Late Capitalism and the Scientific Image of Man: Technology, Cognition, and Culture

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In his recent book *iDisorder: Understanding Our Obsession with Technology and Overcoming Its Hold on Us*, psychologist and computer educator Larry Rosen presents a compelling diagnosis of what he sees as the increasingly widespread cognitive and psychosocial effects of technology on society. According to Rosen, the emergence of cyberspace, computing, social media, portable electronic devices, Web 2.0, and so on, has brought about a general cognitive and psychosocial disorder with symptoms which looks suspiciously like those of a number of well-known psychiatric disorders and is centered on our increasing occupation with technology and new media. These disorders include (but are not limited to) obsessive-compulsive disorder (constantly checking our Facebook, e-mail, iPhones, etc.), attention-deficit hyperactivity disorder (increased inability to focus on one task because of the prevalence of multitasking, video-gaming, etc.), social anxiety disorder (hiding behind various screens at the cost of maintaining face-to-face social relations), and narcissistic personality disorder (being obsessed with creating an idealized online-persona) – all of which are accompanied by various neurological reconfigurations, such as alterations in chemical levels of dopamine and serotonin (i.e. changes in the brain's reward system as a result of technology addiction, which seems to mirror the chemical imbalances underlying various forms of substance addiction), and the creation of new synaptic connections among neurons (i.e. neuroplasticity) in response to the environmental changes brought about by technology (which may be the underlying neurobiological explanation for phenomena such as 'phantom vibration syndrome' where cell phone users start to experience phantom vibrations on a regular basis, presumably as a result of increased attentiveness for vibrating sensations). Taken together, all of these symptoms point to a general state of collective anxiety brought about by the intricate relationship between the technological, neurological, and psychosocial. It is this anxiety that Rosen refers to as 'iDisorder'.

Undoubtedly, there is still a lot of work that needs to be done here, particularly regarding the relation between the technological and psychosocial (to what extent is technology the root-source of these symptoms?), as well as the exact nature of the symptoms themselves (do they index actual clinical conditions?). Yet despite these various lacunae it seems clear to us that Rosen's project brings light on issues that everyone familiar with daily life in digital culture can recognize themselves in, and whose exact nature hopefully will become clear once we learn more about the psychosocial and cognitive effects of technology. But besides from these context-specific reservations, it is also important to recognize the larger context in which Rosen's work makes sense, which in our view is twofold; on the one hand in terms of the function of digital culture within late capitalism, and one the other hand in terms of the relationship between science and culture implicit in the cognitive and psychosocial effects of technology. It is these two contexts that we aim to elaborate on in the present essay. In the first section we will situate Rosen's diagnosis within what Mark Fisher has referred to as a general disenchantment of the digital in late capitalist culture (i.e. a widespread dissatisfaction with current forms of digital culture), which not only indexes a major cultural malaise brought about by the digital, but also what Fisher has identified as a general aporia within late capitalism: the problem of mental health. Then, in the second section, we will elaborate on the implications of the use of scientific resources (neuroscience in particular) in order to understand the cognitive effects of technology and its potentially decisive role within the context of a major cultural shift brought about by the speculative import of what the philosopher Wilfrid Sellars has referred to as the 'scientific image of man'. Finally, we will conclude with some brief remarks about the nature of this shift and its implications for various forms of cultural and post-capitalist praxis.

Digital Pathologies in Late Capitalist Culture

According to Mark Fisher, the fact that the presence of various psychological disorders such as depression, anxiety, stress, and attention-deficit hyperactivity disorder has increased significantly over the last decades is not a mere coincidence, but a consequence of the rise of neoliberalism as such. Indeed, what has accompanied

