsein. Es ist, weil es denkt, und es denkt, weil es ist. 'Selbst,' nach der Ableitung des Wortes von *si liba*, heisst "Leib und Leben."⁴² Mit dieser seiner Grundbedeutung ist nunmehr vollständig Ernst zu machen. (2)⁴³

Broadly working in the aftermath of the Cartesian dualism between mind and body, Kapp's theory of organ projection posits a reciprocal relationship between the "Aussenwelt" and "Innenwelt," externalization and internalization. The human fashions a tool in unconscious imitation of a bodily organ. The hand holding the stone, for example, serves as the model for a primitive hammer, each new perfection and advancement of which maintains the original organic impulse. Other examples Kapp dwells on include the relationship between the invention of achromatic lenses and insights into ocular anatomy, stringed musical instruments, principles of harmonic frequency and the organ of Corti in the inner ear, the pump and the heart, the steam engine and metabolism, the telegraph and nervous system, and so on. Technological artifacts, existing in the world for humans to see and contemplate, in turn advance human consciousness and self-consciousness, as the tools provide the models for understanding mechanical principles and, by extension, anatomical structures in the human body.

42 Not actually. DTV's *Etymologisches Wörterbuch des Deutschen* has the following gloss: "Man zieht gewöhnlich venetisch *sselboi-sselboi* Plur. 'sich selbst' (vgl. ahd. *der selbselbo* 'der sich selbst gleiche') heran und denkt an eine Verbindung des Pronominalstamms ie. **se-* (s. *sich*) mit dem in Pronominalbildungen auftretenden *l-* Formans (vgl. lat. *talis* 'so beschaffen, solcher', *qualis* 'wie beschaffen, von welcher Art'), die um das Suffix ie. *-bho-* 'von der Art des Grundworts seiend, dessen Qualität habend' (s. *Sippe*) erweitert ist." Pfeifer, Wolfgang. *Etymologisches Wörterbuch des Deutschen*. Munich: Deutscher Taschenbuch Verlag, 2005. 1276. Of course, the etymology Kapp provides is all the more interesting for being incorrect. I haven't been able to determine the source of Kapp's etymology, but it doesn't seem to be from the Grimms' *Deutsches Wörterbuch*, which doesn't mention a possible bodily origin for "selbst."

43 The bodily nature of the human subject structures, in a way, Kapp's book from beginning to end. In a later discussion of the relationship among the unconscious, consciousness, the self-consciousness, he writes, "Da nun das Unbewusste gleichermaassen in der Leiblichkeit wie im Geist zur Erscheinung kommt, so ist das Selbstbewusstsein nicht nur Bewusstsein vom Subject der Geistesthätigkeit, sondern ebensowohl Bewusstsein von dem das Selbst wesentlich constituirenden Leibesleben." (163)

Das *Selbstbewusstsein* erweist sich demnach als Resultat eines Processes, in welchem das Wissen von einem Aeussern zu einem Wissen von einem Innern umschlägt. Dieses Wissen, wieder auf das Aeussere sich kehrend, und dessen Kenntniss erweiternd, giebt hinwiederum neue Aufschlüsse über das Innere und producirt in dem endlosen Herüber und Hinüber der Orientirung über die Welt und der Selbstorientirung überhaupt den Inhalt alles Wissens, die *Wissenschaft*. (22)

Knowledge is here positioned as the movement between the exterior and the interior of the human body, a self-magnifying process that results in self-consciousness and science. For Kapp, this is a dialectical process that leads from the first rudimentary stone tool to modern anatomical insights about the nervous system and spongy microscopic structure of Cancellous bone. After briefly recounting the history of the concept of the *anthropologische Maasstaab* in Western philosophy, Kapp describes the steady accumulation of knowledge and the relationship between consciousness and self-consciousness in this way: “Der *im Denken von sich ausgehende* Mensch ist die Voraussetzung des zu sich selbst zurückkehrenden Menschen. So ist das Denken gleich dem Athemholen ein Process ununterbrochenen Einnehmens und Ausgebens” (12). This movement of departure and return also stands for the process of externalization and internalization that marks for Kapp the relationship between technology and self-consciousness.

The very way that organs and tools can model and inflect each other depends on the limits between inside and outside not being strictly coterminous with the physical boundaries of the human body, but rather being a positional and relational interplay of forms across the porous medium of the human body. Indeed it would seem that it is only the fact that the human body and its extremities can count as both “inside,” as part of the subject, and “outside,” as part of the environment, that makes the unconscious morphological borrowing and reflective conceptual incorporation that comprise organ projection possible in the first place. A longer passage will be useful here.

Man hat sich vor Allem über den Begriff “Aussenwelt” vollständig klar zu werden. Das “In uns” und das “Ausser uns” ist selbst für die Sinnesauffassung nicht so glatt geschieden, wie gewöhnlich angenommen wird. Hier giebt es ein streitiges Grenzgebiet. Das Ich dictirt, was ihm, je nach gegebenen Relationen, als Aussen gilt.

Einmal beansprucht das nur in einem bestimmten leiblichen Organismus oder vielmehr nur als Organismus existirende Ich den gesamten leiblichen Gliederbestand als Innenwelt, ein andermal erklärt es Hand und Fuss zur Aussenwelt gehörig, für “*Extremitäten*,” welche gleich anderen natürlichen Dingen, Steinen etwa und Pflanzen, ebenfalls sinnlich wahrgenommen werden.

Und doch gehört ohne Frage der ganze Leib auch wieder zur inneren Welt. Wird auch das Gehirn als alleiniger Denksitz angesehen, als das intellectuelle Innere, so dürfen darum z. B. Herz und Rückenmark nicht ausser Acht bleiben, denn nimmermehr vermag ein Gehirn für sich allein zu denken, ihm hilft ja der *ganze Organismus* unbewusst mitdenken.

Zunächst ist für uns wichtig eine andere Unterscheidung im Begriff “Aussenwelt,” sofern für diese die übliche Bezeichnung “Natur” keineswegs ausreicht.

Zur Aussenwelt des Menschen gehören nämlich eine Menge Dinge; welche, abgesehen davon, dass die Natur allerdings das Material für sie liefert, mehr Menschen- als Naturwerke sind, und welche als Kunstproducte im Unterschied von Naturproducten den Inhalt der Culturwelt ausmachen. Was ausserhalb des Menschen ist, besteht demnach aus Natur- *und* Menschenwerk. (23-24)

In his suggestion that, even for perception, corporal boundaries are not absolute but rather position the body ambiguously vis-a-vis the perceiving subject, Kapp looks ahead to later influential theories of perception and embodiment such as those of Ernst Mach and Helmuth Plessner. More significantly for the present context, the terminology of the “Aussenwelt” and “Innenwelt” unsettles any strict separation between human subject and non-human nature. Not only are the extremities rightly perceived to belong to the external world, available to perception like other phenomena, but much of what comprises the external world are in turn cultural, human-made artifacts. This result of the externalization involved in human production becomes part of a surrounding environment, cognition of which then feeds back into the formation of human self-consciousness and knowledge. When making a primitive tool like a stone hammer, the projection from the organ the tool is implicitly modeled upon – in this case the arm with the

clenched fist or stone at its end⁴⁴ – is an unconscious one. Yet for Kapp, the very act of thought involves a *Vorstellen* that is already a kind of projection. After reviewing various definitions of “Projection,” he defines it spatially, as a kind of externalization in a way that pertains to both making and thinking: “In allen diesen Fällen ist Projiciren mehr oder weniger das Vor- oder Hervorwerfen, Hervorstellen, Hinausversetzen und Verlegen eines Innerlichen in das Aeussere. Projection und Vorstellung sind dem Wortlaut nach eigentlich wenig verschieden, insofern der innerliebste Act des Vorstellens nicht frei ist von einem dem vorstellenden Subject gleichsam vor Augen gestellten Object” (30).

Yet what this movement of imagination, projection, and realization also means is that, for Kapp, nothing can be made by the human that isn’t already ‘in’ the human in some sense. The anthropocentrism and anthropomorphism of his theory are necessarily linked in a way that already suggests the methodologically circular nature of the teleological progression he describes. A short description of the progression between human production and human self-consciousness illustrates the tautological pitfalls of a conception of a dialectics that sees human technological behavior purely in terms of an externalization:

Nachdem hierauf das Selbstbewusstsein, auf Grund seiner Unterscheidung vom Unbewussten und vom Bewusstsein, in seinem Zustandekommen durch die äussere Welt der Objecte, in deren Bereich namentlich die freien mechanischen Gestaltungen gehören, beleuchtet war, erfolgte der Rückschluss auf die Menschenhand, aus der alles Geräte und Werkzeug hervorgeht, und überhaupt auf den leiblichen Organismus, der, wie er sich selbst aufbaut, stets auch nur sich selbst producirt und projicirt, nach dem Ursatz, dass aus Jeglichem immer nur das, was in ihm liegt, heraustreten kann! (28)

This picture is far removed from a Hegelian or Marxist version of the dialectic. By excising the question of intersubjectivity, Kapp also sidesteps the encounter with alterity that characterizes the

44 “Ist demnach der Vorderarm mit zur Faust geballter Hand oder mit deren Verstärkung durch einen fassbaren Stein der natürliche Hammer, so ist der Stein mit einem Holzstiel dessen einfachste künstliche Nachbildung. Denn der Stiel oder die Handhabe ist die Verlängerung des Armes, der Stein der Ersatz der Faust” (42).

former's work and the problems of alienation and conflict uncovered by the latter. Kapp's picture of a historical dialectic is a tautology of self-fulfillment, where what is ultimately produced is merely a realized version of what was latent from the beginning.⁴⁵ This allows him to frame human history as the culmination and meaning of natural history in a different way than Marx's more nuanced picture of human action as a form of nature acting upon itself:

Wie in der embryonalen Zelle der erwachsene Mensch als Uranlage vorhanden ist, so ist die Idee des Menschen der Keim, oder die Uranlage der ganzen organischen Schöpfung. Wie immer ist das Ziel zugleich der Uranfang, und der Uranfang zugleich Zweck und Ziel der Entwicklung, diese selbst die Einheit eines Weiterschreitens sowohl nach rückwärts wie nach vorwärts – die alte schon von Aristoteles ausgesprochene Wahrheit: 'Das der Entstehung nach Spätere ist der Idee und der Substanz nach das Frühere.' (20)⁴⁶

For Kapp, the human is the origin and the end of all things. As the crown of organic creation, the human body – unconscious source of mechanical principles and forms, embodiment of mathematical harmony⁴⁷ – is also the idea that guides the unfolding of that creation from the start.

This more metaphysical side of the theory of organic projection indicates a deeper ambivalence in Kapp's theory between the morphological emphasis on the way that technology is modeled after the *form* of human organs, and a more symbolic connection between the world of human products and the natural world. This ambivalence can be seen in Kapp's threefold use of the human hand. As described, the first tools Kapp mobilizes for his account are primitive

45 The concept of latency is important to his understanding of the relationship between unconsciousness and self-consciousness, since unconsciousness seems to be that which is simply not yet conscious; the directionality of the progression of knowledge also implies a directionality of externalization. The unknown is that which is not yet known, but awaits knowledge and externalization. "Da von einem Unbewussten überhaupt nur insofern die Rede sein kann, als wir uns bewusst werden, dass ein Unbewusstes ist, und dass unser Bewusstsein nach unbewusst in uns wirkenden Vorgängen zu Tage tritt, so ergibt der Mittelbegriff des Bewusstseins die Einheit von Selbstbewusstsein und Unbewusstsein in der Weise, dass unter Geist die sich ihrer bewusst gewordene Seele, unter Seele der im Unbewussten latente Geist zu verstehen ist." (160)

46 Intriguingly, however, expressions like these of Kapp's teleological solipsism vaguely prefigure later developments in theoretical biology, such as the reappropriation of the notion of entelechy by Hans Driesch or Ernst Haeckel's dictum that ontogeny recapitulates phylogeny.

47 See chapter XI (209-277).

hammers and axes. These come about through a natural, unconscious extension of the form and function of the working hand.⁴⁸ Yet the hand is not just the model for primitive tools, but the origin of a technological stance as such. The relationship for Kapp between the hand and technology is not just analogical, but also metonymic:

Unter den Extremitäten gilt die Hand wegen ihrer dreifachen Bestimmung im verstärkten Sinne als Organ. Einmal nämlich ist sie das angeborene Werkzeug, sodann dient sie als Vorbild für mechanische Werkzeuge und drittens ist sie als wesentlich beteiligt bei der Herstellung dieser stofflichen Nachbildungen, wie Aristoteles sie nennt, – “das Werkzeug der Werkzeuge.”

Die Hand ist also das natürliche Werkzeug, aus dessen Thätigkeit das künstliche, das Handwerkzeug hervorgeht. Sie liefert in allen denkbaren Weisen ihrer Stellung und Bewegung die organischen Urformen, denen der Mensch unbewusst seine ersten nothwendigen Geräthe nachgeformt hat. (41)

As technology advances, the ambivalence becomes more pronounced. Examples are marshaled to demonstrate the reciprocal morphological connection between products of the human hand and organs of the human body, such as the relationship between the organ of Corti in the inner ear and the harp, the eye and the camera, the nerves and telegraph wire, the bones and principles of architecture, and Kapp insists that the development of technology maintains the elementary forms of the original organ projection,⁴⁹ yet the morphological emphasis of the theory becomes strained when the book turns to technologies such as language and the state. In these cases, Kapp

48 “Unter Benutzung der in der unmittelbaren Umgebung nächst ‘zur Hand’ befindlichen Gegenstände erscheinen die ersten Werkzeuge als eine Verlängerung, Verstärkung und Verschärfung leiblicher Organe.

Ist demnach der Vorderarm mit zur Faust geballter Hand oder mit deren Verstärkung durch einen fassbaren Stein der natürliche Hammer, so ist der Stein mit einem Holzstiel dessen einfachste künstliche Nachbildung. Denn der Stiel oder die Handhabe ist die Verlängerung des Armes, der Stein der Ersatz der Faust Es ist die Gruppe der Hämmer, Aexte und deren nächste Formen aus der Steinzeit, auf welche wir mit Rücksicht auf deren hervorragende Bedeutung die Auswahl einiger Abbildungen von Werkzeugen beschränken.” (42)

49 “Die bisher aus einem unübersehbaren Vorrath herausgerissenen Beispiele werden genügend darthun, dass die elementare Beschaffenheit des Werkzeugs in allen spätern Metamorphosen des Gegenstandes wieder zu erkennen ist.

“Die Producte der gesteigertsten Industrie verleugnen nicht ihren Ausgang und ihre wesentliche Bedeutung. Die Dampfmahlmühle und die Steinhandmühle des Wilden sind eben Vorrichtungen zum Mahlen. Die Seele beider ist und bleibt der Mahl- oder Mühlstein, und die beiden concav und convex zusammenpassenden Feldsteine, sie waren die erste Vorrichtung zum Ersatz der die Körner zerreibenden Mahlzähne des Gebisses. In allen Transformationen der Wasser-, Wind- und Dampfmühlen ist der Theil, welcher sie zu dem macht was sie sind, der Mahlstein, der nämlich, wäre er auch wie in der eisernen Handmühle durch Metallscheiben ersetzt.” (47)

must instead foreground the importance of self-consciousness and the teleological progression of *Geist*.⁵⁰ Despite the element of analogy involved in the idea of organ projection, Kapp insists it is not merely a question of analogy, but that there are deeper causal principles at play, linking the products of human invention with the anatomical intricacies of human organs.⁵¹ The organ of Corti in the inner ear and the principles of tonal frequency made manifest in the harp or piano are not just accidentally similar, but are connected in a deeper way.⁵² As he writes, “Der Rapport zwischen der mechanischen Vorrichtung und einem bestimmten organischen Gebilde ist prädestinirt. So finden sich Lupe und Auge das eine im anderen, die schwingende Saite und das Ohr, das Pumpwerk und das Herz, die Pfeife und der Kehlkopf, der Brückenträger und der Oberschenkelknochen, ebenso wie Handwerkzeug und Hand” (122-123).

The basic working principles of organs and tools are due, in Kapp’s account, evidently not to the fact that forms that work based on patterns or principles of nature, whatever their origin, are preserved and modified, but to a deeper teleological convergence that links mechanical perfectibility and organic evolution.⁵³ What this means is that the concept of organic projection is also gradually unmoored from the evidence of formal similarity; what is projected is

50 “Aber nicht allein in dieser stofflichen Welt, sondern auch da, wohin der Schluss unserer Betrachtung drängt, in der Welt des Geistes, die uns, mit *C. G. Carus* zu reden, einen ‘mit dem palpablen Gliederbau in Substanzeinheit sich darlebenden spirituellen Organismus zum Bewusstsein bringt,’ breitet sich ein Analogon aus, dessen logische *Momente*, zwar nicht so sinnfasslich wie die *Movimente* der harten Materie, aber um so durchsichtiger und bleibender in stets höheren Graden der Energie des Selbstbewusstseins teleologisch zur Erscheinung kommt.” (91)

51 “Demgemäss hat alles Spielen der Phantasie mit beliebigen durch ‘gleichwie,’ ‘gleichsam,’ ‘gewissermaassen’ eingeführten Vergleichen der Thatsache der Organprojection Platz zu machen. Denn sie ist es, auf deren Grund die Lehre von den Tonempfindungen den Faden entdeckt hat, an dessen Führung die weitere Forschung im ‘Labyrinth’ des Gehörsinnes vor Verirrung geschützt ist.” (91)

52 Quoting Helmholtz, Kapp writes, “‘Ein solches Miniaturclavier mit Nerven ist in der That die *Schnecke*, die wir im Ohre haben’” (86).

53 “So entspricht der *organischen Entwicklungstheorie* eine *mechanische Vervollkommnungspraxis* vom Steinhammer des Urmenschen aufwärts durch alle Werkzeuge, Apparate und Maschinen einfacherer Construction hindurch bis zu demjenigen complicirten Mechanismus, in welchem man die *Mustermaschine* anerkennt, deshalb weil sie von der Wissenschaft gewürdigt ist, als Werkzeug und als eine Art physikalischen Apparates zum Verständniss der Wechselwirkung der Naturkräfte und der Lebensvorgänge im Organismus zu dienen.” (133)

not the unconsciously intended physical form of a human bodily organ, but rather, the extended mental apparatus of intentionality, instrumentality, and conceptualization as such, to the point where technology is a sheer expression of spirit:

Unsere Betrachtung kommt dem Punkt immer näher, wo der Begriff des Werkzeugs über die seinen Inhalt ausmachenden, aus dem Rohstoff geformten Mechanismen hinweg seine gewöhnliche Fassung so zu erweitern beginnt, dass er sich auch auf weniger sinnlich greifbare Formirungen erstreckt, bis er schliesslich, sublimirt zum Begriff von Mittel und Werkzeug in höchster und allgemeinsten Bedeutung, seine Stoffe sich unmittelbar aus der Werkstätte des Geistes selbst liefern lässt. (150)

Likewise, language is both an example of organ projection and stands on its own because of its comparative immateriality.

Wenn nun derselbe Gang in der Entwicklung der Sprache sich kundgiebt, so unterscheidet sich diese von allen anderen Gestaltungen der Organprojection doch wesentlich dadurch, dass sie frei von den Hemmungen ist, welche der Widerstand des festen Materials dem Gestaltungsbedürfniss verursacht. In dem gefügigsten und einem gewissermaassen geisthaften Elemente sich bewegend, lässt sie das Werkzeug und die es formende organische Thätigkeit in einheitlichem Verband erscheinen. Hiervon kann man, ohne gerade paradox zu sein, sagen, das Denken sei eben so wohl Werkzeug der Sprache, wie diese das Werkzeug des Denkens. (289)

Language is necessarily a kind of organ projection, in the sense detailed earlier, of the spatial relationship between projection and thought, making and externalization. Yet this does not entirely explain how projection is to be understood at all if it can also work “unencumbered” by the very material, morphological dimension that has been necessary to its functioning (and identification) up to this point. It seems clear that Kapp wants to mark, in the chapter on language, a turning point in his account where the progression reaches a kind of fulfillment. This could be a way of accounting for the chiasmus at the end of the passage quoted above, expressing a reciprocal and dialectical relationship between thought and language, whereby each is able to use the other as its instrument. Yet given the fact that the progression of anthropological history up to this point in the book had depended on material production taking the forms of anatomical

organs, and thereby serving as visible products of human interiority (the “Innenwelt”) in the external world and thus sparking the realizations that had led to self-consciousness and, beyond, to science, it is unclear how language is able to work in a similar way through its purported immateriality, let alone why it shouldn’t have played this function earlier on. In other words, if language is able to be the tool of thought and also use thought as its own tool, the entire premise of the theory – that unconscious organ projection leads to self-conscious awareness of anatomy, science, and everything else – seems unnecessarily circuitous. Put slightly differently, the way Kapp’s accounts culminates in a few choice organic unities undermines the historical progress of organs presumably necessary to attain these unities in the first place.⁵⁴ This tension would seem to be another manifestation of the methodological circularity of his anthropocentric teleology, where the human is both the culmination of an organic drive and is presumed at the outset as a kind of guiding idea in nature.

When the discussion turns to machines, the focus shifts away from anthropomorphic projection in favor of an extended consideration of the nature of machines. Yet after a lengthy engagement with Franz Reuleaux’s theory of kinematics, Kapp arrives again at the human. As was the case with Marx, Kapp describes modern machines as assemblages that incorporate living labor, yet lacking any economic dimension and foregrounding instead kinematic motion, Kapp derives from modern machinery a symbolic justification of the modern state as a force of limitation on individual freedom. While at first glance the contemporary specificity with which he addresses machines and kinematics might seem to avoid some of the hoarier spirituality

54 “Die Sprache unterscheidet sich aber von den übrigen Gestaltungen der Organprojection sehr wesentlich dadurch, dass sie das Abbild nicht bloss einer für sich in Betracht gezogenen Organgruppe, sondern einer Totalität organischer Funktionsbeziehungen ist. Als die durchsichtige Form eines organischen Gesamtbildes würde sie, in solcher Abstraction von der auch ihr zu Gebote stehenden Technik, immerhin nur als Schemen eines Organismus gelten dürfen, *wenn nicht die Thatsache der Entwicklung der Technik durch die Sprache und der Sprache durch die Technik beide als Seiten derselben organischen Einheit erscheinen liesse.*” (308, italics added)

involved in his transfer of a material logic of projection to the domain of pure *Geist*, the function of the discussion of machines is ultimately to arrive at the state as the organic unity of human existence and the triumphant resolution of the divide between the organic and the mechanical.

Following Reuleaux, Kapp describes the machine chiefly in terms of transmission and especially in terms of the basic unit of paired elements.⁵⁵ Marx, it should be recalled, defined the machine in terms of the working end of the machine, as opposed to either the source of power or means of transmission, because the working end of the machine liberated the labor process from the organic limits of the single human body, and thereby allowed the individual worker to produce more value in a given amount of time. Where Marx thus discussed machines in terms of the changing value relationship between human bodies and labor, Kapp is more interested in the kinds of motion allowed for and limited by the machine. Where the machine becomes for Marx the materialization of the incorporation of living labor by capital, for Kapp the machine is a model of the state. The basic logic of organ projection is preserved in the development of the machine – Kapp identifies the stick spun back and forth by human hands in order to start a fire as the origin of the machine⁵⁶ – yet it should be noted that the logic has shifted somewhat. The tool is no longer the projection of a particular anatomical organ, but the idea of two connected parts in relative motion to each other is emphasized instead. Gone is the need for tools to physically resemble parts of the human body, but the developmental logic of complex from simple technologies is preserved.⁵⁷

55 “Der Grundzug der Maschine ist nämlich ihre Zusammensetzung nicht sowohl aus Element, sondern aus paarweise zusammengehörenden Körpern oder *Elementenpaaren*. Von diesen bildet eins die Umhüllungsform des anderen, so dass, wenn man das eine feststellt, das andere beweglich bleibt, *aber nur in der einzigen, dem Paare eigenthümlichen Weise*, wie dies ersichtlich ist z.B. an der Schraube und der Schraubenmutter. Die Bewegung des einen Elementes verhält sich *relativ* zu dem zugehörigen Element, *absolut* aber zu dem Punkte der räumlichen Feststellung.” (175-176)

56 “Demnach wäre also das Doppelholz des Reibholzfeuerzeuges in seiner quirlartigen Drehbewegung die allererste Maschine oder die erste Vorrichtung, welche diesen Namen verdient.” (180)

57 Kapp’s other examples of circular motion – potters’ wheels, water wheels, lathe – similarly elide the morphological requirements of organ projection, shifting the emphasis instead to the development of a kind of

Also maintained is the reflective process whereby technology illustrates facets of the human, yet here too what is illustrated is not a principle of anatomy (as it was with the organ of Corti, the lenses of the eye, or the fine structure of bones) but rather symbolic traits of the human soul. “So mögen denn Kraftschluss und Paarschluss in Zukunft ihre psycho-physische Würdigung finden, indem der in der Culturwelt vorhandene machinale Gedanke in der erklärenden Rückbeziehung auf seinen Urgrund neue Schlaglichter auf das Wesen der menschlichen Seele und auf die Geisteswelt überhaupt zu werfen berufen ist” (188).

“Kraftschluss” is the name given by Reuleaux to a mechanical configuration such as that found in a water wheel, where the axle is unsecured and would be expected to rise were it not for the counteracting weight of the water wheel itself. A “Paarschluss,” on the other hand, is a pair of elements such as found in a bolt and nut arrangement, where the connection is fully closed to outside disruptions (184). Quoting Reuleaux, Kapp identifies in the progression from the former to the latter a model of progress: “Der Fortschritt nun in der Vervollkommnung der Maschine besteht ‘in der abnehmenden Verwendung des Kraftschlusses bei zunehmender Ersetzung desselben durch den Paarschluss und den Schluss der dabei sich bildenden kinematischen Kette’” (184).

The way that the openness of the *Kraftschluss* gives way to the closed kinematic linkage of the *Paarschluss* becomes a parable of human society and a metaphysics of power and discipline.⁵⁸ The gradual perfection of machines on the kinematic level implicates an ideal of human society and reinforces the teleological motion towards a version of the Prussian state. The

circular motion from simple tools to complex machines. On the *Gedankenfigur* of circular motion in the 19th century and the kinematics of Reuleaux in particular, see Helmut Müller-Sievers, *The Cylinder: Kinematics of the Nineteenth Century* (2012)

58 On the relationship between the two kinds of pairs and their relationship to “freedom” (in an engineering sense) in Reuleaux’s work, see Müller-Sievers (34-36): “One way of describing this development in kinematic terms – and in terms provocatively contrary to liberal philosophies of history – is to chart it as the successive elimination of freedoms.” (36)

human is not merely the source of machines and technology in general, but is understood as a machine system.

Die erhabene Warte für eine weite Rundschau ist errichtet. Unter Beziehung auf die an sich unabhängig von einander wirkenden kosmischen Kräfte und auf die der Einwirkung eines Motors entgegenwirkenden, im Bestand der Maschine verborgenen Molecularkräfte, sowie mit der Erinnerung daran, dass der Kraftschluss die Form ist, in welcher ein Rest kosmischer Freiheit den machinalen Systemen beigemischt ist, wird auf das Uebergangsgebiet hingedeutet, welches aus dem ideal machinalen System in das kosmische überleitet. Fügen wir hinzu, dass dem Kosmos der Mikrokosmos eingeboren ist, und dass der Mensch selbst, wie er leibt und lebt, das ideal machinale System darstellt! (188)

In order for this culmination of the integration between the human and the machine to be realized, the literal incorporation of humans and machines must first be portrayed. Where Marx had analyzed the incorporation of the worker within the machine system as the concretization of a value relationship between living and dead labor, Kapp emphasizes by contrast the kinematic incorporation of the living body into the machine, in order to present a parable of power.⁵⁹

Yet this picture of human society as a disciplined body is not an only insight that comes about through a consideration of kinematics, but is in a way presupposed by the beginnings of labor, in Kapp's account. History begins with human labor, and recognizable history is marked by the division of labor into castes and an organization ("Gliederung") into estates.

Insofern man die Geschichte als die Aufeinanderfolge der menschlichen Arbeit auffasst, ist auch die erste Arbeit, um das Geringste davon auszusagen, der geschichtartige Anfang, und die Urgeschichte selbst lässt sich weiterhin erst von da zu erkennbarer Geschichte an, wo eine berufsgleiche Scheidung der Arbeitenden in der Arbeitstheilung zu erscheinen beginnt, und die allmälige feste Sonderung in Kasten und die staatliche Gliederung zu Ständen vorbereitet. (34)

If by definition human work and human society are characterized by static caste divisions,

59 "Bei der Analysirung der vollständigen Maschine kommt die Menschenhand selbstverständlich nach einer hiervon verschiedenen Richtung in Betracht. Sie fügt sich nämlich dem Maschinengetriebe als Organ ein, ja es theiligt der Arbeiter, z. B. am Spinnrad oder am Schleifstein, seine Gliedmaassen unter der Leitung der Willenskraft derart an dem Getriebe, dass er seinen organisch arbeitenden Körper als ein für sich bestehendes kinematisches Getriebe mit der leblos arbeitenden Maschine in geschlossene kinematische Verkettung setzt." (197)

modeled after the limbs of a human body, then we may speak of a different sort of organ projection than that involved in the development of tools, technology, and self-consciousness. This anthropocentrism is less methodologically self-aware than axiomatic. If human history is determined by human labor, and the latter in turn necessitates a fixed division into castes (rather than the more relational, antagonistic idea of classes, for example), then the version of a state that is the telos of Kapp's account cannot come as a surprise. And indeed, just as the limitation of power in order to harness it is a key feature of the modern machine, limitation and discipline come to be the hallmarks of a state, which in turn is seen as the entity that can restore balance to the unfortunate disharmonies of industrialization.

Die Extreme der Anhäufung von Lebenssäften auf Einen [sic] Arbeitspunkt und die Verödung auf allen übrigen laufen hier wie dort schliesslich stets auf Verkümmern hinaus. Das heilsame Gleichgewicht muss sich herstellen, wenn der Ueberfluss an Arbeitskräften in friedlicher Ablösung theils der benachtheiligten Agricultur zurückgegeben, theils in die durch Arbeitsmaschinen regenerirten häuslichen Werkstätten übergeleitet sein wird.

Die Dampfkräfte, welche den socialen Sturm heraufgeführt haben, sie allein können und werden ihn wieder beschwören. Allen, die da berufen sind, die schwüle Zeitfrage vorurtheilsfrei zu betrachten, wird es im Lichte der Theoretischen Kinematik⁶⁰ wie Schuppen von den Augen fallen, wenn es heisst: "*Weise Beschränkung schuf den Staat, sie allein erhält ihn und befähigt ihn zu den grössten Leistungen; Beschränkung hat uns in der Maschine allmählig die gewaltigsten Kräfte unterworfen und lenksam an unsere Schritte gefesselt.*" (201)

Without an idea of modernization that sees its disruptions as momentary breaks in an equilibrium that can be restored by the same forces that disturbed it, it is difficult to see how Kapp could have arrived at the notion of the state that he does. The greater usefulness of Marx's account of technology, compared to that of Kapp's, can perhaps also be seen in the fact that he provided a model of modernization, urbanization, and accumulation that still has analytic traction today, while it is difficult to imagine what might be salvaged from Kapp's essentially harmonious

60 i.e., Reuleaux's 1875 book, *Theoretische Kinematik*.

picture of labor crises and the relationship between agriculture, industry, and technology. Yet aside from questions of usefulness, it is essential to recognize the figure structuring Kapp's account of modernization, for in it we can see the same logic of *Gliederung* that informs the picture of castes that mark for him human labor as such.

In other words, while the emphasis on paired machine elements need not reinforce the holistic integrity of the integral body (and indeed, one can imagine many versions of the relationship between machines and bodies that disrupt the boundaries of the individual body, as in Döblin's novel discussed in my next chapter), Kapp connects the idea of kinematic linkages to the organization (*Gliederung*) of the individual body in order to reinforce its integrity and the resemblance between machines and organisms.

Das kinematische Getriebe ist der reale Fortsatz der leibhaftigen organischen Kinese,⁶¹ welche *Reuleaux* als die lebendige Arbeitsmaschine von jener als der leblosen scharf unterscheidet.

Die lebendige Arbeitsmaschine ist also, um einmal figürlich weiter zu sprechen, jedenfalls Maschine, aber sie ist *die* Maschine, welche vor allen durch Menschenhand gebildeten Maschinen vorhanden war, die allgemeine Maschine, das allen besonderen Formen der Maschinenteknik gemeinsame Ur- und Musterbild, die leibhaftige Maschine, eine aus organischen Gliederpaaren bestehende kinetische Gelenkverkettung, kurz der leibliche Organismus oder die *Idealmaschine*, mit dem Willen als eingeborenem Motor für sie selbst, und als Universalmotor für die Gesamtheit der machinalen Erzeugnisse!

Wo jedes Glied eines untheilbaren Ganzen ein elementares natürliches Werkzeug ist, da erscheint das Ganze als Gliederung. Die lebendige *kinetische Gliederung* des Organismus ist in machinaler Entäusserung *kinematische Verkettung* von Stücken und Theilen. (205)

Kapp is preserving a distinction between living organism and machine, but he is differentiating between them in order ultimately to insist on the primacy of the integral living body over the

61 In defining these terms on the previous page, Kapp had assigned the organism to the active pole and mechanism to the passive pole in this relationship. "Vorausgesetzt die Beschränkung auf das Gebiet der Artefacte, gehört daher das Wort *Kinematik* (von *κίνημα*, das Bewegte) dem Mechanismus an, wie das von uns mehrfach gebrauchte *Kinese* (von *κίνησις*, das Bewegen) dem Organismus. Diese Zerlegung des Begriffes der Bewegung in active und passive dürfte einer befriedigenden Erklärung des Verhältnisses von Organismus und Maschine wesentlich zu statten kommen." (204)) In this way he is able to both preserve the projective connection between the machine and the human hand, and also maintain the priority and agency of the organic.

machine within the shared space of their fundamental similarity. In other words, he needs to be able to both show that the machine is made in the image of man and to maintain the organic superiority of the human – in this way, the juxtaposition of *Gliederung* and *Verkettung* is both contrastive and analogical.

Furthermore, the resemblance he identifies between the organism and the machine ultimately allows for an analogy between the body and the state. This analogy is not however a rewarmed version of the older idea of the body politic, but also depends on features of organ projection and particularly the logic of externalization.⁶² By this logic, then, the state is both a technology and is itself a kind of body, with its own division of labor, its own organs fulfilling their assigned functions, and its total functional harmony: “Im Staat giebt es so viele Grundthätigkeiten wie im leiblichen Organismus. An ihnen hat er sein Bestehen, seinen Bestand, seine Stände. Sie sind ihm von der Natur vorgedacht und vorgegliedert. Ihren Reflex nach oben bilden die Fachministerien” (318).⁶³

The logic of the nexus Kapp has arrived at, connecting the conceptual and metaphorical

62 While the basic contours of organ projection up to this point, as seen in the example of the hammer, had suggested the absence or at least unimportance of social exchange and intersubjectivity, here the importance of *Gemeinschaft* makes a strong appearance, as Kapp leads the reader in short order from human action to the necessity of the state:

“Die Thätigkeit des Menschen überhaupt, auch die artefactische (*hantalunga* ahd. die Bearbeitung einer Sache) wird zur Handlung (handelunge mhd. die Behandlung, Verhandlung), zum beabsichtigten Handeln.

“Wie einem Einsiedler sein Thun oder seine Beschäftigung vorkommt, ist durchaus gleichgültig, da der Mensch nur in der menschlichen Gemeinschaft als solcher Geltung hat. Nur ihr steht es zu, mit Urtheil und Gegenhandlung das Thun des Einzelnen abzuweisen oder sich gefallen zu lassen.

“In jedem menschlichen Gemeinwesen aber setzt sich das fort, was allen Individuen das Gemeinsamste ist, der menschliche leibliche Organismus. Daher ist auch der Staat der werdende Organismus, d.h. er ist die zur *res publica* und *externa* werdende *res interna* der Menschennatur und ihre organische Totalprojection.” (309)

63 Kapp describes the social body of the state as follows: “Wie nun mit der Thätigkeit der Gliedmaassen die Sonderarbeit der Individuen, so stimmen die Functionen der grossen einheitlichen organischen Heerde (Ernährungs-, Gefäss-, Athmungs- und Nervensystem) mit der auf Arbeitsheilung basirten berufsständischen Gliederung der Massen, je nach deren Richtung auf Ackerbau, Gewerbfleiss, Handel und Pflege der Intelligenz. Auch die Erweiterung der berufsständischen Thätigkeit und ihre Fortsetzung nach aussen, sowohl die Gründung von Pflanz- und Töchteransiedlungen, das Colonialwesen, als auch das die Existenz der Gesellschaft schützende Heerwesen, haben beide ihre organischen Analoga. Diese bestehen theils in den Einrichtungen zur Fortpflanzung der Gattung, theils in dem Knochengetige, welches, in seiner nunmehr erkannten Bestimmung als Organ der Fest- und Selbständigkeit, den gliederigen Unterschied und den Aufrechthalt des Ganzen ausmacht.” (318)

fields of bodies, organs, machines, and the state, means that the state is thus also both a harmonious well-ordered whole and a model of mechanical integration, in the form of discipline. Just as the increasing perfection of the machine constrains the kinematic connections in increasingly closed paired connections,⁶⁴ the state as telos of human existence subordinates individuals to the needs and form of the whole.

Es ist eine höchst überraschende Tatsache, dass auch die Entwicklung der menschlichen Gesellschaft das nämliche Fundament hat. Es ist die Unterordnung des Einzelwillens unter den höheren, und kommt am schärfsten ausgebildet als militärische Disciplin zur Erscheinung. Dies vorausgeschickt nennen wir geradezu den Theil und Vollschluss des Elementenpaares die Disciplin der Maschine, und bezeichnen dem entsprechend die Disciplin des Heeres als Vollschluss von Befehl und Gehorsam. Wir halten ausserdem bei dieser Verwendung des Ausdrucks Disciplin dessen Doppelbedeutung fest, einerseits die paarige Uebereinstimmung der Elemente, welche sowohl die Dienstordnung der Maschine als auch die des Heeres bedingt, andererseits die Kenntniss und die Wissenschaft von der Erzeugung und Aufrechterhaltung dieser Erfolge.” (339)

The proto-Foucauldian ambivalence of “discipline” is worth noting here, because it affirms the two strands of the book that converge in Kapp’s picture of the state: from the beginning, the process of organic projection has been both a material process and an epistemological one. These two dimensions come together in a teleological fulfillment that incorporates the subject of technological organ projection – namely, the human – within that subject’s own fully realized projection. As in Marx, we have a kind of organic inversion that incorporates the human within the machine, but here the process is welcomed. And because Kapp has from the beginning insisted upon a strong anthropocentrism, the mechanical, disciplinary aspects of the state are

64 “Wie sich oben, S. 184, herausgestellt hat, beginnt die Entwicklung der Maschine mit dem Elementenpaar, dessen charakteristische Eigenschaft darin besteht, dass das eine Element die Umhüllungsform des anderen ist und dass ihre Bewegung nur in der Einen, der paarigen Aneinanderschliessung eigenthümlichen Weise vor sich gehen kann. Ist das eine Element festgestellt, so ist die Bewegung des anderen eine absolute zum Punkte der räumlichen Feststellung; ohne solche Feststellung bewegen sie sich relativ zu einander. Die Form ihrer Zusammenschliessung mag hier, je nach Befund einer nur theilweisen oder einer vollständigen Umhüllung als Theilschluss und als Vollschluss bezeichnet werden. Da nun die zwangsläufige Bewegung des theilschlüssigen Elementenpaares nie ganz sicher ist, die des vollschlüssigen aber Störungen fernhält, so beruht überhaupt auf der zunehmenden Ablösung des Theilschlusses durch Vollschluss der Fortschritt in der Vervollkommnung der Maschine.” (338-339)

recuperated within a larger, transcendental organic logic. Notably, however, the organic quality of the state is due precisely to its status as the expression of human action and purposes:

Wie nun im Einzelorganismus, dessen ursprünglich anorganische oder chemische Bestandtheile kraft der organischen Idee andere Verbindungen eingehen, als sie je im Bereiche der Chemie möglich sind: so gewinnt auch der stoffliche Bestand des Staates, sein Grund und Boden nämlich und sein gesammter technischer Inhalt, in der Betheiligung an organischem Leben eine Bedeutung, welche ihn wesentlich von allem dem unterscheidet, was nie mit menschlichen Zwecken in Berührung war. (343)

Human historical existence is by definition an existence in the context of the state for Kapp, and the state, as the depository of all human action and organization, has the organic qualities of the whole, despite the fact that it is also a technological artifact made by humans.⁶⁵ As the culmination *and* framework of all human making, the state is the organic unity of all machines and mechanical endeavors, and thus also the resolution of the contradiction between the mechanic and the organic.

Der Staat, wenn auch noch so unvollkommen oder verkommen, bleibt Organismus und ist nie eine Maschine. Ueberhaupt bezeichnet das Maschinenmässige, auf den Einzelnen wie auf die Gesellschaft angewandt, meistens nur einen hohen Grad von Gedankenlosigkeit und gewohnheitlichem Schablonenthum. Staat sein heisst sich als Organismus verhalten. Deshalb kann er nie ganz mechanisch sein, wohl aber giebt es innerhalb seiner Maschinen, die als Einzelmechanismen vom Einzelorganismus unterschieden werden müssen, die aber als Ganzes im Ganzen der vom Staate selbst tauglich zum Angeeignetwerden zugerichtete Stoff seiner Selbsterhaltung sind.

Wir sind nunmehr auf dem Höhenpunkt unserer Untersuchung angelangt und sehen das Product der Menschenhand, das in seiner Form von Einzelmechanismen bisher vor jeder Vermengung mit organischen Gebilden behütet war, in seiner Gesammtheit mit der Gesammtheit der menschlichen Individuen zu organisch gesellschaftlicher Einheit verschmolzen. In dieser Form also, im stofflichen Bestand des Staatskörpers, ist der in den Einzelartefacten sich forterhaltende Gegensatz von Mechanismus und Organismus

65 “Wo nur immer der historische, d. h. der in staatlicher Gemeinschaft lebende Mensch einem Gegenstand Spuren des Geistes aufgeprägt hat, da erscheint ein solcher Stoff an der Geschichte betheiligt und ist, weil der historische Process und die Entwicklung des Staatsorganismus identisch sind, in staatsorganischer Verbindung.

“So wenig also ein lebendiger Menschenkörper existirt ohne sinnliche Realität, eben so wenig giebt es einen Staatskörper ohne sinnliches Material zum Selbstaufbau. Der von Menschenhand geformte Stoff in seiner Gesammtheit ist demnach als staatsorganischer Bestand frei von mechanischer Besonderheit, gleich wie Anorganisches, dem lebendigen Körper nach der organischen Idee eingeordnet, ebenfalls zu organischer Constitution wird.” (344)

Earlier Kapp had made explicit the centrality and necessity of the state for his idea of human historical development: “Denn eine staatlose Cultur und culturlose Staaten hat es niemals gegeben.” (334)

aufgehoben. ” (344-345)

The state for Kapp is a particular kind of second nature, one that recapitulates the organization and unity of the individual human body. The lengthy mediation from the body to the state passes through technological production. Unconsciously projecting the forms of their organs into tools from the stone hammer to the telegraph network, humans externalize what is latent and unconscious, so that it becomes a part of the external world and can be reincorporated into consciousness and self-consciousness. This process allows for aspects of technology not only to illuminate features of human anatomy, but to generate a kind of ethics of discipline and limitation. Kinematics not only tells us about how human limbs and joints work together, but provides a model of connection, linkage, and control that inflects the picture of the state. Thus by the time Kapp’s account reaches its culmination in the state’s organic body, it is an organic body that has thoroughly incorporated the lessons of the machine. The primacy of the organic was never in doubt in this narrative – Kapp’s methodologically tautological anthropocentrism had insisted upon it from the beginning. But the passage through technology, machines, and kinematics means that this organicism is also deeply mechanical. The particular way Kapp yokes the organ to the machine means that modern industrial society can be seen ultimately as a harmonious whole, for example, but also that his anatomical picture of state order can count on the precision and control of machine linkages.

His account is interesting because it represents a deliberate reconsideration of the relationship between the mechanical and the organic⁶⁶ and an attempt to reseat the organic as the origin of the mechanical, to show their deeper unity. Contrary to the Cartesian relegation of

66 In his 1848 critique of Prussian bureaucracy, Kapp had described the state in negative terms as a machine and freedom positively, as an organism: “Also *Mechanismus gleich Despotismus, Organismus gleich Freiheit.*” See Hans-Martin Sass’ introduction to *Grundlinien* (xxiv).

bodies to extension and thus to a mechanical logic, or La Mettrie's radical materialism in *L'Homme Machine*, Kapp resituates all machines as organic projections within an organic unity. To historicize Kapp would be to see him as presenting a synthesis of contemporary scientific discourses such as medicine and anatomy (Virchow, e.g.) and kinematics (Reuleaux), but in doing so the larger project is to square the conceptual realms of the organic and the mechanical as key dimensions of human existence per se. His tautological insistence on the primacy of the organic over the mechanical may ultimately limit this project, however, and it, coupled with his blindness towards class, social antagonism, or economic specificity leads to the now charmingly steampunk culmination of his account in the railroad, the telegraph network, and the disciplined, militarized Prussian state. Ultimately this seems to be a vision that cannot leave the 19th century, even while its consideration of the relationship between the organic and the mechanical is useful for considering the relationship between body and tool as a question of philosophical anthropology. It is also a vision in which technology is more clearly (albeit implicitly) gendered, I would argue, than in Marx's or Plessner's theories. By making artifacts like the hammer and ax the primal manifestations of human technology – manifestations that lessened the need for the in-built weapons of tooth and claw (36) – Kapp essentializes technology not only as a projective force, but also as belonging to a particularly aggressive, bellicose, and male sphere. The agent of technology and making implied by Kapp's theory of organ projection is the solitary maker and fighter. The primal technologies that comprise his evidence are tools that cleave and break. As a thought experiment, it is instructive to consider the impact on the possibilities for organ projection if one considered technologies – equally primal in a chronological sense – more often coded as female, technologies of weaving, binding, tying, and the like.⁶⁷

⁶⁷ While the archaeological record of organic materials less long-lived than stone is notoriously patchy (and thus whole histories of different forms of early technology have likely been lost), Kapp could have turned to

Kapp's account of the relationship between the human body, technology, and environment is flexible to the extent that the border between *Innenwelt* and *Außenwelt* is not firmly fixed, but rather has a tolerable margin of conceptual movement, such that anatomical organs and technological artifacts can occupy both sides of the border at once. This has the useful effect of problematizing any fixed dualism between nature and culture, human and environment. Yet despite the opening of this conceptual space, Kapp maintains a hierarchy based upon the primacy of the human and the organic over the non-human and mechanical. Ultimately, the limitation of his account stems from its methodological circularity, where the human is his alpha and omega, the pinnacle that is presupposed.

Helmuth Plessner, the levels of the organic, and the natural artificiality of the human

Half a century later, Helmuth Plessner will offer a theory of the human that also places it at the top of a series of *Stufen*. But unlike *Grundlinien einer Philosophie der Technik*, Plessner's 1928 *Die Stufen des Organischen und der Mensch* carefully elaborates this anthropological position out of a theorization of various kinds of life. Far more methodologically rigorous than Kapp's work (and, to be sure, having the advantage of fifty years of theoretical and empirical biology), Plessner's book articulates the status of the human as part of a logical continuum, not only with other kinds of living beings such as animals and plants, but with phenomenologically accessible things in general. Out of this positionality he develops a theory of consciousness and a picture of the human that necessitates a technological attitude towards the world – humankind's

literature for a logic of tools other than the hammer and the ax. Penelope's burial shroud or Philomela's narrative tapestry, for example, suggest an idea of human making that involves weaving, narrative, and social – rather than individual – action: textiles as text.

“natural artificiality.” This avoids the metaphysics and methodological circularity of Kapp’s account, and it is working in a different area than Marx’s picture. Yet a certain similarity between Marx’s picture of technology and Plessner’s is instructive. Where for Marx, technology is inextricable from its role in a specific political economy, Plessner’s anthropology – and especially his famous dictum that the human being is artificial by nature – depends on its position within his philosophical biology. Thus compared to Kapp’s elevation of the technological within a predetermined anthropocentric framework, Marx and Plessner seem to suggest the drawbacks of an account that conceptually isolates “technology” as a category of inquiry. The fact that the human for Plessner is artificial and technological *because* of biological facts rather than in spite of them, and Plessner’s distinction of his positional account of the human from the pessimistic anthropology of the *Mängelwesen*, cause problems for Helmut Lethen’s mobilization of Plessner’s anthropology in the service of a cold persona against the expressive logic of the creaturely. The particular way that Plessner develops his conception of the human as eccentric being out of a logic immanent to living creatures in general may shed some needed light onto the technological (and political) imaginaries of the Weimar Republic. As we will also see in the cases of Döblin and Jünger, Plessner’s human is technological not in opposition to organic, natural, or creaturely logics and registers, but precisely through them.

Die Stufen des Organischen und der Mensch leads the reader to a picture of the human in a way that each step – from thing to living thing, from plant to animal, from animal to human – is marked by a positional shift in an entity’s relationship to itself. In establishing the parameters of the problem, Plessner lays out the philosophical context as a broadly post-Cartesian one.⁶⁸ By retracing various answers to and dilemmas of the dualism between the *res extensa* and *res*

68 “...immer natürlich im Geiste der cartesianischen Alternative und nicht nach dem historischen Descartestext gesprochen,” as Plessner puts it in an early aside. (87)

cogitans, Plessner introduces the question as one of positionality. The original ontological distinction between the *res extensa* and the *res cogitans* had come to be mapped onto a methodological and disciplinary distinction between physical matter and selfhood, quantity and quality,⁶⁹ and (by implication) the natural and the human sciences.⁷⁰ In light of this, Plessner asks, how is it possible to account for the non-quantifiable aspects of the physical world and particularly of living bodies?⁷¹ And is there a way to account for intersubjectivity, given that the radical doubt of the Cartesian framework can be said to consign other selves to the realm of extension?⁷² And finally, within the context of the ontological rift of *Doppelaspektivität* between mind and matter and the concomitant rupture between the human and natural sciences, is there a

69 “Ursprünglich zwar ist die Scheidung allen Seins in *res extensa* und *res cogitans* ontologisch gemeint. Sie erhält jedoch von selbst eine methodologisch fortwirkende Bedeutung, die sie in gewissem Sinne der ontologischen Kritik entzieht. Mit der Gleichsetzung von Körperlichkeit und Ausdehnung ist die Natur ausschließlich der messenden Erkenntnis zugänglich gemacht. Alles, was an ihr zur intensiven Mannigfaltigkeit der Qualitäten gehört, muß als solches für cogitativ gehalten werden, da zur einzigen Gegensphäre der Ausdehnung die *res cogitans* bestimmt ist. Es gibt demnach nur die beiden Möglichkeiten, entweder die qualitativen Daseins- und Erscheinungsweisen der Körper mechanisch aufzufassen, sie also in Quantitäten aufzulösen, oder aber bei Vermeidung dieser Analyse sie für Inhalte von Cogitationen, für Inhalte und Produkte unserer Innerlichkeit zu erklären.” (79-80)

70 “Als das zunächst Wichtige darf man festhalten: Daß das Bewußtsein, das eigene Ich die Verantwortung für die nichtquantitativen Phänomene des Naturmechanismus überhaupt tragen kann, liegt in der dem Ausdehnungssein völlig widersprechenden Gedankenhaftigkeit, Innerlichkeit des Ichseins begründet. Man begreift: Ein Verfahren, die Erscheinungen vor der Auflösung ins ausdehnungshafte Sein, die Qualitäten vor dem Mechanismus zu retten, ist mit der Gegeninstanz des *res cogitans* gefunden. Zwei ineinander nicht überführbare Erfahrungsrichtungen haben Urteilskompetenz bekommen, das Selbstzeugnis der inneren und das Fremdzeugnis der äußeren Erfahrung. Vergrößernd heißt das Aufteilung der Welterkenntnis in Erkenntnis der Körper und Erkenntnis des Ichs, modern gefaßt: in Physik und Psychologie.” (81)

71 “Wogegen sich eine anticartesianische Bewegung richten muß, ist die Identifizierung von Körperlichkeit und Ausdehnung, physischem Dasein und Meßbarkeit, die es verschuldet hat, daß wir für die meßfremden Eigenschaften der körperlichen Natur blind geworden sind.” (83)

72 “Als *cogitans* ist das Ich jedoch nur in Selbststellung, d. h. sich faßbar. Von einer *res cogitans* kann nur auf Grund der Zuwendung zu sich selbst gesprochen werden. Ein jeder darf darum die Zugehörigkeit des eigenen Ichs zum Sein der *res cogitans* annehmen, weil er in der (ausschließlich ihm selbst möglichen) Blickwendung zu sich als einem Ich, zum Ich als ihm selbst kommt. Auf das Cogitanssein stößt ein jeder also in einer ihm allein vorbehaltenen, auf ihn eingeeengten Wahrnehmungsweise. Bloß in sich selbst faßt er es. Bloß als solches ist es unbezweifelbare Wirklichkeit. Andere Ichs, in einer nicht ausschließlich einem jeden selbst möglichen Wahrnehmungsweise anzutreffen, sind daher vor Anzweiflung nicht geschützt. Aus der ontologischen Konzeption einer *res cogitans* ist unter Beachtung des Weges, auf dem man zu ihr kommt, eine methodologische Konzeption geworden. Der Satz, daß ich als Ich in der ihm eigentümlichen Selbststellung zur Innerlichkeit gehöre, hat die Umkehrung erfahren, daß die Innerlichkeit nur zu mir selbst gehört.” (80-81)

For a very brief summary of the Cartesian implications for subjectivity with which Plessner was taking issue, see Fischer (2000), 266-267.

way to ask questions about the status of the human that also accords with the discoveries of the physical sciences?

