

# The Drug-Tech Interface, Part 1: Rave Culture in the 90s

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'Rave' is an umbrella term for a musical subculture that emerged in Europe and the US in the late 1980s and saw its creative and popular culmination in the following decade. Even though the term itself covers a number of musical genres and subgenres – house, techno, jungle, trance, garage, gabber, big beat, techstep, acid, dubstep, and so on – what all of them have in common is that they are various expressions of what has become known as *electronic dance music*. Rave culture on the one hand refers to the multiplicity of sonic forms that have come to operate under this banner, and on the other hand to the particular social and psychic environments that accumulated around and the whole way of life they brought with them. Similarly, what I am interested in here is not just the music – but rather how the technological, social, sonic and neurobiological components of 90s rave culture converged under the aegis of formal aesthetic and cognitive experiments that may be understood in terms of what the music and cultural critic Simon Reynolds has theorised as rave's 'drug-tech interface'.<sup>1</sup> Hence, this is not an essay on rave from a purely musical perspective. It is rather an attempt to rethink the aesthetic significance of the drug-tech interface from the perspective of a ubiquitous digital culture – which consequently does not approach it merely in terms of sonic innovations, but rather as a specific *aesthetic, sociocultural and neurobiological instrument* that prefigures an emerging digital culture of cognitive and corporeal mapping, objectification and automation. This is indeed the main focus of all essays in this series – which will look at the transformations of the drug-tech interface from the 90s to the present.

But let us begin with the sonic element of rave's drug-tech interface. Now that electronic sounds has become such a common phenomenon in popular culture – not just in dance music, but also in pop music, film music, video-game music, and so on – the idea of subversive electronic music in many ways seems quite distant. But rave culture was in fact crucial in popularising many of these sounds – and it did so through relentless formal experimentation that saw the post-war psychedelic sensibility converge with novel media technologies and be transformed into what Simon Reynolds has referred to as a full-fledged 'digital psychedelia'.<sup>2</sup> Reynolds also uses terms such as 'hallucinogenres' and 'sampladelia' to refer to the formal innova-

tions made possible not just by the sampler, but also by other pieces of music technology (e.g. mixers, synthesisers, effects and later computers).<sup>3</sup> What is significant with these machines is that they allow DJs and music producers to approach sound in a very unorthodox and non-musical way. Because electronic sound is stored in the form of sonic data on hard discs, it allows producers to tweak, morph and rearrange sound files into seemingly infinite forms of alien soundscapes whose sonic registers far exceed those produced by traditional acoustic instruments. This became a trademark kind of rave sound, whose primary formal innovation was its decisive break with traditional sonic notions of natural acoustics, real-time performance and musicality, in favour of a cognitively estranging machine music organised around texture and repetition rather than melody and harmony (of course, this approach to music did not first appear in rave culture – but had already been crucial to sound art and experimental music – although it was certainly popularised and taken to novel sociocultural and aesthetic territories by it).

This inhuman approach to sound therefore required an entirely novel sonic terminology that was organised not around notions such as ‘authenticity’, ‘immediacy’ and ‘musicality’ – but around ‘artifice’, ‘abstraction’ and ‘frequency’. For Reynolds, this distinction between humanist musicianship and inhuman machine sounds points to two different understandings of sonic aesthetics, which he refers to as *subjective expressionism* and *objective functionalism*.<sup>4</sup> Subjective expressionism is an account of music in terms of human personality and interpretation, which approaches the musical material through the persona of the artist, the meaning of the lyrics, and the larger biographical context in which they are embedded. Objective functionalism, on the other hand, discards musical communication and lyrical interpretation in favour of what Reynolds (borrowing a phrase from the theorist Susan Sontag) refers to as ‘the programming of sensations’.<sup>5</sup> In short, what was central to 90s rave was not the narrating of a story or personal experience, but the formal plasticity of the music – its non-organic approaches to sonic form – that utilised studio technology not for enhancing the authenticity of a real-time musical event, but for expanding formal sonic possibilities in the form of a plethora of alien sonic landscapes.