the shift from disciplinary societies to control societies, from Fordist rigidity to post-Fordist flexibility, is nothing less than a major pandemic of various psychological disorders whose root-source is to be found in the numerous social restructurings imposed by neoliberalism, rather than in individual chemico-biological imbalances. These restructurings include flexibility and precarity in working-life, various forms of PR and new bureaucracy, and, of course, the emergence of cyberspace, social media, portable electronic devices, and so on, whose functioning is integral to the neoliberalist restructuring of nervous-systems which inevitably needs to accompany the new social structures, as well as to the blurring of the distinction between work-time and leisure-time which has escalated in dramatic proportions since it was first diagnosed by Adorno and Horkheimer in the 1940's. Accordingly, increased instability in working life is accompanied on the one hand by new strategies for managing workers-consumers, which, despite claims towards decentralization and diversity, remain deadlocked within various forms of bureaucracies, constant surveillance, and false appearances (see in particular Fisher 2009: 31-53); and on the other hand by the emergence of a global cyberspace-matrix whose essential functioning lies in the creation of the 'debtor-addict' central to distributed, late capitalist organization. The debtor-addict has lost the ability to concentrate, as well as the capacity to synthesize time into any form of meaningful narrative, and lives instead in a series of twitchy, disconnected presents: "If, then, something like attention deficit hyperactivity disorder is a pathology, it is a pathology of late capitalism – a consequence of being wired into the entertainment-control circuits of hypermediated consumer culture". (Fisher 2009: 25) Of course, the idea that the proliferation of mental illness may be correlated with the triumph of neoliberalism is strictly denied by the latter's advocates. But, more importantly, it also has not been recognized by the left as an urgent issue to re-politicize, as Fisher notes in a particularly incisive passage:

> The current ruling ontology denies any possibility of a social causation of mental illness. The chemico-biologization of mental illness is of course strictly commensurate with its depolitiziation. Considering mental illness

an individual chemico-biological problem has enormous benefits for capitalism. First, it reinforces Capital's drive towards atomistic individualization (you are sick because of your brain chemistry). Second, it provides an enormously lucrative market in which multinational pharmaceutical companies can peddle their pharmaceuticals (we can cure you with our SSRIs). It goes without saying that all mental illnesses are neurologically *instantiated*, but this says nothing about their *causation*. If it is true, for instance, that depression is constituted by low serotonin levels, what still needs to be explained is why particular individuals have low levels of serotonin. This requires a social and political explanation; and the task of repoliticizing mental illness is an urgent one if the left wants to challenge capitalist realism. (Fisher 2009: 37)

It is consequently in this larger socio-political context that Rosen's work must be situated. Indeed, his observations regarding the proliferation of psychological disorders such as attention-deficit hyperactivity disorder, as well as changes in brain structure and chemical balance – presumably as a result of our increased dependence on technology and new media – indeed seems to be a particularly lucid study of the cognitive and psychosocial effects of the rise of the capitalist cyberspace-matrix that Fisher has identified in his writings on neoliberalism. Consequently, even though Rosen is right in locating the root-source of these symptoms outside the brain, it is only when they have been situated in an even larger socio-political (and, as we shall see, cultural) context that we will be able to properly diagnose their intricate structure and causation, as the above quotation emphasizes.

But this is only one side of the story, however, since the cognitive agenda imposed by neoliberalism not only threatens to undermine psychological issues related to mental health, but also transformative concerns organized around the relationship between the technological and the neurobiological. In other words, there are at least two trajectories that need to be elaborated on here: *clinical* issues related to mental health and *speculative* issues related to the neurotechnological transformation of cognitive

neurobiology. It is the latter set of issues that we will concern ourselves with in the remainder of this essay, with a particular focus on its cultural implications since we believe that contemporary culture not only is in desperate need of such speculative resources, but also because it seems to us that culture would constitute a particularly productive field for the utilization of their transformative potential. Yet before going further into this discussion we need to complement our previous socio-political contextualization with its cultural counterpart, since the digital pathology outlined above not only is rooted in a failed social contract, but also in a cultural malaise of widespread proportions. In other words, the full magnitude of current technological disenchantment can only be understood once it has been situated squarely in the socio-political agenda of neoliberalism, on the one hand, and the cultural malaise of aggravated postmodernism, on the other.

