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Notes on Metallic Affect: Metallurgy and New Materialism

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This paper follows Theodore Wertime, twentieth century historian of metallurgy, spy turned survivalist. Wertime's fascination with metallurgy is related to the Smith in Deleuze and Guattari and the mythical Alchemist of Mircea Eliade's work; also explored are notions of the Cyborg and of Geotrauma. Wertime's work presages a conception of the anthropocene and presumes fatal entanglement between humans and the tools they use.

“The National Geographic has not awarded me funds this year. They shot down my project, as they did that in Sardinia. I pass along this news with deep regrets. Now we shall have to find new funds. My deepest regrets.”

Theodore Wertime, letter to Ronald Tylecote, May 6th 1970 (Tylecote 1970)

In 1978, Theodore Wertime descended from his mountaintop fortress to deliver a paper at the Pittsburgh Metallurgy Symposium (Austin et al.). While the text of the talk is now presumed lost, a summary exists of the thoughts of this former intelligence operative turned rogue scholar of metal affect. For Wertime, it was no longer possible to speak of an ‘Age of Metals’. Metalworking was inexorably linked to other pyrotechnical technologies and these, cumulatively, produced what we know as civilization. Further, they continued to affect our technical and cultural forms of life, with Wertime pointing to the development of microprocessors and solar panels as new, disruptive forms of metallic technology. At the same time, Wertime struggled with the inconsistencies underlying histories of technology and culture. How did the anarchic, borderline nomadic societies develop the infrastructure for working metals, particularly bronze, given the absence of tin in the so-called Fertile Crescent? Were there networks of trade and transportation invisible to the modern viewer? Distant journeys and secret affinities, perhaps stretching as far as Thailand? Running through his later work, we find something else; evidence of catastrophic changes that had been brought about by this metallurgical entanglement in the past, and soon would be triggered again.

In files stashed on the UCL server by Iranian archaeologist and musician Roya Arab, we find documentation of a survey expedition, led by Wertime ten years earlier. Wertime and his team, which included several prolific archaeologists, metallurgists and historians travelled through Iran, Afghanistan, and into Turkey. The expedition appears to have gone well, but not well enough. The samples failed to provide the answers they were looking for; the principal investigators argued, and contemplated killing each other. Certain material-radioactive soil samples, information on Soviet-backed construction projects - were rushed back to the United States; other material, including archaeological artefacts, languished in storage in Tel Aviv (Arab; R. Wertime). But in 1968, the same year that Deleuze and Guattari began their seminal works on *Capitalism and Schizophrenia*, Wertime

was already engaged in a practical quest to solve what would be their most crucial anthropological question: “How do the nomads invent or find their weapons?” (Deleuze and Guattari 404). While Deleuze and Guattari limited their fascination with metallurgy to theoretical speculation, Wertime seems to have sought material evidence showing the importance of metallurgy to nascent society and its discontents. It appears that what was once a covert interest, meticulously researched during lunch breaks and late nights at the State department, was becoming an obsession. Wertime was reassigned, by direct congressional appointment to the embassy in Athens, and his request for a further expedition, penetrating deeper into the Anatolian peninsula was denied.

It is unclear at what point he decided to go rogue. One of his key projects in the seventies appears to be the construction of an impregnable, self-sustaining mountaintop fortress in rural Pennsylvania, possibly based on the legendary assassin’s fortress at Alamut (R. Wertime). Over the course of the decade, he had turned several of his sons into research assistants and had moved an expert from the Smithsonian, his mistress, in to live with him alongside his wife. The independent scholar read Paul Goodman and Marshal McLuhan, incorporating their critiques of contemporary cultural structures into his own work . In missives, published in the Washington Post, Wertime progressed from thoughtful explications of his own work to more bold claims about impending societal collapse. Shortly after his calls for a “New American Maoism in a Post-Copernican Age” they stopped publishing his work. In one sense, he is just another drop out from institutional society, a failed cult leader, a footnote to the seventies. Yet there are other elements running through his work that are incredibly prescient: a conception of the anthropocene, a prediction of past and future geotrauma, and perhaps above all for my purposes, a deep understanding of our entanglement with metallic technologies.