This novel approach to studio technology consequently necessitated a creative approach to its sonic potentials which is akin more to that of a technician than to a traditional musician. Indeed, since technology came to play such an important part of rave culture, experimenting with different (and often unintended) settings and setups became absolutely crucial for DJs

and producers – whose work often grew out of identifying and exploiting these unintended capacities of their technological arsenals. Accordingly, it is the figure of the mad scientist – rather than the artistic genius – which seems to be the most apt metaphor at least for these more unconventional approaches among producers to rave as a *sonic science*. As Reynolds puts it:

How does this project [i.e. of using the studio as a compositional tool] relate to technology? First, it's about finding out what a new piece of equipment facilitates that wasn't previously possible or even thinkable. This involves locating and exploiting potentials in the new machines that the manufacturers never intended. A frequent claim heard from techno producers is that the first thing they do when they've acquired a new machine is to throw away the manual and start messing around, in blithe indifference to the manufacturer's helpful hints.<sup>6</sup>

These formal innovations were made possible not just by technology, but by drugs as well. For Reynolds, it is Ecstasy, or MDMA (Methylene DioxyMetAmphetamine), which was *the* rave drug par excellence. First synthesised in 1912 by the chemist Anton Köllisch (who died a few years later, during World War One) for the German pharmaceutical company Merck, and later rediscovered in the 1960s by the biochemist Alexander Shulgin, MDMA was initially used for therapeutic purposes within loose networks of psychiatrists and psychotherapists in the United States. However, in the early 1980s the drug started to spread beyond the smaller networks of professionals and close friends and became commercialised under the name 'Ecstasy' when a distributor known as the Texas Group started mass producing it in 1983. It would later spread to bars and nightclubs – it was sold openly at bars in Dallas and Austin in the early 1980s and became increasingly popular across the nightclub-scene – before being put on the Schedule 1 of controlled substances by the Drug Enforcement Administration (DEA) in 1985 (to much dismay among therapists and other MDMA-proponents), where it remains to this day. While the criminalisation of MDMA mainly was contested on medical grounds, Reynolds points out that the sociocultural potential of the drug – beyond its recreational use in a therapeutic setting – already had been recognised by a nascent musical subculture that later came to exploit it in collective synergy with technology and the virtual soundscapes of rave music.<sup>7</sup>

Turning to the neurobiological register, it is mainly the field of neurochemistry that has helped scientists to understand how psychoactive and other sorts of drugs affect the human

brain and nervous system. As the philosopher Sadie Plant points out in her book *Writing on Drugs*, by the 1970s an emerging image of the neurochemical processes underlying the experiences of pleasure, euphoria, stress, arousal, and so on, started to come together. And this image would later lay the groundwork for an increased understanding of how these processes may be intensified or interrupted by artificial stimulants whose chemical structures interact with neurotransmitters in the brain by mimicking their specific behaviour. As Plant argues, the psychoactive effects of these compounds principally stem from the body's attempt to compensate for a sudden influx of chemical stimuli, and the key objective for the scientist is consequently to understand how a particular compound interacts with specific workings within the neurochemical system as a whole.<sup>8</sup>

Ecstasy's psychedelic effects are related to the release and concentration of dopamine, norepinephrine and serotonin – neurotransmitters that generate intensified senses of mood, perception and sociability. Common short-term effects include euphoria, a sense of well-being and increased feelings of closeness with other people – as well as heightened perceptions and mild forms of hallucinations that make music sound more distinct and vivid. And once this psychedelic conjunction between MDMA and sound was recognised, producers started to intentionally create tracks that utilised processes like filtering, panning and phasing in ways that further stimulated the drug's psychedelic potential. In that regard, rave gradually evolved into what Reynolds refers to as a 'self-conscious science of intensifying MDMA's sensations'<sup>9</sup> – in particular among the more functionally oriented strands, which seemed to best understand the positive feedback-loops established between technology and neurochemistry through the mediums of drugs and sound. These resources thus came to form the central components of a vector of formal experimentation – the drug-tech interface – which articulated itself through the construction of novel cognitive and sonic landscapes that were evolving as quickly as the psychoactive drugs reworked the human nervous system. As Reynolds notes of this key phase of rave culture in the 90s: it was indeed a climate of rapid, progressive development – where novel sonic forms constantly emerged and together formed a kind of virtual unfolding of future worlds yet to come.<sup>10</sup>

