

'I HEARD BEAUTY DYING': THE CULTURAL CRITIQUE
OF PLASTIC IN *GRAVITY'S RAINBOW*

A Thesis

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ABSTRACT

This essay attempts to get a grasp on Pynchon's 700-plus page omnibus, *Gravity's Rainbow*, by focusing on the development of a single motif in the novel: plastic. It argues that Pynchon takes 1960s and 1970s critiques of supply-driven consumer capitalism, of which plastic was a visible emblem, and makes them more emphatic by placing them into a fictionalized version of the prewar years and the 1940s. Looking backwards, and employing a creative license that allows him to attribute the rise of plastics technology and consumer capitalism to purposely evil entities (like his fictional versions of real-life corporations IG Farben and Shell Oil), Pynchon is able to deliver a narrative that locates the roots of contemporary problems in the technological and business innovations of the World War II era. In *Gravity's Rainbow*, as in early-'70s America, plastic comes to signify for a suite of negative meanings, from environmental degradation, to an exploitative economic order, to a sadistic psychology in which the desire to achieve immortality results in the destruction and perversion of life itself. The essay is divided into three sections. The first uses a cultural history of plastic to identify popular cultural attitudes towards plastic and locate them in Pynchon's text. The second turns towards a closer reading of *Gravity's Rainbow*, examining the character Greta Erdmann and her relationship to plastic. The final section considers a second character, Tyrone Slothrop, and concludes that Pynchon's critique of plastic ends on a pessimistic note, positing only a limited possibility for meaningful resistance towards plastic and the material and psychological economies that it represents.

BIOGRAPHICAL SKETCH

Katherine Sharpe was born in 1979 in suburban Northern Virginia. She graduated from Reed College in Portland, Oregon, which she attended from 1997 to 2001, majoring in English. At Reed, she concentrated on literary theory, including theories of autobiography, and the twentieth century novel. She completed a senior thesis on Salman Rushdie's *Midnight's Children*. She attended Cornell from 2003 to 2005, as a graduate student in the department of English, completing coursework in English and also in the department of Science and Technology Studies. Much of her work was united by a focus on the construction of the self, particularly in discourses of depression and its pharmacological treatment. In addition to her studies at Cornell, she has worked as a journalist and editor. She conceived, edits and runs the short-short nonfiction journal *400 Words*. She continues to live, write, and think in New York City.

For my father

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CHAPTER 1

AMERICAN PLASTIC, PYNCHONIAN PLASTIC

In the early 1930s, chemists at IG Farben stumbled upon a laboratory curiosity. They would amuse visitors by converting isobutylene, a petrochemical, to a liquid at dry-ice temperature, and then adding a few drops of boron trifluoride, a powerful catalyst for polymerization. As soon as the drops hit the surface of the liquid, there would be a noiseless explosion and a white, rubbery snowball would form and bulge spectacularly over the edge of the glass. However, the Germans could find no way of vulcanizing the substance. Some years later, Americans learned that the addition of butadiene—a plentiful, inexpensive gas—would remedy this shortcoming. The resulting butyl rubber is strong, elastic and so impermeable to air that it serves especially well for inner tubes, tubeless tires and similar products...

—Herman F. Mark, *Giant Molecules*, p 129

Someone said ‘butadiene,’ and I heard beauty dying...

—*Gravity’s Rainbow*, p 487

Introduction

In 1976, Gore Vidal lamented in the *New York Review of Books* that American fiction had become too much a product of “academic bureaucracy,” too little concerned with real life. Vidal accused the new fiction of being over-theorized and over-intellectualized, while lacking aesthetic merit. He specifically cited Thomas Pynchon’s work, including the 1973 novel *Gravity’s Rainbow*. Vidal finds Pynchon’s writing to be—in a word—“plastic.” The word is meant as a derogation; to describe what he means when he calls new fiction plastic, Vidal cites from Roland Barthes’s *Mythologies*. There, Barthes describes plastic as “something powerless ever

to achieve the triumphant smoothness of nature.” The hues of plastic, Barthes says, are garish, and its tell-tale sound “at once hollow and flat.” Vidal seems to envision works of new fiction rolling off university assembly lines like so many plastic gimcracks emerging from industrial thermosetters. He disparages fictions like *Gravity’s Rainbow* as lurid, interchangeable, not built to last, and seldom resembling anything found in nature. With respect to *Gravity’s Rainbow*, Vidal is not inaccurate in pointing out Pynchon’s “ambition to be a god of creation,” and the novel’s rejection of realism (even as it incorporates mountains of fact). Vidal’s choice of metaphors is inapt in one extremely important way, however: on a more attentive reading of the novel, Vidal might have discovered in Pynchon’s text one of the most ardent and multifaceted critiques of plastic ever mounted.

This thesis will analyze the meanings of plastic within *Gravity’s Rainbow* by relating the treatment of plastic inside the novel to popular discourses about plastic that were current both at the time of the novel’s composition—in the late ‘60s and early ‘70s—and during the wartime ‘40s in which the novel is set. I shall rely at first on a work of cultural history by Jeffrey Mickle—whose title, *American Plastic*, is taken from the title of Vidal’s 1976 *New York Review* piece—to describe these discourses. Much of what *Gravity’s Rainbow* has to say, explicitly and implicitly, about plastic can be seen to draw from, incorporate, and comment on the public discourses that Mickle outlines. Viewed in this light, *Gravity’s Rainbow* can be read as a critique of a group of attitudes that Mickle has termed “plastic utopianism”—attitudes espoused by plastic’s early inventors and marketers and adopted by some of its early consumers during the 1920s

and '30s (Miekle 68). To demonstrate how Pynchon's critique of plastic takes shape within the novel, I will turn to the character of Greta Erdmann, who personally embodies the links among plastic, sexuality, fascism, and consumption that form the basis for the critical stance towards plastic in *Gravity's Rainbow*. I will conclude with a briefer look into the character of Tyrone Slothrop, the novel's protagonist, whose relationship to plastic illustrates the profound metaphorical and literal links between plastic and a corporate military-industrial complex which arose prior to World War II, and continued to exercise a broad and malevolent power in the decades thereafter.

Pynchon's novel is rife with references to plastic and the science of plastics production. Given the length and density of *Gravity's Rainbow*, and what many observers (including the 1974 Pulitzer Prize board) have regarded as its refractoriness to interpretation, there exist a dizzying number of possible ways to read the novel. My method of getting purchase on *Gravity's Rainbow* has been to pick one motif and follow its thread throughout the work. In the process, I have convinced myself that plastic is central to *Gravity's Rainbow* and that a careful reading of plastic's role in the novel provides a lens through which one can see to the heart of Pynchon's project.

Although plastic is not as specific as some of *Gravity's Rainbow's* other motifs—for example, the German V-2 rocket—the novel can effectively be understood as American Lieutenant Tyrone Slothrop's quest to discover the identity of mystery stimulus X, which Slothrop believes holds the key to the fact that he has begun to experience penile erections every time a German rocket-bomb hits London. The stimulus turns out to

be Imipolex G, a plastic invented by Nazi chemist Laszlo Jamf, who—Slothrop learns—decamped to America years before the War, where he personally trained Infant Tyrone to have his particular conditioned response in the presence of the stimulus. Jamf carried out this enterprise for his employer, the IG Farben Company of Germany. IG Farben is a real company, and its involvement in both the invention and development of plastic and the furtherance of the Nazi war effort are well-documented.

Throughout *Gravity's Rainbow* Pynchon includes, in Thomas Moore's words, "various orders of fact and fantasy surrounding the history of the IG Farben cartel" in order, partly, to dramatize the literal and metaphorical connections between plastics technology and multi-national corporate capitalism run amok (37). To talk about Farben is to talk about plastic, in *Gravity's Rainbow*, and to talk about either is to grapple with Nazism and Nazi psychology. It is also, more broadly, to talk about Thanatos and Eros, death and sex. Pynchon presents both plastic and the self-perpetuating "Weberian bureaucracy" of IG Farben and its subsidiaries as forms of death performing a mere "impersonation of life" (Moore 137; *GR* 166). Plastic, and its corporate inventors and advocates, bespeaks a doomed and unwholesome desire to achieve immortality by transcending death, or by achieving "a form of death that could be demonstrated to hold joy and defiance" (*GR* 579). It is in service of this urge that another of the book's major characters, Captain Blicero, performs the climactic action of the novel when he seals his young lover Gottfried into a German rocket bearing serial number 00000 and fires him off into the air, wrapped in a specially designed Imipolex plastic shroud. This episode points up a further association that plastic carries within *Gravity's*

Rainbow—its connection with sadomasochistic sex. Pynchon’s treatment of sexuality, and S&M in particular, is complicated enough to warrant a volume all to itself. With respect to the topic of this paper, Pynchon seems to imply that sadistic and masochistic sexualities bring into play the same drives towards transcendence that are activated by plastic.

