Putting the virtual back into VR

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> *...when the possible crushes the virtual, or when substance suffocates the event, it is the role of art (or the art of life) to re-establish the equilibrium...* (Lévy, 1995:146).

1 Navigating the world or the world as navigator?

I will suggest here that although there is now a common practice of associating VR with the theatre as a form of representation with stories, plots and characters, VR actually has more in common with performance (and here I mean performance art or ritual rather than the conventional theatre), music and the visual arts. This is because what we could call the 'classical' theatre establishes itself pretty much along conventional lines, within pre-ordained forms of representation. It defers to the past. Performance art and ritual are about transformation and variation, about investigating the unknown and producing the new[1]. Virtual Reality's commonality with performance and art will therefore not be taken as its mimetic qualities - its 'representation of an action'[2], so much as its qualities of modulation; its realisation of the objectile, where an *object* is transformed into an *event* of "continuous variation" (Deleuze, 1993:19). Virtual Reality will be discussed here in a way which is only slightly concerned with its current, specific technological form (that is, for example, a helmet, glove and a three-dimensional, digitally produced, navigable world). I am more

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[1] Of course, here I am generalising about two tendencies, both of which could be said to existed within both the theatre and performance art *as practiced*, that is, one towards re-presenting the already established, and the other towards producing something undetermined.

2 I have elsewhere given an explanation of the machine according to Deleuze and Guattari and further criticised some of Laurel (1991) and Rheingold's (1991) more theatrical approaches to Virtual Reality (Murphie, 1996).

interested in VR as a more general emergent series of cultural phenomena - *a machinic phylum*. In this latter context, technological developments such as Hypertext, the Internet and the World Wide Web can be seen as the first flowerings of a "virtual age" (Stone, 1995:17). Thirdly, the attempt here will be neither to valorise this age, nor to condemn it[3]. Rather it is to seek out its characteristics and *the modulation of the notion of modulation* it performs; the way in which, as a concept, VR allows us to modulate our transformation of objects into objectiles, to shift the gears on the thresholds of perception, operation and expression more powerfully than ever before.

How then, can we understand, VR's expressions and modulations? The work of Deleuze and Guattari has provided one of the key tools of analysis in this area. For a start, as Stuart Moulthrop argues (1994:304-305), in a summary of some of the more extreme of these analyses as regards hypertext, that virtual media *can* offer a kind of dream of Deleuze-Guattarian "smooth voyaging"[4] in a literalisation of the "sort of intertextual play [that] has been the preserve of poststructuralist critics like Hélène Cixous and Jacques Derrida, or postmodern novelists like Kathy Acker and Thomas Pynchon" (305)[5]. In short, virtual media offer a kind of "textual promiscuity" as a "regular feature of...cultural systems"

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3 Many critics do, however, valorise or condemn the virtual age. Landow (1992), Ulmer (1989), Lévy (1995) and Rheingold (1994) are among the best of those that seek to valorise the participatory or democratic pluralism of the virtual media themselves, whilst qualifying this with condemnation of some of the uses to which they may be put by unscrupulous or repressive powers. Their arguments should be taken seriously and in a sense one prefers such cautious optimism, which gives some hope of a plan for the future, to other critics such as Virilio or Baudrillard who are, of course, almost unendingly pessimistic.

4 The concept of the rhizome has had an enormous, if at times dubious, influence on the attempt to develop and conceptualise hypertext. Both Moulthrop and Rosenberg's (1994) essays attest to this, as does the *Rhizome* project itself in which Rosenberg was involved. As Moulthrop points out, "*A Thousand Plateaus* serves in this discussion as more than an example of proto-hypertext. It has also been a major influence on social theories and polemics that have had a strong bearing on the cultural integration of new media" (301). McKenzie Wark, in *Virtual Geography* (1994), writes that the book was written in part as a working out of some notions of Deleuze and Guattari, specifically in a "rewriting of the Deleuzo-Guattarian negative historicism of deterritorialization in terms of my own experience" (225). A somewhat less sober (and perhaps more absurd) Deleuzean in this respect is Nick Land, who writes that "our human camouflage is coming away, skin ripping off easily, revealing the glistening electronics. Information streams in from Cyberia; the basis of true revolution, hidden from terrestrial immuno-politics in the future. At the stroke of midnight we emerge from our lairs to take all security apart, integrating tomorrow" (1992:219). This latter day techno-poet-philosopher might do well to listen to the more coherent Deleuzean appropriations of Wark and Moulthrop, amongst others.

5 Landow (1994:38-39) inadvertently gives a stunning example of how this interplay does not always work, at least in terms of ethics, appropriating the feminist writing of Hélène Cixous into the uneasy context where "her own practice also anticipates what has become an important mode in the hypertext document". The simple mistake made here is the substitution of one highly interactive world for another, that of the hypertext medium for that of the written, with little considerations of the *other* interactions that surround and engage with these worlds, such as the worlds of specifically gendered bodies.