So ergab sich die Frage: unter welchen Bedingungen läßt sich der Mensch als Subjekt geistgeschichtlicher Wirklichkeit, als sittliche Person von Verantwortungsbewußtsein in eben derselben Richtung betrachten, die durch seine physische Stammesgeschichte und seine Stellung im Naturganzen bestimmt ist? [...] Gelingt die Wahrung des Einen Grundaspekts nicht, so folgt unmittelbar daraus eine doppelte Wahrheit, die Bewußtseinsansicht und die Naturansicht der Welt, der Mensch als Selbst, als Ich, als Subjekt eines freien Willens und der Mensch als Natur, als Ding, als Objekt kausaler Determination. Dann hat man die unwürdige und unerträgliche Lage, die zugleich von unwiderstehlicher Komik ist, den Menschen als Produkt einer Phylogenie und die Phylogenie als Produkt des Menschen, des irgendwie im Menschen Ereignis gewordenen schöpferischen Geistes gelten zu lassen. (40-41)

Here Plessner is reconstructing the context of *Lebensphilosophie*, but the final sentence of the passage could apply to Kapp's book. The way he frames the problem foregrounds the pitfalls of a methodological circularity that has no trouble arriving at the *Geist* with which it set out in the first place. Kapp's book represents an attempt to relate human *Geist* and making to the natural world, but Plessner's methodological considerations suggest the problems and presuppositions of an account like Kapp's.

In a sense, Plessner's project is to bring the discoveries of theoretical and experimental biology to bear on longer-standing philosophical questions, and, conversely, to open the question of the biological status of the human to rigorous philosophical inquiry.⁷³ A mind-matter dualism cannot for Plessner account for the origin of the specifically human nor can logics of mechanical causality or quantification fully satisfy on the terrain to which they've been assigned, especially

73 Plessner himself emphasizes the need for this disciplinary encounter: "Also nicht naturalistisch argumentiert: weil der Mensch das höchst entwickelte Wesen auf der Stufenleiter der Organismen ist und am spätesten zu seiner jetzigen Wesensform gelangte, und weil alle seine geistigen Lebensäußerungen auf seinen körperlichen Eigenschaften beruhen, muß eine Anthropologie von einer Biologie unterbaut werden, philosophisch wie empirisch, sondern: weil der Aufbau einer philosophischen Anthropologie zur Voraussetzung die Untersuchung jener Sachverhalte hat, die um den Sachverhalt 'Leben' konzentriert sind, wird das Problem der organischen Natur aufgerollt werden. Nicht die naturwissenschaftliche Erfahrung - von ihrer Verabsolutierung überhaupt nicht zu reden -, die geisteswissenschaftliche Erfahrung ist es, der die Initiative zum Aufbau einer konkreten Naturphilosophie zufällt." (123) On Philosophical Anthropology's central linkage between philosophy and the natural sciences in the wake of *Lebensphilosophie*, see also Joachim Fischer (2009) 36-37, 512-515, and 519.

when it comes to understanding biological life:

Nur da hat bisher die Philosophie Antworten auf die nach der cartesianischen Alternative unlösbaren Fragen gefunden, wo sie den Mut aufbrachte, die ausschließliche Sachdienlichkeit der exakten Methoden für die Naturerkenntnis zu bestreiten. Die Wiederbelebung der Naturphilosophie im deutschen Idealismus gewann allerdings keine erhebliche Durchschlagskraft. Daran waren weniger die schwierigen Gedankengänge der Philosophen als die zur damaligen Zeit noch unentwickelten Zustände der exakten Naturwissenschaft schuld. Es bedurfte erst einer gewaltigen Durchführung der Auffassung, die Natur sei nur als Ausdehnung zu behandeln – mit allen cartesianischen Konsequenzen –, um die Gelehrten besonders auf dem Gebiete der Biologie und Psychologie stutzig zu machen. An diesem Punkte sind wir heute angelangt. Die Losung: “Los von Descartes” würde heute schon eine große Anhängerschar aus den verschiedensten Zweigen der organischen Naturwissenschaft, der Medizin und Psychologie gewinnen, wenn endlich die Philosophie nach dem Vorgang einzelner mutiger Denker sich entschließen könnte, den ganzen großen Problemkomplex von neuem in Angriff zu nehmen. (82)

In this context, then, Plessner arrives at the figure of the border as a way of redefining the specificity of living creatures against the dualism of mind and matter. The category of *Doppelaspektivität* is still preserved as the necessary framework, but Plessner’s project is to unseat the central dualism of *cogitans* and *extensa* in a way that will be able to account for the existence of the *Doppelaspekt* in the human in accordance with the lessons learned from theoretical biology.⁷⁴ The border is able to do this, in Plessner’s use, because it offers various possibilities for the relationality among an object, its properties, how it is perceived, and the external environment. While all things have both a spatial border – a simple contour marking where they end and other things begin – and a non-spatial kind of interiority anchoring their perceptible qualities,⁷⁵ only living things have a relationship to their own border.

74 As he describes the goal of *Stufen*, “Nicht auf die Überwindung des Doppelaspekts als eines (unwidersprechlichen) Phänomens, sondern auf die Beseitigung seiner Fundamentalisierung, seines Einflusses auf die Fragestellung ist es im folgenden abgesehen. Nur auf die Entkräftung dieses Doppelaspekts als eines die wissenschaftliche Arbeit in Naturwissenschaft, d. h. Messung, und Bewußtseinswissenschaft, d. h. Selbstanalyse, zerreißenen Prinzips kommt alles an.” (115)

Fischer (2000) summarizes Plessner’s challenge to dualism as follows: “Um einen Begriff des Menschen gewinnen zu können, der ihn aus *einer* Erfahrungsstellung denkt und zugleich die Doppelung seiner Beschreibung erklärt, will Plessner operativ an dem Phänomen ansetzen, das durch die cartesianische Alternative von Geist oder körperlichen Ding nicht verstanden werden kann: am ‘Leben.’” (270)

75 Plessner begins to unfold the distinction between physical bodies in general and living bodies in particular by

In order to understand what this might mean, we have to retrace Plessner's use of the concept of the *Doppelaspekt*. While originally this word refers in his use of it to the basic Cartesian dualism of extension and thought,⁷⁶ Plessner reworks it in a phenomenological vein to address the problem of perception and thereby tie extension to thought in a strong sense. In order for a thing to be perceived as part of the world of extension, it has to be perceived by something else.

Gegenständlich ist ein Ding nur, wenn es einem gegenständlich ist. Zur Gegenständlichkeit gehört ein Wogegen, wie eine Front nur Front gegen etwas, gegen eine Sphäre ist, nach der sie hinschaut. Objiziertsein des Körpers ist nur in einer Situation möglich, die dem Dasein des Körpers Anwesenheit ermöglicht. Gegenwärtigkeit, Anwesenheit heißt mehr als nur Dasein. Anwesendsein ist eine besondere Relation des Daseienden zu etwas, für welches es dann anwesend ist und Gegenwart hat. Da die *res extensa* nur als Qualitätensystem gegenwärtig ist, muß die einzige Gegensphäre der *res cogitans* zum Wogegen seiner Gegenwart, zur (vorgegebenen) Bezugssphäre seiner Gegebenheit werden. Körperliches Dasein erscheint mithin nur der Innerlichkeit. Dem physischen Objekt ist das innerliche Sein vorgelagert, vorgegeben, der erscheinenden Körperwelt das Selbst vorgeschaltet. (86)

In this way, Plessner is able not merely to link extension and cogitation, but to develop their relationship in spatial terms. The *res cogitans*, interior, and self must necessarily be placed in front of (*vorgelagert*) physical, extensive objects if the latter are to appear at all, since they can only appear as a system of qualities that presuppose a perceptual apparatus capable of perceiving

differentiating purely spatial extension ("raumerfüllenden Körper") from bodies with a relationship to space ("raumbehauptende Körper"), a distinction he expresses in the terms *räumlich*, on the one hand, and *raumhaft*, on the other: "Jedes physische Körperding ist im Raum, ist räumlich. Seine Lage besteht, was ihre Messung angeht, in Relation zu andern Lagen und zur Lage des Beobachters. Von dieser Relativordnung sind auch die lebendigen Körper als physische Dinge nicht ausgenommen. Aber erscheinungsmäßig unterscheiden sich die lebendigen von den unbelebten als raumbehauptende von den nur raumerfüllenden Körpern. Jedes raumerfüllende Gebilde ist an einer Stelle. Ein raumbehauptendes Gebilde dagegen ist dadurch, daß es über ihm hinaus (in ihm hinein) ist, zu der Stelle 'seines' Seins in Beziehung. Es ist außer seiner Räumlichkeit *in den Raum hinein* oder *raumhaft* und hat insofern seinen natürlichen Ort.

"Wenn ein unbelebtes Ding zerbricht, so fragt man wohl auch: wo ist 'es' jetzt? Von dem Gelehrten wird man freilich zu hören bekommen, ein 'es' habe da gar nicht existiert, sondern nur eine bestimmte Konstellation von Elektronen und Energie, die jetzt eine Umlagerung erfahren habe. Die Frage ist der Erscheinung gegenüber trotz allem berechtigt gewesen. Dem Lebendigen gegenüber könnten wir uns aber mit jener Antwort auch dann nie zufrieden geben, wenn wir wüßten, daß sie objektiv die richtige ist." (186-187)

76 The first mention of the word in *Stufen* is simply of the "Doppelaspekt Körper-Geist" (40).

them. In this way, the *Doppelaspekt* no longer merely stands for the dualism of mind and matter, but comes to inhere in the logic of perception itself, which Plessner describes as comprised of thought and thinker, pure gaze and origin of the gaze. The appearance of extension depends on a subjective act;⁷⁷ this in turn bifurcates into origin and return, act and realization, as two complementary sides of perception:

Das Selbst steht im Doppelaspekt des Fortgangs “von” ihm (Akt, reiner Blick, cogitatio) als des Rückgangs “zu” ihm (Ich als Vollzugszentrum der Akte, Blicksender, res cogitans). Man darf die Schärfe dieser Bestimmung nicht dadurch verwischen, daß man die Spaltung in die Subjekt-Objektivität nur als Betrachtungsweise des Ichs auffaßt. Es ist lebendige Einheit durch Entgegensetzung von Ausgangsselbst (Akt) und Rückgangsselbst (Aktzentrum) und zwar Vollzug dieser Spaltung als ihrer Aufhebung. (89)

Here the *Doppelaspektivität* concerns the act of perception and the organizing center that receives, guides, and organizes perception. This duality carries over to the body itself, which as an object in the world of extension is both available to self-consciousness as an object of perception and, as containing the organs of perception, provides the self with the material basis for its ideas.⁷⁸ Because of the tight linkage Plessner elaborates between the perceiving subject, the body, and the external world, the *Doppelaspekt* that originally referred to the dualism of the *res cogitans* and the *res extensa* is seen as inherent to perception and to objects as such.⁷⁹ Every

77 “Nur wenn die *res extensa* gegen die *cogitatio* steht, erscheint sie. Zum ausgedehnten Ding ist allein der Akt des Subjekts absolut polar. Denn unter welchen Umständen verliert die Innerlichkeit den Charakter der Seinshaftigkeit und erfüllt damit die Bedingung einer echten Wogegensphäre zur gegenständlichen Erscheinung? Sobald sie in Selbststellung als Vollzugszentrum der Akte (*cogitationes*) verharrt, rein als Ich dem Sein gegenüber sich behauptet und auslebt. Nur insofern, als die *res cogitans* selbstmäßig, ichhaft der *res extensa* entgegengestellt ist, hat diese die Möglichkeit der Erscheinung. Woraus nach den oben dargelegten Konsequenzen wiederum folgt, daß nur ich *selbst* als Ich das entscheidende Glied in der Kette der Bedingungen für die objektive Erfahrbarkeit der Welt bin.” (87)

78 “Der Körper als ausgedehntes Ding gehört dann allerdings schon zum Selbstbewußtsein, und zwar zur Sphäre äußerer Wahrnehmung, vermittelt aber offenbar doch dem Ich, der Sphäre innerer Wahrnehmung, Materialien zum Aufbau seiner Vorstellungen. In diesem Doppelaspekt präsentiert sich, idealistisch oder nichtidealistisch angesehen, das psychophysische Gesamtself, dessen äußerste Zone seiner eigenen Organe das reine Hier des Ichs in beständiger Bindung umschließt. Einmal bildet der eigene Körper die Peripherie der Immanenzsphäre, weil er sowohl Teil an der Außenwelt als auch Teil an der Innenwelt hat. Dann wieder umschließt die Innenwelt, als Selbstbewußtsein die Gebiete innerer und äußerer Wahrnehmung enthaltend, im Schatz ihrer Vorstellungen die Außenwelt. Wie soll aber eine Sphäre zugleich mit ihren Grenzen in der Außenwelt geborgen sein und die Außenwelt in sich bergen?” (100-101)

79 Joachim Fischer (2009) summarizes how the *Doppelaspekt* applies to things in general when he writes, “Um

thing evinces this relationship, in the form of a split between its perceptible qualities and the non-spatial interior that acts as the substantial kernel or substrate for these qualities.⁸⁰ This split takes the form of a border that has something to do with a thing's physical contours but is not reducible to them.⁸¹ The border is therefore, in a spatial, phenomenological, and perceptual sense, where a given thing ends and its surroundings begin.⁸²

What distinguishes a living body from other things is that the living body incorporates the border as an aspect, such that the border necessary for any object to appear itself appears in the living object. "Infolgedessen darf man dem Satz, daß lebendige Körper erscheinungsmäßig eine prinzipiell divergente Außen-Innenbeziehung als gegenständliche Bestimmtheit aufweisen, die Form geben: lebendige Körper haben eine erscheinende, anschauliche Grenze" (151). The border of the living thing ("lebendiges Ding") is therefore not just a spatial or phenomenological boundary between it and what is not it, but serves as a kind of interface that mediates between the living body and the environment. This is what Plessner means when he writes that the living body has its border as a characteristic; and to do this, it must have a relation to its border that

dem Phänomen des Lebendigen in diesem Streit gerecht zu werden, baut Plessner folgende Argumentation auf: Demnach *erscheint* bereits das unbelebte 'Wahrnehmungsding' (also jedes einer Wahrnehmung gegebene Ding) kraft eines inkongruenten 'Doppelaspekts,' in der *für die Wahrnehmung* das Körperding mit seinem Außen (erster Aspekt) auf ein verdecktes Inneres, einen unerreichbaren Wesenskern (zweiter Aspekt) verweist. Als *den* 'Grundaspekt,' der den 'Doppelaspekt' von Körper und Geist auf der Ebene des Menschen vermitteln soll, setzt Plessner innerhalb der philosophischen Biologie nun von unten her für die Schicht des Lebendigen – statt wie Driesch 'Ganzheit' oder Köhler 'Gestalt' – den Begriff 'Grenze' (SO 100): der 'Doppelaspekt' *erscheint* in der 'Grenze' selbst als eine Eigenschaft des Dinges (und nicht mehr nur für die Wahrnehmung)." (76-77)

- 80 "Das reelle (belegbare) Phänomen weist auf dieses tragende Ganze von sich aus hin, es überschreitet gewissermaßen seinen eigenen Rahmen, indem es als Durchbruch, Aspekt, Er-Scheinung, Manifestation des Dinges selbst sich darbietet. In dieser Transgredienz des Erscheinungsgehalts besteht die sinnlich nicht belegbare Weise der Zugehörigkeit des realen Phänomens zum Ganzen Dinge." (130)
- 81 "Anschauliche Grenzen liegen bei allen Dingkörpern da, wo sie anfangen oder zu Ende sind. Die Grenze des Dinges ist sein Rand, mit dem es an etwas Anderes, als es selbst ist, stößt. Zugleich bestimmt dieses sein Anfangen oder Aufhören die Gestalt des Dinges oder den Kontur, dessen Verlauf man mit den Sinnen verfolgen kann. In den Konturen, innerhalb seiner Ränder ist der Dingkörper beschlossen und als dieser bestimmt, oder, was hier dasselbe heißt, mit den Konturen, an seinen Rändern ist das Ding als dieses bestimmt. Der Kontur kann nur in vager und abstrakter Redewendung von dem, dessen Kontur er ist, abgehoben gedacht werden." (151)
- 82 See Fischer (2000) for the origin of the figure of the border in Plessner's thought. Fischer glosses it as an answer to the problem of differentiating living bodies from other things. By using the figure of the border to make this distinction, Plessner sidestepped what he saw as the drawbacks of Köhler's *Gestalt* theory and the *Ganzheitstheorie* of Hans Driesch, which had to posit a vitalistic notion of entelechy. (272)

includes transgression. Only in this way can an object be a whole, with contours that both mark its spatial extension and its perceptual aspects.

Welche Bedingung muß erfüllt sein, damit in einer relativen (räumlichen) Begrenzung das nichtumkehrbare Grenzverhältnis zwischen einem Außen und einem Innen vorliegt?

Die Antwort lautet paradox: wenn ein Körper außer seiner Begrenzung den *Grenzübergang* selbst als Eigenschaft hat, dann ist die Begrenzung zugleich Raumgrenze und Aspektgrenze und gewinnt der Kontur unbeschadet seines Gestaltcharakters den Wert der Ganzheitsform.

Auf das Verhältnis des begrenzten Körpers zu seiner Grenze kommt es also an.
(154)

Plessner outlines two possibilities for the relationship between a physical thing and its border. In the first one, the border is merely a virtual liminality, belonging to both the thing and its environment, and to neither of them: “Sie ist reiner Übergang vom Einen zum Anderen, vom Anderen zum Einen und wirklich nur als das Insofern eben dieser wechselweisen Bestimmtheit” (154). The border marks the limit of the physical body, but does not belong to it. In the second possibility by contrast, the border belongs to the object demarcated.

Die Grenze gehört reell dem Körper an, der damit nicht nur als begrenzter an seinen Konturen den Übergang zu dem anstoßenden Medium gewährleistet, sondern in seiner Begrenzung vollzieht und dieser Übergang selbst ist. Deshalb wird hier die Grenze seiend, weil sie nicht mehr das (als Linie oder Fläche vorgestellte und darin eigentlich verfälschte) Insofern der wechselweisen Bestimmtheit, der selbst nichts für sich bedeutende leere Übergang ist, sondern von sich aus das durch sie begrenzte Gebilde als solches von dem Anderen als Anderem prinzipiell unterscheidet. (154)

The first scenario is that of non-living objects, and the second is that of living things. To differentiate these two possibilities, Plessner uses the schematic $\mathbf{K} \leftarrow \mathbf{Z} \rightarrow \mathbf{M}$ for the first, to mark the border as a “Zwischen” between the “Körper” and the “Medium,” and $\mathbf{K} \leftarrow \mathbf{K} \rightarrow \mathbf{M}$ for the second, to show that in the case of the living thing, it is the body itself that mediates between the body and its environment. Because the border and the transgression of the border belong to the living thing as its properties, it is more complexly spatial and positional than dead objects,

which go as far as their physical extension and no further.⁸³ The living thing, by contrast, is on either side of its border at once; and the border of the living thing, rather than being an indifferently spatial transitional zone between object and environment, both distinguishes the object from its environment and opens it up to it.

Ein Körper, der sich entsprechend der Formel $K \leftarrow K \rightarrow M$ zu seinen eigenen Grenzen verhält, ist, da ihn seine Grenzen nicht nur einschließen, sondern ebenso sehr dem Medium gegenüber aufschließen (mit ihm in Verbindung setzen), *über ihm hinaus*. Denn die Grenze, welche im andern Fall, ausgedrückt in der Formel $K \leftarrow Z \rightarrow M$, das weder (sowohl) dem Körper noch (als auch) dem Medium angehörende, also rein virtuelle Zwischen, die bloße Möglichkeit des Übergehens vom Einen zum Andern bedeutet, gehört hier reell dem einen der beiden angrenzenden Größen an. Besteht das Wesen der Grenze aber im Unterschied zur Begrenzung darin, mehr als die bloße Gewährleistung des Übergehens zu sein, nämlich dieses Übergehen selbst, so muß ein Ding, welchem Reich des Seins es auch zuzurechnen sei, wenn es die Grenze selbst hat, dieses Übergehen selbst haben.” (181-182)

The border of the living body belongs to the body, and is not merely the transitional space between a body and its medium. It is a kind of interface that belongs to the body and also opens the body to the surrounding medium; transgressing the border thereby becomes a property of living bodies. Plessner reaffirms this positional status of the living body vis-a-vis its border in a late *Nachtrag* to *Die Stufen des Organischen und der Mensch* from the 1960s. Discussing recent research on organic membranes that was not available to him when he wrote *Stufen*, Plessner describes membranes as fitting his earlier idea of the border – they are not merely the spatial delimitation of an organic body, but are rather a functional interface that determine the

83 “In seiner Lebendigkeit unterscheidet sich also der organische Körper vom anorganischen durch seinen *positionalen Charakter* oder seine *Positionalität*. Hierunter sei derjenige Grundzug seines Wesens verstanden, welcher einen Körper in seinem Sein zu einem gesetzten macht. Wie geschildert, bestimmen die Momente des ‘über ihm Hinaus’ und das ‘ihm Entgegen, in ihn Hinein’ ein spezifisches Sein des belebten Körpers, das im Grenzdurchgang angehoben und dadurch setzbar wird. In den spezifischen Weisen ‘über ihm hinaus’ und ‘ihm entgegen’ wird der Körper von ihm abgehoben und zu ihm in Beziehung gebracht, strenger gesagt: ist der Körper außerhalb und innerhalb seiner. *Der unbelebte Körper ist von dieser Komplikation frei. Er ist, soweit er reicht. Wo und wann er zu Ende ist, hört auch sein Sein auf. Er bricht ab. Ihm fehlt diese Lockerung in ihm selber.* Da sein System die Grenze nicht zu eigen hat, ist sein Sein ohne die doppelsinnige Transzendierung. Es kann also nicht zu der doppelsinnigen Rückbeziehung auf das System, nicht zu der Selbstbeziehung des Systems kommen (wenn es gestattet ist, an Stelle des schwerfälligen Ausdrucks Ihmbeziehung dieses gangbarere Wort zu verwenden).” (184, some italics added)

relationship between body and medium.⁸⁴

The fact that the border of the living thing belongs to the body, mediating between it and the external world, already suggests the dual nature of the human body as both the seat of the self and a tool of the self, a core aspect of Plessner's anthropology. The doubling of the body, seen typographically in the schematic $\mathbf{K} \leftarrow \mathbf{K} \rightarrow \mathbf{M}$, is notably already present in every living thing.⁸⁵ This is the logic at the core of Plessner's book, and it is worth noting that he locates this doubling already in the difference between things as such and living things – more precisely, this aspect of living things builds upon a duality already present in things as such, inasmuch as they are present to perception. The doubling of the body becomes more pronounced when we make the transition from plants to animals, and again from animals to humans. The *Doppelaspekt* that marks phenomenas as such becomes an embodied characteristic of living beings, leading to an excess over and against their nature as “phenomenal things”; this excess is couched in the terms of a positional transgression.⁸⁶

84 “Membranen sind nicht bloße Oberflächen die jeder Körper je nach seinem Aggregatzustand gegen angrenzende Medien eines anderen Aggregatzustandes hat. Sie sind vermittelnde Oberflächen. An ihnen ist der Körper nicht einfach zu Ende, sondern zu seinem Medium in Beziehung gesetzt. [...] Der Effekt solcher strukturbedingten Bindekräfte auf die Oberfläche ist das Entscheidende. Denn er macht aus der Umrandung eine Grenze, in welcher zwei aufeinander wirkende Bereiche zu einer gegenseitigen Vermittlung gebracht werden, ohne den Eigenbereich des umrandeten Körpers in seiner Struktur anzutasten. Dieser Tatbestand gibt dem Körper Positionalität, d.h. setzt ihn gegen den Außenbereich ab. So gewinnt er am Medium eine *Umgebung*, in späteren Entwicklungsstadien u. U. eine *Umwelt*. Mit der Positionalität ist der sog. Ganzheitscharakter gegeben, der sich als Form, nicht notwendig übrigens als eine konstante Form, ausprägt. Membranen begünstigen natürlich die Stabilisierung der Form.” (437-38)

85 What this means, among other things, is that Plessner's concept of life is quite different from that of *Lebensphilosophie*. Fischer (2000) describes it in this way: “Wenn er Lebendiges durch ‘Grenze’ bestimmt, die Inneres vom Äußeren abschließt und zugleich Inneres und Äußeres gegeneinander aufschließt, dann entkräftet er auf der Ebene des Lebendigen, für die der Dualismus cartesianischer Prägung keine adäquate Beschreibung geben kann, das cartesianische Alternativprinzip – entweder Innen oder Außen –, und führt zugleich die metaphysische Lebensphilosophie aus ihrer spekulativen ‘Verzauberung’: Leben ist dann nicht der einheitliche Strom, der sich nur am Dinglichen bricht, am Nichtlebendigen, am Erstarrten und Verdinglichten, sondern Leben selbst ist der Sache nach nur möglich durch Unterbrechung – in Form von ‘Grenzrealisierung.’” (273)

86 “Als Körperding steht das Lebewesen *im* Doppelaspekt ineinander nicht überführbarer Richtungsgegensätze nach Innen (substantialer Kern) und nach Außen (Mantel der eigenschaftstragenden Seiten). Als Lebewesen tritt das Körperding *mit* dem gleichen Doppelaspekt als einer Eigenschaft auf, der in folgedessen das phänomenale Ding in doppelter Richtung transzendiert, es einerseits über es hinaus setzt (streng genommen: außerhalb seiner setzt), andererseits in es hineinsetzt (in ihm setzt), – Ausdrücke, die gleichbedeutend mit den früher gebrauchten Ausdrücken sind: über es hinaus sein und ihm entgegen, in es hinein sein.” (183)

This in turn moves the structuring idea of the *Doppelaspekt* to the duality of *Körper* and *Leib*. The former represents the material, mechanical side of bodies – bodies as physical objects – while the latter expresses their status as living wholes, not entirely reducible to component matter or mechanical laws.

Leib – diese Erkenntnis findet man schon bei Hegel – ist nicht dasselbe wie Körper, mit dem er doch objektiv identisch ist. Wenn ich den Arm hebe oder wenn das Kind laufen lernt, so werden zwar die entsprechenden Muskeln innerviert. Und doch ist damit nur der körperliche Vorgang, nicht der leibliche charakterisiert. Der Vorgang am Leib ist von anderer Art. Natürlich spielen dabei die Organ- und Gelenkempfindungen eine wesentliche Rolle, ebenso die Empfindungen der Haut, der Spannung, die verschiedenen Formen des Tastsinnes. Aber der Leib ist darum doch nicht bloß Empfindung oder das Bewußtsein des eigenen Körpers, der aus Knochen, Sehnen, Muskeln, Gefäßen, Nerven usw. besteht. Er ist eine lebendige Realität. Das zeigt sich gerade in der Art, wie man ihn beherrscht. Gehen, Heben, Setzen, Aufstehen, Liegen sind lebendige Verhaltensweisen (die natürlich durch körperliche Funktionen vermittelt, unter Umständen also auch unterbunden werden), die in der lebendigen Position des Individuums aber einen besonderen Aspekt bedingen, auf den es sehr wesentlich immer Rücksicht zu nehmen hat, der also in Wesenskorrelation zur Person bzw. zum Lebewesen als einem Lebendigen steht. (74-75)

Crucially for the present context, actions such as walking, lifting, standing up, lying down, etc., cannot sensibly be reduced to mechanical processes but encompass meaningful unities Plessner refers to as *Verhaltensweisen*. It is notable, in the context of Lethen's reading of Plessner, that the latter's deployment of the concept of *Verhalten* arises as a way of conveying a basic meaningful unit of the action of animals, the sense of which dissolves if the action is understood purely mechanistically. This insight is connected to Plessner's work on animal behavior and expression⁸⁷ and, *pace* Lethen, does not have so much to do with rigid forms of behavior as with

87 See his "Die Deutung des mimischen Ausdrucks. Ein Beitrag zur Lehre vom Bewußtsein des anderen Ichs" (1925), especially the section, "Die Schicht des Verhalten" (77-89), in which he describes an overlay of the mechanical *Körper*, which can be analyzed in terms of purely "kinematic" physiological processes (78. 83) and the living *Leib*, which must be seen in terms of meaningful wholes of expression and behavior. "1. Durch physiologisches Wissen um die Kinematik der lebendigen Körper darf man sich den schlichten Blick für die Bewegungsformen des anschaulich gegebenen Leibes nicht trüben lassen. 2. Der Leib und seine Bewegungsformen, verschieden je nach der biologischen Art, bilden eine Einheit, von der man weder sagen kann, sie sei physisch, noch sie sei psychisch. Sie liegt in keiner der beiden Seinsebenen, ist aber darum nicht weniger reell." (83)

the attempt to provide a framework for thinking about behavior and expression as meaningful units. As in the above passage, the terms *Leib* and *Verhaltensweisen* express an organic unit that exceeds the physical and mechanical properties of thinghood.

The doubling of the body as a border, and the doubling of the body into *Körper* and *Leib*, also inflect the *Ausgangsproblematik* of the mind-matter dualism. Since the body is both a part of the world of extension or *Außenwelt*,⁸⁸ on the one hand, and the means with which the subject interacts with the world, the body itself becomes the bridge between *Innenwelt* and *Außenwelt*:

Als ein von innen her durchfühlbares und impulsiv mehr oder minder beherrschbares, nach außen gewandtes und teilweise als Außen gegebenes System, dessen Zentrum das Ich, dessen binnenhafte Mannigfaltigkeit dem Ineinander der Akte und Vorstellungen völlig eingeschmolzen erscheint und dessen Grenzflächen bei aller Gegenständlichkeit (also trotz ihrer Vorstellungsnatur) von innen her die Bedeutung von Sinnes- und Bewegungsfeldern, von Einmündungs- und Ausmündungszonen der Wahrnehmungs- und Impulsakte zeigen, gibt er [i.e., der Körper –CG] sich selbst als die gesuchte Brücke von der Innenwelt zur Außenwelt zu erkennen. (101)

For “closed” organizational forms of life such as found in animals and humans, the body is a mediating tool between organism and environment. While the border and its transgression are characteristics of all living things, plants are characterized by a relationship between their bodies and the surrounding medium Plessner describes as “open” – that is, plants are integrated into their medium in an immediate way, marked by the absence of a sensory-motor center, the strong division of functions into discrete organs, a relative lack of differentiation in metabolic functions, and a kind of movement that follows the laws of organic growth rather than reactions to an objective situation.⁸⁹ Animals, by contrast, are marked by a relationship to their environment

88 See 92 ff.

89 On plants as “open” forms, see especially 282-291. The reason for the characterization is positional, with the plant seen as one logical formal possibility for the relationship between the living organism and the surrounding environment. The openness of plants has effects and correlates, however, on the morphological, metabolic, motor, and developmental levels (283-286). As he writes,

“Offen ist diejenige Form, welche den Organismus in allen seinen Lebensäußerungen unmittelbar seiner Umgebung eingliedert und ihn zum unselbständigen Abschnitt des ihm entsprechenden Lebenskreises macht.
“Morphologisch prägt sich das in der Tendenz zur äußeren, der Umgebung direkt zugewandten

mediated through the relative closure and autonomy of their bodies.⁹⁰ It is important to note here that Plessner's account works through the category of positionality in a couple discrete and interlocking ways. Firstly, it is a particular positionality of the individual body that determines its status as a living thing, and, within that group, as a plant, animal, or human.⁹¹ Yet in a more general sense, his account of life is positional inasmuch as the different varieties of life represent logical permutations, differing possible solutions to a formal dilemma (282-283). The "radikaler Konflikt zwischen dem Zwang zur Abgeschlossenheit als physischer Körper und dem Zwang zur Aufgeschlossenheit als Organismus" (283) can find an open solution, as in the case of plants, or one predicated on closure, as with animals. This formal approach to biology is, in the context of the broader presentation of the book, merely an intensification of the particular phenomenological approach to things in general; each transition, it must be emphasized, from thing to living thing, from plant to animal, from animal to human, proceeds in a logical, formal way according to shifts in an object's relationship to the world – or, more precisely, an object's relationship to its relationship to the world.

Once we have arrived at the centrally-organized, closed form of the animal, resulting in the intensification of the body's doubling and its concomitant status as a tool to be used, we are (positionally speaking) not very far from the human's natural eccentricity. A rather long passage will be useful here, because it spells out the way the body itself becomes a kind of

Flächenentwicklung aus, die wesensmäßig mit der Unnötigkeit einer Bildung irgendwelcher Zentren zusammenhängt." (284)

90 "Geschlossen ist diejenige Form, welche den Organismus in allen seinen Lebensäußerungen mittelbar seiner Umgebung eingliedert und ihn zum selbständigen Abschnitt des ihm entsprechenden Lebenskreises macht. Wenn es zur offenen Form gehört, den Organismus mit allen seinen an die Umgebung angrenzenden Flächen Funktionsträger sein zu lassen, so wird die geschlossene Form sich in einer möglichst starken Abkammerung des Lebewesens gegen seine Umgebung äußern müssen. Diese Abkammerung hat dabei den Sinn der mittelbaren Eingliederung in das Medium. Auf Grund des vermittelten Kontaktes bleibt dem Organismus nicht nur eine größere Geschlossenheit als den pflanzlichen Lebewesen gewahrt, sondern er erhält echte Selbständigkeit, d.h. Gestelltheit auf ihm selber, die zugleich eine neue *Existenzbasis* bedeutet." (291-2)

91 For an account of the origins and function of Plessner's use of the category of positionality, see Fischer (2000), 274-276.

representational organ for the organism.

Dadurch ist der lebendige Organismus als Ganzer nicht mehr unmittelbar die (in ihr selbst natürlich vermittelte!) Einheit der Organe, sondern er ist sie nur auf dem Wege über das Zentrum. Er steht also gar nicht mehr direkt mit dem Medium und den Dingen um ihn herum in Kontakt, sondern lediglich mittels seines Körpers. Der Körper ist die Zwischenschicht zwischen dem Lebendigen und dem Medium geworden. So ergibt sich die Lösung des oben gestellten Problems seiner mittelbaren Eingliederung in den Lebenskreis: das Lebewesen grenzt mit seinem Körper an das Medium, hat eine Realität "im" Körper, "hinter" dem Körper gewonnen und kommt deshalb nicht mehr mit dem Medium in direkten Kontakt. Infolgedessen ist der Organismus auf ein höheres Seinsniveau gelangt, das mit dem vom eigenen Körper eingenommenen nicht in gleicher Ebene liegt. Er ist die über die einheitliche Repräsentation der Glieder vermittelte Einheit des Körpers, welcher eben dadurch von der zentralen Repräsentation abhängt. Sein Körper ist sein *Leib* geworden, jene konkrete Mitte, dadurch das Lebenssubjekt mit dem *Umfeld* zusammenhängt. [...]

Physisch betrachtet verdoppelt sich mit der Entstehung eines Zentrums der Körper: er ist noch einmal (nämlich vertreten) im Zentralorgan. Jene "Mitte," nun, die zum Wesen eines jeden lebendigen Körpers gehört, jene kernhafte Einheit für sich gegenüber der Mannigfaltigkeitseinheit, die doch eine rein intensive Größe bedeutet, wird natürlich nicht von einem räumlichen Gebilde ausgefüllt. Sie bleibt raumhafte Mitte als Strukturmoment der Positionalität des lebendigen Körpers. Aber der Charakter dieses Körpers, welcher sie raumhaft umschließt, hat sich geändert, weil er in ihm real vermittelt, vertreten ist. Er ist von *ihm selber abgehoben* und abhängig als Körper. Rein physisch schon ist er "sein Leib." Die raumhafte Mitte, der Kern oder das Selbst "liegt" also nicht mehr unmittelbar "im" Körper. Genauer gesagt, sie nimmt eine doppelte raumhafte Lage zum Körper ein: in ihm (sofern der ganze Körper *einschließlich* des Zentralorgans nicht sein Leib ist und nicht von ihm abhängt) *und* außer ihm (sofern der Körper vom Zentralorgan als sein Leib abhängt).

Auf diese Weise bekommt die Mitte, der Kern, das Selbst oder das Subjekt des Habens bei vollkommener Bindung an den lebendigen Körper Distanz zu ihm. Obwohl rein intensives Moment der Positionalität des Körpers, wird die Mitte von ihm abgehoben, wird er ihr Leib, den sie hat. [...]

[...] *Über eine Kluft hinweg* sind das Selbst und das Medium als das Andere in Relation. Haben oder Besitzen ist nur als diese das Zwischen bestehende Überbrückung des Selbst und des Anderen möglich.

In der Distanz zum eigenen Leib hat der lebendige Körper sein Medium als Umfeld. Die Abgehobenheit vom eigenen Leib ermöglicht den Kontakt mit einem vom Leibe abgehobenen Sein. Der Körper "merkt" das Sein und "wirkt auf" das Sein. Über eine Kluft hinweg steht er mit dem Anderen in sensorischer und motorischer Verbindung. Wollte man diesem ganzen Wesenskomplex der geschlossenen Form nach dem Prinzip der Stufen den Wesenskomplex des "lebendigen Dinges überhaupt" gegenüberstellen, so müßte man sagen, hier sei noch alles gebunden, nur an sich vorhanden, nur impliziert und die Struktur der Lebendigkeit bedingend, was in der geschlossenen Form entbunden, für sich selbständig geworden, expliziert worden sei. Auch die Pflanze hat Stengel, Blätter,

Blüten und Früchte, aber weder ihr Selbst noch sein Haben treten zu ihrem Körper als einem Leib in wirklichen Gegensatz. (295-298, some italics added)

A key feature of Plessner's account is the way that the progression from one level to the next depends on a process of realization, whereby features that were present in an earlier stage are concretized, made explicit, and self-reflective in a later stage.⁹² In this regard, the movement through *Stufen* resembles the progression in Hegel's *Phänomenologie des Geistes* from the in-itself to the in-and-for-itself. As the final sentences of the above passage make clear, the transition from animal to plant depends on latent aspects of the plant's corporality becoming explicit and autonomous. A plant may "have" various parts, but it does not actually "have" them like an animal has its, as mediating organs controlled by a central instance in a way that necessarily both distances the animal from the medium and integrates it into it. Just as the shift from things to living things depended on the relationality of the border becoming a functional characteristic of the living thing (rather than just an accidental spatial demarcation), here too the various doublings of the organism's body represent a necessary mediation between organism and environment in a way that also implies a nascent subject position ("Sein Körper ist sein *Leib* geworden, jene konkrete Mitte, dadurch das Lebenssubjekt mit dem *Umfeld* zusammenhängt" (296)).

This is a shift that intensifies with the transition from the animal to the next and final formal, positional possibility, namely: the human.⁹³ Because the human represents the full

92 A longer example of this dynamic of realization comes later in the book: "Bei der Pflanze tritt eine positional begründete Beziehung zwischen Lebenssubjekt und Medium nicht auf. Eine (direkte) Beziehung spricht sich am Organismus zwar aus, aber sie ist nicht als Beziehung da. Beim Tier ist dies erreicht. Die Beziehung zwischen ihm und dem Umfeld spricht sich zwar am Organismus unabhängig davon, ob er dezentralistisch oder zentralistisch organisiert ist, gemäß dem Gesetz der geschlossenen Form als indirekte Beziehung aus. Für das Tier selber bedingt dagegen der Unterschied in der Organisationsweise einen Unterschied in seiner Positionalität. Im Fall der Dezentralisation findet direkte Zuordnung von Reiz und Reaktion statt. Die Beziehung zwischen Subjekt und Umfeld ist unmittelbar. Im Fall der Zentralisation erfolgt die Zuordnung von Reiz und Reaktion durch das Subjekt. Die Beziehung zwischen Subjekt und Umfeld ist mittelbar." (400-401)

93 Plessner makes it clear that the human being is a formal, positional category rather than a metaphysical or morphological one when he writes, "Wenn der Charakter des Außersichseins das Tier zum Menschen macht, so

realization of the positionality of the living thing, being human is at once the awareness of one's own positionality, and a distancing from it.⁹⁴ The human for Plessner is a sort of second order animal that experiences its experience: "Er ist in seine Grenze gesetzt und deshalb über sie hinaus, die ihn, das lebendige Ding, begrenzt. Er lebt und erlebt nicht nur, sondern er erlebt sein Erleben" (364). Yet as a living thing the human is also centered immediately within its *Umfeld*.⁹⁵ Both centered and decentered, present and absent, in its body and out of its body, the human is the concrete realization of the *Doppelaspekt*.

Ihm [i.e., dem Menschen –CG] ist der Umschlag vom Sein innerhalb des eigenen Leibes zum Sein außerhalb des Leibes ein unaufhebbarer Doppelaspekt der Existenz, ein wirklicher Bruch seiner Natur. Er lebt diesseits und jenseits des Bruches, als Seele und als Körper *und* als die psychophysisch neutrale Einheit dieser Sphären. Die Einheit überdeckt jedoch nicht den Doppelaspekt, sie läßt ihn nicht aus sich hervorgehen, sie ist nicht das den Gegensatz versöhnende Dritte, das in die entgegengesetzten Sphären überleitet, sie bildet keine selbständige Sphäre. *Sie* ist der Bruch, der Hiatus, das leere Hindurch der Vermittlung, die für den Lebendigen selber dem absoluten Doppelcharakter und Doppelaspekt von Körperleib und Seele gleichkommt, in der er ihn erlebt.

Positional liegt ein Dreifaches vor: das Lebendige ist Körper, im Körper (als Innenleben oder Seele) und außer dem Körper als Blickpunkt, von dem aus es beides ist. Ein Individuum, welches positional derart dreifach charakterisiert ist, heißt *Person*. Es ist das Subjekt seines Erlebens, seiner Wahrnehmungen und seiner Aktionen, seiner Initiative. Es weiß und es will. Seine Existenz ist wahrhaft auf Nichts gestellt. (364-365)

The fragmentary nature of the relationship between "Körperleib" and "Seele" is due to the positional intensification of the relationship among body, subject, and environment – specifically

ist es, da mit Exzentrizität keine neue Organisationsform ermöglicht wird, klar, daß er körperlich Tier bleiben muß. Physische Merkmale der menschlichen Natur haben daher nur einen empirischen Wert. Mensch sein ist an keine bestimmte Gestalt gebunden und könnte daher auch (einer geistreichen Mutmaßung des Paläontologen Dacque zu gedenken) unter mancherlei Gestalt stattfinden, die mit der uns bekannten nicht übereinstimmt. Gebunden ist der Charakter des Menschen nur an die zentralistische Organisationsform, welche die Basis für seine Exzentrizität abgibt." (365-366)

- 94 "Als Ich, das die volle Rückwendung des lebendigen Systems zu sich ermöglicht, steht der Mensch nicht mehr im Hier-Jetzt, sondern 'hinter' ihm, hinter sich selbst, ortlos, im Nichts, geht er im Nichts auf, im raumzeithaften Nirgendwo-Nirgendwann. Ortloszeitlos ermöglicht er das Erlebnis seiner selbst und zugleich das Erlebnis seiner Ort- und Zeitlosigkeit als des außerhalb seiner selbst Stehens, weil der Mensch ein lebendiges Ding ist, das nicht mehr nur in sich selber steht, sondern dessen 'Stehen in sich' Fundament seines Stehens bedeutet." (364)
- 95 "Als Ich dagegen, das sich in voller Rückwendung erfaßt, sich fühlt, seiner inne wird, seinem Wollen, Denken, Treiben, Empfinden zusieht (und auch seinem Zusehen zusieht), bleibt der Mensch im Hier-Jetzt gebunden, im Zentrum totaler Konvergenz des Umfeldes und des eigenen Leibes. So lebt er unmittelbar, ungebrochen im Vollzug dessen, was er kraft seiner unobjektivierten Ichnatur als seelisches Leben im Innenfeld faßt." (364-365)

to the way that life in the tripartite scheme detailed above is ejected from the body in the course of a self-awareness of the dual positioning between the living being and its body.⁹⁶ Yet the culmination of this relationship in the human means that the sense of a breach, in depriving the human of full immanence, is experienced as fundamental to human existence. This constitutive self-externality of the human, although it arises from causes immanent to life itself in Plessner's account, means that human existence is distanced from the naturalness that seems to belong to non-human nature. Rather than an immanent property or a surrounding condition, "life" for the human is something that needs to be lived.

Der Mensch lebt nur, indem er ein Leben führt. Mensch sein ist die "Abhebung" des Lebendigseins vom Sein und der Vollzug dieser Abhebung, kraft dessen die Schicht der Lebendigkeit als quasi selbständige Sphäre erscheint, die bei Pflanze und Tier unselbständiges Moment des Seins, seine Eigenschaft bleibt (auch da noch, wo sie die organisierende, konstituierende Form für einen Seinstypus des Lebens bildet, nämlich für das Tier). [...] Für die Philosophie erklärt sich diese 'Querlage' des Menschen aus der exzentrischen Positionsform, aber damit ist ihr nicht geholfen. Wer in ihr ist, steht in dem Aspekt einer absoluten Antinomie: Sich zu dem erst machen zu müssen, was er schon ist, das Leben zu führen, welches er lebt. (384)

The progression that has led from the thing to the living thing, from the plant to the animal, now leads from the animal to the constitutive eccentricity of the human. This is the cause of the "natural artificiality" of the human.

Diese Ansicht, oft auch in mythischer Form geprägt, gibt einer tiefen Erkenntnis Ausdruck. Weil dem Menschen durch seinen Existenztyp aufgezwungen ist, das Leben zu führen, welches er lebt, d. h. zu machen, was er ist – eben weil er nur ist, wenn er vollzieht – braucht er ein Komplement nichtnatürlicher, nichtgewachsener Art. Darum ist er von Natur, aus Gründen seiner Existenzform *künstlich*. Als exzentrisches Wesen nicht im Gleichgewicht, ortlos, zeitlos im Nichts stehend, konstitutiv heimatlos, muß er "etwas werden" und sich das Gleichgewicht – schaffen. Und er schafft es nur mit Hilfe der

96 "In Wirklichkeit ist die Sache gerade umgekehrt: nicht ist das Bewußtsein in uns, sondern wir sind 'im' Bewußtsein, d.h. wir verhalten uns als eigenbewegliche Leiber zur Umgebung. Das Bewußtsein kann getrübt, eingeengt, ausgeschaltet sein, seine Inhalte wechseln, seine Struktur hängt ab von der Organisation des Leibes, aber seine Aktualisierung ist immer da gewährleistet, wo die einheitliche Beziehung zwischen Lebenssubjekt und Umwelt in doppelter Richtung, rezeptiv und motorisch, durch den Leib besteht. Bewußtsein ist nur diese Grundform und Grundbedingung des Verhaltens eines Lebewesens in Selbststellung zur Umgebung (111-112)

außernatürlichen Dinge, die aus seinem Schaffen entspringen, *wenn* die Ergebnisse dieses schöpferischen Machens ein eigenes Gewicht bekommen. (384-385)

Awareness of the lack of immediacy generates a response to attempt to overcome the eccentricity by *creating* a sense of balance.⁹⁷ The result of this is the history of human making, namely, technology and culture per se.

Yet this is not something that can be explained in psychological terms, as a kind of compensation, but results directly from the positional situatedness of the human as a body, in a body, and behind the whole process, as observer. It is perceived as a deficit, but Plessner is careful to say that it is not a deficit. Rather, it is the positionally necessary consequence of self-awareness in the broader framework: the task of living life, for the human, becomes precisely that. With the human's positional eccentricity with regard to its own body comes the epistemological consequence of a particular kind of conscious knowledge of that body and its existence; with that knowledge comes the need, knowing, to live.

Der Mensch will heraus aus der unerträglichen Exzentrizität seines Wesens, er will die Hälftenhaftigkeit der eigenen Lebensform kompensieren und das kann er nur mit Dingen erreichen, die schwer genug sind, um dem Gewicht seiner Existenz die Waage zu halten.

Exzentrische Lebensform und Ergänzungsbedürftigkeit bilden ein und denselben Tatbestand. Bedürftigkeit darf hier nicht in einem subjektiven Sinne und psychologisch aufgefaßt werden. Sie ist allen Bedürfnissen, jedem Drang, jedem Trieb, jeder Tendenz, jedem Willen des Menschen vorgegeben. In dieser Bedürftigkeit oder Nacktheit liegt das Movens für alle spezifisch menschliche, d. h. auf Irreales gerichtete und mit künstlichen Mitteln arbeitende Tätigkeit, der letzte Grund für das *Werkzeug* und dasjenige, dem es dient: die *Kultur*." (385)

This picture of the human is quite different from the pessimistic anthropology of the *Mängelwesen*, a concept originally proposed by Herder and reworked (and popularized) by

97 "Wie angegeben, ist diese exzentrische Position im Menschen verwirklicht. Er steht im Zentrum seines Stehens. Er bildet den Punkt der Vermittlung zwischen ihm und dem Umfeld *und* er ist in diesen Punkt gesetzt, er steht in ihm. D.h. einmal: Seine Beziehung zu anderen *Dingen* ist zwar eine indirekte, er lebt sie aber als direkte, unmittelbare Beziehung ganz wie das Tier –, soweit er wie das Tier dem Gesetz der geschlossenen Lebensform und ihrer Positionalität unterworfen ist. Und es heißt zum anderen: Er weiß von der Indirektheit seiner Beziehung, sie ist ihm als mittelbare gegeben." (401)

Arnold Gehlen.⁹⁸ Where the idea of the human as deficient being presupposes a kind of expulsion from the natural world – left weak and defenseless by comparison to other animals, humans must turn to technology to supplement their natural lack – Plessner’s account shows how the perceived sense of expulsion arises, but elaborates the human situation by contrast from the logic of living beings as such.⁹⁹ The theory of the human as deficient being seems therefore necessarily susceptible to the charge of exceptionalism; as a developmental account that portrays how and why technology arose, it seems to beg the question of how the situation of a deficient being developed in the first place. While Plessner’s existential *Bedürftigkeit* has commonalities with the idea of the human as the *Mängelwesen* – broadly speaking, both accounts see culture and technology as the response to a fundamental disjoint between humans and non-human nature – the shift in emphasis between the two theories is crucial. The theory of the *Mängelwesen* emphasizes morphological evolution and the absence of instincts, where the human lack of natural defensive weapons or fleet-footedness renders them uniquely vulnerable in the animal world. While further work would be needed to tease out the presuppositions and implications of this hypothesis in the historical context of philosophical anthropology, the basic premise of the theory seems to import a culturally specific and exceptionally bellicose idea of evolution as a

98 On the concept of the *Mängelwesen* see Fischer (543-546, 174-177). Fischer too seems to assimilate this concept to categories in Plessner such as *Hälftenhaftigkeit* and natural artificiality, but this is inadequate. Gehlen himself (1950) makes clear that his theory is opposed to a view of the human, such as Scheler’s or Plessner’s, that would situate it on a continuum of levels (*Stufen*) with other forms of life. He justifies this absolute distinction by rejecting approaches like Scheler’s that move from the animal to the human in terms of instincts. For Gehlen, instinctual behavior is an automatism irreconcilable with human intelligence. The human is lacking in instincts, too (21-28).