‘American Plastic’ and the World of Gravity’s Rainbow

The word plastic refers to a set of compounds synthesized from hydrocarbons obtained from coal or petroleum. Plastics are polymers, or long chains of repeating molecules bonded to one another; each molecule of a polymer is called a monomer. Though there are a few polymers that appear in nature (amber is one of them; so is cellulose, the main ingredient in the earliest man-made plastic, celluloid) and can be considered ‘natural plastics,’ and though there are also “biopolymers” essential to living systems, including carbohydrates, proteins, and lipids, for the purposes of this paper “plastics” means synthetic polymers only. Plastics are organic compounds, meaning that they consist primarily of carbon and hydrogen. They are malleable, capable of being pressed, pulled and molded into any shape imaginable, and also durable, degrading extremely slowly. The study of plastics falls under the heading of organic chemistry—the study of carbon- and hydrogen-based compounds. Organic chemistry differs from inorganic chemistry in that chemical structure is of vital importance. In inorganic chemistry, a molecule can be described simply by listing how many of which kinds of atoms compose it; in organic chemistry, it is necessary to understand how the atoms and atomic bonds are arranged

within the molecule. The concept of chemical structure was grasped by Freidrich August Kekulé in the 1850s; an 1865 paper by Kekulé describing the chemical structure of the benzene molecule, helped to set the fairly new discipline of organic chemistry on its feet—as did the discovery that coal and petroleum, which are composed mainly of hydrocarbons, could be broken down into raw materials to serve as building blocks for the synthesis of new organic compounds. The twentieth century saw the synthesis of a number of types of novel organic compounds, including plastics, synthetic dyes, and certain types of drugs. The first synthetic polymer, Bakelite, was invented in 1907; it was made from phenol—which is derived from benzene, which in turn is derived from coal and/or petroleum—and formaldehyde. As the petrochemical industry matured, Bakelite was followed by many other types of plastic including polystyrene, polyvinyl chloride, and nylon, which poured out of corporate labs on both sides of the Atlantic during the immediate prewar years.

Pynchon writes from the 1970s, by which time public opinion had in many ways largely soured on plastic, although plastic had also by that time become a ubiquitous presence in modern life. Pynchon's position is that of a disillusioned observer who is able to identify, from the vantage point of the 1970s, the World War II era as the time from which plastic had, as Miekle notes, “emerge[d] as a major presence in American material life,” and to criticize the circumstances and consequences of that emergence (125). Plastic had long had its detractors, but by the 1970s, significant numbers of people had come to see plastic as both a symbol and an instance of several negative trends whose relations to plastic were gradually becoming visible—environmental degradation, corporate

domination, and postwar *anomie* are all examples. Thus, the critique of plastic in *Gravity's Rainbow* should be situated in the context of the popular view that plastic had “accelerated larger processes that society recognized as out of control only long after having become dependent on the comfort and convenience of plastic” (Miekle 180). Pynchon is far-reaching and masterful in his illustration of plastic's interrelations, both literal and metaphorical, with a variety of ‘larger processes’ that are found to be cause for alarm.

In *American Plastic*, Miekle traces public opinion regarding plastics from their first appearances as celluloid and Bakelite during the last century, up through the 1980s. He mentions at least five common attitudes towards plastic—all of which find expression somewhere in *Gravity's Rainbow*. Most of these attitudes have all been present from plastic's first appearances, though some are notably more or less prevalent at some times than others. ‘Plastic utopianism’ has already been named. Most strongly associated with the 1930s-1950s, plastic utopianism consisted of the view that plastics, as miraculous modern products of the chemical industry, would revolutionize society for the better by ushering in an era of unprecedented human comfort and material prosperity. A typical expression of this kind of thought can be found in the 1966 Time-Life Science Library book *Giant Molecules*. The book's author, Herman F. Mark, had been an eminent IG Farben chemist in Germany during the '20s. Mark, who was Jewish, emigrated before World War II to the United States, where he joined the faculty of the Polytechnic Institute of Brooklyn. Explaining organic chemistry for a popular audience, Mark gushes:

The effects of polymer chemistry and the mass production of synthetics have changed the world. Everything from surgery to space travel utilizes plastics...And just over the horizon are inexpensive houses molded in a matter of hours, plastic parts of the body to replace those which are diseased...perhaps entire cities encased in giant plastic envelopes.

(Mark 15)

Within Pynchon's novel, the plastic-utopian point of view is voiced by Farben man Laszlo Jamf, Captain Blicero, and their corporate and military brethren. However, in *Gravity's Rainbow*, plastic utopianism appears with one important twist: Jamf and Blicero are Nazis, and the improved-upon world that they expect organic chemistry to usher in is a distinctly fascist one. Jamf's student Franz Pökler "and evidently quite a few others" dream of a world like the one depicted in Fritz Lang's *Metropolis*: "a Corporate City-state where technology was the source of power, the engineer worked closely with the administrator, the masses labored unseen far underground, and ultimate power lay with a single leader at the top" (578). The new plastic technology, they believed, would take them there; Pynchon's narrator describes Jamf as a proponent of "National Socialist Chemistry," (578) and the scientist urges his students, thus:

'You have two choices...stay behind with carbon and hydrogen, take your lunch bucket into the works every morning with the faceless droves who can't wait to get in out of the sunlight—or move *beyond*... move beyond life, toward the inorganic. Here is no frailty, no mortality—here is Strength, and the Timeless.'

(GR 580)

Jamf wants to transcend life itself and attain a form of death that is triumphant and manly ("nothing of...self-deluding, mature acceptance,

relatives in the parlor”); this is the utopian promise that plastic holds for him (579-80). Jamf and those of his ilk invest “plasticity’s virtuous triad of Strength, Stability and Whiteness” with a moral significance; as the narrator notes, these scientific ideals were interchangeable with “Nazi graffiti” (250). During wartime and the years that followed it, American people would have been familiar with scientists and corporate authorities in their own country boldly claiming that plastic would improve and extend a distinctly American way of life. Pynchon satirizes these claims by putting them into the mouths of Nazis who believe that plastic, by its very nature, is favorable to their own ideals. *Gravity’s Rainbow* recapitulates the plastic utopianism of plastic’s early days in the United States, but the distinctly fascist twist that Pynchon places on it calls the gung-ho, patriotic optimism of the position sharply into question.

Closely related to plastic utopianism is the conviction, frequently voiced during the 1930s, ‘40s, and ‘50s, that plastic represents a triumphant form of control over nature. Herman Mark again provides a representative quote: as polymer chemistry matured, “first came the alteration of the giant molecules of nature, then the creation of polymers that were entirely man-made, next the production of molecules to order—and eventually, perhaps, will come the synthesis of substances that are unquestionably alive” (Mark 57). Perhaps it is in light of claims like these that one ought to read the puzzling assertion in *Gravity’s Rainbow* that Imipolex G is the first plastic that is actually erectile, capable of the life-like feat of responding to electrical stimuli. It was common once for chemists to boast that they could design a completely original material to fit specifications. In Mark’s words, “the chemist became a kind of architect;

he could...design the molecule to incorporate the properties he wanted it to have before he ever began to create it" (Mark 15). Recalling these claims right down to the language of their phrasing, Pynchon's narrator rehearses "[p]lasticity's central canon: that chemists were no longer to be at the mercy of Nature. They could decide now what properties they wanted a molecule to have, and go ahead and build it" (249). The V-2 rocket, a technology associated with plastic (because plastic was used as an insulating material in rockets, because the fictional rocket-object the Schwarzgerät is made of plastic, and also because the production of both rockets and plastics was undertaken by IG Farben), is described as "an entire system *won*, away from the feminine darkness, held against the entropies of lovable but scatterbrained Mother Nature" (324, Pynchon's ellipsis). Again, in *Gravity's Rainbow* the characters who most cherish the disruption of nature promised by plastic are characters affiliated with IG Farben and the Nazi party. It is no coincidence that Captain Blicero, who dreams of sacrificing his young lover, Gottfried, in a way that might immortalize their love by transcending the inter-generational "cycle of infection and death," contrives to do so by firing Gottfried into the air in a rocket, after wrapping the boy in a shroud of Imipolex plastic. Plastic, a possibly living thing, created by men without the mediation of women and in apparent defiance of "Mother Nature," provides the grand finale to a love affair between a man and a boy. Again, Pynchon takes a well-known popular trope—the idea that plastic technology might re-arrange the rules of nature by allowing chemists to create molecules 'made to order,' and places a spin on it that many early proponents of plastic might have found disturbing.