(ibid.). Moulthrop himself, however, sees little inherently liberating about all this, writing that it may be "more delusion than Deleuzean" (306). In a much more precise reading of Deleuze and Guattari than those such as Nick Land (1992), Moulthrop warns against both "technonarcissism" (309) and the "misleading possibilities for multiple discourse" (308). Moulthrop further points out that, for Deleuze and Guattari, "the dyad of smooth/striated represents not a dialectic but a continuum" (316)[6]. From my own point of view, this means that it is not a matter of reconstituting Moulthrop's suspiciously contaminated smooth space. Instead, it is a matter of reinserting the play of smooth space into the inevitable 'continuum' of smooth and striated space. Only then can we approach the cautious optimism of Ulmer (1989), Lévy (1995) and others in regards to new media. Or even approach an ethics along the lines of Foucault's 'passion'; breaking up the system from within, and operating as an individual "electric or magnetic field", not "within person or identities" (Deleuze, 1990:127-128), or trademarks, that would totally striate such as field. In other words, it is a matter of evaluating actual and potential expressions in terms of operations, of the manner of living implied, rather than of the return of absolute values and properties to their owner, the subject.

With this in mind, then, an evaluation will be made of VR on the basis of its *operations* first - what it *does*, rather than whether it is inherently good or bad. In this, I am not so much interested in VR as a form of representation of reality as an *expression* of it. In any case, there is no doubt that VR, as yet, provides a very poor representation of reality and may, in the foreseeable future at least, not reach the degree of high-fidelity reproduction of reality that we already associate with older media such as television. Nevertheless, the high-fidelity reproduction of the world is not necessary to an expression of it, and there can be no doubt that VR, as with everything else in the world, expresses the world in a particular fashion[7].

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[6] Moulthrop concludes that "Hypertext - and its yet more distant cousins, virtual reality and cyberspace - will not produce anarchist enclaves or pirate utopias" (316). He makes the point that "we who write theory tend to suffer from a surfeit of idealism and an antipathy to operational compromise" (315). Deleuze and Guattari, of course, were much more interested in operations than ideals.

[7] Rebecca Coyle (1993:160) cites Krueger on this issue, who writes that "artificial realities are a medium of expression and experience...Increasingly, people are products of artificial experience. Vicarious experience through theater, novels, movies, and television represents a significant fraction of our lives. The addition of a radically new form of physically involving interactive experience is a major cultural event which may shape our consciousness as much as what has come before". I would argue that this new medium is produced within a relation to changing consciousness. This will be discussed shortly.

I have already begun to signal that this expression is complicated by the fact that VR - as an expressing 'entity' - can be considered in at least three different registers to be three different things. The first, and only the first, of these registers is that which is usually discussed - VR as a particular series of technologies. By and large, these occur in the form of a computer mediated space which combines various perceptual *mechanisms* and systems with operational *systems* (flight, weapons control, movement through VR space, etc). The effect is both that one is immersed in a computer generated world, and that sometimes, through that immersion, one is able to operate more effectively in the world to which such technologies are linked. Such technologies include the now ubiquitous helmet-and-glove, Myron Krueger's 'Artificial Reality', in which the whole space is made interactive and the body itself is not so claustrophically encumbered with technical apparatus, or, more generally, such technologies as flight simulators, computerised flight control systems or video guided missiles. All of these *express* a certain relation to the real, even if that representation is fuzzy or 'inaccurate'. In fact, often the fuzzines or inaccuracy is part of its expression of reality. The clearest example is the missile guidance system or cockpit which simplifies representational detail deliberately in order to express itself more effectively (and, at times, more maliciously) within the world. In these cases less representational accuracy makes for more ballistic accuracy. Having discussed these technical aspects broadly, in what follows I will not cover the technical details any more than I need to[8].

The second of the registers in which VR can be considered is a broadening of the first. This involves a consideration of the way in which, through a series of new media technologies, the line between the 'virtual' and the 'real' is generally blurred within communication systems (although, of course, it could be argued that the telephone has already accomplished this blurring). This occurs not just within the first register of what we could consider to be recognisably VR technology, which itself involves at the least a form of communication between body and machine, but in the broader arena of what Rebecca Coyle (1993:162) has labeled "meta-media", which would here include VR technology, the Internet or cyberspace as a whole. These new meta-media, considered in themselves, are still only new *technical* systems, and neither the first nor the second register of Virtual Reality, in themselves, explain exactly why such technical systems or even larger arenas

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8 These are discussed much more fully in Rheingold, 1991; Coyle, 1993; and Pryor and Scott, 1993.

facilitated by these broader meta- media have arisen as they have and when they have[9]. As Heidegger has noted so famously, there is nothing technological about technology (1977:4). Even considered *as* technologies, however, the meta-media seem to overwhelm our normal attempts to deal with them purely technologically. We are forced to *think* through them before we can make the next move. As Coyle notes, the "reality" of the meta-media such as VR may well be determined "philosophically rather than identified as a discrete area of communications practice". She further notes the extreme importance of the "ethical component of this philosophy" (ibid.). This philosophical and ethical grasping is complicated by the way in which 'reality' and the virtual are so obviously blurred in VR. Coyle also quotes Brenda Laurel, who in 1991[10] said that, despite "the word 'virtual'" being "okay... the use of the word 'reality' in the singular belies a certain cultural bias" (in Coyle, 1993:162-163).

In the following section I shall attempt to give the beginnings of a philosophy from a Deleuze-Guattarian perspective which describes how it is that the virtual is expressed in contemporary technological and cultural developments, and how this expression relates interactively to a reality which is certainly not singular. I shall argue that 'virtual' and 'reality' are not, as Laurel is cited by Coyle (162) as suggesting, "oxymoronic" terms, but rather interactive[11]. Furthermore, I shall argue that related areas such as metaphysics and physics are also - like the virtual and the actual - highly, mutually implicated. In this I shall write of a third register in which Virtual Reality can be discussed, one that encompasses the first and the second and, in fact, gives them their potential. This is, of course, the full Deleuze-Guattarian 'machinic', where machines are considered as separate from technologies, and operate, autopoietically, as a series of 'diagrams', through both virtual tendencies and shifts in actual states of affairs[12]. I shall argue that VR technologies arise,

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9 For a more specific discussion of the precise social situation of cyberspace see Hayward, 1993.