Once again it is the work of Mark Fisher which is exemplary here. Building upon Jameson's Marxist thesis that changes in culture must be understood in conjunction with changes in the economy, and that postmodernism is the cultural logic of late capitalism, Fisher sees contemporary culture as steeped in what may be characterized as a sort of normalized postmodernism. The latter designates a widespread cultural inertia where the residual conflict between modernism and postmodernism which haunted Jameson's work has been completely forgotten, along with the distinction between high art and popular culture, and where the modernist ethos of orienting oneself towards the unknown has been substituted – again, as Jameson correctly predicted – by a tendency towards revivalism, retrospection, pastiche, and constant recycling of the already familiar. Accordingly, 'retro' no longer designates one particular style but the modus operandi of culture *tout court*, and the capitalist colonization of nature and the unconscious – observed with wonder and horror by Jameson in the 1980's – has now been normalized to such an extent that it is simply taken for granted. Consequently, even though cultural distribution, consumption, and communication have went through remarkable changes over the last decade, cultural production itself has generated very little of excitement. Contrasting his own adolescence with that of young people today, music

writer and cultural critic Simon Reynolds notes that whereas his own youth was steeped in interests such as modernist art, alien life, and outer space (i.e. the unknown), the wonders of boundless exteriority no longer seems to have any purchase on young people today, immersed as they are in Youtube, Facebook, iPhones, and other forms of social media (see Reynolds 2011: 362-398). Sure, new technologies have proliferated dramatically over the last decade, but only to the extent that they maintain the cultural interiority and status quo concomitant with the capitalist cyberspace-matrix. This is a cultural situation which Reynolds characterizes as one of widespread temporal malaise, or 'hyperstasis', *qua* digital life as daily experience. The fundamental problem which confronts us is consequently one of rehabilitating the link between technology and the unknown – in contrast with the cyber-capitalist reiteration of the already known – which to us is intimately connected to a renewed understanding of the implications of science on culture, simply because science, as we shall see, is one of man's primary methods for indexing the unknown. In particular, the field of cognitive neuroscience seems to provide some of the most promising (but hardly the only) resources for this cultural confrontation with the unknown; not just because it provides a much-needed antidote to the cognitive malaise imposed by neoliberalism, but also because it exposes the unknown within man himself. The latter will consequently be our main topic of discussion in the next section.

The Cultural Implications of Cognitive Exteriorization

At a first glance, the idea of the cultural import of resources provided by modern science might seem dubious – what, after all, could scientific data provide cultural production? – yet it is of our firm belief that this issue is one of the most critical for any form of contemporary cultural theory. Of course, questions concerning the intellectual influence of scientific rationality on cultural production have been posed numerous times over the last decades, but over time their many shortcomings have become increasingly obvious and what is needed today is therefore a radical reconsideration of the relationship between science and culture (or, in broader terms, between man and nature). In what follows, we will consequently aim to sketch out

some broader outlines for such a reconsideration, focusing in particular on one of the most influential statements on the topic: Adorno and Horkheimer's *Dialectic of Enlightenment*. However, this requires us to engage not just with the book's celebrated chapter on the culture industry, but also with its central arguments regarding the failure of the Enlightenment and the pathology of instrumental rationality, since what often goes unmentioned in the many books outlining the influence of Adorno and Horkheimer on contemporary cultural theory is the wider critical context in which the analysis of the culture industry is situated. Indeed, the decision to not articulate this link has in our view become more than a mere pedagogical shortcoming, since it in fact harbors the key to a contemporary engagement with the book's criticisms of modern culture. It is consequently at this particular juncture where our analysis must begin.

As is well known, the main topic of *Dialectic of Enlightenment* is what Adorno and Horkheimer considered to be the failure of the Enlightenment in the modern world, and may be condensed into the following question: If the animus of the Enlightenment is that of emancipating man from his irrationality (or 'immaturity', as Kant put it), then why is contemporary society sinking into a new form of barbarism? Indeed, fascism, capitalism, cultural standardization, and the oppression of women – all of which are analyzed in-depth in the book – can hardly be thought of as triumphs of enlightened man, so the task of the critical theorist then becomes one of identifying the root-source to these widespread failures of modern society. Yet unlike during the Frankfurt School's earlier Marxist period, Adorno and Horkheimer argue that this root-source cannot be located in various forms of class struggle or political oppression, since those phenomena – just as capitalism itself – are mere symptoms of a much deeper conflict which has haunted Western civilization since its inception: that between man and nature. This conflict is formulated in terms of a struggle between dominating and dominated, since, for Adorno and Horkheimer, civilization is dependent on man's urge to tame and ultimately control the hostile forces harbored by alien nature. This is the objective of sacrifice in pre-rational societies, since sacrifice – construed as a particular logic of non-conceptual exchange – is