Pynchon takes the idea that plastic represents a new threshold of control over nature, and brings out a dark side of this promise: he uses metaphors that call attention to the disruption of the life cycle—a very ‘60s ideal to counter ‘40s optimism about overcoming nature’s limits. Scholar Thomas Schaub writes that by the early 1970s, environmentalist writers like Rachel Carson, Barry Commoner and others had “helped create the cultural cachet of the ‘circle’ and the ‘cycle’” as ways to conceive of life and of the natural world (Schaub 65). Circles and cycles were opposed to “the horrible epithet ‘linear,’” and “in the 1960s the material symbol of man-made linear events” was (‘natch,’ as Slothrop might say) “plastic” (Schaub 65). In *Gravity’s Rainbow*, plastic’s non-reversible violation of the natural order appears as a frightening prospect, and the pretensions of the characters who equate plastics technology with immortality are revealed as grandiose misapprehensions that endanger all life on Earth.

Another attitude towards plastic that Miekle mentions is the tendency to see the material as tacky and banal—a shoddy substitute for ‘real’ materials. A passage near the end of the novel deserves consideration in light of this third meaning of plastic. In it, Pynchon sets up people with corporate and military power—“the coal-tar Kabbalists of the other side”—against

the rest of us, not chosen for enlightenment, who must go on
blundering inside our front-brain faith in Kute
Korrespondences...kicking endlessly among the plastic trivia,
finding in each Deeper Significance and trying to string them all
together like terms of a power series...plastic saxophone *sounds of
unnatural timbre*, Cracker Jack prize *one-shot amusement*, home
appliance casing *fairing for winds of cognition*, baby bottles
tranquilization, meat packages *disguise of slaughter*, dry-cleaning
bags *infant strangulation*, garden hoses *feeding endlessly the*

desert...but to bring them together, in their slick persistence and our preterition...to make sense out of, to find the meanest sharp sliver of truth in so much replication, so much waste...

(590; first two ellipses mine, the rest Pynchon's)

Plastic as a material is “inherently formless”; this feature, coupled with plastic’s artificiality, and the fact that it is often made to imitate other substances like marble or wood, caused the word ‘plastic’ by the 1970s to acquire a host of negative meanings including “sham, meretricious, counterfeit, substitute...spurious,” and slangily, “phony, unreal, dehumanized” (Miekle 4, 7). Something about plastic and its aptness as an imitator seemed to threaten the integrity of meaning itself. Pynchon rehearses the symbolic meaninglessness of plastic in his vision of a world in which we are “blundering” among a clutter of plastic items that we are unable “to make sense out of.” Miekle continues that during this time, “the emerging youth culture identified [plastic] with everything they despised in American life,” associating the material with dishonesty, hypocrisy, and meaninglessness (Miekle 260). Plastic symbolized spiritual and emotional vacancy, as in the classic moment from Mike Nichols’ 1967 film *The Graduate*, in which Dustin Hoffman’s character is assailed by an older man eager to impart to him “Just one word...Plastics...There’s a great future in plastics.” That moment “hit a nerve” with audiences, quickly becoming a part of America’s “communal memory” (Miekle 3). Plastic items are a material abundance, but because plastic is a cheap substance most often used as an imitator of other things, its omnipresence actually degrades the quality of life—or even gives the patina of life to that which is actually death. The passage quoted above captures that sense of

plastic as imitative, yet essentially dead (“*sounds of unnatural timbre,*” “*feeding endlessly the desert*”) or death-bearing (“*infant strangulation*”). Miekle writes that for many during the late ‘60s and early ‘70s, especially amid apprehensions of nuclear disaster, “plastic evoked a sense of death imitating life—and rather indifferently at that” (Miekle 247). In substituting the merely lifelike for the actually alive, plastic was the ultimate counterfeit.

Relatedly, Miekle records that during the 1960s and ‘70s, plastic began to be perceived as an environmental threat. These worries took several forms. First, the public became concerned about threats that plastic might pose to personal safety. The highly-publicized “dry cleaning bag tragedy of 1959,” in which 80 infants died of strangulation by polyethylene film, caused an early upswing of anti-plastic sentiment (Miekle 249). Gradually, the public came to worry about plastic’s effect on the natural environment as well. In Thomas Schaub’s words, “*Gravity’s Rainbow* may be understood as the culmination or *summa* of three decades of intense environmental dissent” (Schaub 60). *Gravity’s Rainbow* acknowledges the environmental threat presented by plastic through characters who point out the hypocrisy inherent in the presentation of plastic as a transcendent material (the presentation that Jamf and Blicero cling to). One such character is (ironically, the *ur*-IG man) Walter Rathenau. Rathenau is a historical figure whom Pynchon describes as “prophet and architect of the cartelized state” (164). A “corporate Bismarck” who managed Germany’s economy during World War I, Rathenau became intimately involved with the rise of IG Farben (*GR* 164-5). Early in *Gravity’s Rainbow*, a group of Farben executives gathers at the

home of a spiritual medium to contact Rathenau. From beyond the grave, Rathenau gives the executives advice, but in the process advises them not to fall prey to the illusion that to make plastic is to create new life.

Rathenau speaks to the group about the coal-tars that are the building blocks of plastic. “Imagine coal,” says Rathenau, “down in the earth, dead black, no light, the very substance of death. Death ancient, prehistoric, species *we will never see again*. Growing older, blacker, deeper, in layers of perpetual night...Earth’s excrement” (166). Rathenau recalls the discovery that new materials, plastics, could be made from coal-tars. But he lets his interlocutors know that polymer chemistry is not as alchemically transformative as it can sometimes seem. Speaking of the “thousand different molecules” engendered by the new science, Rathenau warns:

‘The real movement is not from death to any rebirth. It is from death to death-transfigured. The best you can do is polymerize a few dead molecules. But polymerization is not resurrection. The more dynamic it seems to you, the more deep and dead, in reality, it grows. Look at the smokestacks, how they proliferate, fanning the wastes of original waste over greater and greater masses of city...Death converted into more death. Perfecting its reign, just as the buried coal grows denser, and overlaid with more strata—epoch on top of epoch, city on top of ruined city. This is the sign of death the impersonator.’

(166-67)

Of all the characters in *Gravity’s Rainbow*, it’s Rathenau who speaks most eloquently of the threat that plastic poses to the environment (though of course he does not use that word, which was not used in the sense of ‘environmentalism’ until decades later). Although the parlance he uses is scientific-mystical rather than environmental-activist, Rathenau gives

voice to a very 1970s critique of plastic as a degrader of nature. His overt reminders that plastics originate in the excrement of the earth would have resonated with readers in the '70s who were learning to think of the finished product as little better than excrement, itself.¹

Another meaning assigned to plastic has been drawn from the material's association with the interrelated rise of the military-industrial complex and a corporate-driven consumer economy. These associations are readily drawn from the historical record, and they are everywhere in *Gravity's Rainbow*. Giant chemical companies like IG Farben and DuPont invented technologies (artificial rubber being one high-profile example) that allowed Allied and Axis powers to keep waging war against one another when supplies of raw materials from natural sources were cut off. World War II saw corporations and governments working hand in hand; according to Herman Mark, DuPont "supplied the Allies with 40 per cent of all explosives used in the war" (113). These corporations consciously anticipated the end of World War II as a marketing challenge. To capitalize fully on the new materials they had invented for the war effort, companies had to adapt these materials to civilian uses—and sell them aggressively to the consuming public. The plan was to keep profits up by stimulating consumers to never-ending desire for more products. Miekle quotes a DuPont vice president vowing to "see to it that Americans are never satisfied" that they have purchased enough (176). Supply-driven

¹ "During the 1920s predictions of an expanding system of inexpensive artificial goods had suggested material abundance as a basis for a utopian democracy. By the final third of the century that transcendence and abundance threatened to drain natural resources and pollute the society that supported it by generating a flow of irrecoverable, inassimilable matter—garbage, society's excrement" (Miekle 264).

marketing, then, has been a hallmark strategy of plastics manufacturers: during the '40s, chemists worked outward from chemical discoveries to the marketplace. When they found something of interest, they looked for ways to commercialize it. Robert McLaughlin has gone so far as to note that after sinking billions in the invention of synthetic materials, "IG needed a war to make a profit on its investment" (331).