10 At a talk given at The University of Technology, Sydney, on October 9, 1991,

11 Or, as Cornwell (1992:232) puts it, "The abstract idea of virtual reality can be frightening because it reminds us that all reality is illusory". According to Cornwell, this leads to an anxiety, a "fear of nothingness" (ibid.) which "sometimes leads people to try to impose safe limits on what virtual reality can or cannot be. These rules make little sense, however, when placed in the context of the potentially N-dimensional nature of virtual reality" (ibid.).

12 I have discussed this at length in Murphie, 1996. Nevertheless, the simplest example of a machine is found in Foucault's extremely well known discussion of Jeremy Bentham's 'Panopticon'. This is a machine whch is actualised in various forms, operates through various disourses the consitution of certain fields, and yet has a virtual form - is an event - which exceeds all these actualisations.

and will continue to arise, in any number of previously *unthought* actualisations. This is because there has been a profound series of shifts within the broader machinic which produces these 'technologies', 'us' and our thoughts about both. These shifts occur in both the virtual and actual, and are *shifts as regards the virtual itself*. To sum this up, because of these shifts in the machinic, perceptual and operational modulation is no longer a filter for a stable world but is applied to modulation itself, so that everything is taken up within this modulation of modulation. (For example, we used to watch television programs. Now more and more we zap *between* channels, and this zapping forms a conscious activity in itself[13]. And all this is before one begins to consider various forms of more direct manipulations of screen content.) The threshold of perception, previously the unseen frame for a perceived 'stable' world, now frames itself, draws attention to itself as unstable and therefore as something that can be *operated* through like any other machine. Finally, the virtual flowers, not in its 'unreality' or transcendence, but in its immanent reality, also making it something through which we can operate.

In this I diverge slightly from the other major (seemingly[14]) Deleuze-Guattarian influenced assessment of the virtual that I am aware of, that of Pierre Lévy's extensive discussion in *Qu'est-ce que le virtuel?* (1995). This is, perhaps, more a matter of bifurcation than disagreement. Lévy argues for an increased "virtualisation" (13) of the world, and gives extensive examples of this, from economics to the arts. Lévy, whose earlier work is used in Guattari's later formulations of the machinic (1995:8), cautiously and optimistically welcomes what he sees as the potential consequence of the increased virtualisation, attempting to "accompany some of my contemporaries in their effort to live a little less in fear and resentment" (Lévy :144). He gives a clear account of the role of the virtual and the actual, although it is at times difficult to distinguish between the machinic and technological registers of these. He is also concerned, as quoted at the beginning of this article, with conserving the virtual against the reign of the possible. Although, of course, there is obviously much to agree with here, I am taking a different, though not necessarily incompatible path. Obviously, though I do not take technological advances as indicative of

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13 When we no longer find this zapping confusing, the postmodern age is over for us.

14 Lévy rarely mentions Deleuze, except as useful for a theory of the difference between the virtual and the possible. He also uses Guattari and Serres on occasions. On occasions he differs greatly from Deleuze and Guattari , for example, in arguing that the event can be actual and/or virtual (55)

some disaster, neither do I take them as indicative of advance, particularly, in themselves, as an advance in the area of the virtual. This does not necessarily mean, of course, that *at times* they may not indicate such an 'advance', and arguments such as Lévy's can only increase the likelihood of more ethical uses of technology[15]. I, however, am arguing for a different flowering of the virtual, not in its *increase or evolution*, but in the passion and attention accorded to its simple shifting existence. I this I argue that it is not a 'virtualisation' of the world that has increased, but our ability to operate the virtual. What is more, this increased ability to operate the virtual is by no means immediately ethically positive. It is not so until we answer the question, each time specifically, of what manner of living it implies, of what passions can break up the trademarks we increasingly live through every time we boot up.

2 Virtual Reality and the Threshold of Perception

> *I might as well take the period that follows the mechanical age and call it the virtual age...virtual because the accustomed grounding of social interaction in the physical facticity of human bodies is changing.* (Alluquère Rosanne Stone, 1995:17)

Virtual reality expresses what might be called *the shock of the real immanence of the metaphysical*. We thought that the metaphysical lay 'beyond' us. Now we find it sticking to anything and everything and pushing us around. VR brings to an end the regimes of separation which would, through the operation of certain representations, deny the *interactive* reality of the virtual and actual in favour of a simple facticity of *stable* bodies and *fixed* states of affairs. Yet we are only at the beginning of the end of these regimes. No doubt VR still awaits its own Bazin or Kracauer who, as with their theorisation of film, would attempt to describe not the 'bizarre' or 'unreal' nature of VR but the way in which the real is

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[15] I find the book confusing on this point. At times, it seems that computers and other new technologies have in themselves given the space to increased virtualisation. At others, aware of the need for some caution in more utopian moments, Lévy notes that he is not "denying the existence of relations of power (pouvoir) or of domination" but merely interested in the fact that whether these are present or not, there is an increasing "collective intellgence" (119). He is critical of some forms of technological advance, for example arguing that the 'information superhighway" will "reify the virtual" (127). Yet he can also, whilst acknowledging that cyberspace and money are not incompatible, make statements such as "Cybernauts have no need of money" (ibid.)! One can only hope that the virtual nature of such statements is actualised time and again!

expressed within it in a distinct fashion[16]. Here I will merely be content with some introductory remarks, and with a use of Deleuze's discussion of the virtual in *The Fold* (1993) and *Difference and Repetition* (1994) to begin to discuss what it is that is expressed in VR. Again, I shall not extensively discuss VR as a form of representation except as a way of leading into the alternatives.