For a survey of creative appropriations of the figure of the *Mängelwesen*, see Fore (2012) 7-8. While he seems to assimilate Weimar philosophical anthropology *tout court* to Gehlen’s concept in a way that overlooks Plessner’s contribution, many of the positive aspects of the appropriations of the *Mängelwesen* he lists would in fact fit well with Plessner’s theory.

99 “Nur weil der Mensch von Natur halb ist und (was damit wesensverknüpft ist) über sich steht, bildet Künstlichkeit das Mittel, mit sich und der Welt ins Gleichgewicht zu kommen. Das bedeutet nicht, daß Kultur eine Überkompensation von Minderwertigkeitskomplexen darstellt, sondern zielt auf eine durchaus vorpsychologische, ontische Notwendigkeit.” (396)

bellum omnium contra omnes; more specifically, it isn't clear why only physical means of attack and defense count as inborn advantages, but social features shared by many species besides humans – group organization, cooperation, language – are a priori transferred from the natural realm to the cultural sphere.

Plessner's account, by contrast, elaborates the concept of artificiality in stages, from the *Doppelaspekt* inherent to the perception of objects as such through the relationship found in various forms of life between body, border, and environment.¹⁰⁰ The end result is a natural artificiality, to be sure, and something like a vertiginous disorientation – “Seine Existenz ist wahrhaft auf Nichts gestellt” (365). But given its place within the broader context of *Die Stufen des Organischen und der Mensch*, this result does not square neatly with Lethen's use of Plessner, precisely because the emphasis the former places on the latter's concept of artificiality strips it from its context in the service of a strong dichotomy that privileges separation, masking, and armoring.

It is notable that Lethen, in his reconstruction of four *Lesarten* of Plessner's dictum, “Der Mensch ist von Natur aus künstlich,” does not arrive at the emphasis suggested by *Stufen*, namely: “Der Mensch ist von Natur aus künstlich.” While my reading of the 1928 book has attempted to show how the eccentricity and artificiality of the human stem from a positional

¹⁰⁰ And indeed, Plessner considers other accounts of the origins of the human and culture, criticizing the tendency to focus on one feature of human existence or to situate the human in relationship to other animals only for the juxtapositional effect of incongruity (385-393). “Eine biologisch-utilistische steht einer psychologischen Auffassung der geistigen Welt gegenüber, die erste macht den Menschen zu einem gesunden, die zweite zu einem kranken Tier. Beide sehen ihn primär als Tier, als Raubtier oder als Haustier, und versuchen, die Epiphänomen der geistigen Äußerungen seines Wesens aus biologischen Prozessen herzuleiten. Darin liegt ihr Kardinalfehler (der aufs Schlagendste die Unfähigkeit demonstriert, den Menschen als Menschen und doch als Naturwesen in Einer Perspektive zu sehen, solange man naturwissenschaftliche mit geisteswissenschaftlichen Vorstellungen zusammenkoppelt). Sie verabsolutieren ein Symptom des menschlichen Daseins und wollen damit alles andere für den Menschen Bezeichnende erklären. Die einen führen das Menschliche auf das Allzumenschliche, den Sexualtrieb oder den Ernährungstrieb oder den Machttrieb, zurück. Die anderen wieder konstruieren einen Erlösungstrieb. Die dritten sehen alles unter dem Aspekt der Intelligenz und der Berechnung. So bewegen sich alle in Zirkeln und kommen aus dem Empirismus biologischer oder psychologischer Symptome nicht heraus.” (390)

logic immanent to living things as such, Lethen is working from the opposite direction, arguing that *Die Stufen des Organischen und der Mensch* represents the “Naturalisierung einer exzentrischen Verhaltenslehre” (80). That is, in Lethen’s reading Plessner starts from a position that is both anthropological and political, descriptive and prescriptive – to avoid the shame and risibility of expressive immediacy, one needs the protection of distance, masking, armoring, and tact – and inscribes it onto the natural world for a broader justification. It is quite possible that these two *Lesarten* of Plessner are determined by which works are prioritized, and that the disciplinary commitments of the various works to biology, anthropology, politics, and social commentary are in tension or even incongruous. That must remain a question for another context. For the present, it is worth considering the nature and implications of Lethen’s reading of Plessner in the context of *Stufen*.

In the various figures and images he examines in Plessner’s work – the border, the mask, the armored body – Lethen invariably emphasizes the aspects of separation, distance, and conflict. The polemic thrust of Plessner’s 1924 social critique *Grenzen der Gemeinschaft* – Lethen’s primary textual reference – encourages these emphases, and yet reading them into *Stufen* contorts the later text, rendering it a usefully piecemeal illustration of a cold anthropology at the cost of any overall coherence or even differentiation from other tendencies in philosophical anthropology. Plessner’s use of the border becomes, in Lethen, a border imposed by a sovereign ego that contains and protects the living body.¹⁰¹ Likewise Lethen emphasizes the mask as the

101 “Sein zentraler Begriff der ‘Grenze’ bezeichnet jetzt nicht länger eine Zone des Austauschs. Vielmehr tritt nun eine hochreflexive Person auf den Plan, die über ein Ich verfügt, das sich nach Innen scharf gegen das Unbewußte des Leib-Seins abgrenzt. [...] Die Aufgabe der Bewachung der Grenzziehung, mit der das Ich sich seiner Identität vergewissert, versetzt es in einen chronischen Alarmzustand.” (84) Conspicuously absent is the border’s function as an interface between organism and external world. Lethen had previously quoted a summary of Plessner’s theory by Joachim Fischer, only to likewise elide the necessarily dual function of Plessner’s concept of the border: “‘Im abkammernden und zugleich aufschließenden ‘Grenzübergang’ ist ein Lebewesen vom Zentrum aus gegen eine korrelierende Umgebung gestellt...’” (83, italics added)

figure of a baroque dance of power, obscuring and protecting, rather than the more complex mediation of mediacy and immediacy found in Plessner, where phenomenal appearance is like a face that hides in the act of revealing.¹⁰²

What is lost is the more nuanced relationship between mediation and immediacy, the way that the border common to all living things both differentiates it from its environment *and* integrates it; absent in Lethen is the insight that the idea of a border is already its transgression.¹⁰³ And for Plessner, this transgression is a necessary feature of both the border and eccentricity, and not simply a threat to subjectivity autonomy and dignity. Similarly, where Lethen sees figures of polarity, fragmentation, and separation, it would perhaps be more accurate to identify the acknowledgment of the need for mediation. Quoting *Macht und Menschliche Natur* (1931), Lethen writes, “Deshalb ist der Mensch “von Natur” künstlich und nie im Gleichgewicht” (Lethen 77). In Plessner’s book, the quote continues, “Deshalb kommt ihm jede Unmittelbarkeit nur in einer Vermittlung, jede Reinheit nur in einer Trübung, jede Ungebrochenheit nur in einer Brechung zustande” (*Macht und Menschliche Natur* 199). Isolating only the second moment of each pair elides the possibility of mediation; a *Brechung* is not a *Bruch* but a necessary feature of any optics. We can also see this in Plessner’s view of contemporary animal psychology – while it is true that the observer has no immediate access to an animal’s interiority, mediated knowledge of knowledge is nevertheless possible through observation of behavior, or *Verhalten* (*Stufen* 106-

102 “Darum ist die Exzentrizität, auch wenn sie sich im Vollzug des Wissens (der Vermittlung) vergißt, nicht getilgt. Kraft ihrer faßt das Wissen unmittelbar etwas Mittelbares: Die Realität in der Erscheinung, das Phänomen der Wirklichkeit. Erscheinung ist ja nicht wie ein Blatt, wie eine Maske zu denken, hinter der das Reale steckt und die man von ihm ablösen kann, sondern ist wie das Gesicht, welches verhüllt, *indem* es enthüllt.” (405)

103 Fischer (2000) reconstructs the genealogy of Plessner’s concept of the border as follows: “Er zieht hier (ungenannt) Hegels idealistische Bestimmung der ‘Grenze’ (als inner Bestimmtheit, die etwas mit seinem Anderen (Medium) sowohl zusammenschließt als es davon abscheidet) und Simmels lebensphilosophische Charakterisierung der ‘Grenze’ (Leben als ‘Mehr-Leben’ und ‘Mehr-als-Leben’) in die biologische Konkretion des Organischen, wie sie ihm durch Buytendijks ‘Anschauliche Kennzeichen des Organischen’ präsentiert war.” (272-273)

107).¹⁰⁴ This term brings us to a key point: *Verhalten* in Plessner is not assimilable to *Verhalten* in Lethen. In the latter's framework, *Verhalten* is connected to codes of conduct, prescriptive forms of behavior that work to protect the autonomy of an individual. For Lethen, it is a figure of separation. For Plessner, on the other hand, *Verhalten* is the necessary mediation between an organism and its environment, and can in fact reveal much about intention and motivation; it is as much a figure of connection as it is the methodological acknowledgment of the inevitability of mediation.

Where Lethen foregrounds separation, isolation, and fragmentation, Plessner's anthropology proposes mediation, eccentricity, and relation. Because Lethen privileges only moments of separation, coldness, and artificiality, he collapses the large distinction between Plessner's anthropology and the theory of the *Mängelwesen* – this makes perfect sense if the lesson from Plessner is simply that humans are artificial, but then it also reduces Plessner's contribution to anthropology to a trivial statement about a gulf between the human and the natural world. The fact that Lethen can find Plessner's failure to mention Herder "astonishing" (91) suggests quite tangibly how little the former engages with the specificity of the latter's anthropology, and particularly its connection to biology.¹⁰⁵

104 "Nicht die ewig verborgen bleibende Innenwelt der Tiere mit ihrem uns unzugänglichen Empfinden und Befinden, sondern die Umwelt, d. h. die jeweilig verschiedene Gestalt der Einheit derjenigen Momente, die für sie wirksam werden und auf die sie wirken können, sei das wissenschaftliche Programm des 'Tierpsychologen.' Keine Kryptopsychologie, sondern Phänologie des lebendigen Verhaltens: Erklärung des uns sichtbaren Gebahrens der Tiere aus sinnlich wahrnehmbaren Faktoren." (107) What observation of *Verhalten* can in fact reveal is suggested in a passage where Plessner supports the use of words to describe animal behavior that would be dismissed as anthropomorphic by a strictly mechanical view of stimulus and response: "Insofern ist Wasmann im Recht gewesen, wenn er gegen Uexkülls tierpsychologiefeindliches Programm zum wenigsten die wissenschaftliche Rechtmäßigkeit von Ausdrücken wie Sehen, Hören, Tasten, Riechen usw. bei Tieren verteidigte. Diese Arten der Bewußtheit sind Arten und Bedingungen lebendigen Verhaltens, das eine Überbrückung des Zwiespalts zwischen dem Eigensystem des Leibes und der Umwelt bedeutet." (112)

105 And in fact, Plessner does mention the Gehlen-Herder connection in the preface to the second edition, declaring the deficient being hypothesis of "begrenzter Tragkraft" (23). Elsewhere, Plessner considers other pessimistic anthropologies and various exceptionalisms of the human, in order to contrast them to his own theory. See *Stufen*, 387-391.

Paradoxically, in reading the border as a form of armoring and containment the sovereign self imposes on itself for protection, Lethen ultimately recenters the eccentric subject within the well-defined body. The insistence on separation, coldness, and distance actually has the effect of undoing the one part of Plessner's *Gedankengut* Lethen needs most, namely, the insight into the fundamental eccentricity of the human. This concept is not reducible to a cold distance that would shield individuals from excess emotiveness and risibility, but is rather a complex positional logic that understands humans as both in their bodies and outside of them, being bodies and having them, and behind the whole dual relationship as its observers. This is a model of embodiment, and of culture and technology, too large for the tight confines of the armored ego.

In a sense and despite its emphasis on distance and armor, despite its attack on expression and warmth, Lethen's version of Plessner remains a deeply subjectivist one. In this account, Plessner presents the reader with a sovereign and calculating subject that draws and polices the border of its corporal and affective autonomy. This subjective decisionism implies, as I have suggested, a body recentered within its armor and neatly delineated from other subjects, and from its own risky and creaturely nature. Yet what one finds in Plessner instead is the border that connects, the subject that is multiply positioned within, without, and behind its body, and contours that are spatial and phenomenological interfaces as much as demarcations. A guiding commitment of *Die Stufen des Organischen und der Mensch* is to objectivity and the necessary relationality between subject, body, and environment. We see this in Plessner's picture of technology and culture too. Where Lethen's reading implies technology as calculation, distance, armor, *Steuerung*, and a kind of traffic-control for individual subjects – all of which emphasize and connote subjective aspects of technology – what we find in Plessner is an insistence on the

co-presence of invention and discovery, making and finding, creation and expression, subjective and objective dimensions.¹⁰⁶ In other words, Plessner is careful to emphasize the close connection between human artificiality and the structures of objective reality. This is fully in accordance with the method and focus of the rest of the book, where features that distinguish the human are not the markers of an absolute breach or ejection from the natural world, but are rather the dialectical realization and self-fulfillment of tendencies already present in nature. Eccentricity, for example, is the result of an incremental and progression realization of a tendency already latent in living things and, at base, already present in unrealized form in the split at the core of phenomenal objects available to perception. It is also closely connected to the idea of expression, a linkage that does not really seem to have a place in Lethen's account.¹⁰⁷

This is a pattern we will see recur in the following chapters. The fact that Lethen ignores or suppresses the way that, for Plessner, humans are not just artificial but artificial *by nature*, and that eccentricity yields not just the necessity for mediation, but for mediated *immediacy*, has as a broader correlate the way that nothing ultimately seems to be *strictly* technological for the writers

106 "Denn ebenso wesentlich ist für die technischen Hilfsmittel (und darüber hinaus für alle Werke und Satzung aus menschlicher Schöpferkraft) ihr inneres Gewicht, ihre Objektivität, die als dasjenige an ihnen erscheint, was nur gefunden und entdeckt, nicht gemacht werden konnte. [...] Der Mensch kann nur erfinden, soweit er entdeckt. Er kann nur das machen, was es 'schon' an sich gibt – wie er selbst nur dann Mensch ist, wenn er sich dazu macht, und nur lebt, wenn er sein Leben führt. [...] Das Prius von Suchen *und* Finden dagegen ist die Korrelativität von Mensch und Welt, die auf die Identität seiner exzentrischen Positionsform und der Struktur dinglicher Realität (die eben auch 'exzentrische' Form zeigt) zurückweist. [...] Der schöpferische Griff ist eine *Ausdrucksleistung*. Dadurch erhält der realisierende Akt, der sich auf die von der Natur dargebotenen Materialien stützen muß, den Charakter der Künstlichkeit." (397-398)

107 "Hier geht es um die den Ausdrucksweisen vorgelagerte Notwendigkeit des Ausdrückens überhaupt, um die Einsicht in den Wesenszusammenhang zwischen exzentrischer Positionsform und Ausdrücklichkeit als Lebensmodus des Menschen. [...] Mitteilungsbedürfnis und Gestaltungsbedürfnis deuten also selbst auf existentielle Mächte zurück, die in ihnen sich nur auswirken. Ob diese mit der Sozialität der menschlichen Lebensform direkt oder indirekt zusammenhängen, ob nicht noch andere Seiten der Form ins Spiel treten, bleibe unerörtert. Eins ist durch die bisherigen Untersuchungen gesichert: Die exzentrische Positionsform bedingt die Mitweltlichkeit oder Sozialität des Menschen, macht ihn zum ζῶον πολιτικόν [sic], und bedingt gleichursprünglich seine Künstlichkeit, seinen Schaffensdrang. Es fragt sich, ob aus der Exzentrizität ebenso ursprünglich – nicht diese oder jene Art von Ausdrucksbedürfnis, sondern ein Grundzug menschlichen Lebens folge, den man als Expressivität, als Ausdrücklichkeit menschlicher Lebensäußerungen überhaupt bezeichnen muß. Ein derartiger Grundzug macht sich natürlich für den Menschen auch als Zwang geltend, der nicht nur in seinem Leben aufgeht, sondern darin gegen sein Leben angeht, lebend sein Leben führt." (399)

and intellectuals of Weimar considered in this study, but is always technological in way that stems from a given logic or register of the natural world or the natural sciences. What we find in Plessner is similar to what we will see in Döblin and Jünger, and suggests an important dimension of the technological imaginaries of the Weimar period – because of a particular kind of human embodiment within its environment, human activity, labor, and technology are themselves understood as outgrowths of natural and biologic forces. The bodies here are not in the first place armored, contained, and divided off, but integrated, positional, and ecological in various ways.

What the comparison of externalization, embodiment, and incorporation in the technological anthropologies of Marx, Kapp, and Plessner suggests is that consideration of terms such as the human, nature, labor, and the body were crucial to modern articulations of a newly-autonomous concept of technology.¹⁰⁸ In none of these three thinkers does technology stand on its own legs. Where it comes closest, in the work of Kapp, is where it becomes most methodologically and philosophically suspect. Put differently, the methodological level influences the conceptual and philosophical levels. Where a discourse of technology, such as that of machines in Marx or of the *Hälftenhaftigkeit* of the eccentric human in Plessner,¹⁰⁹ articulates its connection to a related discourse and inquiry (political economy in Marx, philosophical anthropology and biology in Plessner), it has both a heuristic value as a tool of inquiry and finds a useful – because contextually specific – theorization. Where it is absolutized in the service of foregone conclusions about the centrality of the human, as in Kapp, technology is unable to tell us much about itself except in a haplessly historicist way: that people thought a certain way about

108 For the history of the development of technology/*Technik* as an emergent autonomous concept, see Leo Marx (2010) and Eric Schatzberg (2006).

109 (385)

the topic at a certain time.

But despite their differences in method and utility, what we see in Marx, Kapp, and Plessner is a concept of the human that articulates it as a relationship between biology and technology, organ and machine. None of the three figures ultimately draws a strict dichotomy between the terms, although Kapp's insistence on the primacy of the organic comes close. Rather, they offer three sketches of the human as a liminal figure between self and other, body and environment, subject and substance, *Innenwelt* and *Außenwelt*, nature and technology, a figure whose primary action, when reduced to its most basic terms, consists in a kind of border crossing across the bounds of the individual body, externalizing itself and incorporating its other. The differences among the three show the necessity of context-specificity and methodological function in constructing (and parsing) accounts of technology. And, in a way that complements this insight, their commonality suggests the rough conceptual coordinates of the space in which the human body was being reconceived in the late nineteenth and early twentieth centuries in its relationship to nature, technology, organs, machines, labor, production, and the newer semantic and social fields of industrialization, capitalism, colonialism, urbanization, and modern sciences such as experimental biology. For a much closer view of the way that the instrumental body was serving as a site to reimagine human subjectivity in the 1920s, let us now turn to Alfred Döblin's 1924 science fiction epic, *Berge Meere und Giganten*.

CHAPTER TWO

“Jetzt kommt das Leben”: *The Technological Body in Alfred Döblin’s Berge Meere und Giganten*

Alfred Döblin occupies a curious position in the landscape of German modernism. If it weren't for the canonical status of *Berlin Alexanderplatz* he could easily pass for a “forgotten author,” as one critic pointedly put it, and this in spite of a complex and diverse oeuvre that stretches over half of the twentieth century.¹¹⁰ Such lopsided reception stems in part from the difficulty of accounting for the vicissitudes of a biography that intersects with major moments in twentieth-century literary and cultural history without being readily assimilable to any of them.¹¹¹ From his early engagement with Expressionism and Futurism to the literary celebrity that attended publication of his city novel in 1929 and his alienating wartime conversion to Catholicism,¹¹² from his avant-garde embrace of technological modernity to a monist philosophy of nature,¹¹³ from his exploration of Eastern Jewry to his sustained engagement on behalf of the

110 While a recent biography by Oliver Bernhardt concludes with a chapter on Döblin as the “vergessene Dichter,” this is a situation that may well be changing, as Gabriele Sander argues in the introduction to her invaluable critical overview of Döblin’s life and work (2001). And to be sure, recent critical interventions into Döblin scholarship, such as Devin Fore’s article “Döblin’s Epic: Sense, Document, And The Verbal World Picture” (2006) and Stefanie Harris’ *Mediating Modernity: German Literature and the “new” Media, 1895-1930* (2009), consider lesser known works by Döblin to complicate and deepen our understanding of his contribution to German modernism, yet the city novel continues to be *the* horizon that orients these approaches.

111 Klaus Müller-Salget, in his seminal account of Döblin’s development, describes the two predominant ways of accounting for Döblin’s oeuvre: on the one hand, there is the view that his entire work represents an unchanging continuity, and on the other, the idea of “Proteus Döblin” emphasizes the author’s radical shifts between movements and styles, viewing each individual work in isolation (1). While this dichotomy no longer aptly characterizes the scholarship on Döblin, a sense persists that the milestones, reference points, and termini of his life and work are not to be reconciled, and indeed a recent biography draws on the figure of “Proteus Döblin” (Schoeller 16).

112 Gabriele Sander describes the scene in Santa Monica in 1943 amongst the exiles who had assembled to celebrate Döblin’s 65th birthday: “Heinrich Mann hielt die Begrüßungsrede, Fritz Kortner, Peter Lorre und Alexander Granach lasen aus Döblins Büchern, es erklangen teilweise eigens für ihn komponierte Werke von Hanns Eisler und Ernst Toch, und ‘die Blandine Ebinger sang Berliner Chansons’ (Br 292). Mit den in seiner Dankesrede gemachten Andeutungen über seine neugewonnenen religiösen Auffassungen stieß Döblin dann jedoch auf totales Unverständnis bei der knapp zweihundert geladenen Gästen.” (70)

113 For example, in “Der Geist der naturalistischen Zeitalters” (1924) and *Das Ich über der Natur* (1927), respectively.

disenfranchised and suspicion of the organized politics of the left,¹¹⁴ Döblin's heterogeneous array of positions has prompted critics to elide the incongruous aspects of his thinking to highlight his contribution to German modernism.

This chapter focuses on one of the most confounding and complex works in Döblin's oeuvre, his 1924 science fiction novel *Berge Meere und Giganten*, a sprawling narrative chronicling the future history of humanity between the 20th and 27th centuries. Scholars have endeavored to make sense of its conceptual and aesthetic incongruities by reading it as a cautionary tale about the fateful struggle between nature and technology in industrial modernity.¹¹⁵ The novel would thus fit into a dichotomous discourse organized around a set of neat polarities between nature and technology, the organic and the mechanical, the armored body and the *Kreatur*, that supposedly dominated the cultural and political imaginary of Weimar culture.¹¹⁶

114 See *Reise in Polen* (1926) and "Wissen und Verändern!" (1931).

115 Roland Dollinger, for example, describes it as Döblin's "grandiose vision of the heroic struggle between the ratio-technological impulse of modern man and nature" (95). Gabriele Sander, who edited the critically revised *Neuausgabe* of 2006, has dubbed it an "Epos über den Konflikt zwischen Natur und Technik" (154-5). Irmgard Hunt has written that "[m]an and nature, or man against nature, is obviously Döblin's overall theme in all its possibilities" (65), and Ritchie Robertson has called the central theme of the work "man's urge to control nature" (216). In "Bemerkungen zu *Berge Meere und Giganten*" Döblin describes how, although he originally set out to write the novel in order to settle accounts with his creeping "nature complexes," the process of writing it yielded the opposite effect, namely a deliberate paean to nature. In general, the development of Döblin's attitude towards modern technology is a vexed question. In the dedication to *Die drei Sprünge des Wang-lun* (1915), Döblin describes the disruptive audial impact of modern technology that enters the window from the street. The vibrations, noise, and chaos of urban modernity that will be welcomed into *Berlin Alexanderplatz*'s montage of voices are here juxtaposed to the less ephemeral acts of remembering and bearing witness. The novel *Wadzeks Kampf mit der Dampfturbine* (1918) and especially the programmatic essay "Der Geist des naturalistischen Zeitalters" (1924) represent a more enthusiastic approach to modern technology. The question of technology is implicitly central for Müller-Salget's account of Döblin's trajectory in the sense that Müller-Salget's focus is the shifting role of the "Ich" in the context of Döblin's "Naturalismus." Yet for reasons that will become clear over the course of this essay, I do not follow Müller-Salget in many of his points, particularly in the way that he sees a strong transition in Döblin's view of technology between *Berge Meere und Giganten* and "Der Geist des naturalistischen Zeitalters" – I do not think we are justified in seeing, as he does, the science fiction novel as representing "eine absolut gesetzte Technik und die daraus resultierende Antinomie zwischen Mensch und Natur" (13).

116 Various accounts of Weimar culture foreground the discursive centrality of the body and dichotomies such as that between nature and technology. Most important for this study is Helmut Lethen's *Verhaltenslehren der Kälte* (1994), but Peter Sloterdijk's *Kritik der zynischen Vernunft* (1983) and Jeffrey Herf's *Reactionary Modernism* (1984) should also be mentioned in this context.

In this chapter I argue that the novel's repeated disarticulation and reassemblage of bodies, far from constituting a warning against the Promethean hubris of the technological impulse, instead undermines conceptual dichotomies pitting nature against technology, the organic against the mechanical, and the human against the non-human.¹¹⁷ That is, the novel stages the literal entwinement, rupture, and fusion of human organs with technological apparatuses in order to allow immanent conceptual tensions to play out on the narrative level.

Scholars of Weimar culture and the avant-garde have shown how the technological body was mobilized to rework categories of subjectivity, experience, gender, society, labor, and media, among others, as part of a larger critique of a bourgeois humanism that privileged psychological interiority.¹¹⁸ While Döblin's *Zukunftsroman* appropriates terms and tropes from this tradition, its aesthetic negotiation of the body's dual status – as both a tool and the seat of the self – offers a far more complex figuration than the trope of the armored or prosthetic body that circulates in other modernist art and fiction. Even the newer figure of the cyborg is insufficient to account for Döblin's depiction of technology, since *Berge Meere und Giganten* disrupts the very distinction between biology and technology on which the cyborg is necessarily based.

117 My reading thus builds and expands on Peter Sprengel's original and nuanced reading of *Berge Meere und Giganten* as a text in which Döblin's vitalism leads to the dissolution of boundaries between the organic and inorganic, and between different living beings. For more on the centrality of the concept of *Lebens* to Döblin's early work, see Ernst Ribbat's seminal monograph *Die Wahrheit des Lebens im frühen Werk Alfred Döblins*.

118 Of particular interest in this connection is the work of Helmut Lethen, Andreas Huyssen, Andrew Hewitt, and Matthew Biro. Lethen's *Verhaltenslehren der Kälte* (1994) proposes a coolly inorganic anti-subjectivism in discussions of Ernst Jünger, Helmuth Plessner, and the "radar type." In "The Vamp and the Machine: Technology and Sexuality in Fritz Lang's *Metropolis*" (1981) Andreas Huyssen argues that *Metropolis*'s syncretist mixture of an Expressionist technophobia with the technophilia of *neue Sachlichkeit* is explained by the film's reliance on technological imagery to negotiate competing models of female sexuality. His essay on Ernst Jünger (1993) analyzes the latter's dependence on technological armoring to shore up the privilege of individual experience in the face of its erosion by modern technology and warfare. Hewitt (1993) situates the importance of the machine for Marinetti's Futurism in the way that the machine can model a harmonious antagonism, a "struggle without protagonists" (142) that displaces class conflict onto a conflict between man and nature in the service of "capitalism's libidinal project of self-destruction" (17). And most recently, in *The Dada Cyborg* (2009) Biro has shown how the Berlin Dadaists drew on the post-WWI glut of prosthetic bodies to appropriate the figure of the cyborg as a way of rethinking "representation, perception, and identity in the modern world" (257).

This chapter has three objectives. Firstly, to show that Döblin's position is fundamentally coherent and continuous; seemingly incongruous moments within his oeuvre, such as his monist philosophy of nature and his avant-garde critique of the autonomous bourgeois subject, are not so many revisions of his position but rather varying expressions of a set of common impulses. Secondly, I argue that Döblin's science fiction novel forces us to rethink the relationship between nature and technology within German modernism: this relationship cannot be characterized as one of polarity or dichotomy so much as of mutual discursive and tropological dependency. And finally, rather than evincing a wishful (and ideologically dubious) desire for reconciliation, the novel's embrace of an organic understanding of technology and the human communities that arise at the end of the narrative suggest an undertheorized aspect of Weimar literature. Here violence is inflicted on the human body not to repress organic, creaturely vulnerability in the service of the armored persona, but to undermine the very polarities upon which such constructs are based in order ultimately to articulate a new kind of relationship between individual and collectivity.

My analysis begins by examining how the text's dedication already constructs the body as a relationship between the perceiving, writing subject and its environment rather than as a clearly bounded entity. Then I turn to the novel's progressive penetration, rupture, dissolution, and reconstitution of the human body, in order to both account for the way that it furthers Döblin's critique of the autonomous individual and to show how, far from evincing a pessimistic view of nature's domination by technology, *Berge Meere und Giganten* instead shows the inseparability of these two terms. I then analyze the eponymous giants to suggest how Döblin's reconfiguration of the human body is tied to the novel's political vision, in which a reworked subjectivity enables the kind of collectivities depicted at the end of the text. I conclude by considering *Berge Meere*

und Giganten in light of Helmut Lethen's characterization of the Weimar Republic as determined by the frozen polarity of "Entmischung," in order to suggest how Döblin's novel can challenge a received understanding of Weimar culture.

To say that *Berge Meere und Giganten* does not lend itself to summary is something of an understatement. Döblin's novel spans the 20th to the 27th centuries with a geographic scope to match, and depicts a future history of power struggles, war, technological innovation, and rebellion. Because of its epic temporal scope, the episodic narrative is not so much character-driven as it is anchored to other types of continuity, whether geographic or thematic. The novel thereby departs from the typical, popular *Zukunftsromane* of the period, which centered on strong-willed, calculating heroes engaged in ultimately successful monumental technological projects, like the related genre of the *Ingenieurroman*. While *Berge Meere und Giganten* does feature engineers and scientists involved in Promethean ventures, they are decentered both by the sweeping diachrony and the epic role played by mass processes and movements. Yet the novel goes even further by insistently rupturing the individual bodies in which characters are necessarily located. In so doing, it both shares a thematic focus of contemporary *Zukunftsromane* on technological advances and war, and radically differs from other early texts of the genre in the way it undermines rather than reinforces the autonomous individual. Both the decentering effects of the epic narrative and the insistent ruptures of individual human bodies rework the literary category of character and the bourgeois ideal of the contained individual with which Döblin associated it.¹¹⁹

119 On the relationship of early *Zukunftsromane* to the *Ingenieurroman* and its strong-willed protagonist, see Brandt (2007), especially pp. 14, 69-71, and 117-121; for an overview of the formal and thematic characteristics of early German science fiction, see Innerhofer (1996), especially pp. 20-29; for a discussion on the thematic and political differences between *Berge Meere und Giganten* and contemporary nationalist *Zukunftsromane*, see Peter Fisher (1991), pp. 151-156. For Döblin's own take on the relationship between the literary category of

A few of the more notable events in the novel include a renewed *Völkerwanderung*, the invention of synthetic food production, known as *Mekispeise*, indefinitely capable of sustaining a thereby redundant population, a world war between Europe and Asia that chars and floods much of Russia, the struggle between the urban, technocratic centers of power and several waves of a back-to-the-land movement, the cataclysmic harvesting of Iceland's lava to melt Greenland's ice, the torrent of hitherto icebound prehistoric monsters thus revived, and in response to these, the cultivation out of human, animal, vegetable, and mineral elements of living defense turrets (the titular giants). This sequence of events ultimately yields the new egalitarian collectivities that arise in Europe at the end of the narrative, and I will show how the intertwined challenges to the individual body and its instrumental use lay the necessary groundwork for the conceptions of subjectivity and community that enable these collectivities. The episodes my analysis will focus on are distributed throughout the novel (in the dedication, and in books two, three, seven, and eight out of nine) in order to reconstruct the development of the relationship between technology, instrumentality, and the human body.

“Die dunkle rollende tosende Gewalt.” The dedication’s writing body

“Jede Minute eine Veränderung. Hier wo ich schreibe, auf dem Papier, in der fließenden Tinte, in dem Tageslicht, das auf das weiße knisternde Papier fällt. Wie sich das Papier biegt, Falten wirft unter der Feder. Wie die Feder sich biegt, streckt. Meine führende Hand wandert von links nach rechts, nach links vom Zeilenende zurück. Ich spüre am Finger den Halter: das sind Nerven, sie sind vom Blut umspült. Das Blut läuft durch den Finger, durch alle Finger, durch die Hand, beide Hände, die Arme, die Brust, den ganzen Körper, seine Haut Muskeln Eingeweide, in alle Flächen Ecken Nischen. So viel Veränderung in diesem hier. Und ich bin nur ein Einzelnes, ein winziges Stück Raum” (8).¹²⁰

character and the concept of the individual, see “An Romanautoren und ihre Kritiker.”
120 Döblin, Alfred. *Berge Meere und Giganten*. München: Deutscher Taschenbuch Verlag, 2006. All further citations of the novel are to this edition.

This scene of writing occurs in the middle of the unusual dedication to *Berge Meere und Giganten* and follows a sustained encomium to the recipient of the dedication – an all-pervasive force of change and becoming that Döblin dubs “das Tausendnamige.” This description of what the authorial voice sees in the moment of writing – the pen, the paper, the May sunlight and later the flowers on the desk – at first recalls a familiar moment of writerly self-reflection: before the novel, the novelist. Yet while the indexical, declarative quality of “Hier wo ich schreibe” may seem to foreground the writing self, the quick shifts from the paper to the pen to the hand to the anatomic close-ups soon dissolve any sense of centered subjectivity.¹²¹ The metonymic chain that links sunlight, paper, pen, fingers, nerves, blood vessels, and all organs of the writing body establishes a relation that interweaves body, instrument, environment, writer, and writing, effacing the distinctions between them. The organs of the body themselves become media technologies through which knowledge is recorded and transmitted and thus no different from the pen, since the integration of the body with its environment undermines any easy demarcation between subject and medium or perception and production.¹²²

In the space between the initial “ich schreibe” and the “ich bin” at the end of the passage, the meaning of “ich” undergoes a curious transformation. The active quality of “ich schreibe,” once this action is situated along a linkage of bodily and environmental processes, becomes

121 While Döblin commonly uses the term “das Ich,” the development of his terminology from “An Romanautoren und ihre Kritiker” onward makes it appropriate, in my opinion, to speak of subjectivity in a broader sense to characterize his ideas on this score. Part of the thrust of such programmatic essays, as well as of *Berge Meere und Giganten*, is to undermine atomistic notions of the “Ich,” in order to create a picture of subjectivity, perception, embodiment, and environment as entwined concepts. Thus when I refer in this essay to “subjectivity,” this is not meant to be taken in a dualistic sense but rather refers to the way that Döblin situates the “Ich,” the self, and the subject in the dispersed relationships that connect the individual unit to the surrounding environment.

122 Given Döblin’s programmatic linkage in the early “An Romanautoren und ihre Kritiker” between technology, a dispersed subjectivity, and elemental, natural forces, the dedication’s subversion of a clear delineation between body, medium, and environment can be seen as a fundamental aspect of his thought, and already signals the way that he will portray thought as a process of corporal integration with one’s environment in *Das Ich über der Natur* (44, 84-90).

something that happens to the body as much as it is something the body does. The apposition to “ich spüre” – “das sind Nerven” – dislocates the agency of the “ich” in both perceiving and guiding the pen, a dislocation subtly reinforced by the image of the blood vessels weaving throughout the body. By the time we read, “ich bin nur ein Einzelnes,” it is clear that the “ich bin” is not the expression of a grounded, autonomous selfhood but rather a statement of subjective implication in a relationship that transcends the limits of the individual body. Similarly, “Einzelnes” is not a contained, monadic individual, but exists in a synecdochal and material relationship to the wider world; the “winziges Stück Raum” that is the self both recapitulates and decenters the initial “hier.”

While this scene of writing fails to produce or stabilize a writing subject, it also conspicuously avoids partaking of the modernist discourse of a *Sprachkrise* made familiar by Hugo von Hofmannsthal’s Chandos, Rainer Maria Rilke’s Malte, or Robert Musil’s Törless. The breakdown of a sovereign, writerly subjectivity does not correlate here to an inability to write or convey meaning.¹²³ Rather, it is precisely the act of writing, conceived as something that takes place along a dispersed network of corporal and environmental media technologies, that constitutes a new model of decentered subjectivity. A key feature of this model is the ambivalent role of the body as both the tool that carries out the act of writing that generates the self and, on the other hand, the entity in which the self is most commonly located. It is this paradoxical, dual status of the body both as a tool for producing the self in interaction with the environment and as

123 In Hofmannsthal’s text, Lord Chandos cannot articulate the very words – “Geist,” “Seele,” “Körper” – whose relationship Döblin’s text reconfigures. As we will see, Döblin is concerned with elements that occur in the Chandos letter, such as endless fragmentation and the (un)knowability of the interior of the body, but uses them in a completely different way. In Rilke’s novel, the pervasive motif of bodily and architectural penetration produces the sense of fragmentation that makes the production of meaning a nearly impossible project. As is already evident from the dedication to *Berge Meere und Giganten*, Döblin is also invested in transgressing corporal contours, but in contrast to Malte, the relationship established between the *Eingeweide* and what Döblin elsewhere calls the *Ausgeweide* is the very condition for the possibility of writing. For a reading of the relationship between Chandos and Malte in the context of new media technologies, see Stefanie Harris (2009).

the self's metonymic representative that Döblin's novel probes.

In the 1920s Helmuth Plessner attempted to account for this paradoxically dual relationship between subject and body by splitting the notion of the body into the two concepts of *Körper* and *Leib*. The *Körper* is the more mechanical body, location of the subject and subject to the same physical laws as all objects, while the *Leib* is the living body through which the subject interacts with its environment.¹²⁴ For Plessner, the human is at once located inside and outside the body: the human *is* a body and *has* a body that it deploys instrumentally, and is also outside of the whole process as a self-reflective subject.¹²⁵ Plessner's technological anthropology is based upon a positional relationship among the body, the subject, and instrumentality, and thus shares key terms with *Berge Meere und Giganten's* corporal explorations, yet the latter pushes the tension between being and having a body further on the topological level by staging the clash between being and using a body in the ruptured and reconstituted interfaces between organs and organisms, body and environment. In Döblin's novel, instrumentality is not only a decentering or eccentric feature, as with Plessner, but also ruptures the very bounds that eccentricity, needing a center, still needs.¹²⁶

In this sense, the scene of writing from Döblin's dedication can be understood as a microcosm of the novel as a whole. Where the former traces a movement from the body that writes to the self that is inscribed across a media relationship consisting of corporal, technological, and environmental elements, ending in an image of dispersed subjectivity,¹²⁷ the

124 See *Die Stufen des Organsichen und der Mensch* (1928), especially 291-302, and "Die Deutung des mimischen Ausdrucks" (1925), especially 77-89.

125 *Die Stufen des Organsichen und der Mensch* (365)

126 In a sense, the basic unit of Plessner's anthropology is the experience of individual organism; part of Döblin's radicality is to unsettle the automatic centrality of the individual by insisting that the individual is one level among many, and nothing more than an arbitrary heuristic organizing principle. This is indeed a thematic motif of his work from "An Romanautoren und ihre Kritiker" to *Das Ich über der Natur*.

127 As Döblin will write in "Der Bau des epischen Werks," "man glaubt zu sprechen und man wird gesprochen, oder man glaubt zu schreiben und man wird geschrieben" (243).

fate of instrumentalized bodies in *Berge Meere und Giganten*'s plot runs a similar dialectic in dramatizing, at the novel's end, a deindividualized collective freed from the instrumentality that was originally tied to the contours of the individual body. Crucially, Döblin's topological strategy of rupturing the bounds of the individual body also produces the dissolution of any conceptual boundary between nature and technology as separate spheres; more precisely, the novel's extended de- and reincorporations demonstrate that nature and technology cannot coherently be conceived as separate spheres in the first place. Thus while the violent fantasy of the avant-garde armored body may well gain a shock value by assimilating nature to technology, *Berge Meere und Giganten* unfolds the immanent implications of the trope of the body-as-tool to recognize the inseparability of the two spheres and reformulate the question accordingly as an exploration of the body's ambivalent instrumentality.

“Drähte und Röhrchen führten in ihr Inneres.” The technological body in the laboratory

An early scene in the novel renders the convergence of nature and technology graphic by depicting the literal wiring-together of organic and technological elements. Meki's laboratory, in the vicinity of 26th-century Edinburgh, is the leading center of global research in synthetic food production, and this section of the novel sets the tone for much of what follows. The production of synthetic food eliminates agriculture's dependency on unpredictable natural cycles, thereby creating the material surplus and attendant bodily and spiritual torpor that results in the global “Ural War” and subsequent bloody chaos. Moreover, the entire project of synthesizing food requires the total instrumentalization of organic bodies. Yet as later episodes will show, this is the beginning of a relationship between bodies, growth, and instrumentality that ultimately results in the defeat of instrumentality, since the disruption of the distinction between individual bodies

undoes the distance necessary for these bodies to be controlled in the service of a rational end.

Meki's researchers, called "Grünen" after the uniforms they wear, conduct experiments on the at first unwitting human test subjects, the "guests" or "Violetten," experiments that shift the scale from the organism to the organ.¹²⁸ The body itself is not a privileged site – "Die Physiker und Chemiker emanzipierten sich vom Tier- und Pflanzenkörper" (84) – but the organs are, as the "guests" are habitually vivisected and incorporated into various apparatuses.

Um [die Gäste], in gläsernen Schränken, in Kästen Wasserbetten, bei wechselnder Temperatur von Erdkälte bis zu hoher Wärme lagen auf Watte, schwammen in Behältern umhüllt und bloß, weiße und rote Organe und Organteile. Aus Standgefäßen floß ihnen in dünnen Röhren die ernährende Durchblutungsflüssigkeit zu. [...] An alle, lebende Organismen, lebende Organe, durchpulste Organteile waren die beobachtenden Apparate herangeschoben. [...] Die ungeheuer hohen Glaszylinder, in denen sich weiße rotgeäderte Därme an ihrem Gekröse langsam wurmartig bewegten, getrennt oder verbunden mit dem Organismus. Substanzen goß stäubte strich man auf sie, beobachtete die Verwandlung, die sie auf der triefenden Schleimhaut, an der dünnen Darmwand erfuhren. Die Schädel waren manchen der Menschen geöffnet, die behaarte Kapsel lag neben ihnen. In ein flüssiges warmes Bett war nach rückwärts das vorquellende pulsierende Gehirn gelagert. Dick zogen sich die blauen strotzenden Venen über die weißliche gefurchtete Masse; sie war auseinander gezogen, Drähte und Röhren führten in ihr Inneres. Drähte und Röhren führten auch zu den Därmen, in das Blut, in die Leber. (87–88)

This total, capillary interpenetration of organic elements and scientific apparatuses is characteristic of the technology depicted in Döblin's novel. It is not just the image of tubes and wires leading into human organs that gives this scene its particular quality, but the repetitive stylistic insistence with which laboratory equipment is interlayered with living organs. The enumeration of body parts and components – livers, muscles, cells, intestines, mesentery, mucous membrane, skull, brain, scalp – gives an impression of completeness, which paradoxically reinforces the sense of fragmentation. The body parts are spread out from one another and interspersed with apparatuses, observing scientists, and purposive bustle; the end effect is an

128 For an exposition of the various scientific and medical discourses that facilitated Döblin's focal shift from the organism to the organ, see Annette Ripper (2007).

image of an entity or system that is as technological as it is biological. There is a circulation and a metabolism of a sort, but these can only be described as biological processes mediated by technological apparatuses, or technological processes mediated by organs.

The “Wirrsal” of tubes and wires running through the “Glassärgen” in Meki’s laboratory is connected to a greenhouse of sorts, in which plants and trees are similarly innervated through their leaves, trunks, and roots. “Auch sie waren umgeben von einem Wirrsal von Drähten und Röhren. Sie waren gespalten, angebohrt; in die Kronen Stämme Wurzeln führten Leitungen. Kühl waren einzelne hohe Säle durchweht; in anderen brütete die Luft; rote grüne phosphoreszierende Lichter lagen auf den Pflanzen” (88). Here again an enumeration of parts – crown, trunk, root – creates a sense of fragmentary accumulation rather than organic wholeness. This fusion of animal, vegetable, and mineral foreshadows the even more monstrous agglomeration of the giants toward the end of the novel. To the extent that Meki’s violent dismembering and coupling of organs and plants represents a Promethean quest for knowledge, it could be certainly seen as the domination of nature by technology. Yet the textual emphasis on interpenetration and interwiring challenges the very distinction on which this hierarchical antagonism would need to be based. Seen in this way, the gruesomely literal interpenetration of technology and nature in the *Mekiwerte* serves as a model for the way that nature and technology are interwoven in the instrumental body throughout the novel. Furthermore, it seems as though technology can only be technology in this novel to the degree that it *becomes* nature. The awed popular reaction to the rumors, and then the products, of the *Mekiwerte* suggests as much. “Man träumte, war in einem Schlaraffenland. ‘Sie haben künstliche Tiere. Sie können Bäume machen’” (93). It is not simply the domination of nature that is at stake in this passage, but its literal production. What the dissection and reconstruction of life in Meki’s laboratory shows is

emblematic of *Berge Meere und Giganten* as a whole. The literal fusion of nature and technology mirrors the conceptual breakdown of the distinction between the two, and these radical mergers rely on or produce the rupture of individual bodies.¹²⁹

Seen in this light, the dismemberments and their emphasis on organs over organisms depicted in Meki's laboratory become ambivalent. On the one hand, the violent integration of organs and apparatuses is in the service of a rational procedure with a clearly defined instrumental end. While the "guests" are forcibly deindividuated, this rationalistic procedure solidifies the technocratic selfhood of Meki, whose name will be associated with the synthetic food for the remainder of the novel. On the other hand, the rupture of human bodies and their integration into technological, biological assemblages, in keeping with Döblin's programmatic critique of the sovereign individual, will generate its own logic, which will come to undermine both individuation and instrumentality.

"Die Erde muß wieder dampfen. Los vom Menschen!" Döblinismus as program

The destruction of individual bodies in Meki's laboratory must be read in the context of *Döblinismus*, the programmatic theorization of the novel form set forth in essays such as "An Romanautoren und ihre Kritiker. Berliner Programm" (1913) and "Der Geist des naturalistischen Zeitalters" (1924). In these essays Döblin mounts a critique of the autonomous bourgeois individual, the traditional psychological novel that privileges this individual, and the humanistic

¹²⁹ The experimental procedure portrayed in this episode bears strong similarities to the antihumanism of programmatic aesthetic essays by Döblin such as "An Romanautoren und ihre Kritiker. Berliner Programm" (1913) and "Der Geist des naturalistischen Zeitalters" (1924). In these essays Döblin mounts a critique of the autonomous bourgeois individual, the traditional psychological novel that privileges this individual, and the humanistic world view of the German *Bildungsbürgertum* that centers on both of these. This critique is enacted by a shift in scale away from the level of the individual. On the one hand, the focus becomes microscopic by moving to the sub-individual level of the physiological process or complex. Simultaneously, Döblin suggests a telescopic view that zooms to the supra-individual level of the mass or collective. Either way, the defined contours of the individual are blurred in the service of an attack on an understanding of subjectivity that relies on this contained, isolated individual. See *Schriften zu Ästhetik, Poetik und Literatur*, pp. 121, 171-172, 188-189.

world view of the German *Bildungsbürgertum* that centers on both of these. Crucially, this critique is enacted by a shift in scale away from the level of the individual. On the one hand, the focus becomes microscopic by moving to the sub-individual level of the physiological process or complex. Simultaneously, Döblin suggests a telescopic view that zooms to the supra-individual level of the mass or collective. While Döblin grounds the need for the shift away from the individual in a historical narrative – in the face of the massive social and technological changes, traditional art has become anachronistic – the result is not a technophilic modernism but rather, and perhaps surprisingly, a return to nature.

“Der Künstler arbeitet in seiner verschlossenen Zelle. Sein Persönliches ist zwei drittel Selbsttäuschung und Blague. Die Tür zur Diskussion steht offen” (119). With this topological gesture of opening, Döblin begins his short essay from 1913, “An Romanautoren und ihre Kritiker. Berliner Programm,” in which he spells out his critique of much contemporary novelizing and his vision of a renewal of the form. For Döblin, changed times demand a changed art. Raising a common avant-garde complaint against contemporary art, he charges the latter with a laughable anachronism: “die Arbeitsmethode ändert sich, wie die Oberfläche der Erde, in den Jahrhunderten; der Künstler kann nicht mehr zu Cervantes fliehen, ohne von den Motten gefressen zu werden. Die Welt ist in die Tiefe und Breite gewachsen; der alte Pegasus von der Technik überflügelt, hat sich verblüffen lassen und in einen störrischen Esel verwandelt” (119). The challenge presented to traditional aesthetic modes by technological modernity is explicit; Cervantes is mothridden, and Pegasus, traditionally associated with Hippocrene, the holy spring of the muses, is now a stubborn ass in the face of technology that can fly higher than he. “Der Geist des naturalistischen Zeitalters” takes up this theme again, eleven years later. “Es gehört eine gewisse innere Verdunkelung (sagt einer Verblödung) dazu, Kunstwerke in die Welt zu

setzen. Nur so ist es verständlich, daß Deutschland schon 1890 ein stark industrialisiertes Land war, die Künstler aber, Maler und Literaten, noch bei Sonnenaufgängen und Gänsehirtten verweilten” (185).

The object of Döblin’s critique is a bourgeois humanism that would maintain older approaches and topoi amidst processes of modernization that are, for Döblin, far more compelling than these fusty idylls. “Es ist freilich schon heute ein Unfug, eine Säule von Phidias anhimmeln zu lassen und die Untergrundbahn ein bloßes Verkehrsmittel zu nennen. Keine höhere Schlosserei ist die Technik, sondern vom Blut dieser Epoche” (“Der Geist,” 173). The new type of human that embodies this epoch, the “Großstädter,” has solved the philosophical, aesthetic, and religious quandaries of the humanists in the simplest possible way: namely, by abandoning them (174-5). The technological character of an age necessitates, and produces, a new type of human with its own particular *Geist*: “Unzweifelhaft ist der Kölner Dom die Äußerung eines starken bestimmten Geistes. Die Dynamomaschine kann es mit dem Kölner Dom aufnehmen” (176).

If the dynamo is an expression of the spirit of what Döblin calls the “naturalistic age,” then it is not just aesthetic forms that have become outmoded, but a particular understanding of *Geist* and human subjectivity more generally. Just as he rejects a conventional understanding of the literary category of plot as a post-hoc attempt to provide a rational, orderly flow to complexes, processes, and occurrences that are much messier,¹³⁰ Döblin dismisses concepts such as “Zorn,” “Liebe,” and “Verachtung” as convenient fictions that serve to mask the underlying,

130 “Viele als ‘fein’ verschrieene Romane, Novellen, – vom Drama gilt dasselbe – bestehen f[a]st nur aus Analyse von Gedankengängen der Akteure; es entstehen Konflikte innerhalb dieser Gedankenreihen, es kommt zu dürftigen oder hingepatzten ‘Handlungen’. Solche Gedankengänge gibt es vielleicht, aber nicht so isoliert; sie besagen an sich nichts, sie sind nicht darstellbar, ein amputierter Arm; Atem, ohne den Menschen der atmet; Blicke ohne Augen” (120).

concrete, and much more interesting realities of human behavior.¹³¹ “Man lerne von der Psychiatrie, der einzigen Wissenschaft, die sich mit dem seelischen ganzen Menschen befaßt; sie hat das Naive der Psychologie längst erkannt, beschränkt sich auf die Notierung der Abläufe, Bewegungen, – mit einem Kopfschütteln, Achselzucken für das Weitere und das ‘Warum’ und ‘Wie’” (121). Words like “Zorn” and “Liebe” are flawed in part because they rely on the conscious motivations of individual subjects and, in so doing, embed human actions within an implicit narrative framework.¹³² They are “blinde Scheiben” that could never serve as microscopes or telescopes into human behavior – the object of the novel should be “die entseelte Realität” (121). Psychiatry thus provides a model for a depsychologization of literature that discards subject-oriented and teleological accounts of human action in favor of what Döblin famously called a “Kinostil,” the principle of which is construction rather than narration.