Accordingly, Pynchon thematizes the close, often obscure relationships between governments and chemical companies, using a heady blend of historical fact and fictional invention or speculation. Trying to unravel the mystery of Imipolex G, Slothrop discovers unexpected and unseemly connections between Shell Oil and a number of companies that reveal themselves to be fronts for IG Farben (*GR* 250-51). *Gravity's Rainbow* often seems to propound the idea that technology is exploiting human beings, rather than the other way around, and that the companies that invent new technologies are sinister entities intent on perpetuating themselves no matter what the cost in human life or suffering. (In a Christmas-time scene in *Gravity's Rainbow* set late in the war in England, the parishioners in a country church appear ragged and hungry. They suffer so that 'The War' itself might grow fat; "the War needs coal...The War needs electricity." It may be Christmas, but the War has received all the good presents (133).) In *Gravity's Rainbow*, IG Farben representatives manipulate supply and demand with an eye on the bottom line that excludes all concern for human well-being. At one point, Farben censures a subsidiary company named Spottbilligfilm, which designed as a weapon "a new airborne ray which could turn whole populations, inside a ten-kilometer radius, stone blind...Poor Spottbilligfilm. It had slipped their

collective mind what such a weapon would do to the dye market after the next war”² (*GR* 163). Later, Farben drug expert V-Mann Wimpe tells a character named Vaslav Tchitcherine that the IG fantasizes about developing a drug that could “abolish pain rationally, without the extra cost of addiction.” Such a drug would provide the basis for a perfectly-managed, Farben-controlled economy, because as Wimpe relates, “we already know how to produce real pain. Wars, obviously...machines in the factories, industrial accidents, automobiles built to be unsafe” (*GR* 348, Pynchon’s ellipsis). If pain could be generated and the means of its relief sold to the people for a profit, the IG would control a diabolically perfect consumer economy. All that remains is to get rid of addiction, because its unmeasurability and unpredictability threatens Farben’s chances at perfect control. Tchitcherine is repulsed by the “direct conversion between pain and gold” that he hears coming from Wimpe (*GR* 349). Here, Pynchon has taken critiques of the “inflationary culture” of supply-driven consumerism that were in currency during the late ‘60s and early ‘70s, and made them more emphatic by placing them into a fictionalized past where the rise of consumer culture can dramatically be attributed to purposefully evil entities (Miekle 260). Pynchon’s critique gains intensity, too, from the fact that the evil corporate entities he mentions are simultaneously his fictional creations, and actual companies operating in the real world. Though the quest for a perfect drug seems to be a fictional invention, the motives behind it are in some way very true for Pynchon.³ Inger

² One of IG Farben’s first great successes in making products with the new organic chemistry was synthetic aniline dyes. Consumers’ hunger for never-before-seen colors made these dyes a cash cow for the company during the 1930s.

³ Thomas Schaub has written, with respect to the environmental movement of the 1960s and ‘70s, that “the rhetoric of paranoia” was frequently deployed in service

Dalsgaard writes that in *Gravity's Rainbow*, the rocketry project that Farben and the Nazis undertook together “signifies not only for Nazi eugenics but equally for both industrial slavery and...abuses of nature” (102). These are the values that Pynchon attaches to plastic.

of “the adversarial purposes of the new left” (Schaub 61-2). Jeffrey Mickle reports that paranoia has been a recurring motif in popular critiques of plastic as well. He mentions a news article in the late 1930s, containing a “bizarre bit of information” about a chemical known as cadaverine, which led to persistent rumors to the effect that nylon was, or could be, made of chemicals derived from human corpses (Mickle 140-41). Once nylon had become a familiar presence, some consumers “who took seriously the myths of scientific infallibility and machine-age perfection” began to circulate “rumors to the effect that ‘nylon was made stronger at first’ or that it ‘was called back...because it was too good,’ or that its strength was reduced ‘because it would have ruined the hosiery industry’” (Mickle 146).

CHAPTER 2
IN THE FACTORY OF DESIRE:
GRETA ERDMANN, PLASTIC WOMAN

In order to consider more systematically how the five views on plastic just discussed—plastic utopianism, plastic as control over nature, plastic as vapid substitute, plastic as environmental threat, and plastic as signifier for exploitative consumer capitalism—are implicated in Pynchon's novel, it will be helpful to examine a single scene in which they all come into play. A little more than halfway through the book occurs an episode in which Greta Erdmann, a retired German film-actress, is taken to the IG Farben plastics factory where Imipolex has been developed, and is given an orgiastic introduction to the new material. Of all the scenes in the novel, this is the one that deals with plastic in the most sustained and explicit fashion.

The story is related in Greta's voice; she describes how she and her husband Thanatz were living and working during the war with the rocket-battery led by Captain Blicero. One day, Blicero takes Greta to a "petrochemical plant" known as The Castle (*GR* 486). Blicero goes into a meeting, leaving Greta with Drohne, an assistant who had "seen every one of my films" (487). The factory is a sinister fantasia of plastics and their production. Greta catches a glimpse of the Schwarzgerät on the conference table; it is "gray, plastic, shining, light moving on its surfaces" (487). Drohne, "a plastics connoisseur," rhapsodizes to Greta about "the true ring

of Polystyrene,”⁴ and goes “into raptures for me over a heavy chalice of methyl methacrylate” (487). Meanwhile, plastic objects are being produced in a hectic factory setting: “clear rods of some plastic came hissing out through an extruder at the bottom of the tower.” As Greta recalls, “I thought of something very deep, black and viscous, feeding this factory...Plastic serpents crawled endlessly to the left and right. The erections of my escort tried to crawl out the openings in their clothes. I could do whatever I wanted.” Finally, “Drohne and the men stretched me out on an inflatable plastic mattress. All around, I watched a clear crumbling of the air, or of the light. Someone said ‘butadiene,’ and I heard *beauty dying...*” (487).

This scene associates plastic with death and suffering by recalling plastic’s early, intimate associations with the Nazi war effort. Most overtly, butadiene is a hydrocarbon, a petroleum derivative that was polymerized by IG Farben chemists to make synthetic rubber for tires and other applications, an innovation that was strategically crucial for the Nazis (Mark 126, 129). More interestingly, the reference in the passage to the “black and viscous matter” recalls an earlier scene in which Greta, vacationing at the wryly-named “Bad Karma,” a resort renowned for its healing mud, “hot and greasy mud with traces of radium, jet black, softly bubbling,” murders a number of Jewish children by casting them into “the black mud pool: that underground presence, old as Earth” (475, 477). The language used to describe the mud at Bad Karma recalls the language with which Walter Rathenau speaks of coal tar at the séance. Plastic is

⁴ Polystyrene was an IG Farben invention; Herman F. Mark calls the material “the Farben group’s first great plastic success” (129).

made of coal-tar, earth's figurative excrement; the Nazis relied on concentration-camp labor provided by Jews (whom they regarded figuratively as human excrement). Human life, along with coal tar, was the raw material of IG Farben's productive output. According to McLaughlin, the IG relied on the labor of concentration camp inmates to keep its factories open during the War—Auschwitz was to be the site of the IG's "largest synthetic fuel and rubber" plant (324). McLaughlin quotes Joseph Borkin's argument that while slave-owners traditionally regard slaves as, at least, a valuable investment accordingly requiring a certain amount of care, the "IG reduced slave labor to a consumable raw material...When no usable energy remained, the living dross was shipped to the gassing chambers and cremation furnaces" (McLaughlin 325). Greta Edrman's act of throwing Jewish children into a pit of coal-tar-like mud illustrates the terrible equivalency maintained by the IG between mineral deposits and human lives. As another character, Katje Borgesius, reflects: "[d]on't forget the real business of the War is buying and selling...Jews are negotiable. Every bit as negotiable as cigarettes, cunt, or Hershey bars" (105).