There can be no doubt that VR can be used to tell stories, to extend subjectivities, or to imitate an action, but none of these are operations exclusive to VR. Moreover, theoretically at least, like abstract painting or much modern music, VR could just present "noise" without stories, or diagrams without beginnings, middles and ends. In addition, there is certainly something suspicious about Capital's potential ability to use VR to extend human subjectification through the imitation of an action into areas such as home banking and shopping[17]. It comes as no surprise, for example, that William Gibson's version of cyberspace is ruled largely by banks and renegade cowboys. I have elsewhere criticised the treatment of technology on the basis of the imitation of an action (Murphie, 1996). Nevertheless, it should be reiterated here that even mimesis is never just representation according to Deleuze. It is always first and foremost a form of production. This productive aspect to representation is also clearly described in Michael Taussig's book, *Mimesis and Alterity* (1993). For Taussig mimesis always involves contact. It produces changes in relations, and is therefore a tool or weapon, used to gain control. Espen Aarseth points out, with regard to the context of the hypertext, that the main goal of designers such as Brenda Laurel, rather than transparent access, is to "control what they call the plot". Here the system develops tight operational structures in which "the situations and actions would be carefully orchestrated to fit its model of appropriate drama" (Aarseth, 1994:75). This is, in essence, as is Greek tragedy, not as far from a 'shoot-em-up and win' video game as one might like to think. It is certainly a long way from those systems that Aarseth calls "indeterminate cybertexts" (ibid.). Mimesis always involves some sort of control. When imposed by the

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16 Perhaps it is Lévy's work that begins this immense project. As a further note, this is not to imply that VR only, as Bazin can be seen to imply as regards film, contains a form of real*ism*. Once again I am interested in what is expressed in the virtual(actual)/reality interaction, not in what is represented.

17 In another context, Rheingold (1994:10) writes "I've been colonized; my sense of family at the most fundamental level has been virtualized". Rheingold's books *Virtual Reality* (1991) and *Virtual Community* (1994) give perhaps the best coverage of the actual technological and social developments in this field. The second, *Virtual Community* is considerably less 'starry-eyed' than the first and one can only admire

system itself it always involves stratification and subjectification within that system as a form of control. As Aarseth writes of Laurel and similar theorists, "it is hard not to see the potential for conflict between the user and this *deus in machina*" (ibid.).

How can we then conceive of VR outside of mimesis? If it does not, despite the hype about representation, merely represent the real, or *even* represent it effectively[18], what does it do? What does it create? What does it indicate? Does VR express a shift away from an interest in representation to *operation,* as I have suggested? If this is so, what are the consequences for any notion of 'real*ism*', if the real and the virtual are in co-extension, or when a fundamental assumption of new machines is that the virtual operates on the real, as in VR? To what 'unreal' would such a realism be opposed?

The last of these questions is no longer answerable. 'Everything is real', especially VR. Or real 'enough'. VR creates a totality which (potentially) both overwhelms present perceptive thresholds and creates, rather than represents, a 'total *enough* world' within the world(s) at large. VR has obviously real affects on those worlds with which it interacts. It presents humanity with the possibility of the modulations of the virtual, previously operating below the general threshold of perception, *being seen* to overtake and disrupt the more 'solid' notions of our social existence. In this, it instills a crisis in our normal, if false, dichotomy between reality and representation.

How then, again, can we approach VR? Firstly, it is necessary to take a machinic approach, as VR, as always, is a machine and the product of a machine *before* it is a technology[19]. As such it possesses a concept that traverses and *works* its plan(e). In this, it is important to remember that the "concept is not defined by an attribute, but by predicates-as-events" (*FLD*:42). I would suggest that the "predicate-as-event" of VR is *the modulation of modulation.*

Rheingold's commitment to a true virtual community, as exemplified in his net defence of the independence of the Internet.

[18] As Sally Pryor notes, "current state-of-the-art VR worlds are not convincing enough to be seriously confused with the 'real thing'. More importantly,. the representation of 'reality' in VR is actually a highly specific view of the world, a view which unthinkingly assumes a Western tradition and ideology" (Pryor and Scott, 1993:168).

[19] Most of the technology for VR pre-existed it. VR as a technology is a specific multiplicity drawn together from previous technologies (such as stereoscopic vision, stereo sound, digital image processing, etc) so it is actually quite hard to pinpoint what is actually 'new' about the technology per se..