It was consequently the alien experiential impact of technologically altered sounds, in conjunction with the hallucinogenic effects of MDMA, within the context of an emerging late capitalist digital culture that was the key formal innovation of rave culture.<sup>11</sup> For Reynolds, this aesthetic on the one hand articulated itself in terms of a present media-scape realism – and on

the other hand in terms of visions of future forms of post-human subjectivity and virtual reality social organisations. Hence, the formal experiments conducted under the aegis of the drug-tech interface...

...can be seen as a new kind of realism that reflects the fact that the late-twentieth-century mediascape has become our new Nature; it can be diagnosed as a symptom of, but also as an attempt to master and reintegrate, the promiscuous chaos and babbling of heteroglossia of the information society.<sup>12</sup>

He therefore links the sonic and chemical sublime of rave culture to the artificial and gothic sublime of science fiction and horror. For what primarily mattered in 90s rave, just as in science fiction and horror, was the cognitive estrangements of the alien futures and outsides invoked through the music and drugs – as opposed to a narrative confined *within* the human lifeworld. Needless to say, this is also why 90s rave culture is part of the modernist vector of experimentation that I am interested in here – insofar as its cognitive estrangements were both thematic *and* formal.

Similar links were identified by other writers as well. For instance, in *Writing on Drugs*, Sadie Plant argues that this mind-expanding potential of the drug-tech interface found its most immediate fellow traveller in the cyberpunk-fiction at the time – which also concerned itself with navigating the technological sublime of late capitalist culture through a similar fusion of aesthetics, technology and neurochemistry.<sup>13</sup> In her own words:

[O]ne wave of writing seemed to feel this rush of music coming on: cyberpunk, a genre in which what Bruce Sterling defined as the ‘powerful theme of mind-invasion’ played a crucial part: ‘brain-computer interfaces, artificial intelligence, neurochemistry – techniques radically redefining the nature of humanity, the nature of the self’. [C]yberpunk anticipates a world in which drugs are enhanced or replaced by even more immediate and precise means of modifying brains and changing minds.<sup>14</sup>

In particular, Plant saw a crucial conjunction between Ecstasy and conceptions of cyberspace at the time, which allowed artists to explore previously unimaginable virtual and sociocultural

spaces through drugs and technology. Indeed the great cultural significance of cyberspace, according to Plant, was that it further expanded the cognitive estrangements induced by music and Ecstasy across a wider social and public realm in the form of what the cyberpunk author William Gibson famously has referred to as a 'consensual hallucination'. It is thus at this particular point where rave and cyberpunk converged – as the two major cultural movements oriented around exploring and mastering these consensual hallucinations.

However, the cognitive expansions of rave, like those of cyberpunk, also exhibited darker sides that mainly manifested themselves through a number of unpleasant side-effects generated by MDMA. These include short-term effects such as dehydration, anxiety, slight nausea and increased body temperature (which may result in blood clots and internal bleeding) – as well as long-term effects such as weight loss, sleep deprivation, paranoia, panic attacks and severe depression. The underlying neurochemical explanation for these long-term effects is that the brain needs a certain amount of time to restore serotonin levels – which means that when MDMA is used regularly, it will take longer for serotonin levels to normalise and one consequently runs the risk of a certain amount of depletion. While these neurochemical processes pinpoint why MDMA not should be viewed as physically addictive, it can however lead to what Reynolds refers to as an 'emotional addiction' in which the raver hopelessly tries to recreate the original 'honeymoon experience' with Ecstasy through increased dosages and polydrug abuse.<sup>15</sup> The result, however, is the exact opposite: anxiety disorders, paranoia and other forms of psychological damage. In that regard, long-term psychological costs, as opposed to physical ones, seems to constitute the most severe side-effect of MDMA, as Reynolds notes.<sup>16</sup>