The "plastic serpents" that Greta mentions allude to a story told about a critical moment in the development of organic chemistry. During the mid-nineteenth century, a young chemist named Friedrich August Kekulé had been struggling to understand the chemical structure of benzene, a hydrocarbon that had been isolated from coal tar (still today, benzene is a precursor in the production of plastics, drugs, dyes, and other organic compounds). According to lore, Kekulé dozed off during his work and had a dream of an uroboros, or a serpent biting its own tail (Mark 54).

Upon waking, Kekulé found that he was able to visualize the molecular structure of benzene: an internal ring of six carbon atoms joined to one another by alternating single and double bonds, with a single hydrogen atom attached to each carbon. Kekulé's new understanding of benzene eventually translated to an understanding of all so-called "aromatic" organic compounds. Kekulé's dream of the uroboros is regarded as a turning point in organic chemistry; his insight into the nature of carbon bonds paved the way for the rational planning and synthesis of novel organic compounds, including plastics. The Castle scene in *Gravity's Rainbow* refers back to Kekulé's dream in order to tap the symbolic meanings of the uroboros, a "self-devouring snake or dragon" (Adams 150). The uroboros, as Michael Adams relates, is traditionally regarded as "the central archetype of the collective unconscious and a universal symbol of transformation" (150-51). Pynchon recalls Kekulé's dream in order to point out an irony: from a symbol of circularity and creative transformation, Kekulé grasped the secret that lay behind chemical reactions including the polymerization of plastics—an innovation that *Gravity's Rainbow's* Walter Rathenau describes not as true creation, but as a mere "movement...from death to death-transfigured" (*GR* 166). Kekulé's uroboros is sinister, indicating not real transformation, but only the illusion of it. In Adams' words, "the trajectory of the plastic rocket is semicircular—a half not a whole circle, not a full or complete circle. Pynchon's plastic rainbow serpent and his plastic world are non-recyclable, non-returnable, GET IT? Now the uroboros is not creativity but catastrophe" (Adams 158). The "plastic serpents" in the factory recall Kekulé's perverse application of the

uroboros, his use of a circular symbol of renewal in service of the linear and the one-way.

The serpents that Greta mentions also recall Biblical snakes tempting Greta with the allure of overweening human achievement to a new catastrophe. Drohne's erection is described as snake-like, too. The plastic snakes seem to make their appeal to Drohne and Greta's lust to subdue nature. Greta's role in the scene is double, however, as she also stands in for the "scatterbrained Mother Nature" that is brought to submission in a sexualized scenario: "Drohne and the men stretched me out on an inflatable plastic mattress."

The passage that describes Greta's exit from The Castle invokes environmental critiques of plastic. She recalls that "one morning I was outside the factory, naked, in the rain. Nothing grew there. Something had been deposited in a great fan that went on for miles. Some tarry kind of waste" (488). The plastic pleasures of the Castle are synthesized at great expense; the surrounding land has been rendered lifeless, coated with what Rathenau called "the wastes of original waste." On her first approach to the Castle, Greta had described the factory in industrial-apocalyptic imagery, as "black and broken towers in the distance, clustered together, a flame that always burned at the top of one stack" (486). Here, Pynchon may be seen to support environmentalist discourses of the 1960s and '70s that "identif[ied] the Second World War as the beginning of...environmental pollution," and placed the blame on "industry run amok" (Schaub 63, 61).

Inside the Castle, however, a mood of orgiastic sexuality prevails. Greta describes being dressed in a tight suit of Imipolex plastic, which

arouses her as nothing has done before. Drohne straps on “a gigantic Imipolex penis over his own,” and Greta almost literally loses herself in anticipatory pleasure:

Things, memories, no way to distinguish them any more, went tumbling downward through my head. A torrent. I was evacuating all these, out into some void...from my vertex, curling, bright-colored hallucinations went streaming...baubles, amusing lines of dialogue, *objets d'art*...I was letting them all go. Holding none. Was this ‘submission,’ then—letting all these go?

(488, Pynchon’s ellipses)

The connection between plastic and sexuality may come as surprising at first. Certainly, it is an association not strongly present in Miekle’s rehearsal of popular attitudes towards plastic over time—although he provides a few examples, from marketing and film, of links between synthetic products and feminine allure.⁵ Greta Erdmann herself is an actress in sexually titillating horror films. But to find real meaning in the Castle scene’s provocative conjunction of Imipolex plastic, sexual arousal, forgetfulness, and submission, it is necessary to go deeper into Pynchon’s text.

One way of elucidating the connections among plastic, sex, forgetting, and submission is to examine the other aspects of Greta Erdmann’s character more closely. Although Greta is neither a chemist nor one of the novel’s many seekers after the plastic Schwarzgerät, her character is literally and metaphorically associated with plastic—and via plastic, with sex, submission, and forgetting—in a number of telling ways.

⁵ See, for example, Miekle 146, 88, and 227.

On the most basic and literal level, Greta Erdmann's association with plastic is three-fold. In the first place, Greta is a movie actress (393). Moving-picture film at the time was made of celluloid, an early plastic derived from wood cellulose (Mark 82). Plastic, in this way, allows Greta to appear to the world as an object of sexual desire. Secondly, Greta is a drug user. Her drug of choice, Oneirine (whose very name implies, dreaming, the loss of a sense of reality and fact), is a synthetic organic compound invented by the same Laszlo Jamf who created Imipolex G. Finally, Greta is superlatively responsive to Imipolex G as a sexual fetish. Her experience of Imipolex as perfect submission recalls her sexuality as it is represented elsewhere in the novel: Greta is a masochist who finds that physical punishment not only arouses her, but also helps to soothe her many anxieties and fears.

In all three of these roles—actress, drug user, and masochist—Greta appears as someone who is shaped and molded by outside influences. An actress behaves as she is directed in a part, taking on and shedding identities when bidden. A drug user manipulates her emotions and her physical sensations by introducing foreign chemicals into her body. And a masochist desires to be physically disciplined by harsh, wounding touches. Greta's malleability brings to mind some of the comments about plastic that Roland Barthes makes in his *Mythologies*. According to Barthes, plastic as a material is characterized by its ability to be molded into an infinitude of forms. Plastic is "a 'shaped' substance," less a material in itself than "the very idea of its infinite transformation" (Barthes 96-97). Plastic "can become buckets as well as jewels" according to the desire of its shapers. This versatility accounts for plastic's appeal, "since the scope of

[plastic's] transformations gives man the measure of his power, and since the very itinerary of plastic gives him the euphoria of a prestigious free-wheeling through Nature" (Barthes 97-98).

Because of her proclivity for being molded into various identities and shapes, Greta can be thought of as metaphorically plastic. Like a plastic resin, Greta takes on the shapes that others desire her to. "It was always easy for men to come and tell her who to be," the narrator relates; "[s]he had more identities than she knew what to do with" (*GR* 482). Greta even thinks of herself as a kind of product. Of Gerhard von Göll, her director in "dozens of vaguely pornographic horror movies," Greta remarks: "I knew he was a genius from the beginning. I was only his creature" (393). Greta's almost statuesque passivity is emphasized time and time again. Fans of her movies "nicknamed her the Anti-Dietrich: not destroyer of men but doll—languid, exhausted" (394). Greta is aware that the nature of her sexual appeal to men has something to do with her radical passivity. A particularly telling passage leads into the scene where Greta encounters Imipolex G. One of Greta's incarnations is described in language reminiscent of plastic manufacture as "a thin white scum, a caustic residue" (483). This phrase opens a memory in which Greta encounters a corpse who speaks to her.

Though she couldn't move its limbs as easily as a doll's she could make it say and think exactly what she wished.

For an instant too she did wonder—not quite in words—if that's how her own soft mind might feel, under the fingers of Those who...

(483, Pynchon's ellipsis)

In this moment of truncated self-awareness, Greta recognizes that she allows herself to be molded “under the fingers” of males who form her into a commodity, an object shaped according to the dictates of their desire (indeed, she is known by a half-dozen or so different names within *Gravity’s Rainbow*, all of them given to her by various men). By taking on the personae and assuming the shapes she’s molded into, Greta “gives man the measure of his power” just as plastic does.