VR, however, also does possess a machinic phylum[20] or technological lineage, which I would define as *those machines which interact across different thresholds of perception* so as to, firstly, draw attention to them, and, secondly, allow participation with, or operation through, them. For example, in VR, territorial thresholds can be modulated by both the telecommunications system globally (one can operate at great distances - distance itself, large or small, is modulated), and the computer-body network locally (one can have access to the minute perceptions both of one's own body and of the computer in a manageable fashion). Information thresholds are crossed by the computer chip. Body/machine thresholds are crossed by augmented perceptual apparatuses, such as stereoscopic vision or even just the now common computer interface. Representation/'reality' thresholds are crossed by the affect and the percept operating in one joined represented/real space. In all these, VR provides a massive amplification of potentiality and variation in the realm of the modulation of modulation itself. The threshold of perception is itself subject to a massive broadening of its own limits. In short, we are now brought to the knowledge of the *power* of modulation.

3 Extracting the World from the World

Of course, it is the amplification, control and the self-reflexivity of the virtual in VR that is at issue here, not the question of its originality. The technologies involved here in some ways merely actualise, in a new formal series, an older virtual machine, which could be called the world. For Deleuze, following Leibniz, the world *is* virtual, has always been, and this virtuality includes the whole world (1993:51). The world is an infinite series (of folds or differentials) that permutates within extrinsic limits. For Deleuze, "the word 'virtual'....designates the unilateral character of inclusion" (52). This leads to the Leibnizian

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[20] Deleuze and Guattari write of a "machinic phylum, or technological lineage, wherever we find a constellation of singularities, prolongable by certain operations, which converge, and make the operations converge, upon one or several assignable traits of expression" (1987:406). The example they give is of the "iron sword, descended from the dagger" and the "steel saber, descended from the knife" (ibid.). The important point here is that each "phylum has its own singularities and operations, its own qualities and traits, which determine the relation of desire to the technical element (the affects the saber 'has' are not the same as the sword)" (ibid.). Manuel De Landa (1991) differentiates two aspects of machinic phyla. There is firstly that of "self-organization" which "include all processes in which a group of previously disconnected elements suddenly reaches a critical point at which they begin to 'cooperate' to form a higher level entity" (6-7). An example he gives is that of termites cooperating "to build a nest" (7). Secondly, there are "the particular assemblages in which the power of the processes may be integrated" (20).

concept of an individual monad, each of which contains the whole world. This can be easily understood in reference to VR, where the technology itself is based upon an entire scientific understanding of extrinsic differentials of perception. VR is a matter of extracting the optimal degree of clear perception that effectuates the actual knowledge of a potential entire world (contained in cyberspace, the matrix, internet...a simple disk or CD-ROM). The world of VR is virtual, then, in the sense that 'virtually', all the world is already there. Yet the individual in cyberspace has a perception which resonates with some of that world clearly, and other parts of that world less clearly. Some images in Gibson's novels of the 'matrix' give an adequate expression of this simultaneously clear and fuzzy perception of cyberspace. Gibson himself, as cited by Scott Bukatman, suggests that this may be because he acknowledges that cyberspace is as much about unconscious formations as conscious, about . Bukatman quotes Gibson and writes that "what machines do with us, and how wholly unconscious this process has been, is, and will be" (Bukatman, 1993:644)[21].

This is questioning what humanity, consciously or unconsciously, is crucially able to *extract* from the machinic world by operating through a perception of it. Deleuze writes in this regard that "Inclusion is virtual, Leibniz specifies, because it has to be extracted, and because the predicate is included in the subject only 'under a certain power'" (1993:52). The degree of perception, provided by the threshold between the clear and the 'fuzzy', is the *power* under which the virtual world can be extracted. On a simple level, the perceptive extraction of the world is a matter of practices, of ethics, and being about affording perception, is also about art - predicated upon the creation of percepts and affects. This predication is not "an attribution" but an "'execution', an act, a movement, a change, and not the state" (53). In other words it is an event.

Perception itself is not representation, nor is it even the more complex mimesis of an action. It is much closer to what we have come to separate from the classical theatre as performance art (with 'real' time, pain, pleasure, etc) in its eventuality, as action, as event. For Deleuze, this event is the basis of conception. *Con*ceptions of the world are also *per*ceptions of it and concurrently forms of *production* which execute the extraction of clear *relations* within it. There is a sense, for Deleuze, then, in which relations are events and

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[21] Gibson is quoted here from the "Author's Afterword" to the electronic edition of his cyberspace novels (Voyager, New York, 1992).

events are relations (52). There are also relations within relations and events within events. For example, the world itself is a broad event/relation and all actions, perceptions within it are also events/relations within that broader event/relation. Therefore the "world must be included in every subject as a basis from which each one extracts the manners that correspond to its point of view" (53).

Yet it is only the recent beginnings of the production of *concepts, affects and percepts* to do with this specific complexity that brings about the virtual age. Again it is VR that makes this perfectly clear, as a world of relations in which individuals may literally contain the whole world virtually (on disk or even in the simplest of interactive software, such as netscape, for example) but must relate to it in different ways to extract any smaller event. This is not only a question of being able to tell stories well[22], although it might be. It is also a question of which connections can be made, of the possibility *of* relation, of the possibility of allowing new events to occur and to interconnect with each other.

Once again, then, the aspect of VR that seems to characterise it as different from some other experiences is not the technology but its attitude to perception, not as a solid or stable representation but as a relation to an event. VR designers accept, with Deleuze, that -

> *...nothing authorises to conclude in favor of the presence of a body that might be ours, or the existence of the body that would have happened to affect it. There exists only what is perceived....* (94)

It is the acceptance of the pre-eminence of this perception that characterises the way in which VR opens up the world of the virtual to us. In short, by accepting the virtual as part of the real, the virtual can be *generally* perceived and one can participate in relations/events.