For Reynolds, the latter on the one hand took the form of a 'collective comedown' among hardcore ravers – whose brains had been seriously depleted of serotonin following extended periods of intense raving – and also led to a chaotic neuropharmacological situation where a number of amateur and fake substances were flooding the market. More specifically, the emergence of various cocktail pills (which combined cheaper and more unreliable chemicals) and Ecstasy containing (the harsher and more toxic) MDA rather than MDMA – in conjunction with increased intake and polydrug use among ravers (which was to make up both for the lower-quality drugs and for Ecstasy's long-time serotonin-depletion) – led to a neurochemical street-science of homemade cocktail pills and an overall psycho-physical exhaustion that extended MDMA's nasty side-effects to a social level, and soon spiralled out of control in the form of a collective darkside-paranoia:

The nihilism latent in the dehumanizing logic of the drug/technology interface is always lurking, waiting to be hatched. Rave's "desiring-machine" becomes a machine gone mad, wearing out its flesh-and-blood components. The human nervous system is not built to withstand the attrition that comes from sustained sensory intensification and artificial energy. Ultimately, the rave experience can be literally mind blowing – as in a fuse burning out, rather than psychedelic bliss.<sup>17</sup>

But interestingly, rather than leading to the end of rave culture, this neurochemical darkside-paranoia instead opened up entirely novel spaces for sonic and social experimentation that ended up spawning some of the most exciting subgenres of rave – first darkcore and later jungle and techstep – which developed darker and harsher sounds, as well as novel forms of complex rhythms. What also was crucial here was a distinctively fierce and uncompromising attitude towards rave and its position within an emerging late capitalist economy – which came to affirm capitalism's breakdown of previous social relations under the premise that there is 'no turning back'. Capitalism may have obliterated the social fabric according to its ruthless logic of exploitation – yet the key response here was not to passively withdraw, but rather to utilise the sonic and neurochemical experiments in rave as a cognitive and cultural springboard for future technological emancipation through the overturning of capitalism's dynamic forces.

However, in contrast with these compelling cultural and cognitive ambitions, Reynolds' own understanding of rave is steeped in a by now well-known sociocultural and collective immediacy. More specifically, Reynolds theorises rave culture as a sonic 'desiring-machine' (Deleuze and Guattari) whose central sociocultural and (anti-)political function was to provide 'temporary autonomous zones' (Hakim Bey) of collective emotional release – in the forms of 'mass communion' and 'communal freak-out' – in the midst of an emerging late capitalist, social atomisation. In his own words:

Ecstasy culture is a useful way of dissipating the tensions generated by wage slavery and underemployment; it's an agent of social homeostasis, insofar as the loved-up ambience of clubs and raves offers youth a sort of provisional utopia each and every weekend, thereby channelling idealism and discontent out of the political arena altogether. [...] Could it be that the entire project of rave and post-rave club

culture has amounted to little more than a survival strategy for the generation that grew up under Thatcher? A culture of consolidation, where the illusory community of the Ecstatic dance floor compensates for the withering away of the “social” in the outside world, ever more deeply riven by class divisions and economic disparities? The explosion of pent-up social energies that occurred in the late eighties has been channelled and corralled into a highly controlled and controlling leisure system. The rave as temporary autonomous zone has become the club as pleasure-prison, a detention camp for youth.<sup>18</sup>