The several forms of shaping that Greta undergoes seem to have the shared consequence that they help to alleviate the deep anxieties that constantly torment her. During their brief romantic affair in Berlin, Slothrop notes that Greta speaks “in a voice always just at the edge of falling apart” (444). She cries incessantly and fears her own reflection in the mirror. “Whippings seem to comfort her,” Slothrop notices. Greta’s masochistic desires are indulged by her husband Thanatz, who physically shapes her with applications of the whip, and then shapes her again—in the more figurative sense of bestowing an identity—when he ‘reads’ the many scars he has placed on her body, “as a gypsy reads a palm” (484). Greta recalls that “she loved [Thanatz] most at those moments, just before sleep...while scar-tissue formed silently on her, cell by cell, in the night. She felt almost safe” (484).

Throughout, Greta’s plastic-ness is inflected by her femininity; she is not just a plasticized character but specifically a plasticized *woman*. It is significant that it is always *men* who “come and tell her who to be” (482). Her sexuality involves a delicate balance between her own desire to receive shaping touches—physical punishment and theatrical direction alike—and the desire of various men to inflict punishment on her and to cast her in

roles. Though Greta is a masochist, she seems to awaken sadistic desires in the men who view her films. After watching Greta perform in a film called *Alpdrücken*, Franz Pökler leaves the theater “with an erection, thinking like everybody else only about getting home, fucking somebody, fucking her into some submission” (397). That night in bed, Franz fantasizes “Leni no longer solemn wife, source of embittered strength, but Margherita Erdmann underneath him, on the bottom for a change, as Pökler drives in again, into her again, yes, bitch, yes” (397). Greta herself craves a firm, shaping, even sadistic touch, and she generates in those who see her the desire to exercise violent control. She is thus a figure for the feminized natural world that the chemists and corporate executives hope to yoke and subdue. Throughout *Gravity’s Rainbow*, Pynchon seems aware of sex as a comprehensive spectrum of activities that unites the best and the worst of human drives. Sex is a kind of zero-point where love and hate, pleasure and pain, constructiveness and destructiveness, memory and forgetting all combine and mingle. Most sex acts are mixed, but some tend more towards one or another end of the spectrum. Greta’s sexual activity has to do with violence, cruelty, and the death-drive whose name, Thanatos, her husband’s name echoes. Greta’s sexuality is the type most strongly linked to plastic.

For Greta, being submissive (a condition expedited by Imipolex G) is linked with a denial of responsibility. In the factory, Greta feels that “I could do whatever I wanted,” but what she wants is to passively be “stretched out” on a mattress by the men around her (487). Greta experiences great relief from the evacuation of memories that accompanies her sexual encounter with Imipolex. But though this forgetting is

pleasurable for her, its larger meaning is ominous. Throughout the novel, repeated references are made to shadowy entities known alternately as “the Firm,” “They,” or “Them.” Always-capitalized They are an object of fear and fascination throughout the book. They are never clearly defined, though it is strongly hinted that They, whoever They are, hold the real power and are truly in control. Further, They would seem to be the real driving forces behind the war. They are certainly malevolent, or at least uncaring. Further, as Slothrop realizes, They are associated with forgetting; loss of memory serves Their interests. Sizing up a new acquaintance, it “occurs to Slothrop that Säure can’t possibly be on the Bad Guys’ side. Whoever They are, Their game has been to extinguish, not remind” (438). Inger Dalsgaard recalls Hannah Arendt’s concept of ‘rule by nobody,’ noting that totalitarianism requires bureaucratic structures guaranteeing that “individuals cannot be identified or held individually responsible by the public at large” for the abuses of the corporate structures they belong to (Dalsgaard 92). “Anonymity and loss of individual responsibility become built-in organizational necessities within both large-scale technological projects like the rocket program...and the rocket production and human extermination project within which Blicero operates” (Dalsgaard 92). Totalitarianism is made possible when individuals forget, or refuse to know, the implications of what they and other people do.

Submissive forgetting connotes the loss or denial of personal agency, as does another one of Greta’s traits: paranoia. Greta is overwhelmingly paranoid, a condition that begins to rub off on Slothrop—who also has serious paranoid tendencies—during their time together (*GR* 446). Greta’s

drug use is partly in service of allaying her paranoid anxieties, but her drug of choice, Jamf's Oneirine, also causes paranoia, which the text defines as "the onset, the leading edge, of the discovery that *everything is connected*, everything in the Creation" (703, Pynchon's italics). The notion that 'everything is connected,' as several critics of Pynchon's text have noted, has the paradoxical effect, when it is pushed far enough, of denying escape or real agency to anyone. With respect to one of the novel's many paranoid characters, Molly Hite has written that "[t]he lure of totality is so great, Pynchon suggests, that people will assent to a system in which '*everything is connected*' even if the system guarantees their destruction" (98). Hite finds that the only cause for optimism in *Gravity's Rainbow* is the possibility that "something always goes wrong" (130). It's no coincidence that within the novel, "anti-paranoia," or the belief that nothing is connected to anything, is the credo of the forces struggling against Their complete control.

The traits that make Greta Erdmann a 'plastic woman' make her the type of subject that fascism requires. Her libidinal orientation is towards the pain that They are so masterful at producing; accordingly, she is willingly controlled by anyone with sadistic, controlling tendencies. She awakens such tendencies in those around her. Driven to submit and forget, Greta becomes entirely amoral. Her erotic attraction to plastic is fundamentally inseparable from her erotic orientation towards pain, her romance with death. Viewed through the filter of Greta Erdmann, then, *Gravity's Rainbow* seems to cast plastic in an almost wholly negative light. But Greta is not the central character in the book, and it is important to

ask whether there are other characters or episodes in the novel that imply different, perhaps more positive, meanings for plastic.

CHAPTER 3

CODA: TYRONE SLOTHROP, FROM PLASTIC TO PRETERITE (RESISTANCE IS ALMOST FUTILE)

One obvious place to look for further associations of plastic within the novel is to the character of Tyrone Slothrop. He is the protagonist of the book, and like Greta he has an explicitly sexual response to Imipolex G: its odor, whiffed from afar, causes him to have an erection as a conditioned response. If Greta Erdmann and her experiences in the Castle illustrate the connections between plastic and environmental catastrophe, and plastic and human hubris, then Tyrone Slothrop and his quest through the Zone after the plastic Schwarzgerät intensifies the sense of relationship between plastic and multinational corporate capitalism—envisioned in *Gravity's Rainbow* as a cynical, shadowy, and self-sustaining bureaucracy bent on profit and its own survival at any price. Slothrop's quest to understand the nature of the mysterious connections between IG Farben and his own childhood drives the narrative forward. His progress through *Gravity's Rainbow* can be understood as a process by which Slothrop is gradually un-yoked from his conditioned response to Imipolex, and simultaneously grows farther away from the corporate entities and structures of power that induced his sensitivity to plastic in the first place. Far from suggesting either a redeemed role for plastic or a reliable way to fight back against the ominous trends with which plastic is associated, however, Slothrop's story remains ambivalent at best. Slothrop's escape from his conditioned response to Imipolex, and the corporate agents behind it, is accompanied by a progressive and

profound disintegration of self. *Gravity's Rainbow* seems to end with the pessimistic suggestion that a comprehensive victory over the powers in charge of plastics, rocketry, and war in general, is not possible.

Redemption occurs only haphazardly and momentarily, in places and among people in whom the powerful elite is not presently interested.

On the face of it, Greta Erdmann and Tyrone Slothrop seem so different as to practically be opposites. She's a brittle, anxious silent-film star with a need for pain; Slothrop is a paranoid but often happy hedonist, blundering through life in a Hawaiian shirt, with a girl on each arm. Nevertheless, the two share important traits; notably, both are used and manipulated for the benefit of others. Each is portrayed as the hapless pawn of a malevolent larger system that is identified, both literally and metaphorically, with plastic. At the Casino Hermann Goering, Slothrop becomes overwhelmed by the feeling that something profound is conspiring against him. These feelings climax during a scene in which Slothrop walks, alone, into the Casino's empty main gambling hall, and awakens to the sense that he is merely a cog in a mysterious structure larger and more powerful than he. "Deserted in noon's lull," the hall is quiet and filled with chairs and gambling implements:

These are no longer quiet outward and visible signs of a game of chance. There is another enterprise here, more real than that, less merciful, and systematically hidden from the likes of Slothrop. Who sits in the taller chairs? Do They have names? What lies on Their smooth baize surfaces?...Slothrop, in his English uniform, is alone with the paraphernalia of an order whose presence among the ordinary debris of waking he has only lately begun to suspect.