Priests from Afar, Gods from Below

It is from Deleuze and Guattari that I take the term ‘metallic affect’, and from them also that we get a comprehensive notion of the itinerant metallurgist as a sort of wildcard. Rosi Braidotti has performed an excellent exegetical reading of their idea of the Nomad, expanding it into a capable theoretical construct. Yet the smith is almost absent from contemporary Deleuzian theory, save for brief mentions in the work of Barry and Day, and an excellent, obscure essay in a trade magazine by Elizabeth Jones . The smith is said to neither belong entirely to sedentary civilisation, nor to the nomadic tribes that both oppose and are employed by sedentary civilisations as agents of war (as well as of trade and exploration). I have attempted to trace this notion of itinerant metallurgists back through their work, as well as through the work of their sources. I trace the first encounter, though any judgement on significance is pure speculation, to a patient known as Jack Brière, admitted to the clinic at La Borde early in 1959 (Dosse 47). Brière appears to have been incredibly active during his time at La Borde, serving for some time as a secretary and treasurer and pursuing courses in sculpture. His reason for admission, several unspecified ‘phobias’, was detailed in his induction, and subsequently in eight years of private therapy, to a young doctor called Felix Guattari. François Dosse, in his dual biography, reveals that Guattari was able to acquire funds for Brière to purchase books on metallurgy; it is inconceivable that Guattari would fail to learn a great deal about a subject of

passionate interest to a long-term patient (47). Dosse also notes that many students, some of whom were studying anthropology or related subjects, overran La Borde and contributed to its pedagogical environment; they were referred to collectively as ‘the Barbarians’ (50). The first written evidence of Guattari’s enthusiasm for metallurgy seems to come in his *Anti-Oedipus Papers*, his preparatory notes for his collaboration with philosophy lecturer Gilles Deleuze. In an entry from 29th March 1972, Guattari notes with a great deal of excitement that Andre Leroi-Gourhan’s *Milieu and Techniques* has a complex notion of the emergence of metallurgical technologies, eschewing the clean break from the neolithic in favour of a gradual, complicated emergence (372). Metal appears to have always been on the human radar, even before we had the capacity to work it. Paraphrasing Leroi-Gourhan, Guattari develops his concepts of the machinic vector or phylum, which would become critical both to his later work and his collaborations with Deleuze. From here, we can already discern a prototypical form of symmetrical materialism. The machinic vector spoken of plays some part in enabling its future users; a phylum is a classificatory structure, used also for families of tools, but in this case also implying organic phyla. It is another form of agency running in parallel to, and even underlying what is perceived as human technological progress.

In *Anti-Oedipus* itself, Deleuze and Guattari’s first great collaboration, there are few references to metallurgy; those that exist refer only to attempts to discipline metallurgists to prevent the elaboration of flows. Deleuze and Guattari write that:

The primitive machine is not ignorant of exchange, commerce, and industry; it exorcises them, localizes them, cordons them off, encastes them, and maintains the merchant and the blacksmith in a subordinate position, so that the flows of exchange and the flows of production do not manage to break the codes in favor of their abstract or fictional quantities. (154)

As opposed to the primitive accumulation of Marx’s early civilisation, which had not yet developed the level of technological enhancement required to facilitate exchange of, and experimentation within, technology, the primitive machine sketched here is incredibly sophisticated. The machine is able to repress the emergence of great civilisations through the careful management of blacksmiths and merchants, alchemists and astronomers. The emergence of capitalism disrupts this disciplinary power, releasing these agents and the machinic, or metallic vector that animates them. For Deleuze and Guattari, capitalism predates the industrial revolution, actually helping to produce the demand for its machines (232). In *Anti-Oedipus*, it appears that much of the speculation about metallurgy relate to Guattari’s preparatory reading of Leroi-Gourhan. It is in the 1977 dialogue with Richard Pinhas at the Course Vincennes that we see Deleuze start to develop a metallic passion of his own. Pinhas, drawing upon a range of mostly musical sources, and explains that:

... a kind of process which I call for the moment a process of metalization (métallisation), a metallic process which would affect for example the repetitive musical syntheses, and which would be a kind of mixture (of course, this notion of mixture remains to be defined), and where one would have a time which would be both continuous and *eventual*.

Pinhas is referring back to the two conceptions of time – the linear *chronos* and the exceptional *aion* – developed in Deleuze’s 1969 work *The Logic of Sense*, though the notion of ‘metallic synthesis’ is

initially alien to Deleuze. Within the space of this single lecture, Deleuze has already begun to adapt and adopt the concept, making a humorous observation about the 'metallic thread' of Humphrey Bogart's voice. In Pinhas' reading, the metallic process comes to counteract the crystallisation of time, rendering it fluid and dynamic, both sequential and significant. Metallurgy has its own understanding of materiality that differs from that of conventional ontology.