primitive man's attempt to affect a commensuration between himself and the horrors of alien nature. Enlightenment is, of course, founded upon the discarding of sacrificial logic in favor of rational explanation, yet what enlightened thought in fact ends up with, according to Adorno and Horkheimer, is not the post-sacrificial logic it is searching for, but merely the internalization of sacrifice *tout court*. Accordingly, enlightened thought is characterized as an unreflective pathology where man's desire to convert the entirety of nature into series of numbers and formula (i.e. to control nature via scientific explanation) remains deadlocked within the mythical pattern of thought it wants to be rid of, since what scientific logic ultimately represents is nothing but a new form of alienation which not just extends across the exteriority of nature but also into the interiority of man himself. Indeed, what the scientific impetus to exteriorize and spatialize ultimately ends up with is nothing but an aggravated form of self-sacrifice, since the reduction of everything to identical units – rather than reaching out towards an exteriority beyond man – merely continues to symbolically sacrifice parts of the human in a pathological, compulsive manner, which in the end renders properly philosophical (or reflective) thinking impossible. Consequently, for Adorno and Horkheimer, this marks the beginning of a dangerous path where ends are substituted for means and domination sooner or later is reverted back towards man himself; both in terms of domination between men and in terms of the alienation of man from himself, where thinking is reduced to a pure mathematical function:

> Thinking objectifies itself to become an automatic, self-activating process; an impersonation of the machine that it produces itself so that ultimately the machine can replace it. […] Mathematical procedure [becomes], so to speak, the ritual of thinking. In spite of the axiomatic self-restriction, it establishes itself as necessary and objective: it turns thought into a thing, an instrument – which is its own term for it. (Adorno and Horkheimer 1997: 25)

It is consequently in this wider critical context where the analysis of the culture industry must be situated, since what the latter indeed is an index of, according to Adorno and Horkheimer, is one of the modes of self-domination which has emerged along with the triumph of scientific rationality. Accordingly, the term 'culture industry' was deliberately chosen – as opposed to 'mass culture' or 'popular culture' – precisely in order to emphasize the link between Enlightenment-rationality and modern culture by highlighting on the one hand how the latter operates in terms of increased technological subsumption by mechanical reproduction, and on the other hand how the distribution of cultural products is being monitored by rational, controlled organization. In other words, these are the primary symptoms of how Enlightenment-rationality has infected cultural production and reduced the latter to a series of banalities of artificial desires which, of course, are strictly in-tune with capitalist organization in the form of a new mode of social domination.

Yet the link between scientific rationality and social domination that Adorno and Horkheimer's thesis rests upon is far from guaranteed. Indeed, in our view it is rooted in a fundamental misdiagnosis of the intellectual import of Enlightenment-rationality, which remains committed to the safeguarding of a fictional 'humanism' at the cost of eliding its wider speculative implications. However, these implications have recently been articulated with remarkable cogency by the philosopher Ray Brassier, who in his book *Nihil Unbound: Enlightenment and Extinction* presents a striking alternative interpretation of the intellectual legacy of the Enlightenment; an interpretation which, as we shall see, will provide us with conceptual resources for the construction of a very different account of culture than that of Adorno and Horkheimer.

The speculative argument of *Nihil Unbound* may be understood as a thanatropical inversion of Adorno and Horkheimer's dialectics of myth and enlightenment, since it insists on, rather than rejects, the impersonal nihilism implicit in scientific objectification and technological exteriorization. Accordingly, whereas Adorno and Horkheimer argue that what they conceive of as the terminal exhaustion of reason