However, the account of rave culture’s significance along these registers threatens to undermine the wider social and cognitive potentials of the drug-tech interface by reducing its cognitive import to the mere facilitating of various forms of mass communions, and its social implementation to nothing more than the provision of transient bunkers for short-term cultural escape. Reynolds is not unaware of this – such as when he ponders on the fact that for all its formal innovation, rave culture has nevertheless done little to overturn the basic work/leisure structure established by industrial capitalism – and indeed seems to fit quite neatly within it (i.e. work hard during the week and party over the weekend). Yet in the end, rave culture as theorised by Reynolds comes down to mere ‘collective disappearance’ (a formulation that he borrows from an essay on rave by the theorist Antonio Melechi): brief collective catharses in the form of transient spaces for mass freak-outs (a bit like sporting and other kinds of leisure events – or even religious gatherings) – which notably reintroduces elements of the vocabulary of immediacy and authenticity at the sociocultural level, that he remains sceptical of at the level of aesthetics. Furthermore, his account of the neurobiological function of Ecstasy in rave oscillates somewhat uncomfortably between on the one hand a commendable scientific realism, and on the other hand a slightly dubious, quasi-spiritualist experientialism. The latter becomes most obvious when he characterises rave as a ‘celebration of celebration’ (i.e. a cultural program for generating communal intensities with no other purposes than themselves), and the affective charge of Ecstasy in terms of ‘its sense of access to a wonderful secret that can be understood only by direct, unmediated experience’.<sup>19</sup> But here again, the tendency to understand the neurobiological import of MDMA in terms of the production of communal intensities and ineffable affective experiences skates over the wider sociocultural and cognitive transformations at stake in resources such as the drug-tech interface.

In a 2010-conversation with Mark Fisher, Reynolds further stressed this position by pointing out that the best post-rave music which has appeared since the decades following the 'death of rave' is significant not because it introduces novel kinds of virtual futures, but rather because it uses the medium of sound in order to articulate a kind of spectral mourning for the now past forms of collective intimacy that rave culture once provided (against the backdrop of the collective isolation of an Internet-culture that has abolished these communal enclaves):

The idea that artists and commentators are groping towards, without fully articulating, is that dance music no longer provides the kind of emotional release that it once did, through collective catharsis. So there is this turn inwards, and also a fantasy of a kind of publically displayed inwardness: the widely expressed artistic ideal of "I want my tracks to make people cry on the dancefloor". Because if people were getting their release in the old way (collective euphoria), why would tears be needed? [...] In the Nineties, drugs – specifically Ecstasy – were absolutely integral to this communal release. One of the reasons hardcore rave was so hyper-emotional was because its audience's brains were being flooded with artificially stimulated feelings, which could be elation and excitement but also dark or emotionally vulnerable (the comedown from Ecstasy is like having your heart broken). [...] I'm just speculating here, but I wonder if [this post-rave emotional turn] has anything to do with a dissatisfaction with Internet culture, the sort of brittle, distracted numbness that comes from being meshed into a state of perpetual connectivity, but without any real connection of the kind that comes from either one-on-one interactions or from being in a crowd.<sup>20</sup>

This is not to suggest that these concerns are not valid at a certain level of analysis, but rather that to theorise the drug-tech interface exclusively along the axis of emotional intimacy and affective intensity restricts it to a by now well-known dichotomy between collective catharsis and isolation – which scales down the sociocultural and cognitive potentials of the drug-tech interface, and the virtual futures it once alluded to, in a way that tends to undermine the wider transformative registers of technology, cognition and science implicit in the digitalisation of culture. For the blurring of the line between the physical and the digital should not simply be understood as a threat to collective immediacy, but also as an opportunity to redraw the social

and cognitive parameters of culture at the dawn of the 21<sup>st</sup> century. This is something that capitalism has been highly successful in. Indeed, since the decline of rave culture's key era in the 90s, it is capitalism that has taken up and mobilised the drug-tech interface for its own bland purposes. More specifically, whereas the components of the 90s drug-tech interface were Ecstasy and music technology, the late capitalist version is fuelled by the distribution of antidepressants and the ubiquity of social media. And whereas the 90s version operated fleetingly at the edges of the mainstream, the late capitalist social implementation of the drug-tech interface has fully transformed not just popular culture, but everyday life as well. This is a kind of depraved version of the virtual futures that rave culture anticipated – yet the way to overcome it is not to fall back to the vocabulary of intimacy and immediacy, but rather to speculate on how the late capitalist distribution of the drug-tech interface may be utilised as a springboard for reclaiming the virtual futures that rave culture once promised.