In 1979, Deleuze devotes an entire course to the relations between music and metallurgy. In his reading of musicians Berlioz and Wagner, what he finds significant is their fidelity to a certain metallic line, to a certain mythological relationship between the musician and the blacksmith. The line of metal is related to the 'crystal line' of musicians such as Mozart, who privilege perfection over flows, but lines are neither exclusive nor dependent upon each other. Deleuze seems to have firmly adopted Pinhas's concept of metallisation, but also engaged in reflecting on the relationship of metallurgy to Edmund Husserl and Gilbert Simondon. Deleuze sees Husserl's phenomenology anew as the hunt for 'vague', ill-defined essences, and for him, "phenomenology is itinerance, it's in the process of following vague essence [...] the phenomenologist is the stroller, the blacksmith" (Deleuze and Pinhas). Simondon, on the other hand, is useful because of his notion of 'metastable states', states which are sustained without equilibrium. These forms of existence are akin to the forms of material worked by the metallurgist. Deleuze expands these 'vagabond corporealities' of Husserl and Simondon into a general theory of movement-matter. This differs somewhat from his Bergsonian vitality; here, he stipulates that "the true matter flow is metal, and the other matters will be grasped as in motion, not by comparison, but only by communication with metal" (Deleuze and Pinhas). Metallurgical processes become a laboratory exemplary of materiality in general; they are the key to an understanding of a possible inorganic vitality.

In *A Thousand Plateaus*, Deleuze and Guattari's tangent on metallurgy centres on two propositions, one problem, and one axiom (394-315). In these segments, Deleuze and Guattari's prior work is assembled to carefully construct a theory of metal as the 'conductor of all matter' and of the smith as an itinerant intermediary between the sedentary state and the nomadic existence (411). Rather than crossing or settling spaces, smiths intersect them, producing their own so-called 'holey space'. They provide the content for the war machines' outbursts, channelling the naturally catalytic power of metal, its latent affect. The primary inspiration for this conception of a poetic cabal is the Australian archaeologist Vere Gordon Childe who saw itinerant metalworkers as providing a means by which villages could get access to metal tools, without being large and hierarchical enough to support full-time craft workers (see Childe 1981). These workers acted as agents of diffusion, bringing technology but also fragments of other culture, religion, and music. They also cite Marcel Griaule (1976) and W.B. Cline's (1937) work on metallurgical castes in Sub-Saharan Africa; these texts are important because of their detail in showing how metal workers were distanced from the rest of society, sometimes given prestige, but nonetheless subject to a range of initiatory practices and taboos. This alienation remains even as the smith mutates into other agents with an unseemly proximity to metal and to the material; foremost among these is the alchemist.

Mircea Eliade, the Romanian theologian, suggests as much in his work on occult metallurgy, *The Forge and The Crucible* (1978). For reasons of space it seems necessary to avoid commentary on

many of the brilliant revelations in this book, and also to avoid discussing Eliade's ambiguous but nonetheless troubling relationship with the pseudo fascist Iron Guard Legionnaires. The strength of this book comes from its attention to the speculative philosophy practiced by the Alchemists: the belief that, left alone, the metallic ores with which they dealt would continue germinating within the Earth's crust, eventually blossoming towards their perfect substance, gold. Eliade suggests that in alchemical lore, metals have an integral destiny, a teleological drive to perfection in the form of gold. The Earth is compared to an organism, to a mother, and the ores to her embryos (52). The alchemical procedure, therefore, was not so much an assault on nature as an assault on time. The alchemist does not replace natural processes with artificial ones, but rather accelerates the natural development of substances towards perfection. One recalls the *Grundrisse* of Karl Marx, specifically the fragment on machines, wherein a worker transforms natural processes into industrial processes, managing and channelling such forces rather than creating processes anew (705). While this appears to allow agency for the worker, the worker is only able to operate by identifying and feeding into processes already ongoing without any human intervention. The alchemist knows this, sublimating the cosmic forces acting upon their bodies through occult rituals.