only can be overcome by re-integrating it within the purposefulness of human history – construed as a temporal transcendence of science's pathological compulsion – Brassier insists on the incompatibility between the image of nature given to us by science and our manifest understanding of things. Indeed, for Brassier, the fact that the thought of science goes beyond our default apprehension of nature must be understood as the starting point for the philosophical enterprise, rather than as a cognitive pathology which philosophy must be summoned to remedy. Consequently, the bulk of *Nihil Unbound* is concerned with articulating scientific rationalism as a cognitive overturning of man's life-world, wherein thinking is confronted with an alien outside which is unconditioned by human manifestation. And rather than trying to re-inscribe this universal purposelessness within a human narrative of reconciliation, the animus of *Nihil Unbound* is one of progressively tearing down the life-world that we have created in order to satisfy our psychological needs (and which philosophy also has participated in, as can be seen in Adorno and Horkheimer's dialectical thinking) by recognizing that human experience, consciousness, meaning, and history are nothing but minor spatio-temporal occurrences within an exorbitant cosmology which is being progressively unveiled by the natural sciences. Scientific rationalism, therefore, is a trauma for thought (as Adorno and Horkheimer argued), although its root-source is not to be found within the confines of human history (i.e. as a purely psychosocial struggle between dominating and dominated) but in the speculative model of death proposed by Freud (see Freud 2003). Death, in the Freudian sense, has nothing to do with death as the end of an individual person's life, but rather indexes the aboriginal scission between the organic and inorganic: a scission which persists as a unilaterally inflicted trauma, or trace of an alien un-life, in the psychological infrastructure of Homo sapiens. (Brassier 2007: 234-238) This impersonal death is the motor which drives speculative thought (*qua* the will-to-know), and the task of the philosopher is consequently not one of staving-off the threat of its disenchanting vectors, but rather following them to their logical conclusion. This is nihil unbound: nihilism emancipated from its confinement within the regional horizon of the human life-world and repositioned within a proper universal context.

However, despite the cosmological implications of Brassier's speculative nihilism, it is important not to overlook its equally significant cognitive import; particularly since consciousness often has been construed as transcendentally unobjectifiable within the Continental mode of philosophizing which has had the major conceptual impact on contemporary cultural theory. Indeed, as we saw an example of in our previous discussion of Adorno and Horkheimer, the scientific objectification of consciousness has often been viewed as an index of a dangerous form of anti-humanism which threatens to alienate us from our true selves in its compulsive attempts to objectify that which lies beyond objectification. Yet the techno-scientific objectification of consciousness is already underway within the various fields of cognitive neuroscience, which together promise an entirely novel image of humankind that certainly will put many of our default conceptions of ourselves into question (including sophisticated philosophical ones). In that regard, it is one of the most significant issues opened up by the conceptual integration of scientific explanation, which is something the philosopher Wilfrid Sellars addressed several decades ago in the form of a distinction between what he called the *manifest* and *scientific* images of man.

According to Sellars, the manifest image is a sophisticated conceptual framework that has accumulated gradually since the emergence of Homo sapiens and is organized around the notion of man as *person*; that is, as a rational agent capable of giving and asking for reasons within the context of a larger socio-linguistic economy. In that regard, the fundamental import of the manifest image is its *normative* valence in that it provides man with a basic framework for keeping track of commitments, providing and revising explanations, assessing what ought to be done, and vice versa. In short, the space of reasons provided by the manifest image is what distinguishes sapient intelligence from that of mere sentience. However, Sellars also noticed the much more recent emergence of another image associated with the natural sciences and which presents itself as a rival image in that it is organized around the notion of man as a *physical system*. In other words, whereas the manifest image construes man quasi-transcendentally, as the singular bearer of the object

reason, the scientific image instead views man from the perspective of natural history, as a particularly complex accumulation of various forms of biological material. Thus, for Sellars, the fundamental task for the contemporary philosopher is one of achieving a stereoscopic integration of the manifest and scientific images; that is, of producing a synoptic framework capable of giving an account of man as a rational agent on the one hand, and as a physical system on the other. Yet this task should not be understood as an attempt to accommodate the scientific image according to man's psychological needs: explanatory integration should not be confused with conceptual commensuration. Indeed, as we just emphasized in our discussion of Brassier and as Sellars himself saw, there is something fundamentally counterintuitive about the scientific image in that it presents an image of man which is completely alien to common sense-reasoning. Accordingly, it is at this particular juncture – at the traumatic clash between the manifest and scientific images – where dialectical enlightenment must be reversed into thanatropical enlightenment and thinking rehabilitated with the edge of speculative reason.[1]

Recently, the trauma generated in the manifest order through its encounter with scientific reason has been given a particularly incisive formulation by the neurophilosopher Thomas Metzinger, whose magnum opus *Being No-One: The Self-Model Theory of Subjectivity* is a comprehensive study of the notion of phenomenal selfhood and the first-person perspective which is firmly grounded in the emerging intellectual resources provided by modern neuroscience. According to Metzinger, the