(202)

Ill at ease, Slothrop feels that "everything in this room is really being used for something different. Meaning things to Them it has never meant to us"

(202). He flees the room, newly certain that he “has been playing against the invisible House, perhaps after all for his soul, all day” (205). Later, Slothrop identifies Them, at least partially, with IG Farben and Laszlo Jamf specifically. Slothrop finds old contracts between Laszlo Jamf and a Slothrop family friend, Lyle Bland, and Slothrop’s own father, arranging for the payment of Slothrop’s tuition at Harvard. “I’ve been sold,” Slothrop thinks, “Jesus Christ I’ve been sold to IG Farben like a side of beef” (286). At this moment, Slothrop begins to grasp the meaning of the correlation (of which he may or may not be consciously aware) between his erections and the impact sites of rocket bombs. As Slothrop reads Jamf’s dossier, he feels vertigo but also, strangely, “a hardon, for no immediate reason. And there’s that *smell* again, a smell from before his conscious memory begins, a soft and chemical smell...*it is the breath of the Forbidden Wing*” (285). Slothrop knows that the smell he’s remembering now “will prove to be the smell of Imipolex G” (286). Even Slothrop’s prodigious sexuality, in other words, functions as it does because someone else has engineered it to. Slothrop is described as a machine constructed by Them for Their own ends; his “erection hums...like an instrument installed, wired by Them into his body as a colonial outpost...another office representing Their white Metropolis far away” (285). Slothrop suddenly perceives that his life has been determined, to what degree he does not yet know, by a multinational corporation, a plastic, and a polymer chemist run amok. Slothrop is not the independent agent he’s assumed himself to be; rather, he is what They’ve made him: “an experimental subject, a dowsing rod and an assassin” (Kappel 246).

Greta Erdmann is happy, even eager, to submit to those who would control her; Slothrop is less so. He embarks across the Zone in a quest to find out more about Jamf and his story, and to elude the controlling forces that he feels are bearing down on him. From the outset, Slothrop's quest proceeds haphazardly. He is exposed to a never-ending series of mishaps and an ever-challenging stream of information which always just surpasses his (and our) ability to interpret every item. In the course of the quest, Slothrop undergoes several fantastic transformations. Like Greta, he plays roles that are suggested to him by others, including a proto-superhero named Rocketman and a porcine folk hero called Plechazunga. These peregrinations tend to side-track him at least as much as they bring him closer to his goal. Throughout his travels Slothrop, like Greta in the Castle, is plagued by a loss of memory and focus. Each transformation side-tracks Slothrop from his quest to find the Schwarzgerät and the information he seeks. In the Zone, Slothrop becomes more deeply involved with a motley crew of the Zone's post-war wanderers; during this time, "Slothrop and the S-Gerät and the Jamf/Imipolex mystery [grow] to be strangers. He hasn't really thought about them for a while" (434). As he moves through the Zone, Slothrop develops "a general loss of emotion, a numbness he ought to be alarmed at, but can't quite..." (490-1, Pynchon's ellipsis). Later he leaves human companionship behind entirely for a life of solitude and integration with nature. Near the end of the novel, Slothrop has become a pastoral hermit, liking "to spend whole days naked, ants crawling up his legs, butterflies lighting on his shoulders, watching the life on the mountain" (623). His sexuality grows more amorphous, too; apparently freed of his conditioned response to Imipolex, Slothrop stops

feeling as through he needs to have an erection during every sexual encounter; as Slothrop enjoys himself with a Zone bohemian named Trudi, the narrator observes, “it’s an open house here, no favored senses or organs” (439).

Amid these developments, Slothrop becomes increasingly fragmented. He can no longer recall where he’s going or why, and though he “pluck[s] the albatross of self now and then,” he does so “idly, half-conscious as picking his nose” (623). As he leaves plastic, the war, and Them farther behind, Slothrop seems to be abandoning his very consciousness, too. By the end of the novel, Slothrop undergoes a full-scale disintegration of self: “he has become one plucked albatross. Plucked, hell—*stripped*. Scattered all over the Zone” (712). Slothrop, who began the novel as much or more ‘plastic’ than Greta Erdmann, transcends his identity by doing what plastic cannot—he decomposes, and even engenders new life in so doing. In the Zone, “[s]ome believe that fragments of Slothrop have grown into consistent personae of their own. If so there’s no telling which of the Zone’s present population are offshoots of his original scattering” (742). It would seem that Slothrop has succeeded in his efforts to escape from the powers that would control and exploit him, even as he has failed to obtain a complete understanding of the Schwarzg erat and the mysteries of the rocket 00000. By the end of the novel Slothrop has become, in some sense, independent of Them, achieving what Leo Bersani has called a “peculiar, self-less freedom” (Bersani 115). On the other hand, Slothrop’s victory appears to be Pyrrhic, as escape comes only at the price of lost subjectivity.

‘Slothrop’s progress’ through the Zone raises questions about the possibility of resistance to the structures of control represented by the chemical cartel IG Farben and the plastic with which its chemist, Jamf, manipulates Infant Tyrone and adult Slothrop—structures which Pynchon and Slothrop conveniently short-hand as ‘Them.’ Some critics have read Slothrop’s disintegration as a hopeful outcome, representing his triumph over Jamf, Imipolex, and the rest of Their best attempts to use him for their own cynical purposes. Lawrence Kappel, for example, argues that “[t]hough Slothrop is comically clumsy and does not quite understand what he is doing, he succeeds in neutralizing himself as a weapon and escaping control” (Kappel 246). Slothrop, in Kappel’s estimation, “achieves a kind of immortality different from the perverse, doomed version of immortality sought by the white European Fathers;” instead, Slothrop is able to realize “a fundamental American myth in which the individual becomes invisible, is absorbed by nature, the land, the people” (Kappel 243, 242). Kappel is right to point out that Slothrop does, indeed, escape from his determined response to plastic and from They who conditioned it into him. It is important, however, not to lose sight of the fact that Slothrop’s ambivalently hopeful outcome is purely individual. Slothrop wins his Oedipal struggle with Jamf and his other “grotesque father figures” by simply removing himself from the field of conflict; his resistance doesn’t do anything to wound Them or diminish Their power (Kappel 231). Slothrop gets free, but his freedom stands in direct proportion to his marginalization. His example suggests that it might be possible to run from Them, but it does not hint at a way in which Their order can be overthrown.

One way to understand what happens to Slothrop over the course of his transformations is to consult the novel's idea of 'the Preterite.' This term is introduced in a heretical tract called *On Preterition*, penned by one of Slothrop's 17th-century Puritan ancestors, William Slothrop. The writing concerns "the Preterite, the many God passes over when he chooses a few for salvation. William argued holiness for these 'second Sheep,' without whom there'd be no elect" (555). References to the Preterite and the Elect become more frequent in the last third of *Gravity's Rainbow*, and Slothrop's transformations can be interpreted as carrying him further and further into the realm of the Preterite. As Leo Bersani has observed, William Slothrop's ideas of the Preterite and the Elect map almost perfectly onto Pynchon's characters' concept of us and Them: "The Pynchonian opposition between They (IG Farben, etc.) and We (Slothrop, Roger Mexico, Pirate Prentice, etc.) is a replay of the opposition of Slothrop's Puritan forefather's polarity of the Elect and the Preterite" (103). At the outset of the novel, Slothrop is, while not one of Them, explicitly one of Their creatures; by the end, he has been 'passed over' by Them and is both free and utterly marginalized. To be one of 'Us' is, *ipso facto*, to be Preterite. Slothrop's final descent into Preterition is symbolized by his donning the costume of the pig-hero, Plechazunga, a reference to William Slothrop's original inspiration for *On Preterition*: the time he's spent with pigs whom he herds from his home in the Berkshires to market in Boston. By the end of the novel, we are instructed to seek the now fully disintegrated Slothrop "among the Humility, among the gray and preterite souls...adrift in the hostile light of the sky, the darkness of the sea..." (742, Pynchon's ellipsis).