Yet despite the call for a *Kinostil* and the essays’ emphasis on the ways that modern technology forces us to rethink our ideas about art, affect, and the human, Döblin is not interested in establishing a dichotomous understanding of the relationship between nature and technology.

131 “Die sprachlichen Formeln dienen nur dem praktischen Verkehr. ‘Zorn’, ‘Liebe’, ‘Verachtung’ bezeichnen in die Sinne fallende Erscheinungskomplexe, darüber hinaus geben diese primitiven und abgeschmackten Buchstabenverbindungen nichts. Sie geben ursprünglich sichtbare, hörbare, zum Teil berechenbare Abläufe an, Veränderungen der Aktionsweise und Effekte” (121).

132 An implication of the claim that psychic or affective entities are narrative fictions is, somewhat paradoxically considering the critical force of this idea’s articulation, that the psyche must be depicted through narrative strategies. This insight is developed in sophisticated detail in Veronika Fuechtner’s work on the relationship between Döblin and Berlin psychoanalysis. In her chapter on Döblin, she traces a shift in his work “from a late-nineteenth-century psychiatric understanding of mental illness to a psychoanalytic conception of the soul,” which “changed his medical practice and simultaneously drove his search for radical new forms of narration in his fiction” (18). She demonstrates convincingly throughout the chapter why it is inadequate to fully assimilate Döblin’s literary production and theory of the 1920s to an antipsychological program. Yet at the same time, her reading of the ways in which *Berlin Alexanderplatz* and *Die beiden Freundinnen und ihr Giftmord* interrogate the dimensions and contours of collective and individual subjectivity in fact supports the idea developed in this chapter, that Döblin was exploring models of subjectivity that moved beyond the atomized individuation he critiques consistently (albeit differently) in works from the 1913 “Berliner Programm” to *Das Ich über der Natur*. The full implication of the shift Fuechtner identifies in Döblin’s thought from psychiatry and physiology to psychoanalysis, however, is something that still needs to be worked through, given the primacy of the body in his literary texts of the 1920s and especially *Berge Meere und Giganten*. My argument at this point is therefore that Döblin’s “psychiatric” suspicion of such verbal units and individualizing fictions finds accommodation with (and expression in) his work of the later 1920s precisely in the reconceptualization of the individual psyche as part of a dispersed, collective subjectivity, influenced by his monist philosophy of nature.

“Der Geist des naturalistischen Zeitalters” clearly affirms technological modernity, but it is a technological modernity that is an expression of nature; a biological approach offers a way for him to arrive at this portrait of an era without recourse to the humanist, traditional, or anthropocentric arguments he wishes to call into question in the first place. “Ich spreche von einer neuen ‘Kraft’, wie auch andere tun, vom humanistischen ‘Geist’, vom mönchischen, naturalistischen. Was ist das biologisch gesehen? Das ist nichts als eine besondere Einstellung der Menschengruppe unter der Einwirkung des Gesellschaftstriebes” (171). Thus his essay is a paean to modernity as the expression of a natural force and a hymn to nature as the fitting paradigm for the technological age. When he writes, at the end of an essay that calls for a greater attentiveness to modern technology, “Man wird immer mehr und durchaus neu in die Natur eindringen, deren Zeit erst anbricht” (190), this is only an apparent paradox. The naturalistic era is at once the era of technology and of nature, because Döblin’s “technology” is a thoroughly natural phenomenon. When he writes in “An Romanautoren” that the novelist should refrain from judgment or commentary and let the work speak for itself, adding, “Die Fassade des Romans kann nicht anders sein als aus Stein oder Stahl, elektrisch blitzend oder finster; sie schweigt” (121), we should now hear the dual register at work. The novel suited to the naturalistic era is to be of stone (nature) or steel (technology), flashing with the electricity that ties the two registers together.¹³³ When we read, “Die Erde muß wieder dampfen,” is this the “Dampf” of a *Dampfturbine*, perhaps that steam turbine from the title of the *Großstadtroman* he would pen the following year, or is it the “Dampf” of the geological cataclysms that shake the futuristic prehistory of *Berge Meere und Giganten*? The use of “wieder” suggests that these are

133 On the figurative importance of electricity for discourses of *Leben* around this time, see Lindner, Martin. *Leben in der Krise. Zeitromane der Neuen Sachlichkeit und die intellektuelle Mentalität der klassischen Moderne*. Stuttgart: Metzler, 1994, esp. p. 180.

but instances of one and the same primal steam.

A key feature of Döblin's aesthetic program, as evinced in "An Romanautoren und ihre Kritiker" and "Der Geist des naturalistischen Zeitalters," is a drastic change of scale from the limits of the individual body. Just as the conceptual fusion of nature and technology in *Berge Meere und Giganten* relies upon the rupture of the individual body, Döblin's attack on humanistic, bourgeois individual interiority proceeds by shifting the scale both up and down, topologically breaking open the confines of the individual body, in the same way that his opening move in the 1913 essay is to rupture the space of the "locked cell" of the artist (119). Crucially, Döblin accomplishes this programmatic shift in scale by both natural and technological means.

"Das mammutische tiefende krachende Wachsen". Marduk and organic growth

The ambivalence of the disruption of bodies seen in Meki's laboratory is magnified in a subsequent scene, where it is no longer the body that is instrumentalized but rather the principle of organic growth itself. Marduk, second Consul of Berlin and one of the most prominent characters in *Berge Meere und Giganten*, ascends to power through an act of what might best be dubbed dendromancy. After the death of Marke, the first consul, Marduk seizes power with a decisive action – he takes forty-two leading researchers by surprise, imprisoning them in an enclosed forest of beech trees near his Brandenburg laboratory. The hostages, not expecting further hostilities since Marduk was a researcher like them, nevertheless begin to notice strange features of the surrounding trees (138). The trunks are split in places, and the fissures are leaking a strange yellow slime. They dimly recall Marduk's experiments with plants. "Er sollte in den Mekilaboratorien an tierischen Organteilen, besonders an Pflanzenstücken eigentümliche Wachstumsveränderungen erzeugt haben" (139). As they speculate what preventive measures

might have led Marduk to confine them there and when he might arrive, they notice that the trees are warm in places, and seem to be making noise. “Wie sie die Köpfe an die Rinden legten, schnurrte surrte summte es drin. Das waren die Säfte; es war Frühling. Nur war es merkwürdig, wie scharf es sich im Mark und im Holz bewegte” (139). The steam that erupts from a broken branch sends one of the party into unconsciousness. Overnight, the trees grow at an alarming rate, cutting off what had recently been open space. “Die offenen Plätze suchten sie zwischen den dicken, immer dickeren Bäumen, als wenn sie nicht wüßten, daß jeder Raum vor Stunden noch offen war” (141). One woman’s arm is pinioned and crushed between two trees; in desperation, two men first kill her to silence her cries before strangling themselves with their belts. The trees continue to grow, accompanied by fluid and splintering sounds and sporadically ejecting fatal juices. Birds wandering into the canopy fall into the trees and are consumed by the wood. The section ends with this passage:

Das mammutische tiefende krachende Wachsen zerpreßte klemmte malmt manschte die Menschen, knackte die Brustkörbe, brach die Wirbel, schob die Schädelknochen zusammen, goß die weißen Gehirne über die Wurzeln. Die Stämme berührten sich. Wurzel Stamm Krone eine Masse, ein verschmolzener wogender wühlender dampfender Klotz. Oben barst er, zischte. Unten trieb schluckte drang es auf, drang seitwärts bis an die Mauer. (143)

The disturbing character of this passage relies on the way that the destructive fusion between individual organisms stems from a tendency innate to these organisms: the technological upper-hand that allows Marduk to carry out his coup is the principle of organic growth itself. “Ein fürchtbares inneres Leben dehnte die brünstigen aufgeregten Pflanzenwesen” (142). Just as in Meki’s laboratory, here the progress of technology depends upon a violent rupturing of individual forms. The same components of a tree – “Wurzel Stamm Krone” – enumerated in Meki’s laboratory recur here, and again the result is the disruption of an integral form; if in

Meki's laboratory the end effect was a ghastly fragmentation, here it is a no less monstrous agglomeration.

Shortly before his death Marduk, now a penitent renegade, returns to the theme of bodily integrity. He has taken up with Elina, the former lover of Marduk's now dead companion Jonathan. Marduk's actions as Consul had led to Elina's capture and torture, including the laming of one arm, but they have reached a reconciliation of sorts. At the edge of a wood, Marduk expresses a hitherto uncharacteristic aesthetic sensibility. "Schönes Leben' flüsterte er, 'schöne Bäume, schöne Nebel [...] Schöner Nebel, schöner Baum', er hielt sie an sich, 'schöner Mensch. Schöner Mensch. Menschenhaare. Menschenfinger. Menschenohren. Menschenhals. [...] Menschenhaare. Menschenhand. Kranke Schulter. Was hab ich gesündigt'" (274-5). Is Marduk naming the body parts as parts, reinforcing a disintegration in language that he has already made in practice, or is he attempting to make atonement by delineating the contours of a healed whole? His mention of a wounded shoulder might refer either to Elina's shoulder or the shoulder of the woman pinioned between the trees; in either case, it is an injury to be reckoned against Marduk, which would support the reading that his enumeration is an attempt to think broken bodies back together again. Similarly, the appreciation of natural beauty is strikingly uncharacteristic for the aging Consul and scientist. Yet the things he mentions, life, trees, fog, in addition to being what he sees at the moment he says the words, all have another meaning that undermines a restorative interpretation. Fog is a dissolver of forms, trees are the weapon of his first battle, and life, as the principle of growth, is what elsewhere causes the dissolution of individual forms.

Even the way Marduk speaks these items and organs bears upon the relationship between integrity and dissolution. His paratactic listing – "Schöner Mensch. Menschenhaare. Menschenfinger. Menschenohren. Menschenhals. [...] Menschenhaare. Menschenhand. Kranke

Schulter” – echoes the most striking aspect of the novel’s prose, evident for example in the sentence “Wurzel Stamm Krone eine Masse, ein verschmolzener wogender wühlender dampfender Klotz”: namely, the way Döblin stacks parallel syntactic units, whether nouns, verbs, or adjectives, without connectors or commas.¹³⁴ The expected boundaries of the sentence unit are sundered by the repetitive introduction of multiple semantic possibilities requiring not a decision between them but an acceptance of all of them in sequence. The rapid parataxis here must be read in the context of his call for a *Kinostil* in “An Romanautoren und ihre Kritiker,”¹³⁵ and here as in the earlier essay the purpose of this style is to undermine a narrative unity that serves to reinforce the stability of the individual subject. What we can see here that was less apparent in the earlier essay is the thoroughly organicist mode of this *Kinostil* – the parataxis and deemphasis of the individual subject have their fitting analogue in an unconstrained principle of growth, or *Leben*, that ruptures both the boundaries of individual bodies and the defined contours of a linear narrative syntax. The dense and often bewildering style of *Berge Meere und Giganten* must therefore be understood as the joint product of Döblin’s early critique of the psychological novel, his linguistic skepticism, and his monistic vitalism.¹³⁶

134 In the novel’s manuscripts at the Deutsches Literaturarchiv in Marbach, the visible deletions of commas and syntactic connectors such as ‘und,’ ‘aber,’ and the like, show that the production of this style was a relatively late development. This suggests that the characteristic style of the 1922 novel must be considered on its own terms and in its own right, in relationship more to other aesthetic and thematic aspects of the novel than to the inheritance of Döblin’s earlier connections to Expressionism. (Thanks to a travel grant provided by the American Friends of Marbach in the summer of 2013, I was able to access the manuscripts in person.) For more on the characteristic features of the manuscript, see Gabriele Sander’s “Alfred Döblins Roman ‘Berge Meere und Giganten’ – aus der Handschrift gelesen.”

135 “Die Darstellung erfordert bei der ungeheuren Menge des Geformten einen Kinostil. In höchster Gedrängtheit und Präzision hat ‘die Fülle der Gesichte’ vorbeizuziehen. Der Sprache das Äußerste der Plastik und Lebendigkeit abzurufen. [...] Knappheit, Sparsamkeit der Worte ist nötig; frische Wendungen. Von Perioden, die das Nebeneinander des Komplexen wie das Hintereinander rasch zusammenzufassen erlauben, ist umfänglicher Gebrauch zu machen. Rapide Abläufe, Durcheinander in bloßen Stichworten; wie überhaupt an allen Stellen die höchste Exaktheit in suggestiven Wendungen zu erreichen gesucht werden muß. Das Ganze darf nicht erscheinen wie gesprochen sondern wie vorhanden.” “An Romanautoren und ihre Kritiker” (121-122)

136 Just “An Romanautoren und ihre Kritiker” rejects a conventional understanding of the literary category of plot as an attempt to provide a rational, orderly flow to complexes, processes, and occurrences that are much messier, it also dismisses concepts such as “Zorn,” “Liebe,” and “Verachtung” as convenient fictions that serve to mask the underlying, concrete, and much more interesting realities of human behavior. (120-121). These terms are

In his study of Döblin's engagement with Fritz Mauthner's theory of language, Devin Fore (2006) argues that the shift in Döblin's prose that culminates in *Berlin Alexanderplatz* should be seen as the adaptation of a "verbal" over a "substantival" world picture, "oriented not toward ontology (*Sein*, a word that Mauthner despised) but toward morphology (*Werden*), toward transformation and mutability, toward time and action" (202). The style of Döblin's 1924 science fiction novel shows not only that this shift towards a verbal and morphological perspective is found significantly earlier than Fore locates it, but also just how strongly key terms of his aesthetic program such as *Kinostil* and *Tatsachenphantasie* reflect an organicist vitalism with roots in Döblin's philosophical monism. Thus while Döblin's later turn to mysticism is often seen as a repudiation of his earlier avant-garde leanings, *Berge Meere und Giganten* demonstrates, in its deindividuated bodies and the prose that both echoes and produces their deindividuation, that the vitalist seeds of this mysticism informed his avant-garde critique of language, subjectivity, and the psychological novel from the beginning.

"Thr werdet mich auflösen. Laß nur. Ich will dahin." The giants as models of dissolution

If the dissections and capillary penetration of body and apparatus in Meki's laboratory represent an instrumental dismemberment of the human body that ruptures the physical contours of the individual; and if Marduk's manipulation of runaway organic growth is still an instrumental use of a biological phenomenon that completely destroys the corporal substrate of selfhood; then the giants invoked by the novel's title demonstrate a paradoxical culmination of

flawed because they rely on the conscious motivations of individual subjects and, in so doing, embed human actions within an implicitly explanatory narrative framework. The dismissal of such terms as "Zorn," "Liebe," and "Verachtung" is thus not just the rejection of hackneyed poetic topoi, but must be seen in the context of his linguistic and philosophical critique of the individual semantic or ontological unit as a convenient poetic fiction. Likewise, Döblin's refusal in "Das Wasser" (1922) and *Das Ich über der Natur* of the word "Meer" to refer to an amassed "Wassergewalt" (22) recapitulates his rejection in the early aesthetic essay of words like "Liebe" as the misleading condensation of a host of psychic and physiological processes.

technological development that undermines the very conditions of its own instrumentalization.

While the giants are marked as the most advanced and powerful technology in the novel, the very principle of unconstrained growth needed to produce them ultimately dissolves their individual subjectivities into that of a collective organism. As their autonomous selves fade into the collective biological assemblages that compose them, their ability to function instrumentally melts away as well.

Enormous defensive towers constructed out of humans, animals, and plants, the giants are intended as a desperate response to the onslaught of the monsters (*Untiere*) unleashed by the rapid melting of Greenland's ice cap. The lengthy scenes that describe the birth of the monsters advance the logic of dissolution and rampant growth now familiar to the novel's reader. Stirred into new life, prehistoric remnants of bones and seeds begin to grow towards one another, forming, breaking apart, and reforming instinctively-driven biological assemblages. It will be useful to cite a longer passage here.

Die zermürbten Trümmer der Kreidezeit, Knochen Pflanzensplitter fanden wieder Leben. Dies wütende Licht backte zu Leibern zusammen, was es fand. Die Knochenwirbel, die zertrümmerten Skelette tranken in dem Lehm die Gletschernässe, zogen sich aneinander. Aus dem Lehm strömten ihnen Stoffe zu, die sie zu ihren Leibern machten, die sie um sich legten; Erde, quellendes Wasser, Salze. Es wandelte sich in ihnen und an ihnen schon um zur Art ihrer Körper.

Um alle Reste und Trümmer ballte sich die Erde zu Lebendigem, quoll auf. So wild war der Drang zu Leibern zu finden, zueinander zu fließen und sich zu bewegen, daß überall auf den Inseln das bloßliegende Land in ganzen Strichen barst, sich hier zusammenrollte zu einer wimmelnden Masse, dort wie vom Regen getroffen aufwucherte unter baumartigen Gebilden. Es waren keine Wesen, wie sie die Erde früher getragen hatte. Um bloßliegende Glieder, Köpfe Knochen Zähne Schwanzstücke Wirbel, um Farnblätter Stempelteile Wurzelstümpfe sammelten sich die Wasser die Salze Erden; oft wuchs es sich zu Geschöpfen aus, die den alten dieser Erdzeit ähnelten, oft drehten sich sonderbare Wesen, sogen an der Erde, tanzten. Das waren Köpfe Schädel, deren Kiefer Beine geworden waren, der Rachen ein Darm, die Augenlöcher Münder. Rippen rollten sich als Würmer. Um eine Wirbelsäule strömte zusammen die lebendige Erde, befestigte sich. Es war als wenn ein Adergeflecht nach allen Seiten ausschloß von den Knochenresten, als wären sie Kristalle, Keimpunkte in der übersättigten Lösung. Und was um die

Wirbelwesen lag, von den Adern berührt wurde, faßte es an, zog es zu sich her, ob es selbst Leib gewinnen wollte oder nicht. Die Würmer, die sich um die Rippen gebildet hatten, zog, wenn sie nicht flohen, das Wirbelwesen an seinen Mund, pflanzte sie sich neben seine Lippen ein; sie schluckten vorverdauten für ihn. (487-8)

If in earlier sections such as those depicting Meki's laboratory or Marduk's dendromancy the rupturing of bodily integrity had been a spectacular, violent event, here it is the medium of life itself. In representing the principle of indiscriminate, blind growth, this passage imbues parts, bones, seeds, organs, in short, matter at any scale but that of whole bodies, with motive force, as the paleontological dregsglom to one another, incorporate each other, break, dissolve and reform. As Döblin writes in *Das Ich über der Natur*, "Innerhalb der Natur wird also nichts zur Form, es wird nur Geformtes umgeformt" (40). Even rock and stone burst into dissolution in this orgiastic miasma of a protoplasmic nightmare. Verbs indicating fluidity abound (*trinken, strömen, aufquellen, fließen, bersten, schlucken, träufeln*), lubricating the image of a riot of forms in manic flux.

As the monsters – now enormous bricolages of various components – float or fly to Europe, their destructive effects are homologous to their own genesis. Whatever they come into contact with is submitted to the same somatoclastic growth that produced the monsters in the first place. Near Hamburg, the first human casualties occur. Those unlucky enough to be caught in the vicinity of other species fuse with them, spectacularly and agonizingly: "die Krallen des Vogels durchwachsen die Arme der schreienden gellenden schlagenden bald ohnmächtigen. Das Tier lag auf dem Weib, wuchs auf ihm, über Menschengröße" (502). In response, researchers begin constructing the *Giganten* by fusing humans, animals, plants, inorganic material together. More than any previous technological endeavor portrayed in the novel, the giants embody nothing so much as the force of a rampant growth that destroys the barriers between individuals, bodies, and

species. “Das fürchterlich Zerstörende dieser Gewalt wurde bei den Versuchen klar: sie zersprengte jeden Zusammenhang, trieb Teile hervor, unter Vernichtung des Organismus” (515). Here the instrumentalization of the human body is pushed to an immanent consequence, namely, the total dissolution of that body.

Yet in contrast to earlier scenes of terror, in the formation of the giants dissolution gains a positive function. The instrumentalization of human bodies proves to be self-defeating, as the principle of dissolution ultimately renders a sustained instrumentality impossible. The man chosen by the scientist and technocrat Delvil to be among the first implanted into a giant addresses Delvil defiantly. ““Wenn ich deinen Turm sehe, Delvil, so preise ich die Macht der Erde. Du wirst sie nicht besiegen. Ich preise die große Macht. Ich fühle mich in ihr. Es ist keine Grenze zwischen ihr und mir. Ich fürchte mich nicht. Ihr werdet mich auflösen. Laß nur. Ich will dahin”” (516). Dissolution struggles with identity, as was the case with the *Untiere*. All elements of the giants tend towards fusion, but they are still at least partly recognizable as elements, and the scientists strive to keep the *Menschenwesen* of the growing giants awake so that they can fulfill their instrumental deployment against the *Untiere*. “Sie waren oft im Begriff, ihren Geist und ihr Menschenwesen aufzugeben und ins bloße Wuchern und Wachsen einzudämmern” (517). Like the monsters, the parts of the giants grow towards each other in omnivorous need, once the principle of growth has been provided by the tourmaline veils. Animal, vegetable, and mineral elements merge as the giants grow into creatures, scenes of struggle, and even landscapes.

Ihre Augäpfel waren größer als ein lebender Mann; sturmartig blies der Atem aus ihrem Mund, den sie offen hielten, als wenn sie schrien. [...] Wenig und selten wurde Nahrung in ihren Mund, über die hängenden Kiefer gefahren und gestürzt; die Riesenwesen, mühselig gurgelnd und schluckend, wurzelten in dem Tier- und Pflanzenboden. Ihre Beine waren von den Hüftgelenken, dem Becken an knollig versteift; breit standen die Beine, verbreiterten sich massig nach abwärts, gingen in Stränge aufgelöst, ihren Fleischcharakter verlierend, in die Bodenmasse über. Von da strömten Säfte und

Nährmassen in ihren Leib. Durch ihre Bauchdecken, in die Weichen wucherten Baumstämme und Tierrümpfe in sie, breiteten sich in dem Gekröse aus, brachen in die Därme ein, verlöteten mit ihnen. Tierblut, Pflanzensäfte ergossen sie in die Därme, die sich langsam hoben senkten, wurmartig zusammenzogen und streckten. Dies war die Bewegung, die man in halber Höhe der Menschentürme sah: das langsame Hin und Her der Därme, die sich versteiften hoben und ihren Krampf lösend wieder herunterstiegen. Mit sich zogen sie jedesmal den schwankenden lockeren Abhang an sich, den aufklimmenden Wald, die hingedehten, aus dem Wald sprießenden Tierleiber: die übergroßen Pferde, die aufrecht standen, die Vorderbeine in den Leib des Tiermenschen vergraben, mit ihren Hälsen sich aus seinem Leib windend und bewußtlos an den Blättern, dem weichen Baumholz kauend. [...] Die Hoden der Männer verschmolzen mit Baumwipfeln und Blüten; sie strömten ihren Saft in die runden Körper, die sie wie Beeren trugen. Oft sah man die Riesen unter der Überfülle der Säfte sich biegen, stöhnen und ihren Samen vergießen. (517-8)

This passage is, in a sense, the culmination of autographic ekphrasis from the novel's dedication. Where the hand holding the writing instrument invoked an image of the human body as a nexus of sensory and physiological flows, the giants push this immanent logic of the instrumental body to a point where distinctions between bodies, organs, organism, and environment are no longer tenable. The self is not something that is distinct from the body or located within the body, but is rather dispersed throughout the body and its environment.

As in Döblin's 1927 treatise *Das Ich über der Natur*, here there is neither interior nor interiority, only an endless entwinement.¹³⁷ And it is not just corporality or contained subjectivity

137 In *Das Ich über der Natur*, Döblin characterizes thought not as an immaterial cognitive affair but rather as something situated in the body – or, more precisely, in the body's integration with the surrounding environment. Accordingly, Döblin refers to sense organs and the central nervous system as *Ausgeweide*: like digestive organs, sense organs are used to break down, incorporate, and interact with the environment (44). In line with the topological challenge to a dualistic view of subjectivity, even interiority becomes a problematic category. Döblin at first considers that the soul must lie somewhere within the body, since all the sense organs seem to lead from the outside in; yet once within the body, all the narrative voice sees are:

“Nervenzentren und Verbindungsfasern. Es ist da ein geschlossenes System, das mit Nervenfasern, Sinnesorganen, Muskeln völlig in sich verläuft, ein System, das sehr übersichtlich und fein konstruiert ist, aber in sich. Eigentlich führen die Nervenfasern gar nicht ins Innere, sie führen ins Gehirn, etwa in die Rinde, fasern sich da auf, bilden Verbindungsfasern mit anderen Bahnen, und weiter ist nichts. Was habe ich eigentlich erwartet? Ein Loch für die denkende Seele?” (114-5)

Topologically stymied by the absence in the human body not only of a soul but even of an interior, Döblin returns to the surface, concluding that the individual only has a soul “als Ganzes” and not in any one part of the body. In a similar vein, “thought” is understood as a bodily process of integration, the active integration of the body with its surroundings; not just the capacity of the individual to perceive, recognize, or cogitate the outside world, but to act upon it. “Thought” thus seems to be a nodal point between the competing tendencies of individuation and deindividuation: “Mit unseren Muskeln und Knochen denkt das Weltwesen wie mit der

that this image of the body-as-tool undermines, but instrumentality as well – while the giants do battle and ultimately defeat the monsters, the deindividuation required for their production results in their gradual drift away from all matrices of instrumental control. Shortly before the novel’s conclusion, the now only vaguely humanoid giants dissolve into the earth, forming a new mountain range in Cornwall.

In a curious twist, the organic agglomeration of the giants and the monsters provides a model for the human communities that arise in their wake. These communities should not be seen as a naively primitivist stasis (let alone as a reactionary organicism) but as a gesture towards the kind of collectivity that would incorporate the critiques of individual subjectivity raised in Döblin’s programmatic essays and *Das Ich über der Natur* and enacted in the rupture of individual bodies in *Berge Meere und Giganten*.¹³⁸ The organic dissolution of individual bodies throughout *Berge Meere und Giganten*, at first portrayed in scenes of terror, thereby comes to provide a utopian model of collectivity and deindividuated subjectivity.

“Was ist das: Meer? Wer ist das?”: Water as image for the relationship between individual and mass

As the passages dealing with the organic fusion of the *Untiere* and the *Giganten* suggest, images of fluidity and dissolution provided Döblin with the descriptive tools needed to rupture individual bodies in a way that also integrated them with one another. In this context, a brief

Dunkelheit und dem Licht und den Elementen und unseren Seelen. Und was ist das: Wir haben Organe? Das ist: wir strahlen. Wir fließen in die Welt ein. Wir sind am Bau, am Dasein, an der Realität und dem Realisieren des geistigen Weltwesens beteiligt” (93).

138 In this regard I follow Hannelore Qual’s reading of the novel. Qual has demonstrated the linkages in the novel between Döblin’s philosophy of nature and his political and social thought, arguing that *Berge Meere und Giganten* advances an ecologically minded anarchism in the spirit of Gustav Landauer and Pyotr Kropotkin. Rather than being a fundamentally pessimistic or fatalistic work, Döblin’s novel would thus represent an open, dynamic utopianism that supports a view of human society as ultimately perfectible.

excursus on the role of water in his thought will be helpful. It would not be an exaggeration to say that Döblin had a fascination with water as an element both literally ungraspable and incomprehensibly vast; he locates the genesis of the idea for *Berge Meere und Giganten* during a 1921 visit to the Baltic, and extended scenes of water as something still, ominous, and violent can be found in novels such as *Wadzeks Kampf mit der Dampfturbine*,¹³⁹ *Wallenstein*,¹⁴⁰ *Berge Meere und Giganten*, and *Berlin Alexanderplatz*. In the dedication to the science fiction novel, water is used as a metaphor for the amorphous ground of existence that supports the individual: “Ich bin nur eine Karte, die auf dem Wasser schwimmt. Ihr Tausendnamigen Namenslosen hebt mich, bewegt mich, tragt mich, zerreibt mich” (7).

In *Schicksalsreise. Bericht und Bekenntnis*, his 1948 memoir of wartime exile, Niagara

Falls are described thus:

Von der Ungeheuerlichkeit der sich hier heranwälzenden Wassermassen versagt das Wort. Das sind Wassermassen in drängender, treibender, stürzender, tobender Bewegung, die mit resoluter stoßender und mahlender Kraft arbeiten. Davor verstummt und versagt, ja erstarrt unsere Phantasie. Das hat schon keinen irdischen Maßstab mehr, keinen tellurischen, sondern einen kosmischen. Hier ist die Erde noch Kind des Weltalls, noch Stern. (299)

Water here serves as a model for a chaotic formless power; in the subsequent sentences, water is the medium for as yet unglimped forms of being, but the difficulty of grasping the fluid medium

139 “Träge, flüssige Masse, graugrün, schwarzgrau, eine Last wie Eisen, meilentief. Von der Sonne angestrahlt, vom mond beleuchtet, unberührt, immer fließend, drehend, lastend; Geräusche, Grunzen und Murren. / Das Schiff schrammt die Oberfläche; das Meer leckt an dem beteerten Holz, wirft Wasser über Bord, versteckt sich, brummt, wartet lautlos.” (321)

140 Wallenstein himself, more used to solid roads, has an aversion to water. “Jetzt fehlte das Einfachste, der Weg, eine flüssige, schwere Masse schwamm vor seinen Füßen; die Herren, kraftstrotzend, standen mit einem Strick am Bein am Küstenrand. Gegen sein neues Herzogtum Mecklenburg schwankte das zerquellende widerstandslose Element an, er beobachtete es widerwillig.” (382-3)

“Der graue träge Wasserrücken. Auf ihn geladen wie auf eine Tischplatte mit wallender Decke der fuderhohe ganze blinkende Reichtum der Menschen. Hier rann es wie in einem Engpaß vorüber, versucherisch; sie hingen am Fels darüber. Die Ausdehnung der Länder war verschwunden; Livland die Wolga Smolensk Stettin Wiborg Saragossa Ofen Venedig stießen aneinander. Und so nah, so schutzlos wie kichernde Weiber, die baden gehen und spritzen.” (450)

“Das Meer, das Verhängnis. Nicht die Reichtümer, es war der Weg: das Land war nicht zu halten ohne das graue, weißzottelige, schäumende Untier. Es rannte gegen seine Feste an, brachte sie zum Schaukeln.” (452)

provokes a question often asked in Döblin's works, "Aber was ist das?" In *Das Ich über der Natur*, he asks "Was ist das: Meer? Wer ist das? Es ist gar nicht 'das Meer'. Es ist die Wassergewalt. Diese Wellen sind keine Einzelwesen. Ich treffe im Wasser nie auf Einzelwesen. Es ist so biegsam, ineinander geschmolzen, ineinandergehend. Ich komme auf keinen Teil, den ich isolieren kann" (22). Water serves as a model for the relationship between individual and mass, demonstrating a tendency towards aggregation that stymies the search for isolated units. He continues, marveling at the way that the fluid medium dissolves the isolation of individual bodies: "In der Flüssigkeit sinken die Grundteile zu tieferer Anonymität zurück. Die schärfere hitzigere Wallung der Körper, ihre Isolierung und Flucht voneinander nimmt ein Ende" (24-5).¹⁴¹

Generally speaking, Döblin uses the image of water to represent the relationship between individual and mass. In passages from *Das Ich über der Natur* at times reminiscent of variously anxious depictions of water in his novels, Döblin shows a fascination with this unsettling element that is at once composed of innumerable parts and is also a seamless mass. "Nicht zu fassen ist diese Form des Flüssigen, die das Wasser und auch andere Körper gefunden haben: glashell, durchsichtig, ohne Naht zusammenlaufend, von einer unglaublichen Weichheit und Nachgiebigkeit, dabei spürsam und fügsam. [...] Was aber so fließt, schäumt und verdunstet, solche Formen annimmt, sich so verändert, solche zauberhaften Kristalle bildet, ist nichts Dummes, Totes, Anorganisches, wie man sagt" (12-3). Döblin's scalar leaps refuse the self-evidence of everyday concepts like "sea." "Was ist das: Meer? Wer ist das? Es ist gar nicht 'das Meer.' Es ist die Wassergewalt. Diese Wellen sind keine Einzelwesen. Ich treffe im Wasser nie auf Einzelwesen. Es ist so biegsam, ineinander geschmolzen, ineinandergehend. Ich komme auf keinen Teil, den ich isolieren kann" (22). He continues, marveling at the way that the fluid

141 This language in the 1927 treatise comes directly from a 1922 essay called "Das Wasser," published in *Neue Rundschau* 33, 853-858.

medium dissolves the isolation of individual bodies: “In der Flüssigkeit sinken die Grundteile zu tieferer Anonymität zurück. Die schärfere hitzigere Wallung der Körper, ihre Isolierung und Flucht voneinander nimmt ein Ende” (24-5). Here the topological concerns of the programmatic essays reappear in a different form. It is not specifically the closed integrity of the individual human body or psyche that is ruptured, but rather the very concept of the individual verbal and physical unit – water, sea, part – that is being undermined, as any single unit is both constantly dissolving back into a *Massenwesen* and is itself comprised of many *Massenwesen*. This constant dissolution and flow is a problem both for any clear-cut relationship between part and whole, but also for language itself, as the words commonly used to identify discrete entities obscure the way that these entities are not so readily graspable: “Was ist das: Meer? Wer ist das?”¹⁴²

“Ein lebendiges Wesen die Welt.” *Life in the ruins*

The logic of corporal dissolution and reintegration that culminates in the creation of the giants serves to effect a deliberate movement away from the authoritarian centralism that has been the dominant political form up to this point. The alternative forms of subjectivity invoked by the giants’ monstrous bodies are carried forward by the societies that arise in the giants’ wake. Not only do the survivors develop ways of living explicitly tied to the catastrophic lessons of the

142 A metaphor of fluid also provided Döblin with an image for the reserve potentiality of the individual for renewal, change, and formation. Describing in *Schicksalsreise* (1948) the way that the individual becomes more fixed and determined with age, Döblin writes that there is always a measure of undetermined potentiality: a “mother liquor” that allows for creation and change: “Man ist bestimmter geworden, aber man ist nie völlig durchbestimmt, ausbestimmt, so wie eine Salzlösung sich auskristallisiert. Man behält durch alle Umstände, alle Lebensalter hindurch eine Portion Mutterlauge. Das ist eine schwebende, wolkenartige, keimträchtige Masse [...] Diese Masse hat die Zeit nicht zu fürchten, sie ist nie auf der Flucht vor der Zeit. Sie schenkt ihr immer neue Bestimmtheiten und Formen.” (285) A “Mutterlauge” is a term from chemistry that refers to the part of a solution left over from crystallization, and thus fits well with the paradigmatic relationship of *Lebensideologie* (Lindner) between form and flow. It is also a word Döblin uses in the manuscripts of *Berge Meere und Giganten* to describe the liquid formative chaos on Greenland as the tourmaline veils bring the prehistoric assemblages to life. The sentence that in the published version of the novel reads, “Es war als wenn ein Adergeflecht nach allen Seiten ausschöß von den Knochenresten, als wären sie Kristalle, Keimpunkte in der übersättigten Lösung” (488), ends in the manuscript thus: “in der übersättigten Lösung der Mutterlauge.”

expedition that had melted Greenland's ice and unleashed the monsters on Europe, but the decentered subjectivity that allows for these social forms is itself produced by the ecological integration announced in the novel's dedication and taken to an extreme in the depictions of the giants.

This utopian vision of ecological integration is ultimately embraced by the populations that have abandoned Europe's fortified, underground cities, populations constituted by a mixture of the remnants of the Iceland expedition and various settlers and sects. "Wie am Spinnrad hob und senkte sich die Brust, sog Luft ein, entließ sie. Unermüdlich sogen die Menschen sich an der Luft fest, durchtränkten sich mit unsichtbaren Kräften. In ihre Därme ließen sie die Säfte vieler Pflanzen und Tiere fließen, nahmen an sich und ließen sich durchlodern von den Gewalten, die sich auf dem Erdboden niedergelassen hatten" (547). The language used is strikingly similar to earlier passages depicting the giants' monstrous bodies, yet here the metabolic processes of the body provide a model for ecological integration that will shape the novel's later descriptions of their society.¹⁴³ Similarly, the way that various organisms strive towards each other and combine is echoed in the portrayal of sexuality after the time of the giants:

Mann und Weib zueinander. Dazu hatte man Füße und Knie, konnte gehen, sich nähern. Blicke zueinander, Hände zueinander, Münder zueinander. Und nicht nur Münder. Man hatte einen Leib; das einzige Wühlen. Was man tastete umfing: daß man nicht Wasser war, um mit ihm zusammenzuschmelzen. Daß man sich hielt, diese Beruhigung Besänftigung: dies Stieren und Vergehen im Feuerschein. (548)

Given the importance in the novel of the relationship between technocracy, biopolitics, violence, and the prevalence of reproduction in multiple senses of the word, it should not come as a surprise that the new societies and subjectivities arise in tandem with a sexual revolution. An

¹⁴³ From the passage on the giants quoted above: "Durch ihre Bauchdecken, in die Weichen wucherten Baumstämme und Tierrümpfe in sie, breiteten sich in dem Gekröse aus, brachen in die Därme ein, verlöteten mit ihnen. Tierblut, Pflanzensäfte ergossen sie in die Därme, die sich langsam hoben senkten, wurmartig zusammenzogen und streckten" (517-8).

early counterpoint to the increasingly centralized power located in the cities of Europe is provided by the “Snakes,” wandering groups of people characterized explicitly by a liberated sexuality, and the key figure of the novel’s eponymous final book is Venaska, “eine schlanke Frau von braungelblicher Hautfarbe und schwarzem dichten Haar” (572), who embodies the force of sexuality associated with her namesake. Yet what is interesting here is not so much the relationship, somewhere between cause and analogy, of sexual and political liberation, but rather the way that this sexuality is conveyed in terms that both recapitulate scenes of corporal dissolution from the rest of the novel and announce a conception of dispersed, ecological subjectivity that will find its fullest expression in *Das Ich über der Natur*. In the 1927 treatise Döblin describes the tendency of things to grow towards each other, a fundamental “Aneinanderhaften der Dinge” that is a property innate to physical matter as such.¹⁴⁴

In the way that this principle of “Aneinanderhaften” (Döblin also calls it a “Verzahnung” and “Verhakung”) demonstrates the tendency of all matter to grow towards and integrate other matter, it recalls the scene of writing from the novel’s dedication. The rampant growth that destroys any distinction between individual bodies in *Berge Meere und Giganten* and the suspicion of the very existence of individual units distinct from aggregate masses in *Das Ich über der Natur* ultimately issue in the vision of a collective, dispersed selfhood prefigured in the dedication, where writing and selfhood are distributed along a chain of corporal and environmental media technologies: ink, sunlight, paper, pen, hand, nerves, blood, muscles, intestines. This is not a blind organicism in which the individual disappears entirely into the mass, but rather an attempt to imagine what the relationship between individual and collective

¹⁴⁴ “So mächtig also sind die Dinge aneinander gegangen, so stark miteinander verzahnt und verhakt. Ich muß geradezu fragen, wenn ich die Organismen betrachte, deren Organe gänzlich der Verzahnung und Verhakung dienen: sind denn überhaupt Wesen da, die sich mit anderen verhaken – ist das Ganze nicht eine einzige Verzahnung und jede Isolierung von Einzelwesen Trug? Ist also an den Dingen eine Wesens- und eine Hafteseite zu unterscheiden, oder ist nur ein dichtes unteilbares Netz da?” (202)

could look like beyond the psychological primacy of the autonomous, monadic individual Döblin criticizes as anachronistic in his programmatic essays. By the time we reach the end of the novel, the depiction of the societies that have come after the giants echoes the corporal and environmental integration and the dispersed subjectivity developed in the giants.

Die Scharen der Menschen in Ruhe und Tod, in Werben und Brautkämpfen, unter Vulkanausbrüchen und Ertränkungen. [...] Und immer sehnsüchtig die Gase der Luft in die Lungenbläschen hinein, und die kleinen Zellen, die Kerne, das weiche Protoplasma, immer angezogen und weiter gegeben. Und wenn die Herzen stillstanden, die Zellen sich trennten und auflösten, waren sie neue Seelen, zerfallendes Eiweiß Ammoniak Aminosäuren Kohlensäure und Wasser, Wasser das sich in Dampf verwandelte. Leid- und lustbegierig, wanderungssüchtig, Seelenvereine in Schneelandschaften, in dem pendelnden weiten Meer, in den blasenden Stürmen, den Steinvölkern, die der Boden zu Bergen hochtrieb. (631)

As in the dedication, selfhood here is located along a material chain that links organism and environment. The language of this passage, by invoking a collection of elements in relation and flux in order to situate subjectivity in material processes of embodiment, suggests the extent to which this monism is central to both Döblin's philosophy of nature and his avant-garde critique of the sovereign individual.¹⁴⁵ More immediately, the location of this passage at the end of a long development that has seen bodies broken, joined, and reconstituted suggests that this development and its attendant violence were prerequisite to the creation of the egalitarian communities at the end of the novel. Reconfiguring the self within the individual body – so that “souls” are located within the metabolic play of matter – enables the shift in the relationship between individual and collective.

¹⁴⁵ In *Das Ich über der Natur*, he writes, “Da bin ich Eiweiß, Protoplasma, Zellmasse, – bin Wasser, Kalk, Kohle, Salz, Phosphor, Eisen, Magnesium, Silizium, die sich überall draußen regen. [...] Das bin ich alles, und das ist weither gekommen, Prärie, Berg und Tal, Sintflut, offene Natur ...” (119-20). This echoes the language from “An Romanautoren” where, calling for “Selbstentäußerung,” he writes, “ich bin nicht ich, sondern die Straße, die Laternen, dies und dies Ereignis, weiter nichts” (122). A 1922 essay called, “Die Natur und ihre Seelen” further challenges the relationship between the individual body and subjectivity, suggesting that even the human body is a convenient fiction: “Aus dem beobachtbaren Material isoliert man den Körper der Person. Von ihm, der nur ein einzelner Beobachtungsfall ist, sagt man, daß er es sei, der denke. Aber er selbst ist etwas Gedachtes. Seine Isolierung ist nicht zu halten” (10-11).

This utopian vision of egalitarian collectives predicated on a complexly distributed subjectivity bears implications for our understanding of Weimar culture, but not because it asserts a final reconciliation between nature and culture. Rather, in drawing out the immanent consequences of the instrumental body, *Berge Meere und Giganten* seriously complicates what Helmut Lethen has dubbed “Entmischung,” a frozen polarity of separation on the one hand and fusion on the other, the armored body of the cold persona facing the passive organicism of the “Kreatur.”¹⁴⁶ The loss of ethical orientation following the demise of the *Kaiserreich* led, according to Lethen, to *Verhaltenslehren* involving the radical and violent taming of the body’s organic, creaturely side in order to fortify this polarity.¹⁴⁷ Like Döblin’s novel, Lethen’s account of the Weimar cultural and psychological landscape is concerned with a relationship among the body, subjectivity, technology, and violence, yet the 1924 *Zukunftsroman* poses a challenge to Lethen’s characterization of Weimar culture because it probes and problematizes the very categories with which Lethen draws his distinctions. The violence in Döblin’s novel does not ultimately protect the armored subject from internal and external threats, but on the contrary effects the dissolution of the isolated, autonomous subject in order to enable the new collectives at the end of the narrative. In this reading, *Berge Meere und Giganten* stands as an implicit critique of the discourse of *Entmischung* by staging the coalescence of the organic and the technological and demonstrating that they cannot coherently be thought separately in the first place.

146 “Der Schmerz der Trennung und die Sehnsucht nach Fusion – zwei Quellen der ästhetischen Faszination – werden in der Ära der Ersten Republik in extreme Ferne voneinander gerückt. Die bürgerliche Kultur der Schattierungen und gemischten Temperaturen weicht einer Ästhetik der Entmischung, der Polarisierung aller Lebenssphären, der Faszination der ‘scharfen’ Grenzziehung und klaren Kontur” (*Verhaltenslehren der Kälte* 133).

147 “[Die Regeln der Verhaltenslehren] empfehlen Techniken der Mimikry an die gewalttätige Welt und legen alles darauf an, den Menschen in seiner schutzlosen Objektheit abzuschirmen” (36).

The contours and borders of organic bodies are anything but clear in the face of the corporal ruptures and reconstitutions that run throughout the novel, and yet they are not merely dissolved in a ‘warm’ fusion either. Instead of the polar stasis Lethen identifies in the literature of the 1920s, *Berge Meere und Giganten* presents us with a restless movement between contour and dissolution, subject and object, organs and machines, digging in neither at the pole of *Entblößung* nor at that of *Panzerung*.¹⁴⁸ Where Lethen’s cold persona ruthlessly instrumentalizes its own body, the bodies in *Berge Meere und Giganten* are ruptured and reconstituted in order to confound the corporal mastery necessary for their instrumental use. Because Lethen’s teleological characterization of the Weimar political landscape depends on the polarization between the “Trennungsspezialisten” of the left and the “Verteidiger des Verschmelzungswunsches” of the right, Döblin’s novel is a crucial document for thinking about the period’s political imaginary as well as its technological one, precisely because it explores logics of separation and dissolution on the literal, topological level.¹⁴⁹ While the violence involved in this exploration has led critics to assess *Berge Meere und Giganten* as a cautionary tale about the dangers of the technological desire to dominate nature, the function of the violent destruction of individual bodies is in fact to advance the logic of corporal dearticulation and reassemblage that ultimately issues in the novel’s complex utopian vision.

Rather than simply exemplifying the avant-garde trope of the armored, instrumental body, *Berge Meere und Giganten* literalizes the figure in order to allow its implications to play themselves out on the diegetic level. It is thereby able to imagine the concrete, real bodies that could fulfill the avant-garde demand for depsychologization and deindividuation, yet these

148 “Die Literatur dieses Jahrzehnts läßt die Bilder des ‘nackten Zeitgenossen’ zwischen extremen Polen schwingen: zwischen Panzerung und Entblößung, zwischen ungehemmten Täterphantasien und Kreatürlichkeit zum Erbarmen.” (41)

149 *Verhaltenslehren der Kälte*, 133-134.

bodies, precisely because of the way that the relationship among bodies, technology, and subjectivity is allowed to unfold over the course of the novel, are radically different from the type of the cold persona detailed in Lethen's study. By pushing the avant-garde trope of the technological or armored body to its necessary conclusion, the novel critiques a notion of autonomous subjectivity predicated on psychological interiority and the aesthetic forms that privilege this notion, without however falling prey either to a dissolute organicism or to a facile technological fetishism.¹⁵⁰

The bodies ruptured, dissolved, and reconstituted in this science fiction novel, for all their instability and frailty, thus serve as missing links among the array of questions and problems Döblin developed over the course of the 1910s and 1920s – his critique of the psychological novel and its version of interiority,¹⁵¹ his epochal considerations of technological modernity,¹⁵² and his burgeoning philosophical monism.¹⁵³ The dense interpenetration of body, apparatus, and environment we find throughout *Berge Meere und Giganten* signals the way that Döblin was rethinking issues of identity, subjectivity, technology, nature, politics, and media in tandem; in this sense, the significance of the novel rests on the extent to which it shows that these questions must be thought in relation to one another.

The novel is thus exemplary of the way that discourses central to the culture of the Weimar Republic – discourses of the organic and the mechanical, technology and nature, progress, catastrophe, and society – could not but articulate themselves in shared terms, in each

150 In his open letter to Marinetti, Döblin accuses the Italian Futurist of precisely such a tediously mimetic technofetishism: "Sie meinen doch nicht etwa, es gäbe nur eine einzige Wirklichkeit, und identifizieren die Welt Ihrer Automobile, Aeroplane und Maschinengewehre mit der Welt? [...] Oder schreiben gar der kantigen, hörbaren, farbigen Welt eine absolute Realität zu, der wir uns ehrfürchtig als Protokollführer zu nähern hätten?" (*Schriften zu Ästhetik, Poetik und Literatur* 114)

151 Especially in "An Romanautoren und ihre Kritiker."

152 In *Wadzeks Kampf mit der Dampfturbine* and "Der Geist des naturalistischen Zeitalters."

153 Döblin's monist philosophy of nature is spelled out most extensively in *Das Ich über der Natur* (1927).

other's words. Far from assuming conceptual dichotomies, it is the novel's project to explore and collapse them. Those seeming incongruities in Döblin's work that have made him consistently difficult to situate amongst a host of disparate disciplines, movements, styles, and commitments in fact demonstrate his importance for understanding German modernism: not just in the sense that he was an interdisciplinary thinker for all seasons whose texts are "paradigms and repositories of modernism"¹⁵⁴ but above all because the interlocking multitude of his positions and approaches compels us to question their relationship to one another and the ways in which they necessarily articulated each other.

The relationship between violence and instrumentality in *Berge Meere und Giganten*, in allowing for a utopian vision that is not assimilable to the desire for organic fusion Lethen attributed to the political right, is more nuanced than an instrumental violence intended to repress the self's own vulnerability. Rather than standing in the service of the armored personality, the violence in Döblin's novel, by collapsing the dichotomies between organic and technological, body and environment, subject and object, interrupts the cycle of instrumental exploitation on which the construct of the armored personality is necessarily based. The ideological and aesthetic implications of the novel's ending, which is also a new beginning, are undoubtedly ambivalent and call for further attention. Yet at this point it seems clear that the novel's vision is symptomatic of a broader contemporary imaginary, the conceptual and political contours of which are perhaps better characterized as a dense *Aneinanderhaften*, a *Verzahnung* and a *Verhakung*, than as the sharp borders of the armored body.

154 Davies and Schonfield, p. 6.

CHAPTER THREE

Natural Histories of the Image: Photography, physiognomy, and the meaning of the surface

“Die Lage wird dadurch so kompliziert, daß weniger denn je eine einfache ‘Wiedergabe der Realität’ etwas über die Realität aussagt. Eine Fotografie der Kruppwerke oder der A.E.G. ergibt beinahe nichts über diese Institute. Die eigentliche Realität ist in die Funktionale gerutscht. Die Verdinglichung der menschlichen Beziehungen, also etwa die Fabrik, gibt die letzteren nicht mehr heraus”¹⁵⁵

In this well known quote from the *Dreigroschenprozeß*, Bertolt Brecht denies that a photograph can reveal anything meaningful about a factory. In problematizing the connection between visual representation and reality, Brecht is taking issue with physiognomy – the idea that visible appearance offers a privileged access to the truth of an object. As Richard Gray has argued, physiognomy was an underlying constitutive discourse for Weimar modernism. Beyond a limited, (pseudo-)scientific attempt to discern and categorize human character based on physical and especially facial features, 20th-century physiognomy provided what amounted to a worldview for Weimar culture.¹⁵⁶ According to Gray, figures from Ludwig Klages to Béla Balázs to Oswald Spengler drew on physiognomic logic to mediate between appearance and reality, interior truth and exterior surface, individual and type. Physiognomic discourse in turn allowed *Lebensphilosophie*’s emphasis on vital intuition (Spengler) and the methodological differences between the human and natural sciences (Dilthey) to be yoked to theories of history, human typology, and language,¹⁵⁷ thereby promising access to historical, social, and philosophical truths through visual appearance alone. Thus it is no accident that considerations of photography were

155 (*Grosse kommentierte Berliner und Frankfurter Ausgabe* 21.469)

156 In describing the role of a “physiognomic worldview” in the early 20th century, Gray is borrowing a title from Rudolf Kassner, one of the best known practitioners of physiognomy during the period. Yet beyond the confines of physiognomy proper, Gray argues that it constituted a broader intellectual current in Weimar culture: “Indeed, physiognomics takes on the character of a super-discipline. It is hypostatized as a universal theory of knowledge, perception, and instinctual understanding that presents a powerful counter-model to the Enlightenment narrative of a rationally endowed, historically progressive humanity” (181).