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[1] Undoubtedly, much more needs to be said about the quest for explanatory integration of the manifest and scientific, and its consequences for a genuinely modern form of nihilism. In particular, it is important to recognize that the commitment to the manifest order *qua* normative reasoning does not index a regression from nihilistic disenchantment to yet another version of conservative humanism – as Brassier sometimes has been accused of – since what is crucial about the manifest image is its normative infrastructure rather than its purely contingent instantiation in the medium Homo sapiens. In other words, there is nothing intrinsically human about the manifest image insofar as it is medium-independent and in principle could be instantiated in other systems than biological ones. (See Brassier and Malik 2014) This is the fundamental speculative import of the Sellarsian model. Thanks to Ray Brassier and Pete Wolfendale for clarifying these points to us.

most fundamental feature of phenomenal selfhood *qua* conscious first-person experience is a peculiar form of epistemic darkness which emerges in-between the phenomenological and neurobiological levels of description. This darkness is centered on the fact that the phenomenal self is unable to experience the underlying neurobiological processes that are constitutive of the first-person perspective as such, and consequently does not recognize the latter as an ongoing *representational process* within the functional architecture of the biological information-processing system that is the body. In other words, for Metzinger, the notion of an authentic self which is in immediate contact with itself and the world around it is a myth rooted in complex representational processes in the brain, whose central function is to maintain the epistemic transparency that is necessary for a stable phenomenal first-person perspective. In technical terms this means that it is only the *content* properties (*qua* phenomenological data) that is accessible to the system, but not the *vehicle* properties (*qua* underlying neurodynamics), which is how the system comes to experience itself *as* a self (rather than as the biological data-system it actually is) by failing to recognize that phenomenal selfhood is a particular form of representational model – what Metzinger refers to as the 'phenomenal self-model' (PSM) – that has been generated through the courses of evolution in order to maximize cognitive and behavioral flexibility strictly for the purposes of survival.[2] But evolutionary efficacy is not the same as epistemic clarity, and one of the major virtues of the PSM-theory is that it circumvents a common problem with many philosophies of mind, experience, and embodiment, which is the tendency to reify non-pathological waking states while disregarding phenomenal state classes which fall outside the framework constituted by default first-person experience. Accordingly, one of the most interesting aspects of Metzinger's work is that it is built around so-called *deviant*

[2] Another more non-technical way to conceive of the PSM is to think of it as a highly advanced virtual reality-model, for just as in VR the major objective of the PSM is to make the user unaware of the fact that he is operating in a medium. Yet with the PSM we need to go one step further with this metaphor, since unlike in VR there is no user which precedes the interaction with the system because *it is only the system that exists to begin with*. (See Metzinger 2004: 553-558) In other words, it is the system's ability to generate a *world-model* on the one hand and a *self-model* on the other which produces the notion of a strong sense of self in immediate contact with the world.

phenomenal models, because what these are examples of are experiential states when the transparency of the default first-person experience loses some of its consistency and parts of the PSM become *opaque* to various degrees. In that regard, deviant phenomenal states such as psychedelic experiences, hallucinations, lucid dreams, and various neurological deficiencies such as agnosia (the inability to recognize faces, including one's own), phantom limbs, and blindsight (the experience of a blind-spot in the phenomenal world-model), are all examples of experiential states that are characterized by a *lack* of transparency and thereby foreground the representational nature of phenomenal self-consciousness by making the fact that the latter is a representational process globally available to the system. In that regard, deviant phenomenal states foreground the compelling speculative implications of modern neuroscience for philosophy, cultural production, and critical theory, since they point to the fact that our default phenomenal interfacing with cognitive interiority and non-cognitive exteriority is only one out of many possible experiential states, rather than the bedrock of humanity as it is sometimes mistaken for. And furthermore, once the neural correlates of consciousness (NCC's) that underlie these various modes of experience have been objectified by modern neuroscience, they could in principle be activated at will with the help of various neurotechnologies, cognitive enhancers, and brain-machine interfaces. Indeed, according to Metzinger, the proliferation of devices for exteriorizing and controlling the brain, as well as the emergence of a modern science of cognition, will form the bedrock of what he refers to as 'Enlightenment 2.0' (i.e. the internalization of Enlightenment-disenchantment – whereby scientific rationality comes to investigate its own cognitive basis – along with the gradual integration of neurotechnologies into everyday-life, see Metzinger 2009: 189-219).