The point here is obviously not that there was something inherently wrong with the social settings of 90s rave culture – they were important laboratories for sonic, social, chemical and corporeal experimentation – but rather that to characterise them merely as transient enclaves of communal freak-out (particularly when opposed to the 'quasi-connectivity' of digital culture) puts an uncomfortable restriction on the aesthetic and sociocultural potentials of these experiments. In order to articulate this argument further, I want to extend the distinction between subjective expressionism and objective functionalism from the aesthetic to the neurobiological and sociocultural registers – which will allow us to differentiate between two different ways of interpreting the aesthetic and sociocultural significance of rave culture. From the perspective of subjective expressionism, rave's wider cultural significance lies in its experiential and affective impact – and how attending raves provided audiences with spaces for collective emotional release. However, from the perspective of objective functionalism, what is central to rave as a cultural phenomenon is how the drug-tech interface was utilised as an instrument of formal aesthetic and neurocognitive experimentation through the collective synergy between music technology and drug-induced psychedelia. As Reynolds puts it:

House and techno producers have developed a drug-determined repertoire of effects, textures, and riffs that are expressively designed to trigger the tingly rushes that traverse the Ecstatic body. Processes like EQ-ing, phasing, panning, and filtering are used to tweak the frequencies, harmonics, and stereo imaging of different

sounds, making them leap out of the mix with an eerie three-dimensionality or glisten with a hallucinatory vividness.<sup>21</sup>

We may consequently argue that the primary aesthetic import of rave's objective functionalism was how the drug-tech interface operated as a vector of *biologically augmented* formal alienation through a progressively expanding set of sonic transformations that responded to the chemical modulations imposed by MDMA and other drugs (indeed, what is drug-induced psychedelia if not a kind of biological formalism?).

In that regard, what is central here is not the collective intimacy and affectively emancipatory experience of going to raves, but the *nascent artificial unfolding*<sup>22</sup> of formal aesthetic and neurocognitive resources – and its potential implementation through larger and entirely different sociocultural settings. Similarly, what is most significant with rave from this perspective undoubtedly goes beyond the music – given that sound is just one example of how these aesthetic and neurocognitive operations may be put into productive use in culture. But there are others as well, which have nothing to do with rave or even with music. What ultimately matters here is the link between objective neurobiology and formal alienation in terms of an 'aesthetic of cognitive mapping'<sup>23</sup> – not the particular medium or sociocultural setting through which this link is realised. This is after all the meaning of formal alienation and objective functionalism, insofar as their abstract infrastructures may be activated through completely different sociocultural settings and aesthetic programs. And while this may seem like an uncomfortable cultural trajectory to some, my conviction is that the cultural utilisation of cognitive mapping and objectification should not simply be viewed in negative terms (as they too often are) – but also as decisive cultural resources at the dawn of an age when the line between cognition and artifice is becoming increasingly obsolete. Indeed, from this perspective, aesthetics becomes a means for explicating the artificiality of cognition.

Hence, the 90s drug-tech interface may be understood as a *cognitive blueprint* for future aesthetic experiments along similar trajectories. What other possible collective fusions between aesthetic and neurobiological processes are culturally and cognitively viable? How could they be productively distributed through culture at large? What kind of impact will they have on our understanding of aesthetic formalism and artificial cognition in an increasingly digital culture? These are the broader questions that the drug-tech interface invites us to ponder on.