There are two aspects to this perception as conceptualised in *The Fold*. The first aspect is the above mentioned, that *perception is affect*. Materially, when one considers sound vibrating the ear canal, light on the retina, signals in the central nervous system, this is something which seems obvious. But there is more to it than this. Affect is not uni-directional. It is an exchange of deterritorialised quanta. Perception for Deleuze's Leibniz was not matter of a subject 'perceiving' an object, but of something that "evokes a vibration gathered by a receptive organ" (95). A simple way of putting this is that pleasure and pain

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[22] Which stories for a start? - those narratives of increased performativity that Lyotard (1984) points to as informing so much of our culture, and which certainly seem to have invaded computer mythology and sales.

have an existence themselves as modulating objectiles which interact with other objectiles. For Deleuze's Leibniz this interaction is a vibration and makes for a kind of harmony or disharmony. Thus a "pain resembles the movement of something pointed that would dig into my flesh in concentric circles" (ibid.). Pain is not, in other words, something that resembles a specific object, such as a pin. Neither is it as simple a matter as a representation to an apprehending subject. Perception, as an objectile, has its own existence. In short "resemblance is equated with what resembles, not with what is resembled" (96). Perception as interactive process, as with the percept and affect of art, contains more complexity than a simple relation between an object and subject. In short, with VR, as with all interaction, it is a question of a *series* of interactions *between* that registers, with each affect being regarded as its own processual micro-ecosystem. To put this another way, a becoming resembles only itself.

The second aspect of perception is that it has two levels, unconscious and conscious. Unconscious perception consists of minute perceptions, "being-for the world" (94). In Spinozan terms this is *affect* on a miniature and immediate level. With every glance our eyes 'capture' millions of percepts. Conscious perception, like VR design, is based upon "differential relations" (ibid.). Conscious perception, rather than perceiving every moment of an affect, every moment of folding, perceives the 'differential' which describes and produces the fold or affect. Our eyes survey thousands of details; we see a 'person'. This 'person' is the product of a 'differential' that operates through the miniature details.

4 The Virtual *is* Difference

'Differential' here is both a mathematical and philosophical term. It refers in mathematics to differential calculus. Here, if 'x' represents a position on a horizontal axis and 'y' on a vertical axis, the figure 'dy/dx' can give the gradient of a curve predicated upon any change of position within these axes, no matter how large or small. The figure 'dy/dx' is thus also a way of describing infinitesimal differences mathematically[23]. This is not, however, quite the

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[23] In this a "system of difference must be constituted on the basis of two or more series, each series being defined by the differences between the terms which compose it" (Deleuze, 1994:117). These differences between the two series are, in mathematics, the 'dy' and 'dx' as discussed, where 'd' stands for the difference which moves through possible positions of 'x' and 'y'. To give a simple example relevant to the fold the

use Deleuze wishes to make of the term because this would refuse it "any ontological...value" (1994:170). For Deleuze, *dx* is the philosophical mark of a broader differential, "simultaneously undetermined, determinable and determination...In short, **dx** is the Idea... the 'problem' and its being" (171).

Here is the kernel of the theory of what Deleuze calls *different/ciation*. It explains how difference works through two series (*dy* and *dx*), and how it is undetermined but determining. As Deleuze writes, this is because "each term exists absolutely only in its relation to the other" (172). The differential is an expression of the in-between. Ideas are differentials, as is everything virtual (or dynamic). This is why thought always involves an *encounter* with an outside and, although difference is self-genetic, why thought's 'objects', its determinations (or actualisations), are not in themselves genetic. Rather "the reciprocal synthesis of differential relations" is "the **source** of the production of real objects" (173 - bold, my emphasis).

Deleuze also builds a theory of power into this notion of differential relations in that they are generative. For Deleuze, "the differential is pure power, just as the differential relation is a pure element of potentiality" (175). What Deleuze values in the differential, then, is not that it describes infinitesimal changes that cannot be measured in any other way. Rather it is that it enables an escape from a primary consideration of relations *only through objects considered in their identity*, or through their negation if an identity cannot be found. The symbol *dx* is therefore opposed to the "not-A" (170) of philosophy[24].

Philosophically, then, the differential gives us the beginning of an understanding of the in-itself of difference. This is carried further with the "differenciator". It gathers and works difference "without any mediation whatsoever by the identical, the similar, the analogous or the opposed" (117). The 'differenciator' is a way of describing the internal dynamics of that process of folding itself. It is an expansion of the notion of the differential which provides a way of understanding the *coherence* of heterogeneous systems and the way in which this allows them to produce or express. All such systems are made dynamic by their relating to other such heterogeneous systems. This produces "an internal resonance" - a kind of harmony or wave within the coupling - which leads to "a **forced movement** the amplitude

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differenciator is the force that runs through a particular curved fold (in a curtain, in a body). This is not necessarily, of course, a regular folding.

[24] Where identity is based upon assumptions such as 'A equals A', 'A does not equal B', etc.

of which exceeds that of the basic series themselves" (ibid.). Difference produces more difference. As I have noted, however, this difference is also coherent. The differenciator is, therefore, also a way of theorising the coherence of interactive systems, especially as they produce difference rather than the 'same old story'.