This is perhaps also the reason for the strong links between metallurgy and spiritual or shamanic practice. Eliade speaks of the vitality of the ore, which "is alive, it moves at will, hides, shows sympathy or antipathy to human beings – a conduct not dissimilar from that shown by game towards its hunter" (4). Alternatively, it is animated by spirits of a hidden, ancient and almost unspeakable chthonic religion that needs to be respected by those that come into contact with it. Hence the proliferation of minor cults and sub-deities amongst certain metallurgically oriented populations. Eliade speaks in particular of Muslim mining populations of Malaysia, who are predisposed to respecting the older, earthen deities in secret, or populations in Indonesia who created their own lore (5). We might think also of the Telchines, etymologically the 'priests from afar', who were responsible in Bronze-Age Greek mythology for the diffusion of metallurgical technologies (Atsma). They belong not to the structured Greek Pantheon, but to the deep lore of the Eastern Mediterranean. Deified, they are given a divide pedigree in an act of retroactive continuity. Some have argued they were simply an advanced culture, accommodated as a marginal and secretive caste, but other tales give them distinctly non-human characteristics. When Hephaestus, the nominal god of metallurgy, is cast down from Olympus, he is said to take refuge amongst the Sintians who were not metallurgists themselves but relied on their good faith for their weaponry. In the lore of the British Isles, we find that belief in metallurgical spirits exists well into the twentieth century. The Bluecaps, Knockers or Coblynau – miniature spirits that can hurt miners if not treated with respect – are visualisations of the contingent nature of mining (the seemingly random or difficult to discern distribution of ore veins) and the dangerous unpredictability of any kind of geotechnics (Manning). They also suggest a possibility of agency on the part of the metals themselves, that metals want to be found and refined, that they might be extracted even without any human intervention.

A large number of mines in North America may have closed in the twentieth century, but it is at this point that another malevolent earth spirit emerges, one untrammelled by restrictions or binding to earthen spaces. In 1970's Pittsburgh, when Wertime conducted his seminar, its haunting

form was visible over the urban sky. As Angela Gugliotta explains in her thesis, the economic and industrial history of the city, its mixture of mining and the steel production for which it was famous ensured that it would physically and semiotically embody an ecological 'dark age'. Grey clouds hung over the city, giving credence to Wertime's proclamations. The end of industry in the United States abated air pollution, but spirits returned in the progression of catastrophic storms with human names. The theory of the Anthropocene posits that the Earth's climate system has been irrevocably changed by human intervention. As Wertime suggests, the extractive industries, particularly those of metallurgy, are responsible for unleashing these spirits, accelerating their growth and giving them an unprecedented level of power.

Cyborgs, Alchemy and Geotrauma

In Deleuze and Guattari we find an excellent, unattributed quote from Ernst Junger's *The Rebel*: "One does not go back to reconquer the myth, one encounters it anew, when time quakes at its foundations under the empire of extreme danger" (403). Mythology can allow us to speculate on contemporary relationships through the consideration of past relationships; mythological time is cyclic. Hesiod's story of Pandora, for example, is a figurative example of the constantly renegotiated taboo around metallurgical practices. In *Works and Days*, where it is most clearly elaborated, Pandora is made by Hephaestus out of clay. The box and indeed Pandora herself are figurative elaborations; only the clay is significant here, significant of a process of entanglement that comes with pyrotechnology (in the preceding text, the *Theogony*, there is no box, and the woman has no name). Pandora is an anthropomorphisation of an assemblage of metallurgical and pyrotechnical technologies that were taboo. It is worth noting that at the time Hesiod wrote, Greece was coming out of a dark age, while simultaneously hurtling towards an ecological catastrophe. This Dark Age was seemingly spawned by the proliferation of iron weaponry to the multitudes and the consequential disintegration of aristocratic and often tyrannical hierarchies. The same text then goes to speak of the five ages of humanity, four of which correspond directly to different types of metal. Hesiod's age, the age of iron, is the most troubled: more metal, more problems. The preceding age, that of the demigods, is the only one not named directly after a form of metallurgy; these demigods are said to continue living on distant shores, after having occasionally interfered in Bronze or even Iron Age affairs. Their coexistence suggests that the ages relate not only to temporal periods, but different relationships with technology; the Bronze Age people, for example, "didn't eat any food at all", further "they had bronze weapons, bronze houses, and their tools were bronze" (27-28). They are themselves brazen, said to be made of 'ash trees'. Certainly, this is the stuff of mythological fantasy. However, it is perhaps worth adapting these to relate to a modern mythological construct, the 'cyborg'. The cyborg is typically conceived as half-human, half-machine, but the words 'cybernetic organism' can be said to apply to any assemblage of organic and inorganic matter. The Bronze Age humans, the demigods, even Hesiod's Iron Age were all indistinguishable from the metallurgical technologies they embodied. Pandora is perhaps the archetypal cyborg, an anthropomorphised spirit representing dangerous technologies.