Pynchon's concept of the Preterite, as it is presented in the final sections of *Gravity's Rainbow*, expresses both a hopefulness for the possibility of resistance towards Them and Their plastic world, and a pessimistic certainty that resistance will always be local and limited in its effects. More specifically, Pynchon draws parallels between the Preterite of *Gravity's Rainbow* and the hippie counter-culture movements of the 1960s and '70s, as a means of celebrating those movements but also questioning their larger efficacy. As Slothrop begins his descent into the Preterite world, he becomes more deeply involved with figures that a '70s reader would recognize as counter-cultural: drug users and -sellers, tenement-dwellers, petty criminals, and a rotating cast of drifters and 'freaks.' He spends an increasing amount of time in dope-ridden crash-pads like "der Platz" (686). In these scenarios, Pynchon borrows tropes from '60s counter-culture to open the question of whether these kinds of resistance and rebellion can be meaningful or effective. In the last quarter of *Gravity's Rainbow*, Slothrop 'turns on, tunes in, and drops out' á la Timothy Leary's famous recommendation; in so doing, he evades the forces of surveillance and control that pursued him into the Zone in the first place, but he also, in his disintegration/Preterition, sinks into irrelevance. Slothrop ends the novel "oscillating in the cleft between this world and nature," in a state of dissociation so profound that he can't even communicate with the friends who "gave up long ago trying to hold him together, even as a concept—"It just got too remote' 's what they'd say" (Slade 69; *GR* 740). Slothrop's joyous and theatrical rebellions, his irreverent performances as Rocketman and Plechazunga, and his epic doping sessions with his "underground connections" do not, in the end, have a lasting effect on Their world order

(Kappel 240). In *Gravity's Rainbow*, as Leo Bersani writes, “[f]amiliar tactics of protest and subversion create local disturbances that are easily forgotten and leave the most menacing paranoid structures perfectly intact” (103). Bersani rightly perceives that “love, anarchy, and randomness,” though they are offered in *Gravity's Rainbow* as “appealing alternatives” to the novel’s “own paranoically conceived apocalypses,” are never, on deeper examination, viable strategies for “profound social change” (Bersani 103).

By disappearing into the Preterite, Slothrop gets away from the “pale plastic ubiquity” of Laszlo Jamf and his ilk (490). But, critically, Slothrop’s struggle does not impact the larger structures in place. The Preterite, by definition, lack power, and plastic is revealed as always having belonged to the elite. The “real crises” of the war, muses the character Oberst Enzian, “were crises of allocation and priority, not among firms—it was only staged to look that way—but among the different Technologies, Plastics, Electronics, Aircraft, and their needs which are understood only by the ruling elite” (521). Slothrop’s ambivalent escape does not wound these systems. By the end of the novel, Slothrop is powerless; his tarot suggests merely “a tanker and a feeb” (738). In the meantime, the elect/elite and their technologies of death and profit, of which plastic is one, continue to thrive. Slothrop’s case indicates that ‘dropping out’ is possible, but that it’s not a viable means of solving a larger structural problem.

IG Farben discards Slothrop, but it and its military-industrial heirs survive into the future—as Pynchon, looking back from the vantage point of the Cold War ‘70s, well knows. This continuity of the corporate-plastic-

hegemony is indicated by Pynchon's glances forward to the Atomic Age. Pirate Prentice, a character who often regrets his decision to enter into work for the Firm, in one reflective moment,

cries for the future he can see, because it makes him feel so desperate and cold. He is to be taken from high moment to high moment, standing by at meetings of the Elect, witnessing a test of the new Cosmic Bomb—'Well,' a wise old face, handing him the black-lensed glasses, 'there's your Bomb...' turning then to see its thick yellow exploding down the beach, across the leagues of Pacific waves...

(544, Pynchon's ellipses)

The coal-tar Kabbalists will go on working for their own survival and profit, and inventing newer and more terrible ways to die. The final sections of *Gravity's Rainbow* suggest that We can't stop Them—at best, we can only creatively contrive to stay out of their way and look for what moments of enjoyment and dignity we can experience in the areas to which Their control does not penetrate.

One can argue that in slipping away into the Preterite, Slothrop enjoys a better and more triumphant outcome than Greta Erdmann, who remains dazzled by Imipolex and Oneirine to the end. However, *Gravity's Rainbow* does not suggest a way that the military-industrial complex could be toppled. Its hierarchies of exploitation will continue. This is patly because of the inherent psychology of power, to whose corrupting allure we are all vulnerable. In *Gravity's Rainbow*, the stronger exploit the weaker in chains extending down from Their highest levels, through malevolent parent-figures like Blicero and Greta Erdmann, to a generation of war-children including Gottfried, Franz Pökler's daughter Ilse, and Greta's

daughter Bianca, down to the dogs and mice that suffer as experimental subjects in Pointsman's lab, and the raw vegetable and mineral material of Earth itself. *Gravity's Rainbow* closes with the dispiriting thought that "[t]he Man has a branch office in each of our brains, his corporate emblem is a white albatross, each local rep has a cover known as the Ego, and their mission in this world is Bad Shit" (713). To break out of the system, we may have to do as Slothrop did and sacrifice our very egos for the cause. "Through Slothrop," writes Bersani,

we mourn the loss of personal presence, of a myth of personality that may, after all, be the only way in which our civilization has taught us to think about ourselves (to think our selves), a loss that, however, must be sustained if we are to disappear as targets, and therefore as conditions of possibility, of rockets and cartels.

(112)

Slothrop's colorful travels through the Zone take him out of Their clutches; but not only does Slothrop's 'victory' leave the machinery of the Farben cartel fully in place, it also coincides with his complete alienation from the social and material reality of his time.

As Joseph Slade has observed, "the real focus" of *Gravity's Rainbow* is not the War itself, but rather "the future-shocked American landscape of the 1960s and 1970s. The war, like many other metaphors, is a component of Pynchon's model for understanding the crises of the present" (Slade 72). Slothrop's story gives Pynchon a way to express misgivings about the efficacy of resistance against plastics technology and the corporate domination that it both represents and instantiates. During the 1960s, "the emerging youth culture identified [plastic] with everything they despised in American life" (Miekle 260). By the time of *Gravity's Rainbow's*

publication, it was becoming obvious that the young dissenters with their “drab clothes, ‘browns, greens, and blue jeans,’” and their earnest counter-cultural mission, had little to show for their excoriations of plastic and big industry (Miekle 261). From the early ‘70s, writes Miekle, “plastic’s expansion continued over the next twenty years, as did the inflationary culture of which it was substance and image” (276). Tyrone Slothrop and the other bohemian characters of the Zone stand for the partial successes and, critically, the disappointments of ‘60s counterculture and its struggles against the corporate state.

In the final analysis, it seems as though *Gravity’s Rainbow* raises at least two literal objections to plastic, and one metaphorical one. First, quite simply, the novel reminds us that plastic is not biodegradable: it violates the life cycle by its very existence. Second, plastic’s association with IG Farben is vital: plastic is a material that can only be produced in a large-scale industrial setting, and therefore the presence of plastics is inseparable from the presence of the corporate entities Pynchon finds so suspicious. Finally, plastic in *Gravity’s Rainbow* appeals to the worst in people: the lusts for control, for immortality, and for dominance that Pynchon finds at the bottom of certain sexual behavior, and indeed at the bottom of the most deplorable human activities. Thomas Moore perceptively writes that *Gravity’s Rainbow* “is concerned with the dialectical tension between two drives, both realized or at least realizable in science: mind’s wish to reintegrate itself with nature and its simultaneous wish imperialistically to swallow nature whole” (155). These two drives may both be realizable in science theoretically, but in practice, *Gravity’s Rainbow* argues, polymer chemistry has served only the latter.

Pynchon's novel achieves its critical stance towards plastic by drawing into itself popular discourses about plastic (including, along with critical discourses, some that regarded plastic favorably), and re-presenting them in its own factually-informed fictional universe. Favorable estimations of plastic are satirized in the novel, and unfavorable ones are amplified. Pynchon's main innovation is his alignment of plastic with sadomasochistic sexuality, a connection he arrives at by extrapolating from plastic's associations with Nazism, the unnatural, death, waste, linearity, and the urge for transcendence. Sadomasochism—and one of its representative figures, Greta Erdmann—elegantly unites all these threatening meanings of plastic within itself, while also accounting for the material's ability to project an eerie but undeniable seductiveness.

Plastic, Pynchon suggests, is the most fitting emblem of the modern world order, in which, as his protagonist Slothrop discovers, not states but multinational corporations wield ultimate power. As Robert McLaughlin sums up, "For Pynchon IG Farben (and, more importantly, the mindset it represents) is even more than Hitler the villain of World War II" (McLaughlin 319). Looking backwards, Pynchon, like other observers of his generation, identifies in the World War II era the seeds of a mind-bogglingly complex structure inside of which we all seem to be firmly, almost hopelessly, enmeshed.

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