157 For Gray, 20th-century physiognomy thus represented a break with the earlier physiognomy of Lavater in that the later “surface hermeneutics” (xxix) broke with the discipline’s foundational emphasis on empirical investigation rather than intuitive reading of the human body (195-6).

invariably influenced by questions of physiognomy, since the camera's mechanical ability to reproduce the appearance of its object provoked debates about the value and veracity of visual representation as such. So the fact that physiognomy provided an implicit framework for media-theoretical discussions of photography during the Weimar Republic is perhaps less surprising than the sheer irreconcilable plurality of positions this framework allowed for.

The aim of this chapter is to explore the different positions on physiognomy taken by key theorists and practitioners of photography in the Weimar Republic. By attending to the ways a physiognomic discourse of the relationship between visual appearance and meaning was mobilized, adapted, subverted, rejected, or affirmed, I hope to reopen consideration of the way that photography – or ideas about photography – provided a space to negotiate shifting understandings of the relationship between aesthetic medium and society, nature and technology, image and signification. Just as physiognomy classically provided a technique for decoding the underlying meaning of natural forms, photography was often granted privileged access to an experience of the natural world by both proponents of a physiognomic understanding of photography and skeptics of this approach. More importantly, discussions about photography demonstrate the extent to which nature and technology necessarily constituted each other as discourses within Weimar modernism, as ideas about the adequate representation of the natural world and competing claims about photography's ability to reproduce the speed and dynamism of modern technology relied upon and reinforced one another.

Photography, though then nearly a century old, was central to the aesthetic discourse of the 1920s for a number of reasons. On the one hand, its mechanical reproduction of visual impressions made it foundational for discussions of the new medium of film, especially before the advent of sound film, and on the other, its supposed documentary veracity prompted

reexaminations of “older” media such as literature and painting.¹⁵⁸ Because the discussion of photography involved a reappraisal of a medium that was coded as particularly technological, but also because discussions of photography tended never to remain discussions simply of photography, but to spill over into other media such as film, literature, and theater, not to mention other conceptual realms entirely, a closer look at a key moment of this debate is a prerequisite to understanding the ways in which technology and nature were reconceptualized and mutually reconstituted one another as discourses during the period.

Physiognomy provided a set of terms for talking about how the photographic image could *mean* anything beyond itself, yet as critics such as Sabine Hake and Matthias Uecker have pointed out, the physiognomic approach to photography itself rested on a host of problematic assumptions about the visible type – the only way that a photograph of an individual can represent a type at all is to the extent that it is able to access a host of cultural presuppositions and stereotypes. This is certainly true, but for the purposes of this chapter I am more interested in pursuing the physiognomic logic, however imprecise, because of the discursive and disciplinary transferences, translations, and slippages it reveals. Thus it is no doubt incorrect when Alfred Döblin, for example, says in his introduction to August Sander’s 1929 *Antlitz der Zeit* that Sander’s photographs provide a visible history of the last several decades if one understands that claim in a universal vein; for a present-day viewer unversed in the visual codes, class composition, and structuring narratives of Weimar society the photographs are historically far less intelligible. Yet the suggestion, for example, that there is a connection between the strategies

158 On the resurgence of the theoretical debate surrounding photography in the 1920s, see Wilke, esp. 44-47: “Wenngleich [die Fotografie], anders als der Film, beileibe kein neues Medium mehr ist, wird sie doch einer umfassenden konzeptionellen Erneuerung unterzogen, einer Rückführung auf ihre technischen Gesetze, die nun gleichfalls als Bedingung und Gewähr ihrer Kunstfähigkeit erscheint. Schon in den 1920er Jahren selbst findet diese Korrelation eine medienhistorische Deutung: Gerade die Entwicklung der bewegten Bilder sei es, die auch den Blick für die mediale Eigenart und das eigentliche ästhetische Potenzial ihrer statischen Vorläufer geschärft habe. In dieser Allianz gründet der Wirkungszusammenhang, der nun beide Medien gemeinsam als Agenten einer Wende zum Optischen figurieren lässt” (44-5).

of representation and kinds of typification employed across such discourses as photographic portraiture, anatomy, and epic prose is itself more compelling than the fact that Döblin's claim may be a bit too sweeping.

I will begin with a closer consideration of Döblin's preface to August Sander's 1929 photobook, *Antlitz der Zeit*, in order to introduce the collusion of discourses that allowed the author to depict the portraitist's work as a comparative anatomy. Döblin's claims about the particularly representative evidentiary nature of the visible have a good deal, I argue, to do with his ideas about the relationship between the individual and the type in the context of his philosophy of nature. The bulk of this chapter will consist of a reconstruction of Brecht and Benjamin's criticisms of Albert Renger-Patzsch in light of the latter's own photographic theory. I have chosen to use Renger-Patzsch as the exemplary photographic practitioner in this chapter not only because he was one of the most prominent Weimar representatives of New Objectivity in photography, nor even because of the fortuitous reach of his personal entanglements with other figures of 20th century German culture, from Brecht's and Benjamin's rejection of his photography to his own later collaboration with Ernst Jünger. Rather, the tension between his photographic practice, his photographic theory, and Benjamin and Brecht's characterization of him will provide the leverage to prise open key issues of visual representation. By attending to how exactly Renger-Patzsch understood the concept of *Wiedergabe*, I hope to show that the photograph for him was not a transparent window that immediately reveals its object, but rather a surface upon which formal play and visual analogy could work to train the viewer's perception and recreate a kinaesthetic experience. The contrast to Renger-Patzsch will then provide the leverage to return to an unresolved tension in Brecht's and Benjamin's theories of photography between showing and telling. Then I will turn to Siegfried Kracauer's essay, "Die Photographie,"

in order to show how his subversion of the physiognomic discourse can help us think about the photographic surface not in terms of the individual image but as a historically specific media landscape, critical awareness of which is prerequisite to social transformation. And finally, I will look some thirty-odd years ahead to Ernst Jünger's collaboration with Renger-Patzsch to show how Jünger develops a particular kind of physiognomy that, in contrast to Döblin's description of Sander's historically "comparative photography," results in an essentializing and elemental transhistorical time, a temporality that will be central in the following chapter's consideration of Jünger's Weimar-era concept of the "organic construction."

The purpose of this chapter is thus to contextualize and historicize the role that debates about photography played during the time, especially to the extent that they linked considerations of visual representation to broader questions about experience, historicity, and the relationship between the individual and the type. These discussions on photographic representation were on the one hand a necessary theoretical confrontation with a modern mass medium that informed the way seeing worked in the Weimar period. Yet on the other, the language and registers available for talking about photography provided a way to work through issues of technology, perception, experience, mass society, and representation as such.¹⁵⁹ In these various theorizations of photographic representation, one can see the contours of a key feature of Weimar culture: a discourse in which nature, technology, perception, and modernity were semantically and conceptually reconstituting and being reconstituted by each other, with no term functioning as a stable or independent variable. Where Döblin draws on the physical sciences to

¹⁵⁹ Mia Fineman has analyzed in detail how contemporary photographic discourses provided a way to rework the relationship between technology and the human, under the sign of "Homo prostheticus" in the wake of the First World War: "Homo prostheticus is a modern, masculine creature, a functional assemblage of organic and mechanical parts who laughs in the face of neohumanist laments about the loss of individuality with a more or less joyful affirmation of a new ontology of mechanized partiality. [...] Homo prostheticus became the figurative embodiment of a new ideal of the human organism functionally enhanced through technology—whether by a steel prosthesis or a Zeiss lens." (32-34)"

describe photography's ability to represent a social history, Ernst Jünger will link physiognomy to a transhistorical, elemental temporality; where the photographs of Albert Renger-Patzsch indulge in formal play to undermine thematic and visual differences between natural and manmade forms, Brecht and Benjamin will take issue with the camera's purported immediacy, an aspect of photography that for them has the effect of naturalizing history while claiming superior representative capacity. These differences in position had largely to do with the different angles from which these various theorists approached the medium, the expectations they had of it, and the formal and medium-specific features they chose to emphasize. Yet the differences between them are worth attending to, particularly because none of these theorists were defenders of pictorialism – that is, a practice of photography that drew on the compositional conventions and aesthetic codes of 19th century painting – and they all praised the modernity of the medium. In the differing demands they made of photography's modernity, therefore, it is possible to reconstruct not only key media-theoretical aspirations of Weimar culture, but beyond this, differing configurations of the relationship among art, technology, politics, and society. In other words, at stake in competing ideas about the photographic image were ultimately different ways of imagining modernity.

“[Das] Meer, das uns alle schaukelt.” Döblin and photography as historical typology

In his introduction to August Sander's 1929 collection of photographic portraits, *Antlitz der Zeit*, Alfred Döblin takes a curiously circuitous route to his subject matter. Döblin's epistemological detour provides an apt point of entry into the complex and often contradictory discussion of photographic representation during the Weimar era precisely because of the way that, in extracting meaning from faces, Döblin navigates among various discourses of aesthetic

representation. In his praise of Sander's portraits, Döblin suggests how we might rethink the issues at stake in period discussions of photography in a way that allows us to see how considerations of media, technology, and representation overlapped and interlocked with ideas about perception, experience, and the visible surface of things.

Before getting to Sander's book, which he finally does about three quarters of the way through his essay,¹⁶⁰ Döblin offers an extended meditation on representation couched in the terms of the medieval debate between realism and nominalism. In his compact summary of the competing positions, he writes, "Die Nominalisten waren der Meinung, daß nur die Einzeldinge wirklich real und existent sind, die Realisten aber hielten dafür, nur die Allgemeinheiten, die Universalien, sagen wir die Gattung, sagen wir die Idee, sind eigentlich real und existent" (7).

Döblin illustrates the differences between the two positions through the genre of the death mask. Although he does not mention the volume by name, the context makes it clear that he is referring to the popular 1927 collection of photographs of death masks, *Das ewige Antlitz*, published by Ernst Benkard.¹⁶¹ Death, as written on the faces of figures ranging from Frederick the Great to the young girl known as "L'Inconnue de la Seine," has erased the accidental, momentary impressions, leaving a visible access to truth beyond the merely particular. Through a process Döblin likens to erosion, the momentary movements of the human face have been erased, leaving only the "En-bloc-Resultat" (9). In the context of the medieval "Gelehrtenstreit" with which Döblin frames his discussion of visual representation, the truth left after the erosive forces of death have cleared away the particulars – "Es ist die ganze Unmasse des Momentanen, Beweglichen auf diesen Gesichtern wegradiert. Der Tod hat eine massive Retusche

160 "Ich habe die Seiten nicht gezählt, oder die Sätze, die ich bisher gesprochen habe, aber wir können jetzt eine Flagge hissen, wir sind nämlich bei unserer Sache, bei unsern Bildern" (13).

161 Benkard, Ernst. *Das ewige Antlitz*. Berlin: Frankfurter Verlagsanstalt, 1927.

vorgenommen” (9)¹⁶² – is the triumph of realism over nominalism. Yet, he continues, it is not just death that brings out the veracity of the human face: the forces of society, class, and epoch also share these powers of creative erosion with death. Turning from Benckard’s volume to Sander’s, Döblin draws a parallel between the leveling powers of death and those of social life:

“Hier liegt vor mir eine andere Mappe, Bilder von Lebenden. Diese sind noch nicht in den großen Bottich gefallen, wo das Persönliche und alle Aktivität von ihnen abgewaschen wird. Das Wasser, das diese Steine abschleift, ist noch an ihnen sichtbar. Sie rollen noch in dem Meer, das uns alle schaukelt. Und während uns aus den Totenmasken überwältigend die eine gleichbleibende Anonymität entgegentritt – wir blicken in eine große eigentümliche Mondlandschaft –, so sehen wir – Individuen? Merkwürdig. Man würde glauben, man sieht Individuen. Aber plötzlich – merkt man, man sieht auch hier keine Individuen! Es ist zwar nicht die große, eintönige Mondlandschaft des Todes, deren Licht auf allen Gesichtern liegt, es ist etwas anderes. Und was? Wir sprechen jetzt von der erstaunlichen Abflachung der Gesichter und Bilder durch die menschliche Gesellschaft, durch die Klassen, durch ihre Kulturstufe. Dies ist die zweite gleichmachende oder angleichende Anonymität.” (10)

In a way that recalls his own theory of the epic, Döblin’s discussion of photographic “realism” makes it clear that this is a form of representation that privileges the type and the mass over the isolated, autonomous individual.¹⁶³ Compared to what he sees as the unfortunate proliferation of “nominalist” photographers – those whose approach to verisimilitude seizes on personal, private, and unique details of their subjects¹⁶⁴ – photographic realism as practiced by Sander is able to show the truth of the type.

162 *Retusche*, or retouching, is of course a photographic term referring to modifications of the photographic negative or print that alter the final image.

163 As I discuss in the previous chapter, water is a crucial motif throughout Döblin’s work and served him elsewhere as it functions here: to undermine fixed boundaries between the individual person or particle and the larger mass. As we will see, Döblin differs from Jünger in that he does not oppose the mass to the type. Both concepts work to undermine the isolation of the sovereign, bourgeois individual. In this context, both his praise of Sander and his aqueous approach to the book’s introduction make sense.

164 “Dann gibt es Photographen, die als Wald- und Wiesenpflanzen auf allen Straßen gedeihen. Die sind, obwohl sie so viele sind, doch in unsern Augen mehr als jene künstlerischen Herren. Sie wollen ein möglichst ‘ähnliches’ Bild von dem Menschen geben, der sich ihnen stellt. Es soll möglichst ‘ähnlich’ sein, das heißt, das Persönliche, Private, Einmalige an diesem Menschen soll auf der Platte festgehalten werden. Wir kurbeln ein bißchen zurück und erinnern uns unserer Eingangssätze: diese Ähnlichkeitsphotographen, das sind die Nominalisten, die keine Kenntnis von den großen Allgemeinheiten haben. Wir tun den Herren wohl zu viel Ehre an, wenn wir sagen, sie haben in dem großen Streit der Geister Stellung genommen und sich entschlossen auf die Seite der Nominalisten gestellt. Unbestreitbar und sicher vorhanden ist immerhin ein bestimmter Realismus dieser Gruppe Photographen, nämlich Geld zu verdienen.” (12-13)

Döblin's argument is, characteristically, somewhat ambiguous at this point. Having suggested here and in other essays¹⁶⁵ that modern, mass society is responsible for creating the type as the truth of the era, he then – disarmingly and seamlessly – claims that the photographic realism practiced by Sander is the privileged aesthetic representation of the type. In other words, Sander's "Geist, seine Beobachtung, sein Wissen und nicht zuletzt sein enormes photographisches Können" (13) are able to bring out the truth of an age through an aesthetic strategy that both reflects and captures the fundamental processes of that age. If it is the "Meer, das uns alle schaukelt" that is responsible for their anonymity, it is Sander's visual idiom that bestows this social erosion of the individual with a representative capacity. The ambivalence in Döblin's praise is worth maintaining because it foregrounds Sander's photographic practice while raising broader questions about the ways in which visual representation was theorized during the period. Where the claim that the typical nature of these faces was brought about through the erosive, leveling vicissitudes of society, class, and history would seem to suggest that the photographer only has to record these eloquent faces for their representative potential to be made visible, Döblin's distinction between "nominalist" and "realist" photographers, and his assignment of Sander to the latter category, hints that the camera itself plays a guiding role in visual typification.

And indeed, Döblin likens Sander's photographic practice to a science rather than an art:

"Wie man Soziologie schreibt, ohne zu schreiben, sondern indem man bilder gibt, Bilder von Gesichtern und nicht etwa Trachten, das schafft der Blick dieses Photographen, sein Geist, seine Beobachtung, sein Wissen und nicht zuletzt sein enormes photographisches Können. Wie es eine vergleichende Anatomie gibt, aus der man erst zu einer Auffassung der Natur und der Geschichte der Organe kommt, so hat dieser Photograph vergleichende Photographie getrieben und hat damit einen wissenschaftlichen Standpunkt oberhalb der Detailphotographen gewonnen." (13-14)

It is tempting to say that Döblin is able to compare Sander's images to a comparative

165 Most notably in "Der Geist des naturalistischen Zeitalters."

anatomy because Sander was already framing his subjects as specimens. Clearly, it is not just historical processes that have stripped the contingent, momentary particulars, but Sander's compositional technique has done this as well. Figures are often posed against a neutral white or grey background or they are arranged indoors or outside, but the shallow depth of field and the lack of visible clutter suggest, to borrow a term from another photographic discourse, that the punctum has been studiously removed – for Sander's sitters, backgrounds are precisely that. Occasionally, subjects such as a baker or a *Tapeziermeister* will wield the tools of their trade, but far from adding individual color, these emblematic implements only serve to reinforce the typicality of the people photographed. Photography can work like a history of organs because of the fundamental recognizability of Sander's specimens.

In this sense, *Antlitz der Zeit* – and Döblin's reading of it – can be situated within a discursive tradition centering on the privileged evidentiary nature of the visible. In their dissociation from a rich visual context and in the tacit narrative implied by the way they are serially mounted within the volume, Sander's portraits recall Karl Blossfeldt's collection of plant images, *Urformen der Kunst* (1928) or, reaching back to the work referenced by Blossfeldt's title, Ernst Haeckel's 1904 *Kunstformen in der Natur*. While not working with photographs, Haeckel deployed a similar strategy of visual representation throughout his work to convey – and demonstrate – truths about biological life, most famously his thesis that ontogeny recapitulates phylogeny. His lush, vibrant zoological illustrations were to bear the burden of proof in making claims about evolution and taxonomy.¹⁶⁶ Likewise Blossfeldt's book *Urformen der Kunst*, although a collection of art photography rather than scientific illustration, sought to demonstrate by means of carefully manicured close-ups that key formal patterns in nature were the origin of

166 For more on Haeckel's practices and theories of scientific illustration, see Daston and Galison, especially pages 160-161, 189-192, and 247-250, and Kreinik, 232-247.

similar forms in art and culture.¹⁶⁷

These resonances between diverse genres, disciplines, and media introduced by Döblin's comparison of August Sander's method to that of the anatomist should alert us to two key aspects of photographic theory and practice during the Weimar Republic. First, what we find are often strategies of representation and discussions of photographic meaning that have little to do with such hallmarks of photographic theory as indexicality, verisimilitude, or the aleatory.¹⁶⁸ Rather, the discussion of the camera's putative objectivity was often more complex and contradictory than a simple assumption based on the purely technical dimensions of the instrument such as its speed and precision (although these are *also* broadly emphasized). As Lorraine Daston and Peter Galison have argued in *Objectivity* (2007), the set of scientific strategies and practices of observation and depiction they dub "mechanical objectivity" had less to do with an accurate portrayal of reality and more to do with an ideal of non-intervention on the part of the scientific subject.¹⁶⁹ This historical notion of objectivity arose over the course of the nineteenth century as a reaction to the Enlightenment ideal of "truth-to-nature." Where the latter required the learned intervention of the subject to eliminate the accidentals of a given image in order to allow its exemplary larger truth to become apparent, the former approach sought to excise precisely this intervention in order to minimize the risk of an unconscious manipulation of the data to conform to preformed hypotheses or images. Yet what one often

167 For a thorough discussion of the relationship between Blossfeldt's image-making practices and his ideas about fundamental botanical types, see Kreinik, 257-263. For a discussion of how his images joined considerations of form and function in a way that reconciled organic nature and modern technology for his contemporaries and drew on Meurer's idea of "Urformen" and Haeckel's monism, see Fineman, chapter 3, especially 93-98.

168 The idea of the index, drawn from C.S. Peirce's semiotic theory, has proven variously fruitful for theorizing the relationship between the photographic image and its object. As Clive Scott writes, "The index [...] is the sign in which the relationship between sign and object, or signifier and signified, is one of causal, sequential, or spatial contiguity" (27). For more on the role of the index in photographic theory, see Scott's *The Spoken Image*, especially pages 17-45. For a further critical assessment of the usefulness of indexicality for understanding film and digital photography, see Tom Gunning (2008).

169 "Nonintervention — not verisimilitude — lay at the heart of mechanical objectivity, and this is why mechanically produced images of individual objects captured its message best" (187).

finds in the photographic discourse of the Weimar era, exemplified in Döblin's praise of Sander's visual typologies, is a combination of the exactitude of mechanical objectivity with a premium placed on strategies of typological representation that accord with truth-to-nature. If we take this convergence of strategies of representation seriously, we are compelled to reconsider how terms such as "objectivity," "realism," and "reproduction" functioned as multivalent and at times contradictory concepts. In the case of Brecht's criticism of Renger-Patzsch, it is the enabling assumptions behind these terms and all they entail that are at issue, far more than critical judgments on specific photographic practices.

The second point, which follows in part from the first one, is that it is impossible to fully distinguish those aspects of Weimar photographic discourse that are entirely medium-specific. On the one hand, discussions of photography drew on the mechanical nature of the camera and film's ability to capture light, often relying upon an implicit analogy between the camera as modern medium and the characteristic mechanization and heightened tempo frequently taken to define modern life. For almost all parties except those still invested in pictorialism, photography was supposed to neither resemble nor imitate painting. Yet on the other hand, discussions of photographic meaning were often anything but medium-exclusive, drawing on strategies of visual representation from across disciplines and media.¹⁷⁰ Between scientific illustration and photography, there was a visual language available for making claims about the type in light of the individual specimen, which is exactly what Döblin emphasized in regard to Sander's portraiture. The truth of the individual photograph, in this case, is less a question of its indexicality and supposed immediacy than its capacity to represent a type.

¹⁷⁰ Juliana Kreinik, for example, has traced a genealogy of the photography of *Neue Sachlichkeit* to strategies and practices of scientific illustration. Her dissertation represents a ground-breaking study of the relationship between visual representation in the natural sciences and the aesthetic conventions of photographic New Objectivity, and has been invaluable in helping me sort out some of the key ideas of this chapter.

“Der Reiz der Oberfläche.” Wiedergabe, Form, and Perceptual Training in the Work of Albert Renger-Patzsch

Returning to the indirect debate on photographic representation staged by Bertolt Brecht, Walter Benjamin, and Albert Renger-Patzsch will involve a good deal of reconstruction and, to be fair, a bit of construction as well, since it was not actually a debate in any meaningful sense of the word. While Benjamin and Brecht do mention Renger-Patzsch explicitly, they address the photographer’s work only obliquely and dismissively; it is fair to say that “Renger-Patzsch” or *Die Welt ist schön* (*The World is Beautiful*) – the title of his best-known photobook – came to stand in as a synecdoche for the photography of *Neue Sachlichkeit* more generally, and even for broader tendencies or possibilities of photography at large. Renger-Patzsch for his part never addresses either Benjamin or Brecht directly, although he does address criticism of his book and its title in a 1937 essay.¹⁷¹ His own writings on photography are largely of a practical nature and consist far more of tips for amateurs and professionals on composition, equipment, technique, filters, chemicals, proper tripod usage, how best to illuminate succulents, etc., than the sort of media-theoretical and aesthetic questions Benjamin and Brecht were addressing. But it may be the very fact that the two camps were talking completely past one another that makes this moment so interesting, and it is worth asking what it might mean that two of the most significant media theorists of the Weimar Republic had so little common discursive ground with its most prominent photographer and their main target.

Without muting the force of Benjamin’s and Brecht’s criticisms, I would nevertheless like to suggest that their objections are not of necessity directed specifically at Renger-Patzsch: indeed, with a shift or two of rhetorical emphasis, the photographer’s work could have been the object especially of Benjamin’s praise, as was Renger-Patzsch’s colleague Karl Blossfeldt. It

¹⁷¹ Renger-Patzsch, Albert. “[Beitrag zu:] Meister der Kamera erzählen.” *Die Freude am Gegenstand*, 150.

should be clear from the start that neither side upheld what were seen as the aesthetic values of a previous age: like Benjamin and Brecht, Renger-Patzsch was interested in the ways that photography could train a new kind of perception. Neither was he invested in preserving received ideas of art or beauty, and indeed, he explicitly bracketed out the question of whether photography could be considered art.¹⁷² Nevertheless, Renger-Patzsch came to serve as a necessary placeholder of sorts, a provocation and an aid to navigating the ambivalence of the photographic medium. In this vein, it is perhaps not too much of a stretch to say that if Renger-Patzsch hadn't existed, it would have been necessary for Benjamin and Brecht to invent him. Thus – inversely – another look at the indirect debate on photography amongst Benjamin, Brecht, and Renger-Patzsch might provide the leverage needed to pry open the ambiguities in Benjamin's and Brecht's own conceptualizations of the medium. At issue is not just a disagreement on the ins and outs of photographic representation, but competing paradigms of the relationship between surface appearance and reality and, by extension, divergent discourses on technology.

Renger-Patzsch's 1928 photobook, *Die Welt ist schön*, is a collection of 100 black and white images, each presented in numbered sequence without caption on a single recto page of the volume, facing a blank verso page. A table of contents identifies each image concisely, naming the depicted object or landscape and only rarely giving geographic information. While Carl Georg Heise's introduction organizes the book into eight thematic sections ("Pflanzen," "Tiere und Menschen," "Landschaft," "Material," "Architektur," "Technik," "Bunte Welt" and "Symbol"), the collection proceeds by formal rhyming and visual analogy as much as it moves thematically from one image to the next.¹⁷³ Through careful composition and lighting Renger-

172 Albert Renger Patzsch, "Photographie und Kunst," in *Die Freude am Gegenstand. Gesammelte Aufsätze zur Photographie*, ed. Bernd Stiegler, Ann Wilde, and Jürgen Wilde (Munich: Wilhelm Fink, 2010), 83.

173 On the narrative structure of *Die Welt ist schön*, see Michael Jennings, "Agriculture, Industry, and the Birth of the Photo-Essay in the Late Weimar Republic." *October* 93 (2000): 47. "The volume is organized rather statically into clearly defined groups of images: plants, animals, and humans; landscapes, commodities, architectural details, technological details, and industrial landscapes; and, finally, a last series of ten images that

Patzsch is able to isolate striking formal aspects and visual details of such diverse subjects as agave, sheep, coffee beans, human faces, the rooftops of Lübeck, industrial forges, gear belts, sludge tanks, and much else. This encyclopedic inclusiveness, isolating disparate objects from their contexts and uniting them all, without explicit commentary, as objects of aesthetic appreciation under the title “Die Welt ist schön,” earned Renger-Patzsch Brecht’s and Benjamin’s accusations of *Verklärung*, or aesthetic transfiguration.

Brecht refers to Renger-Patzsch in a 1928 fragment called “Über Fotografie.” Criticizing photography’s unwillingness to move beyond displays of technical proficiency and attempts to mimic painting, he charges avant-garde photography with an obsessive and fetishistic focus on visual appearance: “Es kommt da aus den Bildern der Avantgarde oft so eine naïve Frage heraus: ‘Wissen Sie eigentlich, wie der Hintern einer Frau aussieht, nein, ich meine, wie er wirklich aussieht?’”¹⁷⁴ Yet the obsession with the visual is not Brecht’s primary gripe with the photography of the avant-garde or of *Neues Sehen*, but rather the suspicion that it is a disingenuous obsession, in that its true object is not a renewed confrontation with visual appearance at all, but rather a roundabout preservation of an aestheticist, traditional conception of art. “Das wäre noch nicht verstimmend,” continues Brecht, “wenn man nicht den Eindruck hätte, sie seien nicht einmal so sehr an der Beantwortung dieser bescheidenden Frage interessiert, sondern mehr daran, daß ein Kunstwerk entsteht, etwas, für das dieser Hintern nur ein Anlaß ist. Es handelt sich hauptsächlich wohl darum, zu zeigen, daß ‘das Leben doch schön ist.’”

mixes shots from most of the foregoing. Yet sustained consideration reveals connections both within and between groups of images. These connections are only in the rarest of cases thematic. Instead, Renger-Patzsch constellates groups of pictures *exclusively* through formal rhyming, and these rhymed constellations are almost always self-referential, in that they suggest to the viewer the manner in which the visual information is to be assimilated.”

In a somewhat similar vein, Matthew Simms sees the organizing principle of Renger-Patzsch’s book in its use of serial and radial structures. Matthew Simms, “Just Photography: Albert Renger-Patzsch’s *Die Welt ist schön*.” *History of Photography* 21, no. 3 (1997): 197–204.

¹⁷⁴ Bertolt Brecht, “Über Fotografie,” (“On Photography”) in *Werke: Grosse Kommentierte Berliner und Frankfurter Ausgabe, Schriften I*, ed. Werner Hecht, Jan Knopf, Werner Mittenzwei, and Klaus-Detlef Müller (Berlin: Aufbau, 1988), 264.

Brecht's rendering of Renger-Patzsch's title is telling, and it is tempting to say that Brecht has transfigured the title of the photobook into what he sees as its essential enunciatory force. Where "Welt" might be taken in a more neutral sense as referring to the world of possible images, "Leben" suggests a glib judgment on social actuality, reinforced by the way the "doch," in foregrounding the question of beauty, serves as the programmatic gesture of *Verklärung*. In a 1930 fragment, Brecht elaborates on the connection between photographic reproduction and *Verklärung*, echoing the first epigraph above: "Die Fotografie ist die Möglichkeit einer *Wiedergabe*, die den Zusammenhang wegschminkt. Der Marxist Sternberg [...] führt aus, daß aus der (gewissenhaften) *Fotografie* einer Fordschen Fabrik keinerlei Ansicht über diese Fabrik gewonnen werden kann."¹⁷⁵ The criticism here is that photographic representation presents aspects of a larger whole without gesturing towards that whole in a meaningful way, so that the broader social context is erased rather than invoked.

Photography by its very medial nature has the possibility to extract visual data from a given social and historical context and present it in isolation, as a static, supratemporal image; for Brecht and Benjamin, the contemporary tendency represented by Renger-Patzsch makes this moment central. Benjamin:

"Die Welt ist schön" – das ist der Titel des bekannten Bilderbuchs von Renger-Patzsch, in dem wir die neusachliche Photographie auf ihrer Höhe sehen. Es ist ihr nämlich gelungen, auch noch das Elend, indem sie es auf modisch-perfektionierte Weise auffaßte, zum Gegenstand des Genusses zu machen. Denn wenn es eine ökonomische Funktion der Photographie ist, Gehalte, welche früher dem Konsum der Massen sich entzogen – den Frühling, Prominente, fremde Länder – durch modische Verarbeitung ihnen zuzuführen, so ist es eine ihrer politischen, die Welt wie sie nun einmal ist von innen her – mit anderen Worten: modisch – zu erneuern. ("Der Autor als Produzent," II.2 693)

Thus it is not simply that photography removes the photographed object from its historical

¹⁷⁵ Bertolt Brecht, "[Durch Fotografie keine Einsicht]", in *Werke: Grosse Kommentierte Berliner und Frankfurter Ausgabe, Schriften I*, ed. Werner Hecht, Jan Knopf, Werner Mittenzwei, and Klaus-Detlef Müller (Berlin: Aufbau, 1988), 443-444.

context, thereby obscuring this context; for Benjamin, it has the additional function of repackaging existing reality (“die Welt wie sie nun einmal ist”) in modish luster, turning the photographed object into an object of consumer pleasure. That which exists is sold, with photography’s help, as something new. This is, of course, the logic of the advertisement, and Benjamin had linked photography, fashion, and advertising in his earlier “Kleine Geschichte der Photographie,” where his target is likewise Albert Renger-Patzsch: “Weil aber das wahre Gesicht dieses photographischen Schöpfertums die Reklame oder die Assoziation ist” (II.1 383). To be sure, many of the images in *Die Welt ist schön* were produced for industrial and commercial clients, and the relatively new medium of advertisements illustrated by photographs certainly informed contemporary discourse on photography.¹⁷⁶ Yet even if we bracket out the question of advertising and the ready judgments on consumer culture that may accompany it, it is clear that for Benjamin and Brecht the photographic surface itself obscures an underlying reality rather than providing access to it, as it supposedly does for Renger-Patzsch.

It is therefore worth mentioning that Benjamin’s argument that the economic role of photography is to offer the consumer images of commodities not actually attainable presages John Berger’s claim in *Ways of Seeing* (1973) about the historical affinity between the rise of European oil painting and that of commodity capitalism.¹⁷⁷ Indeed, the commodity is an important if never fully visible term in Benjamin’s and Brecht’s critiques, and the charge that the image obscures rather than reveals a functional reality bears strong similarities to a basic

176 On photography, advertizing, and the avant-garde in Weimar Germany see Sherwin Simmons, “Advertising Seizes Control of Life: Berlin Dada and the Power of Advertising,” *Oxford Art Journal*, Vol. 22, No. 1. (1999), 121-146, and Maud Lavin, “Photomontage, Mass Culture, and Modernity: Utopianism in the Circle of New Advertising Designers,” in Maud Lavin and Matthew Teitelbaum, *Montage and Modern Life: 1919-1942*. (Cambridge, MA: MIT, 1992), 36-59.

177 “To have a thing painted and put on a canvas is not unlike buying it and putting it in your house. If you buy a painting you buy also the look of the thing it represents. [...] Oil painting did to appearances what capital did to social relations. It reduced everything to the equality of objects. Everything became exchangeable because everything became a commodity. [...] Oil painting celebrated a new kind of wealth – which was dynamic and which found its only sanction in the supreme buying power of money.” John Berger, *Ways of Seeing* (New York: Penguin, 1977), 83-90.

Marxian dynamic: the relationship between surface appearance and structural reality, perhaps most well-known from the discussion of commodity fetishism in volume 1 of *Das Kapital*. The commodity is a fetish, for Marx, because it obscures the social relations that produced it; it is the tangible evidence of a complex, particularly historical system, and yet it seems to be merely an object. In Marx's formulation, "Es ist nur das bestimmte gesellschaftliche Verhältnis der Menschen selbst, welches hier für sie die phantasmagorische Form eines Verhältnisses von Dingen annimmt" (86).

So the problem for Benjamin and Brecht is not just that photography can make the ugly beautiful nor even that it transmutes social or political concerns into aesthetic ones, but rather that, in so doing, it recapitulates an essential logic of capitalist modernity. If reification or *Verdinglichung* obfuscates the complex social relations of production behind the deceptive self-evidence of a world of commodities, *Verklärung* obstructs access to functional social realities by presenting a world of things made beautiful. In this context, *Verklärung* for Benjamin and Brecht is not the necessary transfiguration of real-world material into a presentation suitable for an aesthetic medium, but is rather the obscuring aestheticization of complex social realities, performing on the level of images what *Verdinglichung* achieves on the level of things.¹⁷⁸ Thus the problem with Renger-Patzsch's photography for them is not just that it makes commodities beautiful, but that it duplicates the logic of the commodity fetish itself. A reproduction of visual appearance is just that – a doubling of visual appearance that offers no new insight into an already mystified and mystifying social order.

In Brecht's *Dreigroschenprozeß* we read: "Die Lage wird dadurch so kompliziert, daß weniger denn je eine einfache 'Wiedergabe der Realität' etwas über die Realität aussagt. Eine

¹⁷⁸ My thanks to Johannes Wankhammer for this particular articulation of the relationship between *Verdinglichung* and *Verklärung*.

Fotografie der Kruppwerke oder der A.E.G. ergibt beinahe nichts über diese Institute. Die eigentliche Realität ist in die Funktionale gerutscht. Die Verdinglichung der menschlichen Beziehungen, also etwa die Fabrik, gibt die letzteren nicht mehr heraus” (21.469). Closely related to the accusations of *Verklärung* is the idea that the photographic image obscures the underlying reality. Contrary to a logic of physiognomy, which holds that visible form is an expression of a deeper truth of being, the surface tells us nothing about the interior, and the image is helplessly mute. A reproduction of visual appearance is just that – a doubling of visual appearance that offers no new insight into an already mystified and mystifying social order. For Benjamin, the photographic tendency represented by Renger-Patzsch senselessly reduplicates the world of commodities, thereby obscuring any possibility for a deeper recognition of the human context behind those commodities: “In ihr [i.e., in the motto “Die Welt ist schön”] entlarvt sich die Haltung einer Photographie, die jede Konservenbüchse ins All montieren, aber nicht einen der menschlichen Zusammenhänge fassen kann, in denen sie auftritt, und die damit noch in ihren traumverlorensten Sujets mehr ein Vorläufer von deren Verkäuflichkeit als von deren Erkenntnis ist” (II.1 383). The photographic image thus recapitulates a logic of commodification on multiple levels.

For Brecht and Benjamin, then, Renger-Patzsch is both symptomatic and symbolic of photography’s innate capacity for *Verklärung* – in its essentially myopic focus on yielding up an aesthetically pleasing visual surface, it both distracts from and obstructs meaningful insight into the photographed object. In retrospect, it seems inevitable that Renger-Patzsch should have come to play this role. *Die Welt ist schön* was a well-known work,¹⁷⁹ and had its popularity, glossy images, and implicit unifying narrative not sufficed to earn it a representative status in late

179 On the contemporary reception of *Die Welt ist schön*, see Claus Pflingsten, *Aspekte zum fotografischen Werk Albert Renger-Patzschs* (Witterschlick: M. Wehle, 1992), 168-171, and Ulrich Rüter, “The Reception of Albert Renger-Patzsch’s *Die Welt ist schön*.” *History of Photography* 21.3 (1997): 192-196.

Weimar debates of photographic representation, the programmatic title alone may have been enough to guarantee it that role. Yet as has often been pointed out, “*Die Welt ist schön*” was not Renger-Patzsch’s choice of title, but that of his publisher, Kurt Wolff. The photographer’s own preferred title for his book was allegedly “*Die Dinge*” – one might imagine, all other things being equal, that such a title would have been far more sympathetic to Benjamin and Brecht than the more saccharine moniker that ended up gracing the collection’s cloth spine. It would be tempting to explain away their criticisms of Renger-Patzsch as the result of a misunderstanding, but this would be inadequate. Renger-Patzsch’s book, once in circulation under its more marketable, innocently provocative title, was no longer a collection of technically superb photographic studies of various objects, but itself an object, participant, and prompt in the contemporary discourse on the photographic medium.

And regardless of whether it had been dubbed “*Die Welt ist schön*,” “*Die Dinge*,” or anything else, the photographic practice it demonstrated represented an irritation for a critical photographic theory. Brechtian-Benjaminian hackles would have been raised, I propose, whatever the title of Renger-Patzsch’s photobook. This is not because his photography was simply incommensurable with their views of the medium’s potential – I don’t think that it was – but because of a fundamental ambivalence within contemporary photographic discourse between what we might provisionally dub its formal/pedagogical and its documentary/realist emphases. Both bear upon the question of photography’s relationship to technology: on the one hand, the program of *Neues Sehen* foregrounded the medium’s capacity to expand and train human perception in a way that fit with the rapid social and technological changes of the period. Photography, like film, was lauded as a medium that was up to the task of refunctioning human sight in an age of radical industrialization and urbanization. On the other hand, photography’s

putative mechanical exactitude inspired a whole body of claims and counterclaims about the camera's superior representative potential. The tension between these poles has its counterparts in Benjamin and Brecht, but before addressing the ambivalence between photography's various facets in their work, it will be useful to turn to the theoretic writings of Renger-Patzsch.

To be sure, Renger-Patzsch was interested in photography's ability to reproduce ("wiedergeben") a visual scene. But his understanding of what exactly constituted a photographic *Wiedergabe* differed from the simply positivistic notion implied by Brecht's critique in the *Dreigroschenprozeß*, as did his conception of what photography could and should portray. For Renger-Patzsch, the photographic image was neither merely an immediate reproduction of a visual impression, nor did photography aspire towards enunciatory force concerning functional social realities. Just as he bracketed art out of photography's purview on the one side, he denied it access to discursive or conceptual claims on the other: "Mit dem Versuch, eine Idee darzustellen, überschreitet die Fotografie die ihr gezogenen Grenzen," as he writes in a 1961 essay called "Über die Grenzen unseres Metiers. Kann die Fotografie einen Typus wiedergeben?"¹⁸⁰ In this sense, Renger-Patzsch on the one hand and Benjamin and Brecht on the other are talking past each other; since they disagreed on the very premises of what photography was and what it should be, they lacked the common ground upon which to work out how it could achieve its aims. In a sense, this is simply another way of stating the obvious – that Benjamin and Brecht approached photography as critical media theorists while Renger-Patzsch spoke as a *Berufsfotograf*. Nonetheless, what is interesting is the way that both camps came up against the same ambivalences of the medium, each working in their own specific idiom.

Straight theoretical pronouncements from Renger-Patzsch are few and far between. The casual reader of *Die Freude am Gegenstand*, a recent collection of Renger-Patzsch's writings on

¹⁸⁰ Renger-Patzsch, "Über die Grenzen unseres Metiers," 222.

photography, will immediately notice the prevalence of purely technical insights. Many of Renger-Patzsch's pieces were written for other photographers, and often directed towards enthusiastic amateurs seeking to hone their landscape or botanical photography skills. There are a few pieces that enter the discursive fray and address photography as a medium, such as "Ketzergedanken über künstlerische Photographie," "Photographie und Kunst," and "Ziele." Yet even in the more technical texts it is possible to discern an implicit engagement with the questions being posed of and by the medium during the 1920s.

Photography indeed served a documentary purpose for Renger-Patzsch, but it was to document not simply reality-at-large, but rather forms per se. The *Wiedergabe* at stake was a reproduction of visual forms and, by way of these, sensory experience. As Claus Pfindgen has noted, "Dieser Anspruch der Fotografie auf Dokumentation der Wirklichkeit werde vom Fotografen durch die Inventarisierung und exakte Wiedergabe der Formen realisiert" (114). Yet as Bernd Stiegler has pointed out, even within the claim to exactly reproduce forms – what has often been called Renger-Patzsch's realism – there lies a tension between the exact depiction of an object and formal play for its own sake, between identification and resemblance or visual analogy.¹⁸¹ Because Renger-Patzsch was not photographing with an eye towards the identification of an object or scene but rather to draw out salient formal features, his more technical writings emphasize the initial composition of an image and its subsequent cropping in the darkroom. Thus to take an example used by Thomas Janzen, an image that depicts an immediately recognizable quay wall above a canal is cropped to become the diagonal intersection of two surfaces – the stipple of brick and the ripple of water (figures 1-2). In Stiegler's formulation, "kaum ein Photograph seiner Zeit hat sich so der Dingwelt verschrieben, aber auch kaum einer die formale Abstraktion so weit getrieben wie er" (2010, 305).

¹⁸¹ Bernd Stiegler, Afterword to *Die Freude am Gegenstand*, 305.



Figure 1. Contact print of plate 49 from *Die Welt ist schön* (image from Janzen 1996)



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Figure 2. Plate 49 from *Die Welt ist schön*

The tendency towards formal play distances the photograph from any simple identificatory function that might be anticipated by the idea of *Wiedergabe*, and enables the photographed subjects to mingle more freely; natural and technological forms, for example, come to resemble one another.¹⁸² A close-up of a snake's scales produces the formal repetition and burnished hardness of a machine, while images of industrial forges or warehouses take on an organic, creaturely quality. As Bernd Stiegler writes,

Sein Konzept, das, so wie er es versteht, Kunst und Handwerk, Natur und Kultur, Subjekt und Objekt, Technik und Flora miteinander verbindet, ist die *Form*. Die Form ist in seiner Photographietheorie wie -praxis die zentrale vermittelnde Instanz, die dazu dienen soll, die Ambivalenzen seiner Bilder und seiner Texte aufzuheben. Sie soll es ihm gestatten, radikale Moderne und "elementare Räume" zu assoziieren. Die Photographie ist für ihn die eigentümliche wie besondere Begegnung des konkreten Gegenstandes mit der abstrakten Form – wie auch umgekehrt des abstrakten Gegenstandes mit der konkreten Form. (2009, 83)

Formal principles allow *Die Welt ist schön* to move between images of otherwise incongruous subjects, from the North Sea surf, for example, to rows of identical cobbler's lasts, and form for Renger-Patzsch is closely linked to photography's capacity for *Wiedergabe* – the well-chosen form is what brings the essence of the photographed object to the viewer.

Yet for Renger-Patzsch, *Wiedergabe* is not merely a visual duplication of what exists, but is rather the recreation of a perceptual experience for the viewer; likewise, the essence ("das Wesentliche") is not conceived as a conceptual or critical knowledge of the object (Brecht's factory, say) but is instead supposed to be a representative moment that makes a particular quality of the photographed subject present for the viewer. In a programmatic essay called "Ziele," Renger-Patzsch speaks in favor of a kind of photographic realism that would be able to reproduce impressions ("Eindrücke") and the "magic of the material" ("den Zauber des Materials").¹⁸³ The mechanical nature of photography means that it is the medium able to "do

¹⁸² Stiegler, *Die Freude am Gegenstand*, 305.

¹⁸³ Renger-Patzsch, "Ziele," in *Die Freude am Gegenstand*, 91.

justice” to modern technology: “Dem starren Liniengefüge moderner Technik, dem luftigen Gitterwerk der Krane und Brücken, der Dynamic 1000pferdiger Maschinen im Bilde gerecht zu werden, ist wohl nur der Photographie möglich” (92). Expanding upon this idea in “Photographie und Kunst,” he writes:

...so kann [der Photograph] Dinge im Augenblick hervorzaubern, mit denen sich der Künstler tagelang abmühen muß, wenn es sich nicht überhaupt um Gebiete handelt, die dem Künstler verschlossen sind, auf denen die Photographie sich aber auf ihrem ureigensten befindet. Sei es als souveräne Beherrscherin flüchtigster Momente oder in der Analyse einzelner Phasen rascher Bewegung, sei es zur Fixierung der allzuschnell vergänglichen Formenschönheit der Blumen oder zur Wiedergabe der Dynamik im Reiche moderner Technik. (83)

The particular temporality involved in both “fixing” an evanescent moment in a biological process and reproducing technological dynamism is worth noting here; both punctual and sustained, it elicits an elemental dimension common to organic life and technological modernity alike. Likewise, the sensory experience that is the goal of Renger-Patzsch’s *Wiedergabe* is the experience of space, motion, and kinetic potential: “Worin liegen die Aufgaben der Photographie, fragt man noch? Die Höhe eines gotischen Domes aufnehmen, daß man Schwindelgefühle bekommt, ein Auto aufnehmen, daß man die Schnelligkeit sieht, die ihm innewohnt, die Luft aufnehmen, daß man den Raum fühlt” (47).

That Renger-Patzsch’s *Wiedergabe* is the recreation of kinaesthetic and sensual experience rather than the duplication of the visible can be seen in his advice to amateur photographers on how to compose a landscape. While the photographic novice immersed in a natural landscape such as the Harz Mountains would tend to photograph a given scene indiscriminately, unwittingly influenced by the various sense impressions – the smell of the air, the vastness of the landscape, the pleasant fatigue of the hike, and so on – that subtly and momentarily contribute to making the landscape noteworthy, the finished photograph of course

conveys none of this, and may seem pale and bland in comparison to the original experience. By contrast the more experienced photographer, according to Renger-Patzsch, filters out the other sense impressions and carefully chooses a detail or form in the landscape that captures its particular quality, thus recreating the total sensory experience that the careless amateur, unknowingly influenced by it, actually destroys.¹⁸⁴ “Whoever knows a landscape must also immediately recognize it in a photograph; whoever does not know it must get the correct idea of it.”¹⁸⁵ When prescribing proper practice for landscape photography, Renger-Patzsch relies on the category of “Ähnlichkeit,” but this is no more a simple resemblance to the landscape than “Wiedergabe” is a duplication of the visual. Instead, “Ähnlichkeit” relies on an understanding of the perceived characteristic qualities of a landscape: “Uns muß also alles willkommen sein, was den Charakter unterstreicht, verdammen müssen wir das Zufällige, auf das wir überall stoßen” (138).

The photographed landscape must therefore resemble an ideal version of the actual landscape, a version that captures its essential qualities. Put this way, this photographic imperative could certainly be understood as the type of *Verklärung* criticized by Brecht and Benjamin, a smoothing over of the visible surface to make any subject more aesthetically appealing, extracting an “essence” cleansed of its historical and social context to present it as something eternal. But another reading of Renger-Patzsch’s landscape advice would see it as the kind of negotiation of the relationship between sense perception, formal play, and new media characteristic of other avant-garde discourse of the time. Discussing a key ambivalence in Renger-Patzsch’s theoretical writings between photography’s documentary and essentialist aspirations, Stiegler writes, “Einer Photographie als Dokumentation steht jene als Wesensschau

184 Renger-Patzsch, “Ketzergedanken,” 46.

185 Albert Renger-Patzsch, “Vergewaltigung der Landschaft verboten,” in *Die Freude am Gegenstand*, 130.

gegenüber” (2010, 306). This is an important point, and the two tendencies do exist side by side in Renger-Patzsch’s writings without being fully resolved, but one must go further. I would suggest that the tension between documentation and essence cannot be fully resolved in Renger-Patzsch’s work because they are arguably never entirely distinct from one another. Photographic *Wiedergabe* is the documentation of an essence. As the advice on composing a landscape suggests, to accurately render the formal and surface qualities of an object is to reproduce “das Wesentliche,” and this type of photography, both “Dokumentation” and “Wesensschau,” is also a training of visual perception. In other words, to teach the viewer to see the “essential,” so little evident in a given photogenic object or scene that the amateur photographer may miss it entirely, is tantamount to training a new sort of perception.

A just recreation of a landscape, a botanical specimen, or a modern machine necessitates a new kind of perception that, in foregrounding salient formal features, breaks with the encrusted habits of an inherited aesthetics that takes its cues from painting. In this regard, Renger-Patzsch’s photographic program shared key impetuses with that of László Moholy-Nagy, although his aesthetic strategy and practice were quite different.¹⁸⁶ Like Moholy-Nagy’s 1925 *Malerei Fotografie Film, Die Welt ist schön* was understood by its author as an “ABC-Buch,” a photographic primer intended to train a heightened formal awareness, sharpening the eye to grant it both a renewed perception of natural forms and aesthetic access to modern technology, a point emphasized by Heise in his introduction to the volume.¹⁸⁷

186 On the relationship between Renger-Patzsch and Moholy-Nagy, see Jennings, who reads Renger-Patzsch as a major contributor to the avant-garde project: “Always considered the most ‘traditional’ Weimar photographer, Renger-Patzsch instead emerges here as a major modernist; in fact, only Moholy merits comparison.” Jennings, “Agriculture, Industry, and the Birth of the Photo-Essay,” 47. Virginia Heckert, in her 1997 essay, “Albert Renger-Patzsch as Educator,” also connects Renger-Patzsch to Moholy-Nagy and Blossfeldt in their projects to train viewers in a new visual culture (210-212). On the differences and dispute between Moholy-Nagy and Renger-Patzsch, whose views of photography were aired side-by-side in the winter, 1927 edition of *Das Deutsche Lichtbild*, see Fineman (2001), 80-87.

187 As Renger-Patzsch would write in 1937, “Ich glaube mit Recht sagen zu können, daß ich damals dieses Buch weniger im philosophischen Sinne (wie vielfach aus dem Titel falsch geschlossen worden ist) als vielmehr im lehrhaften Sinne aufgefaßt wissen wollte, als ein ABC-Buch, das zeigen sollte, wie man auf rein fotografischem

I have, I hope, sufficiently problematized the self-evidence of certain positions and presuppositions in Renger-Patzsch's photographic practice and theory that we may return to Benjamin's and Brecht's criticisms. Without wishing to reconcile the various complex positions with one another without remainder, it nonetheless seems safe to say that Renger-Patzsch's photographic project was not the glibly aestheticizing replication of surface appearance that their writings seem to imply, but is rather part of a contemporary discourse on perception, technology, and modernity invested in rethinking the possibilities of the photographic medium in opposition to what were seen as inherited, traditionalist, and still culturally dominant aesthetic norms. "Wiedergabe," a term as central to Renger-Patzsch's work as it is odious to Brecht, proves to be a dense concept that is arguably compatible not only with an avant-garde program of "neues Sehen" but also with the very compositional principles of construction and dismantling that were key in Brecht and Benjamin's conception of what photography should be. Given the emphasis in Brecht's work, from epic theater to the *Dreigroschenprozeß*, on making social realities visible,¹⁸⁸ or Benjamin's praise of the camera's ability to discover hitherto hidden worlds,¹⁸⁹ it becomes somewhat surprising that they would react so vehemently to a photographer who also thought of his work as perceptual training.

Even the accusation that Renger-Patzsch's photography homogenizes everything it depicts under the rubric of aestheticization, thus eclipsing the social, historical, and economic contexts, becomes less damning when one considers that Benjamin praised another photographer

Wege bildmäßige Lösungen erreichen kann, und daß die Reize der Fotografie im Halbton, in der Flächenaufteilung und im Lauf der Linien verankert sind. Bewußt stellen diese Fotos den Reiz der Oberfläche zur Schau" (150).