In a subsequent attempt to give a more complete expression of the problematic of difference, Deleuze invents the term 'differen*t/c*iator'. The differen*t/c*iator exceeds the mathematical use of *dy/dx* to express *some* of the specific co-ordinates of this problem at certain moments, of a specific expression of the moment of a gradient of a fold, for example. Deleuze uses the term 'differen*t/c*iator' to provide a broader means of understanding the virtual and the actual within a framework of difference as both productive and produced. Here differen*t*iation determines "the virtual content of an Idea". Differen*c*iation, on the other hand is "the actualisation of that virtuality into species and distinguished parts differen*c*iation". The latter is always related to the former, as giving so many solutions to a problem (207).

The virtual is, then, the realm in which the totality of differen*t*ial relations coexist. The latter are produced by particular problems set up by interactive sets of heterogeneous series[25]. The actual is the realm in which these are actualised through differen*c*iation into particular differences. The differen*t*ial comes into existence in the virtual. It operates in both the actual (through differen*c*iation - the production of specific states of affairs) and the virtual (through interaction with other differen*t*ials, other heterogeneous series). What we have come, in the present, to call 'Virtual Reality', then, can be seen, at different moments, to present us with *both the virtual and the actual* in the way they have been described here. It is the specific differentials that remain crucial, however, in both the virtual and the actual, as it is the differentials that both produce and operate in the threshold between different

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[25] For Deleuze, the virtual -

> *..is opposed not to the real, but to the actual...is fully real in so far as it is virtual...'Real without being actual, ideal without being abstract'; and symbolic without being fictional. Indeed the virtual must be defined as strictly a part of the real object - as though the object had one part of itself in the virtual into which it plunged as though into an objective dimension...far from being undetermined the virtual is completely determined. When it is claimed that works of art are immersed in a virtuality, what is being invoked is not some confused determination but the completely determined structure formed by its genetic differential elements, its 'virtual' or 'embryonic' elements.* (1994:209).

Here we again see evidence of a slippage of terms (Deleuze himself is here correcting his own previous opposition of the virtual and the real) in the discussion of the abstract which will later come to mean something quite similar to the virtual. The point remains clear, however. The virtual is not a confused realm, but a precise genetic realm.

virtuals on the one hand, and the virtual and the actualisation of its specific cases[26] on the other. The operation of the differentials forms the two parts of difference, namely that of differen*t*iation and differen*c*iation. Deleuze suggests that to fully describe the "integrality of the object we require the complex notion of differen*t/c*iation" (209). This means that "every object is double" although it is not the case that the actual resembles the virtual or vice versa (ibid.). The virtual, as a necessary part of the object, is therefore absolutely real, but this is in the sense of a reality which is constantly differen*t/c*iated and produced as differen*t/c*iated.

For an understanding of perception, differen*t/c*iation is crucial. It allows for a notion of perception based upon difference and change rather than upon identity and stasis. For example, as discussed, the differential creates a kind of threshold between molecular, unconscious perceptions and Molar, conscious perceptions. These two levels of perception, unconscious and conscious, though thoroughly interdependent, are quite different operations which form two heterogeneous series. Yet there are no absolutes. What might provide a heterogeneous series of minute perceptions for a cell of the body might provide a differential for a molecule in that cell. What provides a moment of perception for a muscle might be the result of a differential of many cells' heterogeneous, minute perceptions.

The implication of this is as follows. *That which we normally see as perception, perhaps of the 'same' or the 'identical' is in fact a differential operation at the threshold between these two forms of perception*, which extracts a "clear zone of perception from minute, obscure perceptions" (Deleuze, 1993:96). It is this very understanding of perception which forms the basis of VR - namely that *one does not have to reproduce an exact representation of reality in order to make reality work, one just needs to provide the broader differential relations between heterogeneous series*. Beyond this, however, what Deleuze, through Leibniz, is suggesting here is that *all* perception is based upon this extraction of a clear zone of perception from fuzzy perceptions by a virtual differential. This whole operation itself is now able to be clearly perceived. We now know that we all already live in the virtual as well as the actual. As previously noted, in some ways all VR does is give us the shock of

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[26] Deleuze writes that

> ...*the genesis takes place in time not between one actual term, however small, and another actual term, but between the virtual and its actualisation - in other words, it goes from the structure to its incarnation, from the conditions of a problem to the cases of solution, from the differential elements and their ideal connections to actual terms and diverse real relations which constitute at each moment the actuality of time*.(1994:183).

realising how close the metaphysical is to us. It shows us that the metaphysical inheres within the relations of our bodies. At the deep levels of both virtual and actual, this shock indicates that we are increasingly aware of relations of difference, of the way in which everything seems interconnected and interactive, and at the same time endlessly individuated because everything is a multiplicity.

5 The Differential Relation does not exclude Individuation

Individuation - as a process - is the specific series of actualisations of the different/ciations of the virtual. As Ideas are *active* - creative as well as created - they are formed between series in differentials as "problematic or perplexed multiplicities" (Deleuze, 1994:244). Actualisations are the multiple 'solutions' to these problematics. In other words, they are produced in the way that bodies interact to form new bodies. These bodies are intensifications of relations. In this, "Intensity is the determinant in the process of actualisation. It is intensity which dramatises" (243).