I have argued previously that metal is alternatively ‘alive’, or ‘conscious’, based not so much on the affirmation of agency in any particular metallic substance, but rather on the problematisation of standards by which we determine agency, consciousness or vitality and subsequently attribute, or fail to attribute it to other human or non-human actors. I do not necessarily see human activity as being wholly determined by the presence and potential of metal tools, weapons and salts; that being said, I feel it is impossible to argue that we come away from an encounter with a complex object, produced by a range of geological, environmental and organic actors, without being ourselves affected by it. This argument relates theoretically to recent work in ‘symmetrical archaeology’ by archaeologists attempting to apply French philosopher of science Bruno Latour’s call for equity between human and non-human actors to their discipline (Sørensen 2013, Witmore 2007, Olsen 2012). The first practical engagement of anglophone archaeology with Latour seems to come in Mike Pearson and Michael Shanks’s ground-breaking *theatre/archaeology* (2001), a text which attempts to blur the boundaries between performance studies and archaeology by looking to the way they influence each other and the questions they share. In the middle of the central section, Pearson and Shanks break from their discussion of the warrior to talk about the cyborg. The investigation begins with (presumably) Pearson’s reflection on the tendency for dramaturgy to consider the components of a play - stage, props, characters, texts, architectures, etc. – as separate; Pearson wishes to propose their inseparability. Shanks then looks at the boundaries erected to keep the body and the artefact separate, questioning the relevant criteria: consciousness, complexity, activity. A range of dualisms are erected to maintain this boundary, and Shanks asserts that “the alternative to keeping things and people apart is represented by the spectre of the cyborg” (98). Shanks’s cyborg is not just the robotic-human hybrid, but any artefact or body. In his explication he uses a clay pot he is particularly fond of as an example, but also V.G. Childe, the favoured archaeologist of Deleuze and Guattari. Both human and object contain elements of the other, and Shanks asserts that “we find ourselves in our relations with things, just as they come to be in their historical and cultural relations with us” (100).

This sentiment is mirrored in the work on embodiment by scholars associated with the school of New Materialism. Karen Barad, for example, tells us that “identity formation must be understood in terms of the topological dynamics of iterative intra-activity. Particular material-discursive circumstances constrain and enable the specific intra-action of multiple structural apparatuses of bodily production” (99). Barad implies we are cyborgs by asserting that our identities are defined by the cybernetic processes within which we are enmeshed. Yet it is not simply a case of our entrapment; we also have a role in developing and redefining the nature of the assemblages which define us. Rosi Braidotti, in her comparison of cyborg and nomad subjects, asserts that the machinic component of the cyborg is always oriented externally, providing for a natural linkage between the two. Braidotti asserts that “the machine as a connector and distributor of energy is a transformation engine: it transmits and produces connections and relations with fierce and mindless energy” (57). Braidotti refers back to the ‘Cyborg Manifesto’ of Donna Haraway, arguing that the Cyborg is constructed to include the emergent post-industrial subject, as well as to account for other disintegrations of difference. A most critical element of our transformation towards Cyborg subjectivity is that, in Haraway’s words, “our sense of connection to our tools is heightened” (313). It is important for us to

note that this affect is brought about the emergent dissolution of boundaries between us and our artefacts.

British philosopher Nick Land comes to talk about geotrauma following his research into the ambiguous, quite possibly fictional Professor Daniel Charles Barker. Barker, like Arthur Conan Doyle's Professor Challenger, experiments with the notion of a sentient Earth. While for early Land Earth is hijacked by the 'technocapital singularity' and driven towards certain ends, in Barker's work there is already something about the planet's genesis that predisposes it towards catastrophe. For Barker, "[t]rauma is a body. Ultimately – at its pole of maximum disequilibrium – it's an iron thing" (498). Suitably interpolated, the planet is interrogated from a psychoanalytic perspective, its metal core compared to the hellish plateaus of theological and horror writers as well as to "schizophrenic delirium" (498-99). Wertime, OSS spook turned renegade metallurgist, sees the development of complex pyrotechnologies as a response to Earthen influence:

... the threading of these mazes could scarcely occurred simply on the grounds of esthetic playfulness or chance. Only a combination of inducements and pressures – call them also serendipities and imperatives – could have yielded it. (1983)

In the same article, published posthumously, Wertime looks at deforestation as a historical phenomenon, stipulating that there were many staggering ecological and energy crises that shaped the development of civilisation. Wertime calls his reading of archaic development – which sees pyrotechnologies as addictive, and even narcotic – 'incrementalism.' In an unpublished, recently recovered text supposedly from Land's Cybernetic Culture Research Unit (CCRU), it is claimed that "metallurgy's Gothic technics (constitute) the ultimate betrayal of the human, a pact made with the demon that allows the Golem to escape from the judgements of God" (Greenspan). The reference to Gothic technics invokes the barbarian past of metallurgy, the Gothic line identified by Deleuze, but also the horrific and mystical tendencies of the fictional genre. Metallurgy is seen, both theoretically and practically, as a means of facilitating inorganic life.

Resa Negarestani's best known work on geotrauma is his speculative research on the agency of oil, *Cyclonopedia*. Yet for an understanding of geotrauma, his more recent writing is even more enlightening. In *Globe of Revolution*, he speculates that the first scission occurs with the emergence of the organic from the non-organic. Detached from the planetary mass, we develop a notion of the horizon, interiorising this horizontal limit as the limits of our consciousness (displacing this ordinary trauma, that of the separation of the organic and the earth). Capitalism allows us a form of escape from this interiorised horizon, by developing vectors of movement that serve its specific purposes. We are left with the outer atmosphere as limit. Land has proposed a further acceleration, even at the cost of cannibalising the planet's resources entirely. Negastrani chooses a revolutionary post-Copernicanism: "the trans-and-absolutely modern man is no longer the master or the victim of his traumas; he is a universal vector of synthesis between regional traumas – i.e. traumas associated with his brain, his house, the system, the earth and the universe that is free from his temporal necessity" (54). For Land, given Barker's realisations of the planet's traumatic genesis and latent horror, the Earth is something to be escaped. *Cyclonopedia* (Negarestani), with its unspeakable horrors flooding through oil pipelines, seems also to endorse this perspective. Yet Negarestani's recent work seems to

propose a geotraumatic overload that is in fact return to the Earth – not to the organic correlates of trees and flowers – but to the soil and bare metal. Of course, there is also the work of Haraway; wherein the cyborg is explicitly posed as an alternative to the ecologically-minded, technically sceptical subject of second-wave feminism of her time. For Haraway, “the cyborg is not made of mud and cannot dream of returning to dust”, and yet cyborgs also “do not remember the cosmos” (293). Like Deleuze and Guattari’s smith, they feel comfortable neither settled on the earth, or in the infinite void, only in the holey space that they have created but which also creates them.

It is with these concepts of Geotrauma and the Cyborg in mind that I have come to my present study of Theodore Wertime, as well as my broader investigation of Metal Affect. As Richard Wertime, his son, shows in his memoir, *Citadel on the Mountain*, Theodore Wertime is a flawed, violent and often delusional figure, profoundly paranoid and unclear as to the nature of his revolution. That being said, he does not delineate his traumas; the breakdown of his family relationships are concurrent with the decline of the United States as a global superpower, the environmental devastation of the planet, and his own failing health. Increasingly estranged from his father, the younger Wertime follows in this tradition by using an ecological metaphor to determine their collapsing relationship. They are “two men standing on separate ice sheets, helpless in the face of the oceanic currents” (199). Told he looks like Picasso, the older Wertime screams “I am Picasso”; he is like the artist, but he is also akin the artists’ work, an abridgement of angular, tortured forms (205). The surveys, the research and excavations, along with cancer and psychological trauma, have changed him into another creature, for like his son, he has blended into the solar-powered mountain fortress he is creating. We might think of the Fisher King in the Arthurian canon, whose decline is indiscernible from the decline of his kingdom, and there are other parallels to be made. Comparative mythology gives us the trope of the divine smith who is also flawed or crippled: Hephaestus or Wayland, even Pandora. Yet a mere borrowing of mythological characters will hardly suffice, for a truly accessible materialism, we will have to create them anew.

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