188 For more on the role of visibility in Brecht, especially as it relates to defamiliarization, see Steve Giles, "Making Visible, Making Strange: Photography and Representation in Kracauer, Brecht and Benjamin," *New Formations: A Journal of Culture/Theory/Politics* 61 (2007): 65–75.

189 The best known example is almost certainly in the artwork essay, where Benjamin describes the perceptual access granted by both the still and the cinematic camera in terms of the "dynamite of the tenth of a second" and the totally new structures that come to light under magnification. Walter Benjamin, "Das Kunstwerk im Zeitalter seiner mechanischen Reproduzierbarkeit," in *Gesammelte Schriften, Band I*, ed. Rolf Tiedemann and Hermann Schweppenhäuser (Frankfurt am Main: Suhrkamp, 1972), 499-500.

precisely for the way his visual innovations blended natural and technological forms. In “Neues von Blumen,” a 1928 review of Karl Blossfeldt’s book *Urformen der Kunst*, Benjamin lauds Blossfeldt’s detailed photographic studies of botanical forms for expanding the contemporary “perceptual inventory” (“Wahrnehmungsinventar”).¹⁹⁰ This is striking in light of Benjamin’s scornful dismissals of Renger-Patzsch’s work, not least because Renger-Patzsch conceived of his own work in similar terms. Benjamin’s review continues, in terms that could be applied nearly unaltered to Renger-Patzsch’s work:

Ob wir das Wachsen einer Pflanze mit dem Zeitraffer beschleunigen oder ihre Gestalt in vierzigfacher Vergrößerung zeigen – in beiden Fällen zischt an Stellen des Daseins, von denen wir es am wenigsten dachten, ein Geysir neuer Bilderwelten auf. Diese Photographien erschließen im Pflanzendasein einen ganzen unvermuteten Schatz von Analogien und Formen. Nur die Photographie vermag das. (152)

While it might be argued that use of the camera’s ability to magnify is what constitutes the difference for Benjamin between Blossfeldt and Renger-Patzsch, since the former’s plant photography relied more upon larger-than-life depictions than the latter’s, such stylistic details in photographic praxis hardly seem able to account for Benjamin’s dichotomous characterization of the two photographers, especially since Renger-Patzsch’s photographic theory and practice, with its emphasis on formal analogy and perceptual training, coincided so neatly with precisely those aspects – especially the discovery of visual analogies and unexpected forms – that Benjamin praised in Blossfeldt’s work. Even the tropes Benjamin uses to describe the new access photography gives to the forms of the plant kingdom rhyme with Renger-Patzsch’s own depiction. Where Benjamin writes of Blossfeldt’s photographs that “Wir Betrachtenden aber wandeln unter diesen Riesenpflanzen wie Liliputaner. Brüderlichen Riesengeistern, sonnenhaften Augen, wie Goethe und Herder sie hatten, ist es noch vorbehalten, alles Süße aus diesen Kelchen

¹⁹⁰ Walter Benjamin, “Neues von Blumen,” in *Gesammelte Schriften, Band III*, ed. Rolf Tiedemann and Hermann Schweppenhäuser (Frankfurt am Main: Suhrkamp, 1972), 151. On Benjamin’s use of Blossfeldt to discuss the idea of the “optical unconscious,” see Fineman (116).

zu saugen” (153), Renger-Patzsch encourages those photographing flowers to see with the eyes of insects: “Das Reizvolle besteht darin, daß man beim Photographieren gezwungen ist, sich auf den mehr oder weniger kleinen Organismus, den eine Blüte darstellt, mit dem Auge einzustellen, daß man sozusagen gezwungen ist, mit dem Auge der Insekten zu sehen und ihre Welt einmal zu der unseren zu machen” (“Das Photographieren von Blüten,” 17).¹⁹¹ There are important differences between these two passages. Benjamin’s claim is in one respect more modest, since a fully adequate vision of the world of plant forms and their analogies is reserved for “Riesengeister,” where Renger-Patzsch implies that anyone can learn to see with the eyes of insects and be at home in their world. Yet what matters most in this context is that photography in both quotes inhabits a drastic change of scale from everyday perception, defamiliarizing the visible world. This commonality demonstrates larger perceptual and experiential claims made in the name of photography that are compelling even though, for example, Blossfeldt’s work relied on extreme magnification while Renger-Patzsch’s photographs can seem almost claustrophobically confined to an everyday angle of focus.¹⁹²

Furthermore, the discovery of artificial forms in natural phenomena that Benjamin sees in Blossfeldt’s images could be seen as the very program of *Die Welt ist schön*. The most obvious counterpart to Benjamin’s description of this tendency¹⁹³ is perhaps the stylized depiction of an

191 Albert Renger-Patzsch, “Das Photographieren von Blüten,” in *Die Freude am Gegenstand*, 17. Note that the German word “Kelch” used by Benjamin means both “chalice” and “calyx,” a poetic ambiguity that suggests that the “sonnenhafte Augen” of Goethe and Herder may well have been compound.

192 Fineman summarizes the difference between the two photographers’ approaches in the following way: “Simply put, the essential difference between the two photographers is this: Whereas for Blossfeldt photographs of plant forms were means to an end, for Renger-Patzsch the photograph was an end in *itself*.” (105)

193 “In dem Bischofstab, den ein Straußfarn darstellt, im Rittersporn und der Blüte des Steinbrech, die auch an Kathedralen als Fensterrose ihrem Namen Ehre macht, indem sie die Mauern durchstößt, spürt man ein gotisches parti-pris. Daneben freilich tauchen in Schachtelhalmen älteste Säulenformen, im zehnfach vergrößerten Kastanien- und Ahornsproß Totembäume auf, und der Sproß eines Eisenhufes [sic] entfaltet sich wie der Körper einer begnadeten Tänzerin” (152-3). Fineman unfolds the contemporary reception of Blossfeldt in terms of the relationship between function and form: “What Blossfeldt’s magnifying lenses revealed to critics in the late 1920s was evidence of the primordial basis of functional form – a concept that provided a foundation for the utopian reconciliation of organic nature with the ‘second nature’ of modern technology.” (89)

agave plant and a telegraph mast above the monogram on the cover of *Die Welt ist schön*.

Representative of the book's aesthetic program of cataloging visual forms from various realms usually considered distinct, the juxtaposition of agave and telegraph mast is, as Bernd Stiegler points out, by a surprising coincidence replicated in Benjamin's short narrative from 1930, "Myslowitz – Braunschweig – Marseilles. Die Geschichte eines Haschischrausches." Based on a September, 1928 hashish protocol, the text describes a "Nahkampf von Telegrafmasten gegen Agaven, Stacheldraht gegen stachlige Palmen" to characterize the "große Entscheidungsschlacht zwischen Stadt und Land."¹⁹⁴

Both resemblance and antagonism, substitution and equivalence, the relationship between the agave and the telegraph masts signals a particular discursive configuration of Weimar culture, a discourse in which nature, technology, perception, and modernity were semantically and conceptually reconstituting and being reconstituted by each other. In its emphasis on formal play and perceptual training, *Die Welt ist schön* was no less radical a contribution to this discourse than Benjamin's and Brecht's critiques of it. So what accounts for the vehemence of their dismissals?

I suggested earlier that Renger-Patzsch served as a foil for Benjamin and Brecht, allowing them to work out their own photographic theories, although perhaps "strawman" would be the apter term. *Die Welt ist schön* could then stand in for the perceived tendency of contemporary photography to conflate unaltered surface appearance with deep structural insight, offering up whatever it photographs in a homogeneous and blandly affirmative aestheticization. It should be noted that Benjamin and Brecht were not simply measuring contemporary photographic praxis against the abstract and absolute mandate that it yield immediate insights, and necessarily finding

194 In Walter Benjamin, *Gesammelte Schriften Band IV*, ed. Rolf Tiedemann and Hermann Schweppenhäuser (Frankfurt am Main: Suhrkamp, 1972), 730. For a closer reading of this convergence of imagery, see Stiegler, "Albert Renger-Patzsch und Walter Benjamin," 71-82.

that it fell short, but were rather responding to what they perceived as the tendency to attribute to the camera a more immediate access to reality than other media were capable of. In this light, Benjamin and Brecht were each attempting to theorize how photography might regain some of its inherent potential for disruption, against what they saw as the shortcomings of contemporary photographic praxis and theory.¹⁹⁵ Their strong critiques of Renger-Patzsch and the photography of *Neue Sachlichkeit* more generally demonstrate a discursive constellation within Weimar discourse consisting of a renewed urgency of the visual, a heightened sense of the political, social, and technological stakes of late capitalism (including the rising threat of fascism), and a rethinking of technology, both as an aesthetic object and as the technological means of aesthetic production that Brecht called the *Apparat*.

Just before Brecht's criticism in the *Dreigroschenprozeß* of photographs of factories, he states that it is more important for a filmmaker to understand his technological apparatus than to aspire to produce "art."

Nur so kann der jeweilige Regisseur seine "Kunst" unter dem nachhelfenden Druck der Verkaufsabteilung gegen die neuen Apparate durchsetzen: was er durchsetzt, ist das, was er von dem, was er als Dutzendzuschauer unter Kunst versteht, selber machen kann. Was Kunst soll, wird er nicht wissen. [...] Auf dem Gebiet der kunst betätigt er den Verstand einer Auster, auf dem Gebiet der Technik keinen besseren. Von den Apparaten vermag er nichts zu begreifen: er vergewaltigt sie mit seiner "Kunst."¹⁹⁶ [...] Also ob man von Kunst etwas verstehen könnte, ohne von der Wirklichkeit etwas zu verstehen! Und hier fungiert

195 On Brecht's, Benjamin's, and Kracauer's reactions to the contemporary discourse of photographic verisimilitude, see McBride: "As it has by now become clear, neither Kracauer's nor Brecht's indictment of the use of photographs in the press is driven by a traditional distrust of mimesis, that is, by the age-old wariness toward reproducing the world of appearances, which is repudiated for being a deceptive veil cast on the true essence of things. Rather, they are animated by awareness that photography's potential does not lie in its ability to reproduce appearances in an exact way." Patrizia McBride, "Narrative Resemblance: The Production of Truth in the Modernist Photobook of Weimar Germany," *New German Critique* 115 (2012): 174.

196 "Vergewaltigung" has now come up twice, once here and once in the title of Renger-Patzsch's essay, "Vergewaltigung der Landschaft verboten." Add to these the example Brecht uses of the fatuously avant-garde female nude, and it seems fair to speak of a motif of gender hierarchies and violence. While I am still not entirely sure what significance this has for the claims of this chapter, at the very least one can say that the recurrence of "Vergewaltigung" suggests that gender provided a way of casting infidelity to the material (Renger-Patzsch) or the medium (Brecht) as a kind of sexualized violence. It would also be worth noting that for both Brecht and Renger-Patzsch, "Vergewaltigung" represents a transgression, but an apparently inept, hapless one that comes about through an ovebearing lack of talent and knowledge.

als Wirklichkeit gleichzeitig mit dem Stoff der Apparat. (21.468)

For Brecht, then, reality cannot be understood without an understanding of technology, and crucially, this includes the possibilities of the camera. Far from being exhausted by a reproduction of visual appearance, the camera for Brecht is an instrument of dismantling and construction. Further on in the *Dreigroschenprozeß*, he writes of the technological progress demonstrated by specific improvements to cameras and film, including increased sensitivity to light and other innovations facilitate in photographing faces:

aber die Bildnisse, die man damit herstellen kann, sind zweifellos viel schlechter. Bei den alten lichtschwachen Apparaten kamen mehrere Ausdrücke auf die ziemlich lange belichtete Platte; so hatte man auf dem endlichen Bild einen universaleren und lebendigeren Ausdruck, auch etwas von Funktion dabei. [...] [Die neuen Apparate] fassen die Gesichter nicht mehr zusammen – aber müssen sie zusammengefaßt werden? Vielleicht gibt es eine Art zu fotografieren, den neueren Apparaten möglich, die Gesichter zerlegt? (21.480-1)

The suggestion of a photography that dismantles and analyzes rather than composes is also contained in a short fragment called “Fotografie,” probably from 1928, in which Brecht proposes a series of “essential portraits” created by the juxtaposition of multiple images: “Ein Kopf, aufgenommen an verschiedenen Tagen, in verschiedenen Jahren. Herauszuarbeiten die Verschiedenheiten. Studium der Angleichungen von Physiognomien. Gewisse Anzahl von Gesichtern von Männern und Frauen. Wer ist mit wem verheiratet? (Man sucht lange Verheiratete heraus)” (21.265). The fragment continues by proposing “functional portraits” of hands – the hands of manual and intellectual laborers each holding the tools of their own trade, and then the tools of each other’s trade.

The analytic, dismantling approach to portraiture is reminiscent of Brecht’s sustained critique of bourgeois individuality, whether in the *Dreigroschenroman* or *Mann ist Mann*. Echoing the thematic focus in these texts on disassembling and demontage is a program of

artistic representation predicated not on reflection but on construction and analysis. “Die Verdinglichung der menschlichen Beziehungen, also etwa die Fabrik, gibt die letzteren nicht mehr heraus. Es ist also tatsächlich „etwas aufzubauen,“ etwas „Künstliches,“ „Gestelltes“. Es ist ebenso tatsächlich Kunst nötig” (21.469). The artifice of a series of juxtaposed portraits assembled in an experimental vein might thus be able to access levels of social reality that a simple “Wiedergabe” cannot; the implication is that, for Brecht, portraits of hands may well be able to tell us things about capitalist labor where the picture of the factory remains mute. Benjamin likewise emphasizes the constructionist aspect in photography: “Weil aber das wahre Gesicht dieses photographischen Schöpfertums die Reklame oder die Assoziation ist, darum ist ihr rechtmäßiger Gegenpart die Entlarvung oder die Konstruktion” (“Kleine Geschichte der Photographie,” II 383).

Yet the sudden introduction of “Entlarvung,” unmasking, complicates things. What is the relationship between unmasking and revealing on the one hand, and construction, artifice, analysis, and dismantling on the other? “Unmasking or construction” – does the “or” mark an apposition or a choice between alternatives? Where Brecht’s suggestions for a serial, analytic portraiture imply the centrality of a functional relation, “Entlarvung” suggests at first glance a more immediate and visual access to reality. And if photographic practice is faulted for producing a fetishization of surfaces, what might it mean, concretely, to unmask it, taking the surface off of a surface? While the possibilities of the technological *Apparat* seen by Brecht and Benjamin in *Konstruktion* and *Zerlegung* may well be compatible with Renger-Patzsch’s formal play and perceptual training, *Entlarvung* is an aspect that cannot so easily be meshed with his work, his emphasis on *das Wesentliche* notwithstanding. If it is still broadly true that, for Renger-Patzsch the visible surface grants access to reality while for Benjamin and Brecht the surface obscures

reality, nevertheless the terms have shifted somewhat. The reality accessed by the visible in Renger-Patzsch's work is not an underlying, deep reality but rather an interplay of visual forms able to recreate a sensual, perceptual experience; by contrast, Benjamin and Brecht are now the ones who imply that photography, beyond its contemporary, flawed practice, might yield insights into a deeper functional or structural reality.

Furthermore, what might intuitively seem like contradictory tendencies within each theorist's work are perhaps better described as foundational tensions. On the one hand, Renger-Patzsch's "Wiedergabe" is not a strictly documentary impulse that contrasts with the more avant-garde emphasis on perceptual training but is rather, with its focus on compositional selection and formal interplay, the very vehicle for this training. And in the case of Benjamin and Brecht, *Konstruktion*, *Zerlegung*, and *Entlarvung* are, of course, not in a contradictory relationship either. Brecht's fragment on serial portraiture suggests that dismantling and construction are in fact methods for photography to be able to reveal something about reality; the camera for Brecht should be an irritant, and the thrust of his photographic theory was to rethink how the *Apparat* could break through the glossy veneer spread by a profusion of images and a facilely mimetic photographic practice.¹⁹⁷ For Benjamin, *Entlarvung* is not simply unmasking, but is related to a practice of satire and quotation that confronts ideology with its own premises by means of strategic juxtaposition.

Yet while these different photographic possibilities support one another, they still cannot be fully reconciled. Benjamin's praise of the way that Blossfeldt's category of plant forms adds to our *Wahrnehmungsinventar* cannot comfortably be squared with his accusations of Renger-Patzsch's *Verklärung*, nor is it apparent that Brecht's proposed essential and functional portraits

¹⁹⁷ As Stefan Soldovieri argues, "all of Brecht's reflections on photography involve drawing attention to the concealed 'irritation' of the camera in an effort to destroy the image's apparent innocuousness." Stefan Soldovieri, "War-Poetry, Photo(epi)grammetry," in *A Bertolt Brecht Reference Companion*. Ed. Siegfried Mews (Westport: Greenwood Press, 1997) 146.

would actually offer the insight he suggests, given his claim that “wer von der Realität nur das von ihr Erlebbare gibt, gibt sie selbst nicht wieder” (21.469). What may ultimately be at issue here is the same tension between the formal and documentary aspects of the photographic image that makes Renger-Patzsch’s “einfache Wiedergabe der Realität” not simply a reproduction of reality. At the same time that Benjamin and Brecht rely upon photography’s ability to depict visual forms, they also implicitly demand that it be able to make discursive statements about reality. Significantly, Benjamin and Brecht both suggest *Beschriftung*, or captioning, as a way out of the impasse of photographic signification, and it is the strategy Brecht will ultimately use in his wartime *Kriegsfibel*, his most sustained contribution as a photographic practitioner.¹⁹⁸ The written word is to offer both the clarity and the interruption not, or no longer, accessible to the photographic image alone. Yet inversely, the two theorists draw upon the visual to describe projects in other media. As Steve Giles has pointed out, Brecht uses “abziehen,” a verb used to describe the process of printing an image from a photographic negative, to characterize his method in the *Dreigroschenprozeß* of bringing bourgeois ideology to light.¹⁹⁹ And in the same passage he denies revelatory force to a photograph of the factory, Brecht uses “fixieren,” which in German as in English can refer to the process of chemically fixing an image on a photosensitive medium, to describe how the new apparatuses (i.e. the camera) could have learned something from the natural sciences about depicting human behavior: “das gegenseitige Verhalten der Menschen zu fixieren” (21.469). So at the same time that the visual image is deemed inadequate to convey discursive meaning, the revelatory or demonstrative function of a text has to draw upon a register of the visual: put bluntly, the text is to show, make visible, and

198 On the ambiguity of *Beschriftung* as a political-aesthetic practice, see Matthias Uecker (2007): 477. On the relationship between the images and captions in *Kriegsfibel*, see J.J. Long, “Paratextual Profusion: Photography and Text in Bertolt Brecht’s *War Primer*,” *Poetics Today* 29.1 (2008): 197-224.

199 “This is the first of a series of metaphors emphasizing the need for Brecht’s sociological experiment to make social realities *visible*, ‘um das zu sehende jedermann sichtbar zu machen’” Steve Giles, *Bertolt Brecht and critical theory: Marxism, modernity, and the Threepenny lawsuit*, (Bern; New York: P. Lang, 1997) 74.

fix, while the actual image alone seems able to do none of these.

This ambivalence towards the signifying capability of the visual can be situated within the larger context of the contemporary resurgence of physiognomic discourse. Where the camera's mechanical exactitude generated a host of claims about its access to indexical truth, physiognomy linked visual appearance to an underlying reality. As argued by Sabine Hake and Matthias Uecker, the Weimar-era photobook often relied upon a physiognomic discourse whereby their photographic subjects were supposed to speak clearly about themselves through the image alone, and yet this project repeatedly ran into the dilemma that the intended unambiguous pronouncement – about an individual, a type, a social group, a historical or political narrative – found itself tripped up by the ambiguous muteness of the image, the slippery relationship between type and mass, or the instability of the very social consensus that originally guaranteed the physiognomic legibility of images.²⁰⁰ The visual surface of things that for physiognomy reveals their inner contours remained, frustratingly at times, just a surface. While Brecht and Benjamin responded to this context by rethinking the surface, challenging its putative naturalness by pointing out and recreating its essential constructedness, Renger-Patzsch engaged in the process of exploring the imagistic surface by means of formal analogy, in order to challenge aesthetic and perceptual norms.

Renger-Patzsch's photographic practice and particularly the emphasis in *Die Welt ist schön* on a formal movement across images from disparate realms both demonstrates the type of perceptual training I have outlined above and undermines the presumption of a static identity between image and reality implicit in Benjamin's and Brecht's critiques of him.²⁰¹ In various

200 Sabine Hake, "Faces of Weimar Germany," in *The Image in Dispute: Art and Cinema in the Age of Photography*, ed. Dudley Andrew (Austin: University of Texas, 1997), 117–147.

201 Matthew Simms has argued quite compellingly that Benjamin's objection to Renger-Patzsch can be located in a suspicion of an ontology of the copula linked to Heidegger. I agree with the basic contours of the critique he reconstructs with Renger-Patzsch, Benjamin, Adorno, Heidegger, and Bataille as key figures, but do not quite accept his conclusion: "that in *Die Welt ist schön* photography and ontology coincide. The question 'What is

sequences of *Die Welt ist schön*, formal elements encourage the viewer to look for forms as such, thereby disrupting the containment within the frame of a single image that would seem to be necessary for the facile aesthetic “reproduction of reality” variously alleged by Benjamin and Brecht. While one can certainly argue that it is precisely this connection across images that enables the uncritical leveling of the visible world in the service of a repressive harmony, Renger-Patzsch’s theoretical writings suggest to the contrary (and at times despite themselves) that these image sequences undermine rather than reinforce the apparent self-evidence of the world of things.

A low-angle photograph of the nave of the St. Katharinenkirche in Lübeck, for example, echoes the vaulted arches, serial repetition, and inverted triangle of an array of industrial irons, while the light reflecting off a carefully arranged group at the forefront of the latter suggests the chiaroscuro of ecclesiastical space (figures 3-4). On the whole the irons are cleaner, lighter, and more neatly arranged, but the photograph of the church is exposed in a way that both recalls the serial forms of the irons and resembles the bright open spaces of modern design. This formal rhyming, which links the timelessness of a sacred space and the modular, regimented production time of industrial modernity, continues in the next two images, with a prominent diagonal originating in the lower right of the frame and a reconfiguration of similar oblique curves connecting palace steps to the sparse design of a modern ceiling. A similar movement from sacred to profane by means of a shared form can be seen in images 62 to 64, for example, where a gentle baroque curve is stretched and minimalized in the modernist contour of the Fagus factory in Alfeld (figures 5-7). To take another example, the struts and supports of an empty ferris wheel recall the lines and lattices of a preceding series of images of industrial equipment, a

photography?’, therefore, receives from Renger-Patzsch the tautological answer that photography is precisely the ‘is’; or put less gnomically, photography is identified here with the power to recover certainty and solid ground in a world disturbingly off balance” Matthew Simms, “Just Photography: Albert Renger-Patzsch’s *Die Welt ist schön*,” *History of Photography* 21.3 (1997): 197–204.



93

Figure 3. Plate 93 from *Die Welt ist schön*



94

Figure 4. Plate 94 from *Die Welt ist schön*



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Figure 5. Plate 62 from *Die Welt ist schön*



fig

Figure 6. Plate 63 from *Die Welt ist schön*



64

Figure 7. Plate 64 from *Die Welt ist schön*



Figure 8. Plate 79 from *Die Welt ist schön*



Figure 9. Plate 80 from *Die Welt ist schön*



Figure 10. Plate 81 from *Die Welt ist schön*



Figure 11. Plate 82 from *Die Welt ist schön*

point reinforced by the alienating framing and abandoned impression of the ferris wheel (figures 8-11). An immediate association provoked by the visual similarity of these machines at rest is the fundamental indistinction between machines that move material for production and those that move people for amusement. This association carries over to the following image of a merry-go-round, where the close cropping, the prevalence of dark tones, and the stony folds of a lowering curtain add up to an eerie stasis rather than pleasant motion – the frozen rictus of the horses suggests the terror of impalement far more than the joy of galloping.

Since this chapter began with Brecht's hypothetical image of a factory whose visible surface remained mute, perhaps it is fitting to end this section with two actual photographs of the sea, the guiding image for tropes of visible surface and hidden depths. The first one depicts a scene of rocky surf in the Kattegat, where several ships full of troops sank during the German invasion of Norway. It is the seventh image from Brecht's *Kriegsfibel* (figure 12). While there are no people visible in the image, Brecht's quatrain lends voice to a collective speaker beneath the waves: "Achttausend liegen wir im Kattegat / Viehdampfer haben uns hinabgenommen / Fischer, wenn dein Netz hier viele Fische gefangen / Gedenke unser und laß einen entkommen." The visible landscape is thus shown to be a screen that obscures the real significance of the scene: nature literally covers over history. The other image shows surf on a beach in the neighboring North Sea, and it is plate 40 from *Die Welt ist schön* (figure 13). There are no words, of course, but the following several images repeat visual elements from the photograph to transform the surface from a natural to a technological one. Plate 41 keeps the pattern of the surf but introduces a diagonal row of wooden pilings; this configuration becomes a rickety wooden walkway over water in the next image, and plate 43 takes up the vertical iteration of the walkway's planks and transforms it into a forest of young beech trees (figures 14-16). The multiple vertical elements



Achttausend liegen wir im Kattegatt.
Viehdampfer haben uns hinabgenommen.
Fischer, wenn dein Netz hier viele Fische gefangen
Gedenke unser und laß einen entkommen.

Figure 12. Plate 7 from *Kriegsfiabel*



Figure 13. Plate 40 from *Die Welt ist schön*



Figure 14. Plate 41 from *Die Welt ist schön*



Figure 15. Plate 42 from *Die Welt ist schön*



Figure 16. Plate 43 from *Die Welt ist schön*



Figure 17. Plate 44 from *Die Welt ist schön*



Figure 18. Plate 45 from *Die Welt ist schön*



Figure 19. Plate 46 from *Die Welt ist schön*



Figure 20. Plate 47 from *Die Welt ist schön*



Figure 21. Plate 48 from *Die Welt ist schön*



Figure 22. Plate 49 from *Die Welt ist schön*



Figure 23. Plate 50 from *Die Welt ist schön*

are preserved in tree shots through 45, whose starkly contrasting pattern of wood and snow becomes a “Fir, bent by a snowstorm;” its stark diagonal on a light background is echoed in the banks of the Trave in 47, becomes a pair of rails in 48, a quay wall in 49, and the next image, reversing the diagonal and preserving only the repetition of forms from the brick wall, depicts rows of identical shoe lasts (figures 17-23), signaling the thematic transition to a series of architectural and industrial images. Thus in a sense, both Brecht’s and Renger-Patzsch’s seascapes are able to serve as images of technological modernity; neither photograph lingers in its littoral isolation, but the way that they connect the image of nature to contemporary historical processes via their contrasting treatments of the visible surface says much about how they relate technology, nature, and the visual. Brecht’s ironic disruption of the surface plunges the poetic speaker beneath the waves to show that nature, and by extension any technological or historical constellation that may come to seem natural, is a constructed surface that must be teased apart by the strategies available to the apparatus. For Renger-Patzsch, nature and technology are so linked as elemental forms that they lack any categorical distinction at all; this is a paradoxical and likely conservative logic that obscures the particular social and historical constructedness of each sphere, and yet it is precisely on the formal surface that Renger-Patzsch locates photography’s ability to forge a perception adequate to its historical moment.

While Renger-Patzsch was consigned by Benjamin and Brecht to the dustbin of a naïve and retrograde aesthetic realism, a closer look at his photographic theory and practice shows on the contrary just how complex, vexed, and interesting that most simplistic of photography’s aspirations and possibilities – namely, the exact mechanical reproduction of the visible surface of things – can be. If photography served Renger-Patzsch, Benjamin, and Brecht in various ways to raise the question of a modern aesthetics and an artistic practice adequate to social and

technological modernity, we in turn must ask after the relationship between the modern perceptual apparatus that saw and depicted, on the one hand, and the modernity that was to be seen and depicted, on the other. The idea of technology served, in various ways and to varying degrees of conceptual precision, as a focal point and catalyst for these self-consciously modern aesthetic and media-theoretical discussions of technologically-enhanced vision. In this sense, the ambivalence of the demands made of the photographic image to document reality, train perception, and explore formal variations reflects deeper ambiguities embedded within the very ideas of technology and modernity. Weimar-era discourse on photography as the quintessentially modern medium shows the way that ideas about modernity and technology constitute a particular discursive configuration of Weimar culture, a discourse in which nature, technology, perception, and modernity were semantically and conceptually reconstituting and being reconstituted by each other, with no term functioning as a stable or independent variable. The modernity of photography is both the context it is tasked with documenting and the perceptual habits and formal discoveries it instantiates. Both preexisting the medium as its context and produced by it as its aesthetic legacy, “modernity” is on both sides of the camera and the photographic frame, and on neither side.

“Es ist die Aufgabe der Photographie, das bisher noch ungesichtete Naturfundament aufzuweisen.” Kracauer, photography, and second nature

Siegfried Kracauer also locates photography’s importance in the way it generates a historically specific mode of perception and experience, but his approach is radically different to that of the other theorists. A brief look at his seminal essay, “Die Photographie,” is useful for the way that Kracauer inverts the physiognomic discourse and complicates the relationship between

image and nature. Where a physiognomic view of photographic representation might hold that the surface appearance reveals the truth of the photographed object, Kracauer suggests that photography's meaning is to be found in the fact that photography is nothing but surface. In other words, photography's meaning is that it has no meaning, and the significance of the medium for Kracauer lies in the way that it makes this meaninglessness visible, leading to a recognition of historical contingency that might clear the way for a reconstitution of the social order.

The basic contours of Kracauer's essay are well known: he begins by contrasting a photograph of a well-known film diva to a photograph of a grandmother as a young woman. While each photograph reproduces its sitter — in both cases a woman of twenty-four years — in full photographic detail, they signify in radically divergent ways by virtue of their different situations within contexts of media, experience, and meaning. The photographed diva is immediately recognizable as such, because the viewer can immediately identify the photograph with the image of the film star seen on the big screen — the “original,” in Kracauer's formulation.²⁰² The grandmother, on the other hand, is unrecognizable as such. This is due not just to the chronological fact that the viewer of the photograph has never seen his or her own grandmother as a young woman, but rather to the differing epistemological relationships between image and knowledge in the cases of the film star and the grandmother. Where the former is always known and recognizable as image, the significance of the grandmother stems from the web of stories, experiences, and meaningful associations in which she is embedded.²⁰³ Absent these, the photograph of the grandmother appears as what it in fact is — a seamless assemblage

202 "Jeder erkennt sie entzückt, denn jeder hat das Original schon auf der Leinwand gesehen" (21).

203 "Da Photographien ähnlich sind, muß auch diese ähnlich gewesen sein. Sie ist in dem Atelier eines Hofphotographen mit Bedacht angefertigt worden. Aber fehlte die mündliche Tradition, aus dem Bild ließe sich die Großmutter nicht rekonstruieren. [...] Daß die Photographie jene gleiche Großmutter darstelle, von der man das Wenige behalten hat, das vielleicht auch vergessen wird, muß den Eltern geglaubt werden, die es von der Mutter selbst erfahren zu haben behaupten." (21-22)

of unfamiliar fashions that return the viewer's gaze with the muteness of the outmoded.²⁰⁴

The process of constructing meaning — a process which Kracauer describes as the the liberation from nature and necessity — is central to his essay and its pivotal turn, which need to be worked through in order to foreground exactly how Kracauer reorients the media-historic significance of the photographic surface. But first we need to return to a moment at the beginning of his essay, because in a quick, seemingly unimportant aside Kracauer shows the way that the surface is itself a dense phenomenon in a way that foreshadows the liberatory potential he will grant photography at the end of his essay.

So sieht die *Filmdiva* aus. Sie ist 24 Jahre alt, sie steht auf der Titelseite einer illustrierten Zeitung vor dem Excelsior-Hotel am Lido. Wir schreiben September. Wer durch die Lupe blickte, erkannte den Raster, die Millionen von Pünktchen, aus denen die Diva, die Wellen und das Hotel bestehen. Aber mit dem Bild ist nicht das Punktnetz gemeint, sondern die lebendige Diva am Lido. (21)

By shifting the reader's attention to the mass of halftone dots that composes the image and then quickly away from this to the "living diva," Kracauer adroitly introduces two key notions of the photographic surface that will be central to his argument. At first this bit of misdirection seems like a simple correction — when we speak of this picture, we are not talking about the concrete composition of the medium, but rather the living diva herself, a pure image, as it were. In other words, Kracauer seems to be encouraging the reader to see beyond the contingent material factors of the photographic depiction — the mass of dots — in order to really see the details that matter: her face, her hair, the scene. Yet the fact that he brings up the overlooked *Raster* at all, when most readers of such a brief ekphrasis would not even think of it in the first place, should alert us to something rather more complex. By invoking the halftone dots that form the image on the printed page, a formal characteristic of the medium that has to do precisely with the relationship between marks on a page and the spaces between them, Kracauer

204 (22-23)

is signaling a key motif in his essay — namely, the way that the photographic surface must be perceived as gapless (“lückenlos”) and, by extension, the idea that the photographic surface more often conceals than reveals. Conversely, the media context that informs the setting for his essay — the mass of photographs in the illustrated magazines of the day, a “flood” of images (34) without relation or gap — is subtly probed at the same time. When Kracauer writes that to speak of the image of the diva is not to speak of the mass of points but rather of the “living diva,” only to equate the “original” with her cinematic image a few sentences later, he is establishing, I suggest, a second and broader understanding of the photographic surface — namely, the surface not of the individual image but of the broad media context of all photographic images. In this sense, and in the context of his essay as a whole, his redirection of our attention needs to be read not as a dismissal of the *Raster* but rather a subversive equation of the fragmentary mass of dots with the apparent solidity of the visual surface of the media context in which the diva appears as both living and meaningful. The language of his argument depends on a complex interplay of the surface as showing and obscuring, fragmentary and (apparently) homogeneous and gapless.²⁰⁵ By foregrounding the mass of points that make up the printed image, Kracauer introduces an image of visual configuration as both arbitrary and contingent (for the dots themselves bear no significant relationship to the diva) and, by that same token, capable of being reconfigured. And this is the fundamental thrust of his whole essay: what photography ultimately shows is the extent to which visual representation has become divorced from meaning, not in order to bemoan the loss of meaning but rather to clear the ground for the recognition that meaning and the social order are capable of being reconstructed according to human needs rather than the coercive strictures of history and economy.

205 Photography is a spatial continuum in contrast to the *Lückenhaftigkeit* of the memory image (24-25), and the arrangement of pictures in illustrated magazines extends this gapless spatial continuum to a broader context: “Ihr *Nebeneinander* schließt systematisch den Zusammenhang aus, der dem Bewußtsein sich eröffnet” (34).

But before bringing the reader to this conclusion, Kracauer must first develop the historical relationship between image, surface, and meaning. He does this in part through a complex interplay of images invoking clarity and obscurity, transparency and opacity, in a way that links his discussion of signification as such to his discussion of the visual image. Far from being a window onto the visible world, the photograph is a surface that obscures meaningful perception of that world. Kracauer arrives at this claim by contrasting photographs to memory images (*Gedächtnisbilder*). The memory image of a person, for example, becomes significant by shedding all extraneous details that do not bear on the meaningful associations that sustain this memory. In contrast to the gapless spatial continuum of the photographic image – which Kracauer likens to a facile historicism concerned with amassing a seamless sequence of detail and event – the memory image works by building a web of meaningful associations that in the end resemble a monogram, a shape that identifies without resembling, condensing an individual's signature to its fundamental contours (25-26). The photograph, on the other hand, preserves all the meaningless dross (“Bodensatz”) that falls away from the memory image's accretion of significance. In this sense the memory image has a clarity that stems not just from its superior ability to *recognize* and identify the remembered individual, but also from the concrete metaphors Kracauer uses to describe these processes. The memory image has a clarity that the photograph lacks because the former has cleared the ground in the act of creating the image. By contrast the photographic image covers the individual: photography is a *Schneedecke* (26) and a *Schneegestöber* (34). Photography, compared to the memory image, can only ever be a surface phenomenon (*Oberflächenzusammenhang*) that obscures the meaning of an object rather than revealing it. The artwork, by contrast, has a clarity that the photograph lacks because it does not present the appearance of the object in an attempt at verisimilitude, but rather conveys the

“transparent,” fundamental aspects of a thing.²⁰⁶ In other words, it is precisely the aspect of photography often touted as comprising its superior representative capacity — its ability to reproduce a visual scene completely and in full detail — that Kracauer identifies as the problem. Photographic verisimilitude, rather than making photography a superior window, turns it into a wall without break or gap.²⁰⁷ Compared to the transparency of the artwork, photographic resemblance obstructs recognition of the object²⁰⁸.

The metaphors of opacity used to describe the photographic image also and somewhat surprisingly apply to the natural world of drives that must be cleared and reorganized to make room for meaning in the first place, a process that Kracauer briefly glosses as a history of the relationship among consciousness, the sign, and nature.²⁰⁹ In this context the *Schneegestöber* of photography has its parallel in the frosted glass (*Milchglas*) of the memory images before recognition and selection clear away nature’s compulsion:

Die Bedeutung der Gedächtnisbilder ist an ihren Wahrheitsgehalt geknüpft. Solange sie in das unkontrollierte Triebleben eingebunden sind, wohnt ihnen eine dämonische Zweideutigkeit inne; *sie sind matt wie Milchglas, durch das kaum ein Lichtschimmer dringt*. Ihre Transparenz erhöht sich in dem Maße, als Erkenntnisse die Vegetation der Seele lichten und den Naturzwang begrenzen. Wahrheit finden kann nur das freigesetzte Bewußtsein, das die Dämonie der Triebe ermißt. (25, emphasis added)

Kracauer’s brief narrative of consciousness’ necessary detachment from nature and the rise of the signifying order represents a dialectic of enlightenment, of sorts. In the beginning, lacking any dissociation between consciousness and the immediacy of drives and physical

206 “[Die Photographie] bezieht sich auf das Aussehen des Gegenstands, das nicht ohne weiteres verrät, wie er der Erkenntnis sich zeigt: allein das Transparent des Gegenstandes aber wird von dem Kunstwerk vermittelt. Es gleicht darin einem Zauberspiegel, der den ihn befragenden Menschen nicht so zurückwirft, wie er erscheint, sondern wie er zu sein wünscht oder von Grund auf ist.” (27)

207 “Das aus der Anschauung unserer gefeierten Diva geschöpfte Gedächtnisbild aber bricht durch die Wand der Ähnlichkeit in die Photographie herein und verleiht ihr so einige Transparenz” (29-30). (Break this down a little bit.)

208 “Denn in dem Kunstwerk wird die Bedeutung des Gegenstandes zur Raumerscheinung, während in der Photographie die Raumerscheinung eines Gegenstandes seine Bedeutung ist.” (27)

209 (35-37)

phenomena, meaning is not possible at all. The first step in escaping the grasp of the purely physical is the symbol. Yet the symbol itself is still too beholden to its material, natural substrate. Over the course of consciousness' coming to itself, the significant image becomes more abstract and less material, and eventually results in the concept.²¹⁰ As Kracauer notes, this schematization of the development of the sign is a rough and provisional one, yet: "Genug, wenn er den Wandel der Darstellungen veranschaulicht, der das Zeichen für den Auszug des Bewußtseins aus seiner Naturbefangenheit ist" (36). Two things should be noted concerning Kracauer's account of the trajectory of signification. First, it is represented as a process of clearing nature in order to make room for meaning. Second, in separating the bearer of meaning from nature, this process makes consciousness aware of its own natural origins: "Je entschiedener sich das Bewußtsein im Verlauf des Geschichtsprozesses von ihr befreit, desto reiner bietet sich ihm sein Naturfundament dar" (36).²¹¹

In this sense, then, the metaphors of troubled vision that link photography and the "Naturbefangenheit" — "Milchglas" and "Schneedecke" — suggest that photography functions as a second nature for Kracauer, one that needs to be cleared away (again) in order for meaning to occur at all. This idea is underscored when he writes that photography's spatial continuum is a fitting means of representation for a social order ruled by "ökonomischen Naturgesetzen" (38). Yet the significance of photography ultimately lies in its fundamental ambivalence. Unlike the first nature of drives and compulsion cleared to make room for meaning in the first place,

210 "In dem Maße, als das Bewußtsein seiner selbst inne wird und damit die anfängliche 'Identität von Natur und Mensch' (Marx: 'Deutsche Ideologie') hinschwindet, nimmt das Bild mehr und mehr eine abgezogene, immaterielle Bedeutung an" (35-36).

211 Miriam Hansen characterizes the concept of nature in this essay in this way: "I would stress that in this phase of Kracauer's work his concept of nature, including the bodily and instinctual nature of human beings, has a ferociously pejorative valence, lacking the philosophical solidarity with nature as an object of domination and reification one finds, for instance, in Benjamin and Adorno and, with a different slant, in Kracauer's own *Theory of Film*. As in the essay "The Mass Ornament" (published earlier the same year), nature becomes the allegorical name for any reality that posits itself as given and immutable, a social formation that remains "mute," correlating with a consciousness "unable to see its own material base." (102)

photography, by making apparent both its own meaninglessness and the “natural foundation” that has fallen away for meaning to be possible at all, can both be a kind of second nature and help consciousness clear away second nature. It is precisely in the way that photography, as used in the mass illustrated press, offers a visual representation of everything without selection or the meaningful association of the sign, that it is able to clear the ground for meaning. Abandoned by meaning, nature has become mute — this represents a risk for consciousness, to the extent that society falls prey to the muteness of what it has abandoned. But it also represents an immense opportunity, if consciousness is thereby freed to take an active and self-aware role in the construction of meaning and the (re)ordering of second nature.²¹² What photography represents for Kracauer is the visual capture of everything not capable of being comprehended by the sign or the monogram:

Die Totalität der Photographien ist als das *Generalinventar* der nicht weiter reduzierbaren Natur aufzufassen, als der Sammelkatalog sämtlicher im Raum sich darbietenden Erscheinungen, insofern sie nicht von dem Monogramm des Gegenstandes aus konstruiert sind, sondern aus einer natürlichen Perspektive sich geben, die das Monogramm nicht trifft. [...] Es ist die Aufgabe der Photographie, das bisher noch ungesichtete *Naturfundament* aufzuweisen. (37-38).

Photography is able to do this by virtue of precisely those characteristics that oppose it to the memory image — its lack of meaningful associations and selection. Tellingly, the homogeneous continuum of the photographic surface as seen in the flood of images that comprise the illustrated magazines actually collapses under its own weight. The pure juxtaposition of random elements and perspectives, rather than support the fantasy of a gapless visual space, tends to undermine it, turning the purported immediacy of photographic representation into a productive alienation.

212 “...so ist dem freigesetzten Bewußtsein eine unvergleichliche Chance gegeben. Mit den Naturbeständen unvermischt wie nie zuvor, kann es an ihnen seine Gewalt bewähren. Die Wendung zur Photographie ist das *Vabanque-Spiel* der Geschichte.” (37)

“[Die Photographie] zeigt die Städte in Flugbildern, holt die Krabben und Figuren von den gotischen Kathedralen herunter; alle räumliche Konfigurationen werden in ungewöhnten Überschneidungen, die sie aus der menschlichen Nähe entfernen, dem Hauptarchiv einverleibt. Wenn das Kostüm der Großmutter die Beziehung zum Heute verloren hat, wird es nicht mehr komisch sein, sondern merkwürdig wie ein submariner Polyp. Eines Tages entweicht der Diva die Dämonie, und ihre Ponny-Frisur bleibt neben den Chignons zurück. So zerbröckeln die Bestände, da sie nicht zusammengehalten werden. Das photographische Archiv versammelt im Abbild die letzten Elemente der dem Gemeinten entfremdeten Natur. Durch ihre Einmagazinierung wird die Auseinandersetzung des Bewußtseins mit der Natur gefördert.” (38)

Ultimately, the interruptive capacity of photography’s visual surplus may be able to challenge the compulsion and unfreedom of second nature by pointing to the contingency and provisionality of both representation and the social order as such.²¹³ “Dem Bewußtsein läge also ob, die *Vorläufigkeit* aller gegebenen Konfigurationen nachzuweisen, wenn nicht gar die Ahnung der richtigen Ordnung des Naturbestands zu erwecken” (39).

Thus Kracauer, by attending not to the signifying capacity of the individual image but rather to the way that images are embedded in a context that includes the mass of all other images as well as the temporal dimensions of historical reference, stands the physiognomic discourse on its head (or feet, as the case may be). Contrary to the physiognomic logic that invests appearance with legible meaning, for Kracauer the visual surface alone tells one nothing about the object depicted; taken in the historically-specific context of the medium, however, photography’s aggressive and rapacious “surfacing” of the visible world shows that the surface is all there is, and it is precisely this insight that clears the ground for meaning and potentially for meaningful change.

Seen in this light, the project of *Die Welt ist schön* becomes a paradoxical and perhaps quixotic one. Even if we disregard the complexity of Renger-Patzsch’s notion of *Wiedergabe* as

²¹³ “Die Bilder des in seine Elemente aufgelösten Naturbestands sind dem Bewußtsein zur freien Verfügung überantwortet. Ihre ursprüngliche Anordnung ist dahin, sie haften nicht mehr in dem räumlichen Zusammenhang, der sie mit einem Original verband, aus dem das Gedächtnisbild ausgesondert worden ist. Zielen aber die naturalen Überreste nicht auf das Gedächtnisbild hin, so ist ihre im Bild vermittelte Anordnung notwendig ein Provisorium.” (38-39)

perceptual training and accept for the sake of argument the book's project as Heise presented it (and Brecht and Benjamin understood it), Kracauer's essay suggests a way in which this project might yet undermine itself. Where Renger-Patzsch's collection would seek to harness and contain the contingency and surplus of the *Bilderflut* in the closed narrative structure of a harmonious whole, the nature of the images themselves would explode this desired frame. It is not just the fact that many of these images are in fact stock photographs and came from various photo shoots and advertising campaigns Renger-Patzsch worked on, thus belying the artistic aspirations of the photobook format, but presumably contemporary readers of the volume could not but view the images informed by the media habits of the photographs' original context, namely, illustrated magazines. Thus where *Die Welt ist schön* would aim to demonstrate sequence, connection, narrative, and analogy, the stock character of the images used would undercut this intended unity. In Kracauer's terms, instead of a unified project of visual harmony, we have fragments from the *Hauptarchiv*. Kracauer's meditation on the meaning of the surface thus gives us the leverage to both critique Renger-Patzsch's project and to situate it within the project of *Neues Sehen* in a way that considers the broader historically medium-specific nature of how images worked together. In other words, Kracauer helps us see how the project of juxtaposition in *Die Welt ist schön* can be read more dynamically than as an aestheticizing venture that seeks to level all differences under the guiding category of beauty. The visual analogies of Renger-Patzsch's images would thus help the viewer navigate critically among various disparate areas of the modern world, with the emphasis on fragmentariness or at least plurality, rather than wholeness.²¹⁴

Indeed in another way, Kracauer's photographic theory might not be that far from Renger-Patzsch's. Where Kracauer's 1927 essay privileges precisely those accidental aspects of the image that come to seem alien with time, adding to the assembled contingencies and

²¹⁴ In Döblin's terms, we could also see this approach as the reassertion of nominalism over realism.

particulars of our *Wahrnehmungsinventar*, a later version of his photographic theory shifts the emphasis decidedly to the question of realism. Realism, in the introduction to Kracauer's 1964 *Theorie des Films*, is defined as an aesthetic approach that oscillates between showing the known and revealing unexpected dimensions of the visual (35-36).²¹⁵ Here as in the earlier essay, realism is understood, in Miriam Hansen's terms, as an experiential rather than a referential realism.²¹⁶ For this conception of realism, formal beauty in fact plays an epistemological function, much as it does for Renger-Patzsch. "Das formgebende Streben braucht also mit der realistischen Tendenz nicht in Konflikt zu geraten. Im Gegenteil, es mag sie verwirklichen und erfüllen – eine Wechselwirkung, deren sich die Realisten des 19. Jahrhunderts noch nicht bewußt sein konnten" (47). The revelatory potential of photographs is closely connected to their particular type of aesthetic appeal:

Der ästhetische Wert von Fotos scheint bis zu einem gewissen Grad eine Folge ihrer aufdeckenden Kräfte zu sein. In unserer Reaktion auf Fotos durchdringen sich also Wißbegierde und Schönheitssinn. Fotos strahlen oft Schönheit aus, weil sie jene Begierde befriedigen. Wenn sie dabei – und darüber hinaus – in unbekannte Welträume und die Schlupfwinkel der Materie vordringen, mögen sie uns Einblick in eine Formwelt gewähren, die in sich selbst schön ist. (57)

For Kracauer, too, photography serves to expand human vision in accord with the demands of a technological age. "Erstens hat moderne Fotografie unsere Sicht nicht nur wesentlich erweitert, sondern eben dadurch auch unserer Situation in einem technologischen Zeitalter angepaßt. [...] In derselben Weise hat die Fotografie unserem Bewußtsein die Auflösung

215 Kracauer declares himself explicitly for realism as opposed to mere formal play; interestingly, he groups László Moholy-Nagy and other modern experimental photographers with 19th century art photography and pictorialism (39).

216 "Kracauer's advocacy of realism in [*Theorie des Films*] remains tied to a historical understanding of *physis* and a concept of reality that depends as much on the estranging and metamorphic effects of cinematic representation as on the role of the viewer. As the essay makes sufficiently clear, Kracauer's conception of film's relationship with photography is not grounded in any simple or 'naive' referential realism. On the contrary, it turns on the technological medium's capacity to mobilize and play with the reified, unmoored, multiply mediated fragments of the modern *physis*, a historically transformed world that includes the viewer as materially contingent, embodied subject. The concept of realism at stake is therefore less a referential than an experiential one." "Kracauer's Photography Essay" (105).

traditioneller Perspektiven eingeprägt” (2005 36-37).”

In the later text we thus see the emphasis on photography’s potential to train a historically-specific mode of perception and an understanding of photographic realism that emphasizes creating and incorporating a purely formal dimension. As in the writings of Renger-Patzsch, in Kracauer’s film book photographic realism depends on the interplay between visual form, beauty, discovery, and perceptual training. Despite the apparent incongruity of the two figures, neither Albert Renger-Patzsch nor Siegfried Kracauer advances a naively realist physiognomy. Kracauer’s two texts suggest on the contrary the ways in which *Die Welt ist schön* attempts to reorient visual perception by means of formal play on the visual surface, both of the individual image and across the collection of images. The visual surface does not presume, in this view, to be the outer expression of an inner truth but rather generates new modes of perception and experience precisely by virtue of its detachment from essential claims.

“Alles, was wir als Geschichte bezeichnen, ist im hohem Maß vom Stein abhängig.” Ernst Jünger, history as nature, and the recognizability of the visible

By contrast Ernst Jünger will insist, in the spirit of physiognomy, upon the necessary and transhistorical relationship between visual appearance and inner essence. Yet unlike Döblin’s comparative anatomy with which this chapter began, two essays written by Jünger in the sixties deploy a physiognomic discourse in order to arrive at a notion of elemental, transhistorical temporality. Of interest for the present context is the way that Jünger’s discussion of trees and stones develops a particular temporality from a notion of physiognomy, as does Döblin’s meditation on the typifying erosion of the individual face. Yet where Döblin claimed that Sander’s visible types make a social history manifest, Jünger sees the trees and rocks

photographed by Renger-Patzsch as the visible evidence and emblem of an ahistorical, elemental time. His essays accompanying Renger-Patzsch's *Bäume* (1962) and *Gestein* (1966) unfold a logic of type, physiognomy, and character predicated on a particular relationship between form and essence in order to present an understanding of history as a kind of natural history.

The two books were published as a collaboration between Jünger and Renger-Patzsch by C.H. Boehringer Sohn. Each consists of approximately sixty high-quality black and white plates by Renger-Patzsch, a thematic essay by Ernst Jünger, and captions for each image of an informative geological or botanical nature. The collaborative nature of the oversized volumes begins to suggest some ways in which they occupy their own niche between fine art photography, the popularization of science, and Jünger's essayistic ontology. Neither the captions and other metatexts nor Jünger's essays particularly encourage the reader to view the photographs outside the framework of the type so central to Renger-Patzsch's earlier theoretic writings on photography. *Bäume* is subtitled, "Photographien schöner und merkwürdiger Beispiele aus deutschen Landen," while *Gestein* is described as, "Photographien typischer Beispiele von Gesteinen aus Europäischen Ländern." These subtitles mark the collections as compendia of representative examples. Despite the fact that the book about trees does not describe them as typical examples, they are examples nonetheless, and the captions emphasize this point by indicating aspects of landscape and weather capable of shaping trees in different ways, such that the viewer is encouraged to see Renger-Patzsch's richly textured prints as illustrative of various possible dendritic morphologies.