There is no denying that Enlightenment 2.0 has somewhat of a horrific ring to it,[3] yet it is of our firm belief that theorists and cultural producers should embrace its

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[3] This side of Enlightenment 2.0 has already been dramatized in various science-fiction novels which depict the implications of the proliferation of neurotechnologies on a mass-scale – see for instance Bakker 2009 and Sullivan 2010 – yet in contrast to these mainly dystopic scenarios it is the aim of this essay to elaborate on its (equally important) potential positive implications.

disenchanting vectors rather than follow the trajectory maintained by the Frankfurt-School and reject them for moralistic reasons, since what the speculative resources they harbor promise is nothing less than a major reconsideration of man and his relationship to nature. And, of course, included in this remarkable intellectual shift will be the cultural import of the scientific image, which we believe not only would allow us to further diagnose the cultural deadlock of the present but also provide us with much needed resources to construct alternate cultural futures. In fact, processes indexed by the scientific image are already at work in culture and have even played central roles within important cultural movements such as 90's rave, which Simon Reynolds has described as a remarkable cultural *and* neurological event thanks to the positive feedback-loops constituted by technology and abstract digital sounds on the one hand, and the neurobiological effects of various psychedelic drugs (ecstasy in particular) on the other. Indeed, what was exciting about rave was the fact that the neurochemical modifications brought about by the excessive use of drugs did not just play a peripheral role but in fact constituted one of its major driving forces. In that regard, it formed one pole of what Reynolds has named rave's *drug/tech-interface*, which refers to the progressive evolution of culture through neurotechnological experimentation and rave as an enclave of modernism – a cultural component of what Nick Srnicek and Alex Williams recently have characterized as an *alternative modernity* – within an emerging postmodern cultural landscape (see Srnicek and Williams 2013, and Fisher and Reynolds 2010). Accordingly, if Adorno and Horkheimer argued that modernity had failed to fulfill the promises of the Enlightenment, our contention is that the trajectories towards an alternative modernity must be constructed through a renewed engagement with the legacy of the Enlightenment (whether construed as 'thanatropical' or '2.0') and its fundamental speculative implications – neurobiological experimentation, complex technological systems, impersonal models of reason, cosmic exploration, and so on – which we believe harbor the key to the rehabilitation of man's progressive unfolding towards the unknown. We will consequently end this essay with a few initial remarks on this major speculative project.

Conclusion: Promethean Futures

In his recent work on the hyperstasis of popular culture, Simon Reynolds links the decline from modernist exploration to postmodern malaise with the disappearance of questions concerning the future from the cultural agenda. Whereas rave culture (and other 20th century musical subcultures which preceded it) was steeped in the notion of a progressive unfolding across an extensional axis – a sort of future-rush driven by technological and cognitive navigation via the medium of sound – what is lacking in culture today, according to Reynolds, is any meaningful notion of the future at all. Instead, popular culture today is driven by what Reynolds has referred to as *retromania*: an obsession with its own immediate past in the form of remakes, re-issues, pastiche, and nostalgia. And, as Mark Fisher has pointed out (again following Jameson), this widespread cultural deceleration must be understood as a symptom of the current neoliberal order, since capitalism not only has taken over the notion of modernity but also that of the future, yet is unable to deliver anything beyond marginal changes within what ultimately must be characterized as a terrestrial status quo. The result is a left which is paralyzed by the deadlocks of the present, unable to even imagine a future beyond the confines of the neoliberal order. What we have instead are paltry turns towards organicism, local areas of justice and equality, and laments over the decline of our humanity in the face of cybernetic capitalism. This is now the default position not just among many anti-capitalist groups, but also in the tradition of critical theory which may be traced back to the Frankfurt School as well as the agenda for much postmodern critique. It is consequently at this particular juncture where the current essay must be situated, since we believe that was is needed today is a radical re-invention of critique which once again takes up the Marxist dictum of critical theory as a means for *changing the world*. Indeed, over the last decades it seems that this forward-looking aspect of critique gradually has faded away and been replaced by a desire to go backwards by restoring what we once were. Yet our contention is that the major objective of critique today is to speculate on *what we could be*; that is, to operate from the perspective of the future rather than from that of the past. It is in this context where the speculative integration of the scientific image emerges as a decisive resource for modern critical theory, since it