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### Notes

1. See Reynolds, S. (2013) *Energy Flash: A Journey through Rave Music and Dance Culture* (London: Faber and Faber).
2. Ibid. p. 449.
3. Ibid. p. 451.
4. Ibid. p. 464.
5. Ibid. p. 465.
6. Ibid. p. 462-463.
7. Ibid. p. xxxv.
8. See Plant, S. (1999) *Writing on Drugs* (London: Faber and Faber), p. 170-203.
9. See Reynolds, *Energy Flash*, p. xxxviii. Here, Reynolds also points out that recent neuroscientific research indicates that the drug stimulates the brain's 1b receptor, which triggers repetitive behaviour and consequently may offer a neurochemical explanation as to why rave music – which substitutes narrative progression for repetitive stimulation – works so well with the psychedelic effects generated by MDMA.
10. See Reynolds, S. and Fisher, M. (2010) 'You Remind Me of Gold', in *Kaleidoscope Magazine*. <http://markfisherereblog.tumblr.com/post/32185314385/you-remind-me-of-gold-dialogue-with-simon>
11. There were of course also other strands in rave that had very different ambitions – for example, reintegrating traditional notions of musicality and authenticity into the rave sound – but, needless to say, I think that those strands failed to bring to the fore what was truly innovative in 90s rave.
12. Reynolds, *Energy Flash*, p. 457.
13. This is also the central point of the brief analysis of cyberpunk by Fredric Jameson in his essay on post-modernism – that is, cyberpunk as exemplary of a contemporary aesthetic oriented towards unfolding the sublime of postmodern hyperrealism-culture. See Jameson, F. (1992) *Postmodernism, or the Cultural Logic of Late Capitalism* (Durham: Duke University Press), p. 37-38.
14. Plant, *Writing on Drugs*, p. 169.
15. See Reynolds, *Energy Flash*, p. xl.
16. Ibid. p. xli.
17. Reynolds, S. (1999) *Generation Ecstasy: Into the World of Techno and Rave Culture* (New York: Routledge), p. 217 (this note refers to an older edition of Reynolds' book, since this passage has been edited in the latest one).
18. Reynolds, *Energy Flash*, p. 526-527.
19. Ibid. p. 509.
20. Reynolds and Fisher, 'You Remind Me of Gold'.
21. Reynolds, *Energy Flash*, p. xxxviii.
22. I owe this formulation to the late Mark Fisher from his comments on an earlier draft of this text.

23. The concept of an aesthetic of cognitive mapping has obviously been borrowed from the work of Fredric Jameson (see Jameson, F. (1990) 'Cognitive Mapping', in Nelson, C. and Grossberg, L., eds., *Marxism and the Interpretation of Culture* (Champaign: University of Illinois Press), [http://www.rainer-rilling.de/gsvilla07-Dateien/JamesonF86a\\_CognitiveMapping.pdf](http://www.rainer-rilling.de/gsvilla07-Dateien/JamesonF86a_CognitiveMapping.pdf)) However, expanding on Jameson's sociocultural account of cognitive mapping, the current model seeks to integrate it with what in neuroscience is known as 'brain mapping' (i.e. a branch of neuroscience oriented towards producing spatial representations of the anatomy of the brain through the use of neuroimaging-technology). Central to this model of cognitive mapping is therefore a turning inwards to cognition itself, and how a combination of aesthetic and scientific resources may be productively utilised in culture through exteriorising and navigating the sub-personal architecture of the human brain. Furthermore, whereas Jameson's model of cognitive mapping remains tied to tracking the impersonal vectors of the *present* cultural landscape, the version outlined here aims to explicate the latent cognitive potentials of aesthetic trajectories which are oriented beyond it. Its primary objective is therefore not to simply situate the phenomenological subject within the global landscape of late capitalist culture (important as that is), but rather to utilise the aesthetic and technoscientific resources of cognitive mapping for the purposes of the formal remaking and social repositioning of cognition as such.