Jünger's essays develop the connection between the image and the type by insisting upon the fundamental recognizability of the visible. We are able, he writes, to distinguish a particular group of plants as trees despite vast differences in size and form and the shifting complexities of

botanical taxonomy because we recognize them as such:

Wenn wir bei alldem einen festen Begriff vom Baume haben, so deshalb, weil unsere Vorstellung die Natur ausrichtet. Diese, unsere Vorstellung von Baume ist eng mit dem verbunden, was die Alten Physiognomie nannten. Wir sehen den Baum als Größe, in der die natur Individualität oder besser Personalität gewinnt; sein Wuchs bezeugt uns Leben in einem höheren als dem rein vegetativen und auch zoologischen Sinn.

And, although Linnaeus broke with taxonomic tradition by jettisoning the category of “tree” as distinct from herbs and bushes Jünger continues, “Die physiognomische Entscheidung wird dadurch nicht berührt. Wir wissen instinktiv, was wir als Baum ansprechen sollen oder nicht” (8).

Yet this is not to say that there is a single tree form that would be considered ideal. Were that the case, a physiognomy of trees would not be possible, since the multitude of answers to the question of the ideal tree expresses the multitude of human character types corresponding to these trees. “Besser wäre freilich auch hier, wie gegenüber jeder physiognomischen Entscheidung, von Charakterologie zu sprechen, denn es ist im Grunde die Frage nach seinem inneren Wuchs und Wesen, die der nach seinem Baum Gefragt beantwortet. Er wählt sein Totembild” (9). In this sense *Charakterologie*, like physiognomy, indicates an expressive connection between inner essence and external form — resemblance indicates affinity. Thus in “Steine” the work of the Japanese artist Hokusai represents, according to Jünger, not just a stylistic particularity but rather the deep elemental connection between water and rock that both transcends and shapes epochs. “Der Künstler sieht es: so Hokusai, denn es ist kein Zufall, daß die beiden großen Motive dieses Meisters, der heilige Berg seiner Heimat und die Lebenswoge, so seltsam sich gleichen, bis in den Schnee des Gipfels und den Schaum der Welle hinein. Das heißt, durch die Zeit hindurchblicken” (34).

Jünger describes a visible order (“Sichtbare Ordnung,” 26) in a superordinate principle of growth that unifies organic and inorganic matter.²¹⁷ Growth is thus a formal principle inherent in

217 “Daß hier organisches und mechanisches Wachstum sich sehr ähnlich werden, spricht für ein übergeordnetes

nature, and it is precisely this move – positing growth as an essential formal principle based on the assertion of a visible order in nature, seen in resemblance – that allows him to describe a relationship between form and essence that admits of temporal change but not of history as a determinate process of change involving social and political actors, let alone any notion of progress. In this regard, his conception of form echoes Renger-Patzsch’s practice and theorization of visual analogy, yet where Renger-Patzsch placed formal similarity in the service of a perceptual training that would provide kinesthetic access to reality, Jünger in these essays describes forms as changeable containers for an unchangeable essence. “Hier stürzt die Mauer, und dort wächst sie empor. Beständig im Wesen, wechselt sie die Form. Die Formen sind Fassungen. Der Stein in seinem Wesen, der Stein der Weisen, bleibt unberührt” (26).

Over the course of the essay, Jünger unfolds a logic of dissolution and reconstitution, rise and fall, that draws on the competing historical geologies of Plutonism and Neptunism. According to Plutonism, stones are forged by fire from smaller particles, while Neptunism holds that the erosive influence of the sea is responsible for the creation of small stones from larger ones. Jünger plays these two historical theories off of each other poetically to universalize the tendencies inherent in the accumulation and breakdown of geological formations. The historical theories of Neptunism and Plutonism allow Jünger to access an elemental logic of creation and destruction in constant balance. “Die große Flut gehört neben dem großen Feuer zu den vollziehenden Mächten der Wenden und Endzeiten. Hier spürten wir ein erstes Anheben. Bald sollte sie in ihren weiten, stets wachsenden Zusammenhängen sichtbar werden: als geologische Veränderung” (21). Here Jünger explicitly describes the coming catastrophe of the first World War as a “geological change.” History in this conception does involve change, but it is a catastrophe towards a rebirth, a pendular swing without meaningful difference: “Das Universum

Prinzip.” (26).

hält sich im Gleichgewicht” (25). Zooming both down and up from the historical village that opens his essay, he introduces a universal process of creation and destruction that elides the specificity – not to mention the political dimension – of the soon-to-be-flooded village. “Das Universum ist eine große Mühle, die grob und fein mahlt, Sonnen und Sandkörner. Da wird immer neuer Vorrat verlangt. Er muß sich bilden, schichten, härten, absetzen, aufstocken, muß rastlos ergänzen, was durch den Angriff dahinschwindet, und mit ihm Schritt halten” (25).

Thus for Jünger the notion of a visible order, according to which visual form is expressive of an inner essence, by no means preclude the forms themselves from changing over time. The visible appearance of things changes according to a logic analogous to geological shifts and the slow metamorphosis of stones. Yet, and this point is crucial, the change in forms leaves the inner essence untouched. When Jünger writes that “die Formen sind Fassungen,” he is emphasizing both the possibility for forms to be reconfigured and the necessity of the connection between form and essence. In this way, he moves from a physiognomy to a temporality. It is significant that Jünger does not discuss photography at all in these two essays – rather, they both hinge on the symbolism and essential recognizability of stones and trees that allow them to stand in as figures of time. Indeed, he begins “Steine” by recounting a youthful hike in prewar Italy, a rest in an inn in a village about to be flooded by the construction of a new dam, and the assorted company’s speculations on the nature of stone. Despite the social, punctual nature of a major public works project such as a dam, Jünger uses the imminent flood as a paradigm of history with its cycles of ebb and flow, creation and destruction, rise and *Untergang*. It reflects his idiosyncratic telescoping of individual event and transhistorical patterns that Jünger implicitly portrays the impending disappearance of the small village both as a symptom of contemporary upheavals and a symbol for his vision of history as such. Likewise, he later assimilates

geological catastrophes with historic upheavals, comparing the moods and uprising of different peoples to volcanic eruptions (33).

In “Bäume,” the tree becomes a formal pattern for spatial extension and temporal flow as such.

Der Lebensbaum ist, wie die Sanduhr, ein Sinnbild der Zeit, die sich im Zeitlosen schneidet — dort ist die Taille, der Wurzelhals. Dort ist der Punkt, den wir Augenblick nennen; wir sehen das Vergangene unten, das Zukünftige oben sich ausbreiten.

Im Baum bewundern wir die Macht des Urbildes. Wir ahnen, daß nicht nur das Leben, sondern das Weltall nach diesem Schlüssel in zeit und Raum ausgreift. Das muster wiederholt sich, wohin wir auch die Augen richten, bis in die Zeichnung des kleinsten Blattes, bis in die Linien der hand. So verzweigen sich die Flüsse von der Wasserscheide auf dem Lauf zum Meere, der Strom des Blutes in den hellen und dunklen Adern, die Kristalle in den Klüften, die Korallen im Riff.

*

Im Urbild wird Unbegreifliches geahnt, das sich in der Erscheinung ausbreitet. Der Augenblick birgt und verbirgt das Überzeitliche ... (7)

Crucially, it is the form of the tree that allows for Jünger’s dendrological cosmology. In other words, the same visible recognizability that guarantees our knowledge of what counts as a tree and what doesn’t is also what lets trees serve as an *Ursymbol* for the passage of time in a transhistorical ahistorical way. In this way, nature becomes a figure for a history marked by growth and decline, rise and fall, ebb and flow: “Der Mensch hat immer Werden und Vergehen am Gleichnis des Baumes zu begreifen versucht” (15). The same is the case with stones: “Wie an den Jahresringen eines Baumes lassen sich an manchen Schliffen oder Kernen die großen und die kleinen Rhythmen ablesen” (26, “Steine”). The physiognomic assertion of a fundamental legibility of the visible world, and in particular natural forms, provides the visible spatial, formal order that enables all history to be natural history.

Concluding thoughts. Reproduction, realism, and the type

One would be hard pressed to come up with a position more distant from Brecht’s

statement quoted at the outset of this chapter – that the photograph of a factory tells us nothing about the factory – than Jünger’s attribution of legibility to visual form. In many respects the photographic theories delineated in this chapter are at odds and at times simply incompatible. Even where the focus seems to be the same – as in the claim that photography is the adequate medium to represent technological modernity – a closer look shows the rifts between what the various positions assume and entail.

Yet precisely in their differences and incompatibilities, these positions on photography nevertheless mark out a shared discursive arena particular to German modernism. When Brecht rejects the ability of the photograph to tell us something useful about the factory, he is nevertheless working with a common set of assumptions about the relationship between the image and reality. What is ultimately at stake in these various photographic positions is the way that ideas about visual reproduction and photographic objectivity, when interrogated, necessarily involve a particular kind of aesthetic and epistemological realism: the question of adequate representation necessarily leads to the question of knowledge and often to the idea of the type. From Döblin’s description of photography as a comparative anatomy to Renger-Patzsch’s insistence on essential forms and his condemnation of contingency in the image to Jünger’s “sichtbare Ordnung” based on underlying visible forms, these discussions of photography pivoted around ideas, sometimes explicit and sometimes unspoken, about the relationship between the individual and the type. Even Brecht, although he denied the individual image of New Objectivity any epistemological potential, relied on the possibility of a typology in his suggestions for serial portraiture of hands and faces. Despite (or because of) his emphasis on the camera’s disruptive potential, such portraiture is by definition less interested in the accidents of individuality than a functionalist, positional realism that locates the visible signature of the

individual within a set of social, intersubjective roles.

Döblin's use of the medieval debate between the realists and the nominalists is therefore especially useful in this context, because it problematizes theories of photographic realism that rely on the contingent or indexical properties of the photographic image. To push the point further, one could easily make the case that all of the figures who appear in this chapter, with the possible exception of Kracauer, are realists in Döblin's definition. They invest superordinate ideas with more significance than the accidental particulars of the individual phenomenon or scene, and yet this could not begin to account for the range of positions or contentions they cover. The point, however, is that looking at these theorists in this way opens up the question of what realism actually means in this context, and why discussions of visual representation necessarily involved questions of physiognomy and type during this particular historical juncture. It hardly needs to be emphasized that there are any number of other possible frameworks and orientations for thinking about images, but discussions of the photographic image in German modernism operated within a space marked out by considerations of realism, the type, history, and experience. This is likely at least partly due to the inheritance of scientific strategies of depiction and illustration from the 19th century, a tradition that involved images as evidence or truth of scientific knowledge practices. Yet as the other aesthetic commitments of key figures such as Döblin, Brecht, Benjamin, Kracauer, and Jünger suggest, discussions of photography were also entangled in broader aesthetic debates about representation as such; further research in this area would need to look more closely at the role played by praises of the type over the individual in theories of epic prose and drama. And even more generally, it would be necessary to adumbrate the influence of broader structures of thought on various paradigms of visual representation. The role of a Marxist critique of commodity fetishism in the case of Brecht and

Benjamin comes most readily to mind, but features of *Lebensphilosophie*, particularly the idea of individual forms as transient expressions of an underlying vital force are certainly also at play.

Despite the differences in these paradigms, frameworks, and discourses, all of the takes on photography considered in this chapter have involved the question of how best to represent reality, far beyond purely aesthetic or technical considerations of the adequate depiction of a visual scene. In this sense, the Weimar discourse of photography served as a kind of crossroads where media theory, aesthetics, sociology, philosophy, and science intersected in various ways. Realism was at a premium, and yet beyond a shared sense that the stakes of the photographic image had been raised, there was little consensus on what realism actually was.²¹⁸ For Renger-Patzsch, Benjamin, and Kracauer, each in their own way, the camera's realism had to do with the way it accessed or renewed perception and experience. For Döblin and Jünger photographic realism was quite different in that it was tied to an epistemology of the type and the way the photographic image allowed for a kind of deep recognition, although the two writers diverged widely on what the type entailed for an understanding of historical time. In this sense, the perceptual training and truth claims of photography served as an aesthetic, social, and political battleground. Learning to see was something contested, and at stake were various understandings of modernity and history.²¹⁹

Where Döblin's type is a historical phenomenon closely related to the mass and at times indistinct from it, Jünger's type is a *Denkfigur* diametrically and polemically opposed to the mass. To be sure, the type can be seen, in the case of both Jünger and Döblin, as a historically specific trope that arose as part of a broader dismissal of the classically bourgeois individual in the context of the rise of modern mass society. Yet unlike the social history to which Döblin

²¹⁸ For a substantive and sophisticated discussion of the resurgence of realism – and concomitant return to a prosthetically-inflected anthropocentrism – in the interwar period, see Fore (2012).

²¹⁹ In a similar way, Richard Gray has characterized Sander's *Antlitz der Zeit* as a critical countermodel to contemporary racial physiognomic projects (379).

assigned Sander's typological portraiture, Jünger will deploy the type in *Der Arbeiter* much as he does in his essays on stones and trees: as the herald of a time construed as elemental time, a history seen as natural history. Just as dramatically as *Berge Meere und Giganten* but in a radically different way, *Der Arbeiter* will present the reader with a futuristic body neither totally organic nor fully technological, but one that is rather the result of their collusion.

CHAPTER FOUR

Leben in Ordnung. The organic logic of Jünger's Der Arbeiter and the end of history

In this chapter, I trace the discursive entwinement of the type – the social and epistemological figure deployed in opposition to the individual, as discussed in the previous chapter – and the technological body in what must be the Weimar Republic's most involved depiction of their relationship, namely, Ernst Jünger's 1932 essay *Der Arbeiter*. No account of either the body or the technological imaginary in Weimar Culture can afford to bypass Jünger's text, both because of the suggestive intensity with which it grapples with the embodiment of a new type of human and because of the canonical status it has obtained as the embodiment of a pervasive discourse of the armored body seen as representative of central strands of Weimar thought. Helmut Lethen's well-known account of the cold persona in the Weimar Republic, *Verhaltenslehre der Kälte* (1994), for example, sees Jünger's essay as paradigmatic of an anti-bourgeois, anti-subjective program that armored the body and self against a particularly modern vulnerability in the wake of the abandonment of traditional social hierarchies, epistemological certainties, and established moral codes.²²⁰ *Der Arbeiter* seems to offer a summation of Weimar codes of conduct, presenting the fullest depiction of an outwardly-oriented, electrified, hierarchical, highly technological, and anti-individualistic collectivity predicated on production, speed, and the metaphysical embrace of danger. Jünger provides Lethen's account with a rich *Sinnbild* of a mechanized self that abolishes psychological interiority to the same extent that it supposedly represses its own organic, creaturely life. Yet Lethen underplays the organic

220 Jünger plays a privileged role in Lethen's history, and I suspect this has as much to do with biographical reasons as with analytic ones: the fact that Jünger, the *Frontkämpfer*, *Freikorps* member, and polemicist of the nationalist ultra-right made similar arguments about subjectivity and the body as figures on the left of the political spectrum is invaluable for Lethen's teleological and etiologal reconstruction of Weimar culture.

dimension that comprises as crucial a component of Jünger's attack on bourgeois subjectivity as it does of Döblin's. In this chapter I will analyze the implications of this elision, which frames a dominant understanding of Weimar culture; Indeed, *Der Arbeiter* complicates the image of the armored body as much as *Berge Meere und Giganten* but in very different ways. What does it mean that Jünger's essay undermines the very trope for which it has been made paradigmatic? If the armored body does not exist here, does it exist anywhere, or is it merely an interpretive projection from later decades that has more to do with their imaginaries and politics than with the way the body and technology were seen to relate in Weimar thought?

As will become clear, these questions bear on our understanding of the dense interweave of discourses that comprised the culture of the Weimar Republic. Crucially, Lethen reads this culture as a reaction to a crisis in the period's self-understanding. Once old social and ideological demarcations had been undermined by the culmination of processes of industrial modernization in the First World War, new forms of behavior, or *Verhaltenslehren*, had to be established in the absence of stable, traditional moral codes. The key function of these *Verhaltenslehren* was to differentiate between friend and enemy, inside and outside, self and other.²²¹ Lethen dubs this process "Entmischung" to indicate the guiding role played by various polarities in the thought of this period across the political spectrum.²²² While *Entmischung* works on various levels – epistemologically as a prosthetic aide to perception and and clinical, amoral evaluation,²²³

221 "In Augenblicken sozialer Desorganisation, in denen die Gehäuse der Tradition zerfallen und Moral an Überzeugungskraft einbüßt, werden Verhaltenslehren gebraucht, die Eigenes und Fremdes, Innen und Außen unterscheiden helfen. Sie ermöglichen, Vertrauenszonen von Gebieten des Mißtrauens abzugrenzen und Identität zu bestimmen" (7).

222 "Der Schmerz der Trennung und die Sehnsucht nach Fusion – zwei Quellen der ästhetischen Faszination – werden in der Ära der Ersten Republik in extreme Ferne voneinander gerückt. Die bürgerliche Kultur der Schattierungen und gemischten Temperaturen weicht einer Ästhetik der Entmischung, der Polarisierung aller Lebenssphären, der Faszination der 'scharfen' Grenzziehung und klaren Kontur" (133).

223 "Der Habitus der Wahrnehmungsschärfe fordert in diesen Jahren vom Subjekt vor allem die Verletzung der Grenzen der Moral. Es ist die Schärfe der Negation einer moralischen Norm, die im neusachlichen Jahrzehnt nicht nur einen Habitus zum Ausdruck bringt, sondern auch beansprucht, Exaktheit im Sinne empirisch verfahrenender Wissenschaft herzustellen. Die Abschirmung der Wahrnehmung gegen Einmischungen des

psychologically as the separation between self and other across the clear contours of the armored body, as a way of protecting the vulnerable ego,²²⁴ as a political heuristic to differentiate between friend and enemy²²⁵ – its basic logic necessitates the linkage between clear perception and clear (corporeal and social) separation. The individual subject, caught up in joint crises of a shaken symbolic order, overturned social hierarchies, and unsettled bodies of knowledge, must reinforce according to Lethen its perception and its status as subject by recourse to a prosthetic logic of armoring, classification, and enhanced vision.²²⁶ This logic necessarily foregrounds the mechanical and technological at the expense of the organic.

This brief sketch already suggests both the key role that Jünger, and especially *Der Arbeiter*, plays in Lethen's account, and why this role will necessarily truncate some of the more interesting complexities of Jünger's text. Lethen rightly emphasizes the prominence in *Der Arbeiter* of the armored body and *Panzerung*, a sharpness of vision, and a clearness of contours. *Der Arbeiter* remains such an interesting document, at least in part, because of the way it blends descriptive, prescriptive, and performative analyses in order to account for the contemporary moment and invoke a desired future precisely through its classification of the figure of the worker as a transhistorical *Gestalt*. Yet – and this objection is the starting point for my reading of *Der Arbeiter* – by shoehorning Jünger's worker into the trope of the cold persona, which Lethen

moralischen Urteils muß mit der Entpsychologisierung des beobachteten Gegenstands, seiner Reduktion auf physiologische oder ökonomische Basisdaten und die Ausrichtung auf naturwissenschaftliche Diskurse einhergehen" (187).

224 "Die Umrisse des 'Typus' des Arbeiter-Soldaten, den Jünger den Partisanen und Lumpenproleten entgegensetzt, verschwimmen nie" (202).

225 "Carl Schmitts Freund-Feind-Theorie ist eine Wahrnehmungsprothese, welche geradlinige Bahnen durch den amorphen Körper der liberalen Gesellschaft legt. Halbdunkel wird entfernt, Schwanken und Lavieren werden in der Kategorie des Verrats fixiert. Entmischen ist das Metier der kalten persona, 'Distinguo ergo sum' ihr Wahlspruch" (191).

226 "Wenn stabile Außenhalte der Konvention wegfallen, Diffusion der vertrauten Abgrenzungen, Rollen und Fronten gefürchtet wird, antwortet die symbolische Ordnung mit einem klirrenden Schematismus, der allen Gestalten auf dem Feld des Sozialen Konturen verleiht. Alle Phänomene – vom Körperbau bis zum Charakter, von der Handschrift bis zur Rasse – werden klassifiziert. Merkwürdig genug dienen neue technische Medien wie die Fotografie hierbei als Definitions-Instrumente." (11)

identifies as a key figure of Weimar culture and which is marked by calculating distance, affective iciness, and externally-oriented behavior, Lethen's interpretation is built on unspoken normative and analytic assumptions that lead him to repress the organic nature of the armored body. In particular, Lethen must ignore two key features of Jünger's text: the teleological movement towards reconciliation based on a biological notion of entelechy, and the heuristic – rather than absolute – nature of the contours of the *Typus* of the *Arbeiter*.

In this chapter, then, I will examine key dimensions of Jünger's text in order to recover the inheritance of the organic in what has been read as the kingdom of the mechanical. As I will show, the project of *Der Arbeiter*, far from offering codes of conduct for an estranged and dangerous age, is to move towards a reconciliation that would overcome the alienation between self and object, mechanical and organic, body and technology. This teleological movement, which Jünger describes as *Verschmelzung*, draws on contemporary biological understandings of entelechy – the notion that an organism as a whole is greater than the sum of its parts and strives towards an ingrained harmony. The projected endpoint of *Der Arbeiter* is not a dynamic system where technology has eclipsed the organic, but rather a stasis after history where technology has become organ. This movement necessitates a dynamic play of contours and boundaries – both corporeal and epistemological – more complex than the *Entmischung*, armoring, and delimiting emphasized by Lethen. Metaphors of liquid do not just have a negative valence, but also stand in for the flows and merges central to the trajectory of *Der Arbeiter*. More importantly, the clear contours of the *Typus* that set it off, polemically and epistemologically, from the social mass, are not the end of the story for Jünger, but are rather only one necessarily heuristic and historical moment in his positioning of what he calls the *Typus* between the ephemeral individual and his conception of a transhistorical, metaphysical *Gestalt*.

At issue is ultimately not the limitations of Lethen's compelling and important analysis, but rather the possibility that Lethen's repression of the organic dimension of *Der Arbeiter* is emblematic of a reading of Weimar culture that occludes its discursive integration of nature and technology. Without the organic, one cannot understand how technology functions in Weimar thought. Ernst Jünger, often taken to be a champion of the mechanical, armored, inorganic subject, shows why.

Der Arbeiter presents the reader with a text that is both a diagnosis of modernity and the prognosis or *Wunschbild* of continued intensification of those features of modernity that depart from the ascendancy of the autonomous bourgeois individual. Jünger's text, somewhere between a treatise and an extended essay, heralds the arrival of the figure of the worker as the emblem of a modern fulfillment still in the process of becoming. *Der Arbeiter* treats its subject in general terms with little recourse to specific historical or social referents, moving from one suggestive image to the next in a way that is speculative and associative: the reader often has the sense of moving through a panorama.²²⁷ The salient historical context is strongly informed by processes of modernization, industrialization, and urbanization in general, and the experience of the First World War in particular. Yet a basic narrative trajectory can be located in a movement away from the critiqued moment of bourgeois liberal democracy toward the *Arbeiterstaat* that will replace it. The text has often been read as an embrace of a mechanical armoring in the face of a turbulent technological modernity to protect the vulnerable, creaturely, organic self; this characterization of *Der Arbeiter* is often linked to Jünger's concept of the "totale Mobilmachung," to emphasize the

227 Marcus Paul Bullock makes the case for reading *Der Arbeiter* as a literary project: "The contradiction for [Jünger] here is that even where he goes beyond the role and territory accepted as that of the literary artist, where he explores the phenomena of another domain, he has to keep to the literary character of the initial project. His method must always be adapted from that of literature, or of art more generally." (25-6)

technological dynamism of Jünger's vision. Helmut Lethen reads the text in this way, and Andreas Huyssen (1993) assigns Jünger a similar status by interpreting Jünger's texts as themselves partaking of a logic of armoring in order to shield the wounded male ego. Without denying the presence of armor in Jünger's work from this period, I would like to complicate the analytic centrality it is often granted. In this chapter I draw on the work of scholars such as Benjamin Bühler, Thomas Pekar, and Thomas Löffler in order to explore the organic dimensions of Jünger's text and the specific relationship between its attack on the bourgeois individual on the one hand and its vision of a future beyond history, on the other.

To begin with an image: a description of the face of the worker emphasizes the sharpness of the face's metallic contours and bones, as well as the calm mastery of its gaze.

Verändert hat sich auch das Gesicht, das dem Beobachter unter dem Stahlhelm oder der Sturzkappe entgegenblickt. Es hat in der Skala seiner Ausführungen, wie sie etwa in einer Versammlung oder auf Gruppenbildern zu beobachten ist, an Mannigfaltigkeit und damit an Individualität verloren, während es an Schärfe und Bestimmtheit der Einzelausprägung gewonnen hat. Es ist metallischer geworden, auf seiner Oberfläche gleichsam galvanisiert, der Knochenbau tritt deutlich hervor, die Züge sind ausgespart und angespannt. Der Blick ist ruhig und fixiert, geschult an der Betrachtung von Gegenständen, die in Zuständen hoher Geschwindigkeit zu erfassen sind. Es ist dies das Gesicht einer Rasse, die sich unter den eigenartigen Anforderungen einer neuen Landschaft zu entwickeln beginnt und die der Einzelne nicht als Person oder als Individuum, sondern als Typus repräsentiert. (107-108)

The type of the worker is described with recourse to the physical description of the individual body, but in a way that deemphasizes its particularity. The depiction of the worker's face as sharp, defined, metallic, bony, and attentive evokes a sense of seriality, even as the description of the fixed gaze suggests the importance of individual experience. If this is a technological body, it is not entirely an objectified one. Indeed, the particular shift between subject positions in this passage demonstrates the ambivalent nature of the project of the book as a whole. Just as *Der Arbeiter* frequently shifts, often uneasily, between a motivated depiction of its contemporary

moment and predictive or exhortatory future prognostications, thereby altering its mode of address and the reader's implied position from actual, contemporary subject to ideal, future subject, here too the gaze becomes an intersection in a chiasm of sorts. Where the passage begins by describing the face of the worker from the outside, drawing its associative force from the various connotations of the hardened physiognomy, the portrayal of the gaze puts the reader into the position of the worker. If the outward manifestation of the worker's calm mastery is the steady gaze, schooled on the observation of rapid movement, part of the project of *Der Arbeiter* is to school the reader's gaze on the rapid movements of workers themselves. In other words, the line of sight suggested here is a mirrored and autogenerative one, whereby the worker obtains the characteristics of an armored, technological body by observing armored, technological bodies in motion.

While this mirrored relationship already suggests a complex interplay in the production of the type that goes beyond the protective armoring of the otherwise vulnerable individual, it is certainly true that the body of the worker is an armored body, and Lethen is correct to point to the way that the figure of the *Typus* links the clear contours of the body to the clear epistemological distinctions the figure enables. It is no accident that the above passage pivots from the body to the object world through the gaze of the worker, since the type for Jünger is largely a visual phenomenon: the clarity of his²²⁸ face that allows it to be identified as a new type is fundamentally related to the clarity of its gaze that grants it privileged access to a drastically altered landscape in radical motion. Yet at stake here is not so much a renewed physiognomic logic, but rather the assertion of a sense of corporal solidity and control intended to contrast with

228 While in many ways the depiction of the *Arbeiterstaat* seems to undermine older gender distinctions based on affect or divisions between productive and reproductive labor, the figure of the *Arbeiter* still appears aggressively male, and indeed, the pronoun is always "er." This has in part to do with the way Jünger chooses to depict a type rather than a class or group: it is never "the workers" or "they," but always "the worker" and "he."

the problematic fluidity both of the bourgeois individual and of the mass. The type of the worker, for Jünger, is able to instrumentalize its body as a precise machine.

Es sind hier Bilder einer höchsten Zucht des Herzens und der Nerven Geschichte geworden, die den besten Überlieferungen als ebenbürtig zur Seite zu stellen sind, – Proben von einer äußersten, nüchternen, gleichsam metallischen Kälte, aus der heraus das heroische Bewußtsein den Leib als reines Instrument zu behandeln und ihm jenseits der Grenzen des Selbsterhaltungstreibes noch eine Reihe von komplizierten Leistungen abzuzwingen weiß. (107)

By describing the worker's subjectivity as a "heroische[s] Bewußtsein" that has the calculated distance from its own body needed to use that body as a powerful modern technology, Jünger is able to construct the type of the worker in opposition both to a notion of bourgeois subjectivity predicated on psychological interiority and to the unstructured human masses of liberal democracy. Later, in describing how the *Arbeiter* differs from the creative individual ("Schöpfer"), the text categorizes the features of bourgeois subjectivity that the worker opposes: a finely differentiated soul, uniqueness of character, individual achievement, and a less than robust physical health.²²⁹ "Kultur" is even invoked in opposition to the "Zivilisation" represented by the worker to broadly indicate the intellectual and spiritual virtues of the cultivated interiority of the individual in a specifically German context.

The *Typus* thus serves the strategic function in Jünger's polemic of allowing him to attack

229 "Einem an der individuellen Leistung und ihrem einmaligen Charakter geschulten Empfinden fällt es schwer, sich den Typus in einer Zone vorzustellen, in der das Bewußtsein durch die schöpferische Kraft gebändigt wird. Sein enges Verhältnis zur Zahl, die strenge Eindeutigkeit seiner Lebenshaltung und Einrichtungen scheinen seine Welt weit von jener musischen zu trennen, in welcher der Mensch des 'höheren Adels der Natur' teilhaftig ist. Die metallische Bildung seiner Physiognomie, seine Vorliebe für mathematische Strukturen, sein Mangel an seelischer Differenzierung und endlich seine Gesundheit entsprechen sehr wenig den Vorstellungen, wie man sie sich von den Trägern der schöpferischen Kraft gebildet hat. Das Typische gilt als die Form des Zivilisatorischen, die von den natürlichen Formen ebenso sehr wie von denen der Kultur unterscheiden, und zwar durch das Kennzeichen der Wertlosigkeit unterschieden ist.

Dies sind gängige Wertungen der Zeitkritik innerhalb eines polaren Verhältnisses zwischen Masse und Individualität. Wir sahen jedoch, daß Masse und Individualität die beiden Seiten ein und derselben Medaille sind, und keine Kritik wird aus diesem Verhältnis mehr herausrechnen, als in ihm enthalten ist. Insbesondere wird der Typus durch diese Wertungen in keiner Weise berührt, denn seine Form ist dort, wo er als Gemeinschaft erscheint, nicht die der Masse, und dort, wo er als Einzelner auftritt, nicht die des Individuums." (218-219)

what he saw as necessarily linked forms of subjectivity and collectivity. Put positively, the *Typus* was a way of advancing an idea of individual control and sovereignty within the framework of a particular kind of collective. In this sense, the *Typus* is a strategy of aestheticization: just as the gaze of the worker served as the link between the clear contours of the face and the clear vision that allowed for action, the *Typus* is an aesthetic form capacious enough to accommodate sovereign individual action within a reworked vision of mass society. Benjamin is useful here, but not just the Benjamin who wrote about the aestheticization of politics and called for its inverse. In a 1930 review of a volume edited by Jünger called *Krieg und Krieger*, Benjamin castigates Jünger for a naïve and anachronistic commitment to chivalry in the face of a mechanized warfare that had rendered individual action irrelevant by becoming a matter of statistics. In Benjamin's critique, the authors of the volume are engaging in a repression of technology in order to preserve an ahistorical apotheosis of war.²³⁰ The type of the worker can therefore be seen as a way to circumvent this dilemma – *Der Arbeiter* is not holding onto an antiquated, pre-existing form of subjectivity in the face of processes of modernization that have rendered the former obsolete (or even obscene) so much as advancing forms of individual subjectivity and collectivity that embody what Jünger sees as the lineaments of the age. The individual and the group fit together because they both demonstrate a “crystalline” structure:

Die Masse ist ihrem Wesen nach gestaltlos, daher genügt die rein theoretische Gleichheit der Individuen, die ihre Bausteine sind. Die organische Konstruktion des 20. Jahrhunderts dagegen ist ein Gebilde kristallischer Art, daher fordert sie vom Typus, der in ihr auftritt, in einem ganz anderen Maße Struktur. Dies bringt es mit sich, daß das Leben des Einzelnen an Eindeutigkeit, an Mathematik gewinnt. Es ist daher nicht weiter

230 Walter Benjamin, “Theorien des deutschen Faschismus. Zu der Sammelschrift ‘Krieg und Krieger.’ herausgegeben von Ernst Jünger.” *Die Gesellschaft* 7 vol. 2, (1930), 32-41. Quoted in *The Weimar Republic Sourcebook*. “Instead of using and illuminating the secrets of nature via a technology mediated by the human scheme of things, the new nationalists’ metaphysical abstraction of war signifies nothing other than a mystical and unmediated application of technology to solve the mystery of an idealistically perceived nature [...] Until Germany has broken through the entanglement of such Medusalike beliefs that confront it in these essays, it cannot hope for a future” (164-165).

verwunderlich, daß die Zahl, und zwar die präzise Ziffer eine wachsende Rolle im Leben zu spielen beginnt; es steht dies zu dem maskenhaften Charakter des Typus in Beziehung, von dem bereits die Rede war. (137-138)

This passage thematizes concisely the vision of society that *Der Arbeiter* opposes. The purely theoretical equality of liberal democracy, the shades of bourgeois interior life, the expressive (rather than “maskenhaft”) character of bourgeois individuality, and the formlessness of masses of individuals are connected. Lethen is correct to identify the metaphors of liquidity the text deploys to characterize the uncertainty and weakness associated with liberal, bourgeois culture.²³¹ Where the worker is hard, the bourgeois individual is soft; where the bourgeois individual is expressive and ambiguous, the worker is functional and determined; and where the *Arbeiterstaat* exhibits a determining order from the micro- to the macrocosm on the model of crystal formations, the masses of individuals are shapeless and *Verschwommen*.

At several moments throughout *Der Arbeiter*, we read that the body of the masses is vulnerable or unable to defend itself. “Die Bewegungen der Masse haben überall, wo ihnen eine wirklich entschlossene Haltung entgegengesetzt wird, ihren unwiderstehlichen Zauber verloren – ähnlich wie zwei, drei alte Krieger hinter einem intakten Maschinengewehr auch durch die Meldung nicht zu beunruhigen waren, daß ein ganzes Bataillon im Anrücken sei. Die Masse ist

231 “Das Verschwimmen der Gestalten erfährt die kalte persona als Provokation. Erst recht, wenn sie im Innern des Staates aufkreuzen im ‘amorphen Körper der Massen’ – im Gewühl der Sonn- und Feiertage, im Aufruhr oder im ‘grauen Heer der Demobilmachung’ – als ‘Ferment der Zersetzung’ wirksam werden.

Die Umriss des ‘Typus’ des Arbeiter-Soldaten [...] verschwimmen nie” (Lethen 201-202).

Indeed, Jünger describes aspects of the bourgeois world in terms of liquidity: “Den Arbeiter in einer durch die Gestalt bestimmten Rangordnung zu sehen, hat das bürgerliche Zeitalter nicht vermocht, weil ihm ein echtes Verhältnis zur Welt der Gestalten nicht gegeben war. Hier schmolz alles zu Ideen, Begriffen oder bloßen Erscheinungen ein, und die beiden Pole dieses flüssigen Raumes waren die Vernunft und die Empfindsamkeit. In der letzten Verdünnung ist Europa, ist die Welt noch heute von dieser Flüssigkeit, von dieser blassen Tünche eines selbstherrlich gewordenen Geistes überschwemmt” (36). Yet the counterpart to bourgeois society, the mass or mob, is also described in liquid terms that link it to the same dying world and contrast it to the rigid shape of the type: “Ewig würde [der Bürger] sich an seinen schönen Anklagen ergötzen, deren Grundpfeiler Tugend und Gerechtigkeit sind, wenn ihm nicht im rechten Augenblicke der Pöbel das unerwartete Geschenk seiner mächtigeren, aber gestaltlosen Kraft darbringen würde, die ihre Nahrung aus den Urkräften des Sumpfes zieht” (19). On the political use of motifs of floods and swamps, see Theweleit (vol. 1), especially 287-312 and 497-501.

heute nicht mehr fähig anzugreifen, ja sie ist nicht einmal mehr fähig, sich zu verteidigen” (110). Beyond the fantasies of power and evident misanthropy of such claims, Jünger’s argument is working on a formal level that contrasts the tightness of order to the looseness of an amorphous mass. This is an underlying pattern that unifies the various areas discussed in the text, from the control of individual perception, to the hardness of the body of the worker, to the epistemological clarity of the *Typus*, to the crystalline integration of the *Arbeiterstaat*. It is difficult to say for certain whether these linkages among various levels are analogical, homological, microcosmic/macrocosmic, or merely rhetorically suggestive. It seems clear at least that causality is not a category his analysis favors,²³² and at times Jünger’s presentation tosses up counterintuitive images. Where one of the strengths of the worker seems to be a total integration of organism and machine – an idea that is central to the book, as I’ll discuss below – in the case of the body of the masses, integration with technological and social infrastructures represents instead a vulnerability: “Das Verkehrswesen, die Versorgung mit den elementarsten Bedürfnissen, wie Feuer, Wasser und Licht, ein entwickeltes Kreditsystem und viele andere Dinge, von denen noch gesprochen werden wird, gleichen dünnen Strängen, freiliegenden Adern, mit denen der amorphe Körper der Masse auf Tod und Leben verbunden ist” (111). The difference would seem to be topological. Where the positive integration with technology represented by the “organic construction” of the worker involves an incorporation of technology into the working body, here it seems to be the outed interior, in the form of exposed veins, that

232 When describing the type of vision needed to perceive the deep contemporary metaphysical impact of the *Arbeiter*, Jünger describes cause and effect as a veil, in effect suggesting that they too are mere epiphenomena obscuring the deeper relationship between *Gestalt* and *Typus*. “wie könnte sich hier ein Auge, das wirklich zu sehen versteht, der Einsicht entziehen, daß hinter dem Schleier von Ursache und Wirkung, der sich unter den Kämpfen des Tages bewegt, Schicksal und Verehrung am Werke sind?” (45) For an excellent reading of the way Jünger’s text develops an authorial position uniquely able to perceive the relationship between metaphysical essence and surface appearance in a way that is both descriptive and performative/propagandistic, see Bühler (280-285).

creates the sense of vulnerability. The extended body-machine integration that inverted the individual body in Döblin's *Berge Meere und Giganten*, serving there to explode the isolated autonomy of the bourgeois individual, is here seen as the characteristic vulnerability of that body. Concretely, then, one can at first glance make a much stronger case for the presence of the armored body in Jünger than in Döblin; the worker is invulnerable precisely because the apparatus has been recontained within the closed contours of the typical body. The problem with the bourgeois masses is precisely the amorphousness of that body, and as we saw above, the performative project of *Der Arbeiter* is to give shape to the body by presenting it with shaped bodies.

This depiction of the mass also accounts for why Jünger insists that the mass and the individual are two sides of the same coin. Where Döblin deploys the type and the mass more or less synonymously against the bourgeois individual, Jünger articulates his definition of the type in contradistinction to the mass of individuals. The looseness and dissoluteness of the mass – Jünger refers to the *Pöbel* as drawing its strength from a “Sumpf”²³³ – correspond to the unique, ambiguous, sensitive bourgeois individual Jünger identifies with the 19th century.²³⁴ The type, by contrast, appears in social formations that are seen to be much more discrete and more organized, local expressions of an overriding and teleological *Gestalt*.

Nicht also innerhalb dieser Masse suchen wir den Einzelnen auf. Hier begegnen wir nur dem untergehenden Individuum, dessen Leiden in Zehntausende von Gesichtern eingegraben sind und dessen Anblick den Betrachter mit einem Gefühl der Sinnlosigkeit,

233 (19)

234 “Im engsten Verhältnis zur Gesellschaft steht endlich der Einzelne, jene wunderliche und abstrakte Figur des Menschen, die kostbarste Entdeckung der bürgerlichen Empfindsamkeit und zugleich der unerschöpfliche Gegenstand ihrer künstlerischen Bildungskraft. Wie die Menschheit der Kosmos dieser Vorstellung, so ist der Mensch ihr Atom. Praktisch allerdings sieht der Einzelne sich nicht der Menschheit gegenüber, sondern der Masse, seinem genauen Spiegelbilde in dieser höchst sonderbaren, höchst imaginären Welt. Denn die Masse und der Einzelne sind eins, und aus dieser Einheit ergibt sich das verblüffende Doppelbild von bunter, verwirrendster Anarchie und der nüchternen Geschäftsordnung der Demokratie, welches das Schauspiel eines Jahrhunderts war”(21).

der Schwächung erfüllt. [...]

Es sind vielmehr Zusammenhänge anderer Art, innerhalb deren sich der neue Typus, der Schlag des 20. Jahrhunderts, anzudeuten beginnt.

Wir sehen ihn auftauchen innerhalb scheinbar sehr verschiedener Bildungen, die zunächst ganz allgemein als *organische Konstruktionen* zu bezeichnen sind. [...]"

Daß die Kräfte, die solche Gruppierungen veranlassen, andersartige geworden sind, deutet sich vielfach schon in einer Veränderung der Namen an. Aufmarsch statt Versammlung, Gefolgschaft statt Partei, Lager statt Tagung – darin drückt sich aus, daß nicht mehr der freiwillige Entschluß einer Reihe von Individuen als die unausgesprochene Voraussetzung der Zusammenkunft betrachtet wird. Diese Voraussetzung klingt vielmehr, wie es in Worten wie 'Verein,' 'Sitzung' und anderen deutlich wird, bereits das Belanglose oder das Lächerliche an. (113-114)

Given the way that the *Typus Arbeiter* is characterized against the bourgeois individual by foregrounding iterability, repetition, and substitution, it is interesting that the rejection of the mass of individuals works at least in part by invoking a sense of anonymity and indistinguishability. Descriptions such as, "...dessen Leiden in Zehntausende von Gesichtern eingegraben sind und dessen Anblick den Betrachter mit einem Gefühl der Sinnlosigkeit, der Schwächung erfüllt," or "der freiwillige Entschluß einer Reihe von Individuen" work to undermine the individual's claim to individuality. The agency seen to pertain to the individual is shifted onto the type by the various depictions of the impotence of massed individuals seen in the above passages. In a similar vein, a feature of the bourgeois individual comes to be its featurelessness – as suggested by the image of "a row of individuals" and the depiction of the worker's face cited above (107), it is now somewhat paradoxically the type that is recognizable because of its accentuated, if mask-like characters, while the uniqueness of the individual, reproduced in an endless series, merely lends a sense of fatality to its dissolution. Put simply, one could explain this by extrapolating the idea that industrial modernity (with all that entails) has rendered the individual obsolete, and the type regains agency and control by embracing this state of affairs. This is implicit in Lethen's reading of *Der Arbeiter* as presenting a code of conduct for

adapting to a radically changed historical and social situation.

And indeed, thus far I have followed the basic contours of Lethen's reading of Jünger. Against the *Verschwommenheit* and lack of distinction of the 19th century mass of individuals, the *Typus Arbeiter* presents us with multiple distinctions that work in concert on epistemological, social, psychological, and political levels. The armored body and the clear gaze seem inextricable in *Der Arbeiter*, and the repeated insistence on the metallic appearance of this new type suggests that we can, with Lethen, extend the analogical pairs of individual/type, mass/*Arbeiterstaat*, expression/mask, and vulnerable/armored to add organic/mechanical. To be sure, such a move is crucial to Lethen's argument, which needs to see the mechanical, cold persona repressing its organic, creaturely side in order to be able to identify a code of conduct that would help navigate the fraught and uncertain landscape of Weimar culture. And yet, to see in Jünger's text a strong dichotomy between the organic and the mechanical is to fundamentally misread *Der Arbeiter* by ignoring how it was working within existing discourses of the relationship between the body and mechanicity; doing so also risks conflating the *Gestalt* with the *Typus* and thereby missing the epistemological specificity of the former, which was not merely about making distinctions or armoring perception. When Lethen writes,

Der Typus, ein moderner Mensch, realisiert den Traum von der Synchronisation des Organismus mit der Gerätewelt. Sein Wesen ist technischen Apparaturen integriert. So wie er, eingeschlossen in einer 'gepanzerten Zelle,' die Intelligenz des Geschosses sein kann, so ersetzen elektrische Maschinen die Funktionen seines Zentralnervensystems. Jünger führt ihn in 'kentaureischen' Bildern vor, in der Verschalung von Maschine und Körper, als 'organische Konstruktion'. [...] Durch Funksignale erfahren wir, daß da noch ein Organismus in der metallischen Schale hockt – oder täuscht das Funkgerät seine Anwesenheit nur vor? (202)

we can agree that he correctly identifies the importance of the integration of organism and machine. Yet the provocatively uncertain question with which the passage ends, privileging the

mechanical over the organic, has more to do with Lethen's project than with Jünger's. For the latter, there can be no question about the presence of the organism within the machine, because his attack on the autonomous bourgeois individual, like Döblin's, does not necessitate an organic/mechanical dichotomy and in fact explicitly rejects such a dichotomy, drawing its force largely from organic and biological registers.

To begin with, the body of the worker, the body in *Der Arbeiter*, is not the mechanical assemblage that we might expect. Jünger draws a distinction between two kinds of bodies, the *Körper* and the *Leichnam*.

Es ist sehr wichtig, daß wir wieder zu einem vollkommenen Bewußtsein der Tatsache vordringen, daß der Leichnam nicht etwa der entseelte Körper ist. Zwischen dem Körper in der Sekunde des Todes und dem Leichnam in der darauf folgenden besteht nicht die mindeste Beziehung; dies deutet sich darin an, daß der Körper mehr als die Summe seiner Glieder umfaßt, während der Leichnam gleich der Summe seiner anatomischen Teile ist. Es ist ein Irrtum, daß die Seele wie eine Flamme Staub und Asche hinter sich läßt. Von höchstem Belange aber ist die Tatsache, daß die Gestalt den Elementen des Feuers und der Erde nicht unterworfen ist und daß daher der Mensch als Gestalt der Ewigkeit angehört. (34)

Recent scholarship on *Der Arbeiter* has recovered the influence of contemporary biological debates on the text.²³⁵ Of particular interest in light of this passage is the question of the mechanical nature of the body. Proponents of a mechanistic view such as Wilhelm Roux asserted that the workings of the body could be broken down into independent mechanical systems, while figures such as Hans Driesch and Felix Krueger drew on a vitalistic notion of entelechy to argue that the organic unity of the body is shaped by a teleological development and is thus more than the sum of its parts; Wolfgang Köhler, whose name is most closely associated with *Gestalt* theory, also provided a way of thinking about wholes as different from aggregates of parts.²³⁶

235 Especially the essays by Thomas Löffler and Thomas Pekar in the edited volume *Titan Technik*. The relationship between *Der Arbeiter*'s teleology and biological entelechy these two essays recover will be discussed in further detail below.

236 For more on the vitalism/mechanism debate within biology, see Bühler (47-74), Löffler (59, 64-65), and Pekar

Ernst Haeckel, meanwhile, drew on visual morphologies to encompass both living organs and mechanical tools under the umbrella concept of the organ.²³⁷ In the above passage, the *Körper* is a living unity while the *Leichnam* is nothing more than a collection of parts. Some surplus not reducible to a soul makes the body a living body and complicates any assumptions that the depsychologization central to Jünger's text must also be a rejection of the organic.

Similar to the living body, the *Gestalt* – a central and subtitular concept in *Der Arbeiter* – also involves a whole that is more than the sum of its parts in a way explicitly linked to organic unity: “In der Gestalt ruht das Ganze, das mehr als die Summe seiner Teile umfaßt, und das einem anatomischen Zeitalter unerreichbar war” (31).²³⁸ While the visual connotations of *Gestalt* certainly help Jünger frame his argument about the recognizability of the type, it is a mistake to conflate the *Typus* with the *Gestalt*, and especially to attribute the clear contours of the former to the latter, which serves in *Der Arbeiter* rather as a determinate yet vague force that finds expression in the type of the worker. Often the meaning of *Gestalt* seems closer to something like *Zeitgeist* or “guiding category” than to “figure.” As a guiding category, the *Gestalt* functions according to multiple organic logics, as we will see, and Jünger positions it behind history, rather than in history: “Ebenso wie die Gestalt des Menschen vor der Geburt war, und nach dem Tode sein wird, ist eine historische Gestalt im tiefsten unabhängig von der Zeit und den Umständen,

(101-102, 112). For a discussion of the differences between Driesch and Köhler in the context of the mechanism/vitalism debate, see Plessner's *Stufen*, 138-149.

237 Pekar (101).

238 Eric Michaud has described how “Gestalt” frequently occurred in titles and subtitles of texts written by Nazi ideologues (xiii). Besides the lexical overlap, a commonality between Jünger and Nazi thought as Michaud unfolds it would be the centrality of visible form. This is a connection that remains to be more fully explored. Further research on the relationship between *Der Arbeiter* and German fascism would also have to consider how Jünger's text fits the definition of myth developed by Lacoue-Labarthe and Nancy in their essay, “The Nazi Myth” (1980) Provisionally, it seems there would be meaningful overlap between Jünger's use, on the one hand, of analogy and *Stempel/Prägung* as a kind of relationality instead of conceptuality or logical causality, and their characterization of the mythic importance of mimetic identification, on the other; as well as between their account of the key aesthetic features of myth and particularly the clarity of the *Gestalt*, and the connection in Jünger between the type and visible recognizability. The difference between *Gestalt* and *Typus* in Jünger could however complicate the applicability of their theory of German fascism to his work.

denen sie zu entspringen scheint. Ihre Hilfsmittel sind höher, ihre Fruchtbarkeit ist unmittelbar. Die Geschichte bringt keine Gestalten hervor, sondern sie ändert sich mit der Gestalt. Sie ist die Tradition, die eine siegreiche Macht sich selbst verleiht” (79). The *Gestalt* is beyond a historical dialectic, “obwohl sie aus ihrer Substanz die Dialektik ernährt und mit Inhalten versieht” (77). While Jünger does not articulate the relationship between *Typus* and *Gestalt* as clearly in *Der Arbeiter* as he will in the 1963 essay, *Typus, Name, Gestalt*, one can say that the *Typus* is a subordinate and determinate expression of the *Gestalt*: the *Typus* appears, as we read, as the bearer (Träger) of *Gestaltung* (225). Thus the *Gestalt* is a transhistorical force that is necessarily an organic unity, while the *Typus* is the manifestation of this force within history. While the former is connected to indeterminacy and undifferentiation, the latter needs to be visibly recognizable and starkly differentiated. To foreground the clear contours and distinctions of the *Typus* alone, as Lethen does, is to lose sight of the role it plays in Jünger’s (admittedly imprecise) conceptual framework. More generally, such an excision risks eclipsing the fundamentally associative, analogic workings of Jünger’s text – for any political postmortem of this *Gedankengut*, Jünger’s rejection of causality in favor of free association and analogy (or “Stempel und Prägung,” to use his preferred image²³⁹) is arguably more important to an understanding of the text’s relationship to fascism than its deployment of technological bodies.

The relationship between *Typus* and *Gestalt* implicit in *Der Arbeiter* is elaborated in the later essay.²⁴⁰ A brief sketch of this relationship will help elucidate the organic logics at play in

239 For example, when describing the vitalistic unity of the *Gestalt*, Jünger writes, “Über die Rangordnung im Reiche der Gestalt entscheidet nicht das Gesetz von Ursache und Wirkung, sondern ein andersartiges Gesetz von Stempel und Prägung; und wir werden sehen, daß in der Epoche, in die wir eintreten, die Prägung des Raumes, der Zeit und des Menschen auf eine einzige Gestalt, nämlich auf die des Arbeiters, zurückzuführen ist.” (31). This would also fit with Lacoue-Labarthe and Nancy’s account of the logic of myth being mimetic identification rather than conceptual rationality.