provides thinking with a crucial component for orienting itself towards the future in the form of a major reconsideration of what it means to be human. In that regard, it must be understood as part of what Ray Brassier has defined as the re-habilitation of Enlightenment Prometheanism as the means for collective self-mastery and active participation in the remaking of mankind and the world (see Brassier 2013). Far from being the dangerous totalitarianism it is often accused of, Prometheanism must rather be understood as the speculative program necessary for the re-orientation of mankind towards the future *qua* the unknown. While the many ambitions of this massive project certainly need to encompass much more than merely the cultural, we will conclude with a few remarks on the latter since it is at the heart of our own investigations.

A culture steeped in Promethean ambitions needs to be based on the legacy of thanatropical Enlightenment, rather than its mainstream dialectical version, since it is only the former which will provide man with a proper intellectual context for orienting himself towards the future. Against postmodernist relativism and blatant anti-rationalism it must uphold the intellectual significance of the scientific image on the one hand, and the emancipatory vectors of impersonal reason on the other (see page 12, note 1). At the heart of this position is the rejection of what we earlier referred to as the fictional humanism that constitutes the core of Adorno and Horkheimer's dialectical thinking, and which has reappeared numerous times in postmodern critical theory. In particular, concepts such as nihilism, disenchantment, and alienation – which by now have been manifested as nothing but deplorable symptoms of the cultural present – must not be thought of as mere cultural pathologies that needs to be overcome, but rather as speculative instruments which must be re-invented through their emancipation from their confinement within the manifest order. Indeed, a culture operating according to the current version of Enlightenment Prometheanism must take the latter as *starting-points*, rather than dead-ends, for its ventures into speculative futures. Thus, according to the latter, the current diagnosis of nihilism, alienation, and disenchantment is based on a by now common reification of the manifest image at the cost of its scientific counterpart; yet

the cultural integration of the latter under the aegis of a Promethean program will turn these concepts on their heads by forcing them to be cracked open by the vista of scientific rationality. In that regard, it is important to once again emphasize that the cognitive and technological malaise maintained by neoliberalism must not just be understood as a problem of mental health, but also (as can be seen in the work of Jameson and Reynolds) as a problem of the relationship between anthropic interiority and non-anthropic exteriority. Surely, the former is a significant problem which requires its own particular solutions, yet to think of the social and cultural implications of the scientific image as purely an issue of mental health – which indeed seems to be the common response by analytic philosophers when confronted with skepticism and anti-scientific moralism (see for instance Churchland 2007 and Ladyman 2009) – is to disregard its wider Promethean ambitions and potentially decisive role within a major cultural and cognitive shift. The latter would be based upon (amongst other things) extensive cultural and cognitive experimentation utilizing the speculative opportunities provided by neuroplasticity, advanced technological systems, NBIC (Nanotechnology, Biotechnology, Information Technology, and Cognitive Science), and so on, and would be realized by cultural-scientific resources such as the drug-tech interface which thereby would need to be repurposed for post-capitalist ends.[4] Indeed, the drug-tech interface has not so much disappeared from culture since the decline of the rave ethos (which, ironically, also took the turn towards revivalism and retrospection), but rather been appropriated by capital in the form of the cultural and cognitive agenda diagnosed by Rosen and Fisher (i.e. ecstasy and alien sound-systems have been substituted by anti-depressants and social media). Accordingly, what is necessary is a major re-appropriation of such resources in the form of cultural programs which once again would up the ante of cognitive and cultural ambitions by re-orienting mankind towards the wonders of boundless exteriority.

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[4] In that regard, the current project must also be thought of as part of the wider political program which recently has been referred to as 'accelerationism'. For the to-date best assessment of the accelerationist impetus and its many links to Enlightenment Prometheanism, see Srnicek and Williams 2013, and Williams 2013.

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