240 A full accounting of Jünger’s epistemology would be useful, and particularly an analysis of the development of the relationship between perception and ontology from the Weimar period to the later work. Much could be gained by bringing the categories of *Typus* and *Gestalt* from *Der Arbeiter* into contact with the essays

Der Arbeiter. After a discussion of the worker as type, Jünger writes, “Es ist also ein Unterschied, ob eine Größe als Individuum, Typus oder Gestalt angesprochen wird. Das Wort durchläuft Stufen der Verdichtung oder auch der Vergeistigung. Dabei ist der Typus am schärfsten umrissen; er steht im Brennpunkt zwischen Erscheinung und Gestalt” (144). Here Jünger positions the *Typus* between the individual phenomenon and the *Gestalt* – more significant is the explanation of the type’s sharp contours. In the broader framework of Jünger’s presentation, the type is associated with clarity, sharp contours, differentiation, and armoring on primarily epistemological grounds. Compared to individuals, the type needs to have a basic recognizability – the type is to individuals something like a concept is to a set of objects, but the specifically visual dimension is central to their relationship for Jünger.²⁴¹ Compared to the *Gestalt*, the *Typus* needs to condense characteristics of a broader spirit of an age into an image that seems to function symbolically. This is what I take to be the implication of the following passage:

Wir sahen, daß der Typus einerseits vom Gegenstand, andererseits vom Ungesonderten her Licht empfängt: Licht und LICHT. Daher ist seine handgreifliche Realität geringer als jene der Gegenstände und Individuen – er kommt in der Natur nicht vor. Dagegen sind seine Konturen schärfer, geistiger und daher gültiger, gesetzmäßiger, dauernder als jene der handgreiflichen Erscheinungen. Im Typus wird das Ungesonderte sichtbar, und zwar dadurch, daß es im Gegenstand erscheint – oder anders ausgedrückt: im Typus sagt das Objekt aus, daß es mehr enthält als seine gesonderte Erscheinung, nämlich Gemeinsames. Das wird durch Intuition erfaßt und mit dem Wort gesetzt. [...] Anders ist es mit der Gestalt. Hier kommt das Ungesonderte, das in dieser Hinsicht besser als das Namenlose anzusprechen ist, in weit größerem Umfang ins Spiel. [...] Die Gestalt kann daher nicht, wie der Typus, durch Vergleichung mit dem Objekt gesichert und revidiert werden. (168)

Here again is an explicit reason for the sharpness of the contours of the type. Its position between

accompanying Renger-Patzsch’s photographic collections *Bäume* (1962) and *Gestein* (1966), not to mention with postwar novels such as *Gläserne Bienen* (1957).

241 On the centrality of visual perception and ways of seeing to Jünger’s thought, see especially Marcus Bullock (1992). For a compelling problematization of the centrality of the visual in Jünger’s work, see Julia Kleinheider’s 2010 dissertation, *Illusions of Armor: The Haptic Body in Ernst Jünger’s Early Works*. Kleinheider complicates the preference given to logics of the visual in discussions of modernism by recovering the central role of touch in the way that Jünger understood and reworked the figure of the human body, thus adding an important, well, perspective to our understanding of Weimar culture’s “visual turn.”

the undifferentiated nature of the *Gestalt* and the world of isolated objects – and not merely its particular historical manifestation in industrial modernity – is what stamps the *Typus* with its strong delineation. Where the *Gestalt* is too vague, too timeless, and too diffuse to be identified with the clarity of the *Typus*, the world of phenomena is too ephemeral to generate the more stable shape seen in types. In this way, Jünger is able to combine the sharpness and precision associated with the *Typus* (and with its chief exemplar, the worker of modern, industrial society) with forms of relationality and knowledge that work through logics of association, analogy, and affinity. “Die typischen Züge werden in einer mathematischen Schärfe bewußt, der sich die Natur selbst in den Kristallen nur annähert. Der Gestalt gegenüber treten nicht nur die Umrisse, sondern tritt auch das auf sie gerichtete Bewußtsein zurück. Ein tieferes, ahnungsvolleres Wissen wird berührt – Verwandtschaft, die nicht in der gestalteten, sondern in der gestaltenden Natur ihre Heimstatt hat. Hier fehlt es an Vergleichbarem” (169). Contrary to the clear visibility of the *Typus*, the *Gestalt* necessitates a different, more intuitive kind of perception. While the portrayal of the non-quantifiability of the *Gestalt* found in the later essay contrasts with the often heavy emphasis on mathematical precision found in *Der Arbeiter*, the basic relationship between *Typus* and *Gestalt* is the same in both texts. A *Typus* is the relatively local manifestation of a *Gestalt* that is less determinate, transhistorical, and undifferentiated:

Gestalten aber kommen aus dem Unvermessenen unmittelbar, aus Regionen, denen gegenüber das schärfste Fernrohr wie das beste Mikroskop den Dienst versagt. Der Übergang zu ihnen führt nicht durch Quantitäten, kann also nicht durch bessere Instrumentation erreicht werden. Es sind vielmehr die Qualitäten zu erfassen, die letztthin jeder Art von Ausdehnung Sinn geben. Dazu tut keine neue Optik, sondern ein neues Augen not. (139)

The need for new eyes to see the *Gestalt* is significant here, as is the claim that merely a new apparatus wouldn't quite cut it. In the context of the idea of prosthetic vision in Jünger's early

work,²⁴² this claim underscores both Jünger's call for a radical new vision and the limits of readings of *Der Arbeiter* that tie this vision exclusively to discourses of technology, defined in opposition to the organic. It should therefore also be noted that *Typus, Name, Gestalt* contains something like a methodological declaration at the beginning of the text, where Jünger describes the difficulty of accounting for *Typus* and *Gestalt* in a way that strongly recalls the organicism of his depiction in *Der Arbeiter* of the living body and the *Gestalt* as unities that are more than the sums of their parts:

Das Thema ist einfach, und darin liegt seine Schwierigkeit. Einfache Dinge sind schwieriger zu beschreiben als komplizierte, weil sie dem Namenlosen näher liegen und der Beschreibende auf den Grund der Sprache zurückgreifen muß. Eine komplizierte Maschine mit ihren Einzelteilen und deren Zusammenwirken läßt sich in einer Vorschrift mit absoluter Genauigkeit darstellen. Weit einfachere und überall prägende Formen wie Typen und Gestalten sind schwieriger zugänglich. (85)

A mechanistic assemblage, modular and causal, can be broken down into its constituent parts and exactly (and anatomically²⁴³) portrayed without remainder, while the organic unity of the *Typus* and the *Gestalt* means that there is an excess that cannot be encompassed by language. The opposition Jünger is constructing here is between a system composed of autonomous parts and an organic unity that is more than the sum of its parts. Without this organicist and vitalist excess, I do not see how it is possible to make sense either of the logic of *Der Arbeiter* in general or of the figure of the worker in particular.

What I hope to have indicated with this brief excursion to *Typus, Name, Gestalt* is therefore the particular contours of a relationship among epistemology, ontology, and history that is central to *Der Arbeiter*, and in so doing to have problematized an understanding of *Der Arbeiter* that privileges only the mechanical, armored, mathematically precise aspects of Jünger's

242 See especially Kleinheider and Bullock in this context.

243 "In der Gestalt ruht das Ganze, das mehr als die Summe seiner Teile umfaßt, und das einem anatomischen Zeitalter unerreichbar war" (*Der Arbeiter* 31).

vision. The possibilities Jünger allows for accessing knowledge of the *Typus* and the *Gestalt*, and in particular the associative, intuitive, analogical understanding he sees as necessary,²⁴⁴ are themselves determined by his ontological framework – perhaps this could provisionally be called a Platonic *Lebensphilosophie* – that divides being into individual manifestation, type, and *Gestalt*, each with a particular form of perception or knowledge appropriate to it. This in turn generates a paradoxical view of history as both cyclical and teleological – cyclical because of the way that types, themselves the historical concretion of ephemeral individual phenomena, will come to manifest an underlying, transhistorical/ahistorical *Gestalt*, and teleological because the logic of *Gestalt* demands an absolute fulfillment, a demand seen in the scattered avowals that the age of the worker is not just representative of one type among others, but is rather the age in which the logic of *Typus* and *Gestalt* comes into its own. As paradigms, these two possibilities for history can be described as an elemental, tidally recurring logic on the one hand, and a logic associated with organic growth and metamorphosis, on the other. It is to the latter of these two logics that I now turn.

It is no accident that the *Typus* bears a resemblance to biological schemes of classification. In *Typus, Name, Gestalt*, Jünger draws an analogy to botanical classification to provide an example of the relationship between *Typus* and *Gestalt*. Just as the the *Gattung* of the lily is located between all individual lilies and species of lilies on the one hand and the larger category of plants in general on the other, the type is located between individual phenomena and the *Gestalt*. In the context of the text, this analogy perhaps raises more questions than it answers, but it is significant not just because it shows the way that the *Typus* and the *Gestalt* are as much epistemologies (in the form of schemes of classification) as ontologies (in that the plant's more

²⁴⁴ In his study of Jünger, Martin Mayer has written in detail of the surrealistic dream logic privileged in Jünger's writings of the 1920s and 1930s, particularly in the context of *Das abenteuerliche Herz*.

nebulous status seems to stand in for essential characteristics of the category of planthood), but also because it suggests that the indeterminacy that links these various categories is a particularly vitalist one having to do with growth and change. Ernst Jünger's *Nebenberuf* as an entomologist is well known, and specifically biological classificatory schemes comprise an important Leitmotif in his work. Moreover, at a key moment in the presentation of *Der Arbeiter*, Jünger compares the transition from the bourgeois individual to the worker to a biological metamorphosis, something that cannot be explained or understood by recourse to "Entwicklungsgeschichte": "Wir deuteten bereits an, daß ein Verarmungsprozeß unbestreitbar ist. Er beruht auf der Grundtatsache, daß das Leben sich selbst verzehrt, wie es innerhalb der Puppe geschieht, in der das Imago die Raupe konsumiert" (116).

In one form or another, organicist modes of change and transition are crucial to the logic of history in *Der Arbeiter*. To put it simply, one of the perhaps surprising things about the text is that it is a historical diagnosis of modern industrial society that portrays that society as the result of a natural – biological, organic, elemental – fulfillment. Specifically, the teleological drive of *Der Arbeiter* – the immanent movement towards the total *Arbeiterstaat* – can be seen as an extension of the logic of biological entelechy as propagated by Hans Driesch.²⁴⁵ As Thomas Löffler and Thomas Pekar have shown, Driesch's adaptation of the concept of entelechy links an attack on a mechanistic, anatomical view of life with the idea that living organisms comprise unified wholes that develop according to immanent goals, in a way that resonates strongly with Jünger's idea of the "organische Konstruktion." Driesch developed the concept of entelechy as a

245 While for Pekar, Löffler, and the present study, the connection between the teleology of *Der Arbeiter* and biological entelechy is primarily a conceptual and rhetorical one – i.e., understanding the logic, stakes, and metaphorical features of the latter can help us make sense of the former – there is also a historical connection to be made, as Jünger may well have been exposed to neovitalism through his teachers in Leipzig, Hans Driesch and Felix Krueger (Löffler 57-58).

critique of the mechanical biology of Wilhelm Roux.²⁴⁶ As Löffler shows, both Driesch's entelechy and the teleology of *Der Arbeiter* involve a necessary connection between the organic whole that is more than the sum of its parts and the guiding drive that propels it towards self-fulfillment:

Driesch und Jünger fassen das 'Ganze' bzw. die 'Gestalt' auf als Wahrnehmungsweise bzw. als Qualität der Sichtbarkeit einer letztlich metaphysisch begründeten Wirklichkeit: beide wollen eine Seehilfe anbieten, die in der amorphen Zersplitterung der modernen Realität auf 'Ganzheit' gerichtet ist. [...] Driesch und Jünger gehen von einer teleologisch wirkenden, gestaltenden Kraft aus, die die innere und äußere Wirklichkeit gleichsam bestimmt und harmonisch koordiniert. Diese Kraft wirkt die Ganzheit und Einheit alles Lebendigen bzw. Wirklichen. Sie ist gleichsam immanent und hat eine metaphysisch transzendente Realität. Die 'Entelechie' bzw. die 'Gestalt' wirken 'endganzheitsbezogen,' das 'Ganze' läßt sich nicht aus der Summe seiner diskreten Einheiten ableiten, sondern hat einen teleologischen Überschuß. (64)

Understanding the development of *Typus* and *Gestalt* in *Der Arbeiter* in terms of entelechy can help account for the relationship between nature and history in general in that text, and how the vision of a particular historical form (the modern, industrial worker) can come to stand in for the culmination of human history outside of a class narrative or any sort of causal mechanism. The logic of organic growth also provides a way to understand the symbolic function of the type: indeed, in *Typus, Name, Gestalt* Jünger discusses Goethe's idea of the Urpflanze (and the symbol).

Yet the idea that entelechy provides a model for the teleology at play in *Der Arbeiter* raises a number of questions about the historical status of the *Typus* and the *Gestalt*. We have

246 "Hans Driesch widersprach der biologischen Entwicklungsmechanik und ihrem physikalischen Erkenntnisideal seines Lehrers Wilhelm Roux. [...] Die Entwicklung lebendiger Organismen sei durch eine physikalische Maschinentheorie nicht erklärbar. ... Daher suchte Driesch nach dem steuernden Lebensfaktor, den er in Anlehnung an die aristotelische Tradition als 'Entelechie' bezeichnete ... : 'Entelechie 'ist' im Sinne empirischen Wirklichseins ebenso wirklich wie potentielle Energie, Potential, Affinität usw.; erfahrbar ist aber immer nur ihre Wirkung, ihr Gewirkthaben, im Produkt. Nicht ist sie vor ihrem Gewirkthaben erfahrbar.' (Driesch 1917...) Die 'Entelechie' bewirkt – Driesch zufolge – die Gestaltung zur 'Ganzheit,' die nicht summarisch, d.h. mechanisch erklärt werden könne. Sie stelle das alles durchwaltende Lebensprinzip dar, durch welches alles Lebendige verbunden sei." (Löffler 59)

seen that these are epistemological forms as well as historical ones: type and *Gestalt* are privileged as a way of understanding the world. Recall for instance the way the defined face of the worker is mirrored in his defining gaze, schooled on the observation of rapid motion (107-108). But *Typus* and *Gestalt* are also presented as historical forms – *Der Arbeiter* heralds the arrival of an age determined by *Typus* and *Gestalt*. They are described both as objective features of modernity and as ways of thinking.²⁴⁷ So are these categories ways for seeing and classifying things, are they the things that need to be seen, or are they somehow both?

Der Typus repräsentiert ein andersartiges Menschentum, in dessen Bannkreis sich auch die notwendige Spannung verändert, die zu allen Zeiten zwischen dem Einzelnen und der Gemeinschaft besteht. Die Veränderung sowohl des Menschen wie seiner Gemeinschaften aber ist nur ein Ausdruck der übergeordneten Tatsache, daß eine Welt, in der die allgemeinen Begriffe herrschen, abgelöst wird durch eine Welt der Gestalt. Von hier aus, und nicht etwa durch die Gemeinschaft, wird die Einheit der Gestaltung garantiert, als deren Träger der Typus erscheint. (225)

This passage implies that the *Typus* is a historical phenomenon rather than simply one category in an epistemological or ontological framework, as the analogy to the lily in *Typus, Name, Gestalt* would imply. It represents “ein andersartiges Menschentum,” and is described in the process of replacing a world ruled by general concepts. This movement fits well with the dissolution of liberal bourgeois democracy in favor of the *Arbeiterstaat* and suggests that Jünger is depicting a transition that is both epistemological (since one has to now think in types and *Gestalten* rather than concepts) and historical, since the worker seems not just to be *a* type, but *the* type. This could perhaps be attributed to a conceptual and methodological imprecision of *Der Arbeiter*, and specifically the way it often works through analogies that are more suggestive than anything else. But if we take seriously the challenge of accounting for Jünger’s essay as a text that is a

247 “Es gehört aber zu den Kennzeichen einer neuen Zeit, daß in ihr die bürgerliche Gesellschaft, gleichviel, ob sie ihren Freiheitsbegriff in der Masse oder im Individuum zur Darstellung bringen möge, zum Tode verurteilt ist. Der erste Schritt besteht darin, daß man in diesen Formen nicht mehr denkt und fühlt, der zweite, daß man in ihnen nicht mehr tätig ist” (21).

Zeitdiagnose, polemic, manifesto, and prognostic vision all in one, we have to find a way of understanding why the categories of the *Typus* and the *Gestalt* are not just a convenient, incidental form of presentation for the figure of the worker, but rather offer Jünger a compelling trajectory for the specifically modern – and therefore historical – worker who also announces the end of history. To do so, we need to see what this end of history looks like.

That is, if entelechy indeed shapes the particular development of *Der Arbeiter*, then it is worth looking at the characteristic features of the telos of Jünger's teleology. What we find, instead of a set of guidelines for how to behave in a chaotic, uncertain age, is a vision that opens into a posthistorical stasis marked by consistency, stability, and the end of alienation. Technology, which Jünger increasingly refers to as "die Mitteln," attains the naturalness and instinctual self-evidence of a bodily organ; the distinction between the organic and the mechanical collapses; and a new balance where human activity takes on the orderliness of metabolic processes is seen as the eventual result of the present, dynamic disorder.

Der Arbeiter uses the figure of "organische Konstruktion" to describe a state where technology has been perfected to the point where it is indistinguishable from nature.²⁴⁸

Wir streiften bereits den Begriff der organischen Konstruktion, die sich in Bezug auf den Typus äußert *als enge und widerspruchslose Verschmelzung des Menschen mit den Werkzeugen*, die ihm zur Verfügung stehen. *In bezug auf diese Werkzeuge selbst ist von organischer Konstruktion dann zu sprechen, wenn die Technik jenen höchsten Grad von Selbstverständlichkeit erreicht, wie er tierischen oder pflanzlichen Gliedmaßen innewohnt.* [...] Wir machen die Erfahrung, daß der Verlauf dieses Vorganges nicht nur eine höhere Befriedigung des Verstandes, sondern auch des Auges bewirkt, – und zwar mit jener Absichtslosigkeit bewirkt, die zu den Kennzeichen des organischen Wachstum gehört. (178-179, emphasis added)

The telos of technology is the attainment of a state that negates its distinction as technology. The importance of this logic for the overall trajectory of *Der Arbeiter* cannot be overstated, and

²⁴⁸ For further discussions of the figure of the "organische Konstruktion," see Bühler (268-270), Löffler, and Pekar.

indeed, the passage incorporates other key features of the essay as a whole: the linkage between teleology and biological entelechy, satisfaction of visual perception as the mark of an innate harmony, technology becoming a part of the body rather than something extraneous to it. The point of “organische Konstruktion,” beyond merely binding the two apparently contrary spheres of nature (“organisch”) and technology (“Konstruktion”) into a unity, is a way of expressing a movement towards the end of alienation.

Organische Konstruktion ist erst dann möglich, wenn der Mensch in hoher Einheit mit seinen Mitteln erscheint und wenn *der quälende Zwiespalt* berichtigt ist, der ihn heute, aus Gründen, die wir bereits untersuchten, diese Mittel als revolutionäre empfinden läßt. Erst dann löst sich die Spannung zwischen Natur und Zivilisation, zwischen organischer und mechanischer Welt, und erst dann kann von endgültiger, sowohl eigenartiger wie jedem historischen Maßstab ebenbürtiger Gestaltung die Rede sein. (216-217, emphasis added)

A strong nature/technology dichotomy is experienced as a rift and a form of alienation to be overcome. Just as the armored type needs the broader context of the diffuse *Gestalt* to be properly understood, the programmatic thrust of *Der Arbeiter* only really makes sense in light of the trajectory towards a state where technology is not experienced as exogenous to the body but rather as a natural part of it. To see either an antinomy or a value distinction between the organic and the mechanical is in fact a sign of the “weakened” bourgeois existence, transcending which is the project of *Der Arbeiter*.²⁴⁹ Far from the mechanical repression of organic and creaturely dimensions, such a dichotomy is in fact a symptom of the historical condition to be overcome: “Technik und Natur sind keine Gegensätze – werden sie so empfunden, so ist dies ein Zeichen dafür, daß das Leben nicht in Ordnung ist” (193). Jünger’s phrasing here is worth dwelling on.

249 “Dasselbe gilt für das Verhältnis, das zwischen dem Menschen und seinen Mitteln besteht, – schon in der Tatsache, daß dieses Verhältnis als gegensätzlich, als feindlich begriffen wird, verrät sich der Mangel an Totalität. Es ist diese wertmäßige Unterscheidung von mechanischer und organischer Welt eines der Kennzeichen der geschwächten Existenz, die den Angriffen eines Lebens unterliegen wird, das sich seinen Mitteln mit jener naiven Sicherheit verwachsen fühlt, mit der sich das Tier seiner Organe bedient” (227).

While the immediate significance of the final clause is that the perceived opposition between nature and technology indicates a fundamental discord that needs to be sorted out, the connotations go deeper. The conjunction of “Leben” and “Ordnung” in this context affects how we must understand the function of both life and order in *Der Arbeiter*. “Leben” marks the set of social arrangements and the particular historical shape of human society more generally, but it also needs to be read in the context of a vitalism that sees life not just in social or even biological terms, but as the fundamental generative force underlying all existence and change. Martin Lindner has shown how the conception of *Leben* that had broad appeal and influence from the late 19th through the early 20th century worked through a metaphoric of flows and liquid. The unformed, surging potential of a liquid state provides a metaphorical framework for change and becoming that casts any manifestation of form as a momentary solidification subject to dissolution and reformation. The forms come and go, but the underlying flow remains and drives these changes. And as we shall see in a moment, metaphors of fluidity are key to the teleological development in *Der Arbeiter*. “Ordnung,” on the other hand, is not just an indication that things are right, “in order,” but rather signifies the posthistorical, teleological stasis that is the goal of the development depicted in *Der Arbeiter*. *Ordnung* is the resolution of the dynamic chaos of the essay’s present in the fixed, reconciled, crystalline structure of its invoked future.

While chiasms can often be analytically cheap, I think one would be justified in seeing and establishing one here, since both *Leben* and *Ordnung* are determined by each other. Rather than being two terms that merely happen to fall into accord when a nature/technology dichotomy has been resolved (as in, now life happens to be in order), each term inflects the other to the extent that they become apparently synonymous for Jünger. *Leben* is an ordering principle, the ordering principle in *Der Arbeiter*, with the forms of development and relationality in the essay

determined by logics of growth, entelechy, and elemental forces. On the other hand, the conception of life Jünger draws on is one that necessitates certain kinds of order, such that the “natural” progress and triumph of the worker can be alternately teleological and cyclical, depending on the valences of the moment.

Life is order in *Der Arbeiter*, and this foundational copula both shapes the contours of the vision for an *Arbeiterstaat* beyond imbalance and alienation, and allows this vision to be depicted as a final stasis. The movement towards this stasis is consistently described as a “Verschmelzung der organischen und mechanischen Kräfte.”²⁵⁰ The fusion between organic and mechanical is meant to be absolute, a symbol of the totally altered world of the worker: “Der berühmte Unterschied zwischen Stadt und Land besteht heute nur noch im romantischen Raum; er ist ebenso ungültig wie der Unterschied zwischen organischer und mechanischer Welt” (160). And while the period of transition to a world where every human (and cosmic²⁵¹) activity falls under the sign of *Arbeit* is necessarily experienced as one of upheaval and rapid change, one problem with reading *Der Arbeiter* as a text that takes a certain understanding of its chaotic, uncertain social present (the Weimar era) and prescribes this understanding to a desired future, as Lethen does, is that such a reading does not account for the repeated insistence on the stasis to come. In other words, the value of *Verhaltenslehren* is not clear if the text’s vision is a world where these wouldn’t really be necessary.

Es gibt keinen triftigen Grund, der der Annahme entgegensteht, daß sich eines Tages eine Konstanz der Mittel ergeben wird. Eine solche Beständigkeit durch lange Zeiträume hindurch ist vielmehr die Regel, während das fieberhafte Tempo der Veränderung, in dem wir uns befinden, ohne *geschichtliches* Beispiel ist. Die Dauer dieser Art von

250 “Der Verlauf dieses Vorganges erfordert bei wachsender Perfektion der Mittel eine immer engere Verschmelzung der organischen und mechanischen Kräfte, – eine Verschmelzung, die wir als organische Konstruktion bezeichnen” (209).

251 “Arbeit ist das Tempo der Faust, der Gedanken, des Herzens, das Leben bei Tage und Nacht, die Wissenschaft, die Liebe, die Kunst, der Glaube, der Kultus, der Krieg; Arbeit ist die Schwingung des Atoms und die Kraft, die Sterne und Sonnensysteme bewegt.” (65)

Veränderlichkeit ist begrenzt, sei es, daß der ihr zugrunde liegende Wille zerbricht, sei es, daß er seine Ziele erreicht. Da wir solche Ziele zu sehen glauben, ist die Betrachtung der ersten Möglichkeit für uns bedeutungslos. [...] Wir wollen dies so ausdrücken, daß der Abschluß der Mobilisierungen der Welt durch die Gestalt des Arbeiters ein gestaltmäßiges Leben ermöglichen wird. (175)

The “totale Mobilmachung” envisioned by *Der Arbeiter* is supposed to come to an end in a state of constancy (“Beständigkeit”).²⁵² In accordance with the biological logic of this entelechical unfolding, the economic and social instability of capitalism and a liberal democracy in transition will be replaced by an economic, social, and political order that has more in common with metabolic movement and ecological processes:

Erst nach Erreichung eines Abschlusses kann, wie von Ordnung überhaupt, so auch von einer geordneten Ökonomie, das heißt von einem berechenbaren Verhältnis zwischen Ausgaben und Einnahmen, die Rede sein. Erst die unbedingte Konstanz der Mittel, gleichviel wie dies Mittel immer geartet seien, ist imstande, die maßlose und unberechenbare Konkurrenz zurückzuführen auf eine natürliche Konkurrenz, wie sie innerhalb der Naturreiche oder historisch gewordener Gesellschaftszustände zu beobachten ist.

Auch hier wiederum enthüllt sich die Einheit von organischer und mechanischer Welt; die Technik wird Organ und tritt als selbständige Macht zurück in demselben Maße, in dem sie an Perfektion und damit an Selbstverständlichkeit gewinnt.

Erst die Konstanz der Mittel ermöglicht auch die gesetzmäßige Regelung der Konkurrenz... (177-178)

Accompanying the attained stasis of a metabolic exchange is a spatialization of historical processes or, more precisely, the replacement of dynamic turmoil with an orderly spatial distribution: “In [der Perfektion der Technik] deutet sich an die Ablösung eines dynamischen und revolutionären Raumes durch einen statischen und höchst geordneten Raum. Es vollzieht sich also hier ein Übergang von der Veränderung zur Konstanz, – ein Übergang, der freilich sehr bedeutende Folgen zeitigen wird” (170-171).

This, then, is the vision of Jünger’s text. The armored contours and precise control of the

252 “Die Perfektion der Technik ist nichts anderes als eines der Kennzeichen für den Abschluß der Totalen Mobilmachung, in der wir begriffen sind. Sie vermag daher wohl das Leben auf eine höhere Stufe der Organisation zu erheben, nicht aber, wie der Fortschritt glaubte, auf eine höhere Stufe des Wertes” (170).

Typus Arbeiter announce the workings of a transhistorical *Gestalt*, the full realization of which will be a teleological fulfillment along the lines of biological entelechy, ending in a state where nature and technology, organ and machine, have become one and the turbulent dynamism of history is sublated in a rigidly ordered, static space. My reconstruction of *Der Arbeiter*'s trajectory is quite different from Lethen's, and it is worth considering the implications of this discrepancy. In order to marshal the figure of the worker as another example of the cold persona, Lethen needs to psychologize (as it were) the depsychologization of *Der Arbeiter* – the armored body of the worker needs to be a defense against the threat of ego dissolution in the face of the collapse of bourgeois norms and the technological onslaughts of the modern world. Armoring, typological distinctions, and clear perception are seen to work together to preserve a kind of solidity. This relationship can certainly be found in Jünger's text and it is an important component of his argument, but it is not the whole story. We have seen how, to stay on the level of metaphor and imagery, liquidity has a positive valence as well as a threatening side. While *Der Arbeiter* does describe bourgeois society as a morass,²⁵³ the key figure of "organische Konstruktion" is depicted as a *Verschmelzung*. Furthermore the category of danger, consistently given a positive valence in Jünger's work, is described in liquid terms, as a violent element that surges up from hidden springs and threatens to sweep away the levies of a repressive bourgeois order (48-49). And finally, the key image of electricity also works in a similar way to metaphors of liquid. While Lethen does grant the centrality of electricity for Jünger, it is only as a model of control between the individual worker and the center of power. In a similar fashion to the way he underplays the logic of *Verschmelzung*, when it comes to electricity Lethen explicitly brackets out the components of the metaphoric tied to vitalistic imagery and also elides how electricity

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functions as a model of collectivity for Jünger.²⁵⁴ Not just an image of the relationship between power and workers, the electric metaphor in *Der Arbeiter* link all workers in a rigid collectivity and must be seen as a counterpart to the metabolic regulation of the *Arbeiterstaat*. Incorporation and fusion, not armored divisions, are the endpoint of the text, and this profoundly alters the way in which Jünger's text can be said to engage with the tropes of the cold persona and instrumental body in particular, and the relationship between nature and technology more generally.

Shorn of this dimension, Jünger's text would be a very different one. Precisely those aspects of *Der Arbeiter* Lethen seeks to claim for the cold persona depend on the organic logic repressed by the cold persona. In particular, the text's frontal assault on bourgeois subjectivity and interiority work, as we have seen, not through a repression of the organic but by a totalization of an organic register. Moreover, the critique of a body/soul dualism, the hallmark of many early 20th-century afterlives of vitalism, monism, and *Lebensphilosophie*, parallels in *Der Arbeiter* the robust rejection of the distinction between the organic and mechanical.

Die Mittel der Zeit [i.e., modern technology] sind nicht Hindernisse, sondern Prüfsteine der Kraft, und der Umfang der Herrschaft wird durch das Maß gekennzeichnet, in dem der einheitliche Einsatz der Mittel gelingt. Ein solcher Einsatz ist nicht von dort zu erwarten, wo noch das Gefühl eines entscheidenden Gegensatzes zwischen mechanischer und organischer Welt besteht, in dem eine letzte Verflachung des alten Gegensatzes zwischen Körper und Seele zu erblicken ist. (225)

Just as the distinction between body and soul was seen as foundational to a bourgeois subjectivity that invested the nuanced traits of the individual in the soul, here Jünger ties the preservation of

254 "Den elektrischen Medien mißt Jünger einen besonderen Rang zu, sie besitzen die Qualität von Maschinen, die nicht wie die ältere Generation der technischen Geräte nur die Muskelkraft, sondern die Funktionen des Zentralnervensystems ersetzen. Neben diesen Eigenschaften, die Jünger der 'Elektrizität' abgewinnt, sieht er noch einen weiteren Grund, sie zur Zentralmetapher seines System-Denkens zu erheben: das Elektrizitäts-Netz untersteht der Verfügungsgewalt des Staates, der alle Anschlüsse kontrolliert und jeden Empfänger von Strom einem 'Energieverband' integriert. [...] Das Eindringen der Metaphern der Elektrizitätslehre in Philosophie und Literatur ist darauf zurückzuführen, daß in ihnen die unfaßbare Qualität des 'élan vital' zum Ausdruck gebracht werden kann. [...] Dieser lebensideologische Gedanke wird in Jüngers Konstruktion durchgestrichen; er setzt die Elektrizitätsmetapher nur ein, um den eindimensional-systemischen Charakter der Sozietät des 'Arbeiters' zu charakterisieren" (210-211).

an organic-mechanical dichotomy to an outmoded value system that pits them against each other and is thus unable to adequately grasp their radical integrations. Curiously, Lethen's [assertion of a] repression of the organic in *Der Arbeiter* reprises this move to suggest that the technological selves of workers must quash their creaturely nature in order to reject psychological interiority, while the depsychologization in *Der Arbeiter* does nearly the complete opposite. Jünger's text needs various organic and elemental logics to forward a new vision of subjectivity opposed to the bourgeois world, to sketch out a model for historical change and becoming, and to propose a historical trajectory that ends in the abolition of history in favor of a static natural order.

My use of Lethen in this chapter was not designed to single out a particular reading of Ernst Jünger's text but rather to consider the analytic pitfalls of importing a strong nature/technology dichotomy into our textual objects. In the context of Weimar culture, the risk is not just missing the substantial role of the organic in discourses of technology, and especially the important inheritances from *Lebensphilosophie*, monism, and contemporary biology, although this is a significant blind spot. More acute is the way that the repression of the organic can result in readings of Weimar culture as constituting a unified trajectory, either in a teleological (i.e., towards 1933 and fascism) or etiological way (i.e., against the background of WWI and the varied and at times nebulous traumas of industrialization, urbanization, modernization, collapse of the monarchy, etc.). The chief problem with reading *Der Arbeiter* as one behavior manual among others is not just that it may level the distinctions between it and very different texts of the period, but that it collapses the different features, functions, and modes of address of Jünger's essay.²⁵⁵ Lethen's reading of *Der Arbeiter*, in order to show that Jünger's text does in fact offer

²⁵⁵ Bühler has written compellingly and at length on the way that the authorial function in *Der Arbeiter* is a dual one, taking on the functions both of objective analysis (grounded in a privileged vision of the relationship between historical manifestation and deeper, hidden metaphysical truths on the one hand, and of propaganda and exhortation, on the other (281-285).

codes of conduct, needs to see it both as a straight depiction (rather than a stylized presentation) of its contemporary moment and as a kind of how-to guide (rather than a more mediated engagement with a future vision).

In Walter Serners *Handbrevier für Hochstapler*, Bert Brechts *Lesebuch für Städtebewohner* und Ernst Jüngers *Der Arbeiter* werden die extremen Bedingungen, unter denen sich zivilisationsfreundliche Verhaltenslehren im Kontext der Republik "verkörpern" sollten, sinnfällig. Sie demonstrieren, was geschieht, wenn sich Anthropologie mit der Logik des Extrems verschwistert. In dieser Literatur treffen wir auf eine persona, die in chronischen Alarmzustand versetzt ist. (12)

To view radically different texts, or any individual literary text for that matter, as a straightforward depiction of social "conditions" is a methodological leap that seems unwarranted. Literary texts are asked to be both unwitting reflections of the conditions their times, and extremely canny, deliberate sets of recommendations about how to deal with these objective conditions. The two demands are difficult to reconcile, since taken together they imply that the relationship between literature and history is both mediated and unmediated, savvy and naïve, reflective and prescriptive. It is Lethen's innovative and invaluable contribution to have identified and pursued the connections between disparate discourses of the time: by reading literature in conjunction with the new anthropological vision of thinkers such as Helmuth Plessner, Lethen is able to recover a key constellation in Weimar culture predicated upon, and in dialogue with, the natural artifice of the human (Plessner). Yet his readings of individual texts, including *Der Arbeiter*, often fall short of this contribution by implicitly positing a relationship between text and historical circumstance – rather than among texts and discourses – that needs the literary texts to serve as reflections of a turbulent age.

It seems instead that the only way to proceed is to view the *Zeitdiagnose* in *Der Arbeiter*, for example, as a mediated and motivated representation of its contemporary moment. We may

learn much from Jünger about a dynamic technological imaginary and how it relates to social formations such as the distinction between the type and the individual; it makes less sense to view Jünger's text as a window showing what technology, society, and individuals were *actually like* in the period. The problem with extrapolating codes of conduct from *Der Arbeiter* is one of methodological circularity, and Lethen's text gives the impression at key moments of being locked into a closed hermeneutic circuit. The cold persona accounts for textual features of *Neue Sachlichkeit* from Brecht's party strategy to Jünger's criticism of the bourgeois novel; these textual features, in turn, buttress the suggestive passel of characteristics that add up to the cold persona. The tendency towards schematism comes from the experience of "social disorganization" (10), yet culture and particularly literature is the space where configurations of the individual and social body are worked out, modified, projected, and revised. The exact argument is difficult to pin down; at moments there is a methodologically suggestive interplay between society and literature, but the prevailing impression is that the two spheres each have an exclusive causality over the other.

To open up this interpretive loop would mean rehistoricizing Jünger's text within its constituent discourses, on the one hand, and attending more closely to the interplay of the various logics, metaphors, discourses, and registers in *Der Arbeiter*, on the other. Rather than ask how the text generates a prescriptive response to a (curiously abstracted) historical situation, we must explore how the text imagines and projects a future from the representation of a present itself already coded in terms of a particular relationship between bodies, organs, machines, types, and individuals. Doing so will better allow us to parse the commonalities and differences amongst the ways the different texts of the period challenged, advanced, and complicated tropes of the technological body. This in turn will add to our understanding of the specificity of a given text,

and lay the groundwork for interrogating its politics.²⁵⁶

In the case of *Der Arbeiter* that would mean asking, for one, what type of type the text presents us with. While Jünger and Döblin make for an improbable pair, the immediate similarities between *Der Arbeiter* and key aspects of Döblin's work in the 1920s are instructive. Like *Der Arbeiter*, Döblin's texts *Berge Meere und Giganten*, *Das Ich über der Natur*, "Der Geist des naturalistischen Zeitalters," and "Von Gesichtern, Bildern und ihrer Wahrheit" present us with bodies that integrate mechanical and organic elements in order to undermine the bodily and spiritual autonomy of the 19th century individual bourgeois subject in favor of a logic of typification. And while Lethen does not discuss Döblin in much detail, one could certainly draw on novels such as *Wadzeks Kampf mit der Dampfturbine*, *Berge Meere und Giganten*, and especially *Berlin Alexanderplatz* to add to the list of traits and behavioral codes that make up the cold persona – in a sense, this is testimony to the persuasiveness of Lethen's narrative.

Yet the differences between Jünger and Döblin are also crucial to an understanding of the variety of strategies of typification available to critique the perceived failings of bourgeois subjectivity in Weimar culture. While both authors present bodies that integrate organic and technological elements in a way that undercuts a simplistic notion of the armored body, their topological strategies for doing so diverge in important ways. *Berge Meere und Giganten* presents an ecologically dispersed body that is integrated with its environment. Because the bounds of individual bodies are constantly rupturing and being reconstituted, organic growth does not seem so much entelechical as blindly productive and recombinatory. The spatial figures at play are rupture, combination, and molecular interpenetration. The body of Jünger's worker, on the other hand, incorporates technology as its own body part, and is in turn integrated into the

²⁵⁶ One curious result of Lethen's project, itself coming from a strong political impulse, is that the politics of all his textual objects become strangely and passively reactive/reactionary.

larger collective according to a logic of electrical flows, but it does not seem dependent on the same logic of intestinal or arterial flows that mark *Berge Meere und Giganten* and *Das Ich über der Natur*. In a more abstract way, it makes a key difference that the guiding metaphor for the relationship between individual and collective is electricity in Jünger, and water in Döblin. Compared to electricity's strong force of integration and orientation, the valence of water for Döblin is that it is amorphous and apparently infinitely divisible. This difference in turn results in (or from?) their contrasting assessments of the mass. Where Döblin uses the type and the mass together (and at times interchangeably) to undercut the isolation and sovereignty of the individual, Jünger explicitly opposes the type to the mass. The latter is the form of aggregation proper to the bourgeois individual, while the former is associated with the rigid collectivity of workers that augurs the end of the amorphous liberal era.

This difference has important implications, not least of which would be a reassessment of their physiognomic interventions into photographic theory, as discussed in the previous chapter. In the present context it is more useful to consider how *Der Arbeiter* and *Berge Meere und Giganten* each offer a narrative closure that suggests the end of history, since this question more directly bears on the political visions at play in these texts. As we have seen, *Der Arbeiter* draws on a logic of biological entelechy to present a teleological narrative ending in a future vision of a static order beyond alienation. *Berge Meere und Giganten* also ends with a reconciliation of sorts after the collapse of technocratic city-states and a repressive hierarchical political order. The communes that result at the end of the novel evince, as Hannelore Qual has convincingly argued, an ecologically and politically utopian vision influenced by the anarchist thought of Pyotr Kropotkin and Gustav Landauer.²⁵⁷ Both texts end after exploding the categorical distinction

²⁵⁷ Qual, Hannelore. *Natur und Utopie: Weltanschauung und Gesellschaftsbild in Alfred Döblins Roman "Berge, Meere und Giganten."* Munich: Iudicium, 1992.

between nature and technology in a vision of a future society that has resolved what are seen to be the fundamental tensions of the present moment.

It is safe to say that the similarities end there. The fundamental differences in the ways that each text constructs a particular relationship between body and technology, type, mass, and individual also guide their visions of the future and, more broadly, their versions of narrative closure. The anti-hierarchical, ecological, and plural communes resulting at the end of Döblin's novel contrast sharply to the unified, total, and rigid order that shimmers forth as the fantasy projection of Jünger's essay. But beyond these important differences in the specific contours of each text's political, social vision, the sense of an ending in general differs from text to text.

Where the strong teleology of Jünger's text suggests an absolute closure beyond change, intention, or intervention, the messier history of Döblin's epic yields a narrative world that still feels open to change and renewal, for better or worse. This is not to say that the final passage of *Berge Meere und Giganten* does not evoke some sense of naturalized stasis, but this stasis draws its associative force from a cyclical logic of change and repetition. The end of *Der Arbeiter*, by contrast, signals a final fulfillment precisely because of the importance of a linear entelechical development that leaves this future as the only possible future.

A comparison of two exemplary texts such as these can help enhance features that may be seen as paradigmatic. Given the differences between them, it seems sensible to imagine that the fascist dimension of Jünger's text is not located so much in the psychologically motivated armoring of the individual subject as in the absolute and rigid stasis identified as the end of historical development.²⁵⁸ This in turn comes about not through an embrace of technology in

²⁵⁸ In his analysis of "Nazi time," Eric Michaud has identified in Nazi thought a similar desire for a posthistorical stasis in explicit conjunction with *Der Arbeiter*. For the Nazis as for Jünger, work conceived as a metaphysical and aesthetic project was supposed to effect a change from dynamic movement to static order. Yet in addition to the fact of different guiding discourses – biological entelechy for *Der Arbeiter*, Christ-like eschatology for

opposition to the perceived features of an outmoded bourgeois world, since such a move formed the background to much theoretical and cultural production in the Weimar years. Rather, it is in the precise nature of the organic, biological logic that Jünger adapts and constructs that we must locate the enabling gestures of his vision of a rigid, fascist stasis. If strong dichotomies between nature and technology, organic and mechanical hinder rather than help a nuanced understanding of *Der Arbeiter*, *Berge Meere und Giganten*, or other texts of the time, this is because the relationship between these two realms was more complex – and more interesting – than one of simple opposition. What we see in the case of these texts is rather a relationship of co-construction, whereby technology was not theorized in opposition to nature – either as its repression or liberation from it – but was itself imagined as a natural force that took on the behaviors, registers, and logics of the organic world. Yet as the comparison between Döblin and Jünger makes clear, this is still a large arena: the figure of the organic machine, in itself, does not entail a definitive social vision, philosophical stance, or political project. It is perhaps a testimony to both the utility and flexibility (or slipperiness) of these metaphors, registers, and discourses that *Der Arbeiter* arrives at such a different ending than *Berge Meere und Giganten* from starting points that were, all things considered, fairly similar. *Der Arbeiter*'s rejection of the bourgeois world, with its attendant dichotomies between body and soul, nature and technology, interior and exterior, issues in the vision of a fixed, frozen stasis beyond history. Ultimately, the unresolved metaphorical tensions in Jünger's text may also mean that this stasis is beyond nature as well.

National Socialism – the temporal aspirations of the Nazis were, in Michaud's account, continually frustrated by the tension between the assurance that salvation had arrived with the *Machtergreifung* on the one hand, and the promise that it was still to come, on the other. This dynamic is also inflected by Jünger's text, in my opinion, in the unsettled relationship between the descriptions of the present age as the age of the worker and the text's performative mode that seeks to bring the new man into being. Yet Jünger's text seems to contain no analogue to the dynamic of self-surpassing analyzed by Michaud, which continually frustrated the Nazi desire for (or claims of) the full realization of a pure present (181-219).

CODA

In this dissertation, I have shown how key texts of Weimar culture used the figure of the instrumental human body to interrogate the relationship between nature and technology and thereby undermine strong conceptual dichotomies between these two spheres, as well as related dualisms such as organic and mechanical, mind and matter, and self and world. By attending to the particular logics, discursive reconfigurations, representational strategies, and metaphors of the works that comprise this study, I have sought to recover the insistent presence of the biological, the organic, and the natural in cultural narratives about technology during this period. The dense interweave of discourses, disciplines, and registers that characterizes these narratives can be understood in the terms Döblin used in *Das Ich über der Natur* to describe the boundary-defying relationship among physical bodies and even matter as such: as an “Aneinanderhaften,” a “Verzahnung” and a “Verhakung.” This applies to the physical, conceptual, and poetological delineations of the imagined individual body, to the conceptual spheres of nature and technology, and to the relationship among disparate discourses.

In this way, the intense conceptual and figurative cross-pollination of various discourses and registers was related to the period’s emphatic interdisciplinarity. Thus Plessner could bring the latest findings in experimental biology to bear on the question of human subjectivity in the wake of German Idealism and *Lebensphilosophie*; thus Döblin was able to formulate novel narrative approaches to perception, experience, and subjectivity in part by drawing on monism and the topological strategies opened by a vitalist notion of unlimited growth; thus Renger-Patzsch, Brecht, Benjamin, and Kracauer could formulate questions about the relationship among perceptual habits, mass media, and representation per se, questions posed of photographic praxis

in particular and the relationship among art, society, and politics in general; and thus Jünger shaped his vision of a historical fulfillment as natural history by way of a neovitalist theory of entelechy and a set of metaphors derived from elemental, biological, and geological registers.

Reading the cultural narratives of technology from the 1920s with an eye for the pervasive presence of nature, biology, and the organic is therefore crucial, not simply in order to reconstruct Weimar technological imaginaries on their own terms, but also and especially to map the ways in which theorizations of a contemporary moment deployed the human body and the human being in a variety of ways in dialogue with a wide array of available discourses and disciplines. This approach can help interrupt the sense of crisis and teleology that often informs accounts of the period, precisely in order to reconsider how the Weimar Republic's status as "laboratory for modernity"²⁵⁹ allowed for foundational questions about the human, subjectivity, art, and society to be posed in novel and interdisciplinary ways that drew on and recombined cultural, philosophical, and scientific traditions with roots stretching back to the Enlightenment.

The breadth of this vista is warranted by the material, yet it also raises more questions than it answers. For one, the vexed status of "modernity" in the works I consider is more reflected in this project than it is properly mediated. In part this is due to the limitations and scope of this study, yet in part it also attests to the complex relationship of the texts I consider to the idea of modernity. Speaking provisionally, modernity seems to play three primary roles for these texts and figures. It is, first of all, the general historical context beginning roughly with the European Enlightenment and associated with the rise of the bourgeois subject, modern empirical science, and the 19th-century experiences of industrialization, urbanization, and colonialism. In this broad sense it provided a historical and cultural background for the creative reworkings of

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nature and technology analyzed in the chapters above. Secondly, modernity appears as an experience of the acceleration of the present, often associated with technology and the city. And thirdly, modernity takes place as a self-reflective dialogue about this experience of change and its cultural, philosophical, social, and political implications: as the modern stories moderns tell about the experience of being modern. Within this provisional and admittedly circular framework, it is the third aspect that is of interest here. The cultural narratives about technology explored above provided a way for intellectuals to formulate the contours and stakes of their present moment, yet not, as is often assumed, by playing technology against nature or moving from the domain of the organic to an embrace of the mechanical, but in far more nuanced ways that involved technology and nature, nature as technology, and technology as nature. Further analysis of the interdisciplinary contours of these narratives would help to mediate between the various roles played by ideas of modernity as historical context, contemporary experience, and self-reflexive dialogue.

Other threads remain to be more fully teased out and followed up in future research. The insistent presence of biology in these cultural texts was a surprise, for example, and made for a nice disciplinary correlate to the metaphorical recurrence of the organic. In this vein, it would be instructive to further consider how the personal and institutional connections of the period's intellectual history shaped (and were shaped by) disciplinary borrowings between culture and the natural sciences and metaphorical borrowings between organic and technological registers, for example. The figure of the creature could be another potential way into this question, in its linkage of biology and theology.

The role of Marx and Marxism also deserves more attention. I have here argued for a primarily methodological importance of Marx, as demonstrating the conceptual interdependence

of ideas of nature and technology and the problem with isolating technology as a unit of analysis. Yet Marx also suggests a historical and a philosophical utility for interpretations of Weimar culture. Historically, any reading of cultural narratives of technology in a period that saw the origins of Frankfurt School critical theory would do well to consider the contemporary reception of Marx; to some degree all the figures in this study were variously influenced by the legacy of Marxism, from Brecht and Benjamin's critique of Renger-Patzsch's photographic commodification of reality to Jünger's depiction of the Soviet Union in *Der Arbeiter*. On the philosophical level, the sustained grappling with dualities and dichotomies in the texts I examine – from Plessner's meticulously-derived positionality of the human subject to Döblin's refusal of not just subjective individuation but of the individual ontological unit as such – suggests the robust persistence of a dialectical mode. The way that Marx's presentation in *Das Kapital* continuously moves through various manifestations of value and their necessary subversions and correctives in the course of the encounter with the object, and the way that this dialectical presentation is intricately related to the fundamental relationality of the terms and concepts he unfolds, could provide further insight for understanding the relationship between Döblin's contour-disrupting monism and his various challenges to bourgeois interiority, or between Plessner's immanent unfolding of Cartesian dualism and his idea of the "natural artificiality" of the human. Speaking generally, it seems that there is a way in which these Weimar texts are retheorizing the relationship between nature and technology not just on the metaphorical level, but also by exploring deeper structures of relationality between subject and object. Marx, as well as Hegel, could provide a theoretical and historical framework for closer consideration of the stakes of these cultural narratives.

Finally, in a project on the roles of the human body in cultural narratives of technology,

questions of gender deserve more attention than could be given here. The fact that the topic of gender appears sidelined to the odd footnote or unpursued tangent in the above chapters has its reasons. For one, the interrogations of the relationship between nature and technology I consider tend to be situated on a level that frustrates focus on the individual body. From Döblin's molecular exploration of the relationship between particle and mass and his agglomeration of human, plant, and animal bodies to Plessner's positional anthropology that derives its terms from the perceptible thing to Jünger's electrified collective, the bodies of this study disallow an assessment of the role of gender in places one has traditionally pursued it: feminized nature, the armored male ego, the dissolute and feminized masses, the vamp in the machine, the conquest of nature by technology. In a sense, the approach I have taken – tracking how key texts undo conceptual dichotomies centered on the human body – also forecloses many of the productive ways in which critics have accessed the relationship among gender, technology, and the human in Weimar culture. Which is certainly not to say that gender is absent from the texts that comprise this study, just that it seems to function according to more diffuse and less certain codes. The potentiality of nature in Döblin, for example, certainly seems feminine at times (the character of Venaska would be a crown witness for this idea), yet at other times, for example in his invocation of “Das Tausendnamige” in the dedication to *Berge Meere und Giganten* or in the related “Ich” that permeates nature in *Das Ich über der Natur*, it would seem to be a force of generation and inchoate potential that is depicted as more neuter than anything else. Be that as it may, questions of gender will be necessary to further situate cultural narratives concerning the instrumental body and the organic machine within dominant readings of Weimar culture.

The instrumental body and the organic machine allowed contemporary figures to probe the relationship between nature and technology, literally incorporating the organic and the

mechanical in order to advance self-consciously modern challenges to inherited aesthetics, theories of perception, and notions of subjectivity predicated on the primacy of the autonomous, self-contained bourgeois individual. Exploring these tropes uncovers both tensions and confluences in the thought and cultural production of the period, and also indicates the problem with reading dichotomies into this culture in order to identify paradoxes that may well not have been paradoxes at all, but rather newly available options for theorizing and representing the present. The presence of these tropes in various cultural narratives about technology suggests the particularly prominent role played by ideas about anthropology, embodiment, behavior, spatiality, and positionality in the period's radical reconfigurations of inherited discourses. Bodies in complexly positional and dynamic relation to each other served to model alternative ideas of subjectivity and collectivity, and the fluid play of their contours was often coterminous with conceptualizations of the present moment. What the instrumental body and organic machine ultimately show is the inescapably central and formative presence, within a fully technological age, of the idea of nature.

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