The seat of this process is given another account in Deleuze discussion of Leibniz's monads, although Deleuze (as shall be discussed shortly), at the end of *The Fold*, expresses a desire to turn Leibniz's "monadology" into a "nomadology" (1993:137). For Deleuze's Leibniz, the construction of perception within itself (resemblance with what resembles) explains in part the ability of the monad to be both self-enclosed and to contain the entire world. The monad is like a house with two levels. The upper, the level of the *'soul'*, is completely enclosed, and perceives only its own projections on its own interior folds. The lower, more closely identified with *bodies*, has windows, and in a sense opens out onto the world. There is of course, in Deleuze's account, intermingling of body and soul, and of the two levels. This reflects the way in which minute perceptions (of the body) and macro perceptions (of the soul) are dependent upon each other for definition. Here minute perceptions are "distinct and obscure" while macro perceptions are "clear and confused". For Deleuze, in Leibniz' texts, for example the first, though obscure, are the directly expressed and relate to -

> *the continuum of differential relations or the unconscious virtual Idea...all the drops of water in the sea like so many genetic elements with the differential relations, the variations in these relations and the distinctive points they comprise.* (1994:253)

If we are covered in insects, or out in the rain, our microperceptions are of hundreds of little bites or drops of rain. This is not what we consciously and clearly feel (panic at the insects? delight at the rain?). What comes to be the coherent "expressor" of all these, panic or delight, or just the more general 'insects' or 'it's raining' occurs at the macro level. It only becomes clear by virtue of *confusing* the specificities of the micro, virtual or unconscious Idea in favour of a "whole". Deleuze relates this to the noise we hear when we hear 'the sea', which "clearly expresses only certain relations or certain points by virtue of our bodies and a threshold of consiousness which they determine" (ibid.). Of course, this distinct and obscure/clear and confused relation is very consciously operated on in many new technologies. I have previously noted this as regards VR, but it is equally true of the Internet.

There is, therefore, once again a threshold of perception between "distinct and obscure" (micro perception - the unconscious) and "clear and confused" (macro perception - the conscious). For Leibniz' monad this is realised in a severing of an inside and an outside, which, as with Baroque architecture, leads to the independence of the "façade from the inside...and the autonomy of the interior from the independence of the exterior, but in such conditions that each of the two terms thrusts the other forward" (Deleuze, 1993:28), as in the differentiating relations of two heterogeneous systems.

Again VR literalises this for us even in some of its trademarked forms of content and expression. There is a body and technologies, computers, levers, hands on triggers at the 'lower' level. There is a 'closed room' connected to it at an upper level, be that inside a VR helmet with computer generated projections on its walls and sounds vibrating in its earphones, or the 'blacked out' cockpit of some of the more recent fighter planes.

What defines a monad in terms of perception is the clear zone of perception this whole machine gives it. Though the whole world is present within and available to the monad most of it is not clearly perceived. The remainder is noise. The minute perceptions are there but not dominated by a differential into consciousness. This is, in fact, the aim of, for example, the blacked-out cockpit, that is, to extract the necessary clear perceptions from a very high

level of 'noise'. The more general problem in the modern world, one solved by VR, is not one only of perceiving the world accurately but of being able *not* to perceive the world's many perceptual bombardments, of defining an effective upper level to the 'monad'.

Each monad not only defines itself through, but draws its power from, its ability to actualise (in the soul) and realise (in the body) its own clear expression of the world. Another way this is put is that it finds accord or harmony, in the form of a differential, between different vibrations. A monad *expresses* this accord on a virtual *and* an actual level. Or alternatively, by applying a differential, the monad literally folds the world, and in a sense creates both soul and body as a particular fold of that world. Thus the degree to which the monad can realise and actualise itself through its ability to fold through the differential *is* its power. *The folding is the event that creates a form of power.* The body is the fold's realization and the soul its actualisation[27]. However, as with the abstract machine and its effectuating machines, neither the soul nor the body should be considered to be the same as the event (Deleuze, 1993:105).

Following on from this, pain can be considered to be a lack of harmony (the refusal of the differential or the grating of heterogeneous series without a different/ciator) and the challenge is to bring harmony out of pain (the creation of acknowledgment of a satisfactory differential, such as, for example, a new concept). Harmony "explains the correspondence between each soul and the material universe" (106).

The more harmony there is the larger (literally) is the zone of clear expression, as harmony is another way of expressing a differential or fold. The ethical task is once again to increase harmony, to increase the clear zone of expression, the expressive power. This is so even in bringing discord into harmony, in producing a harmony of apparent discords. Territorialisation on a Major such as the State or Capital, on the other hand, will reduce the clear zone of expression, the expressive power of what can be extracted from the virtual in all the power of its differentials. It can be seen that these ideas relate strongly to Deleuze and Guattari's other ideas about the machinic being interconnective and interactive, about the productive which increases connection and the antiproductive which limits the clear zone of

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[27] Once again, the terms slide a little in Deleuze's work. He writes that "...there exists an actual that remains possible, and that is not forcibly real. The actual does not constitute the real; it must itself be realised, and the problem of the world's realisation is added to that of its actualisation...The world is a virtuality that is actualised in monads or souls, but also a possibility that must be realized in matter or in bodies..." (1993:104).

expression or perception which may be extracted from the general noise. More especially, what becomes "universal harmony" in *The Fold* relates very strongly to Spinoza's spiritual automaton, which can affect and be affected by more and more of the world because of the harmony between ideality and material objects[28].

As I suggested in the beginning, an Aristotelean-style dramatic model will not necessarily give this ethical impetus. This is at least true of the model of *The Poetics*, with its neat beginnings, middles and ends, especially as interpreted by some theorists such as Laurel this century, who see the 'imitation of an action" as something that neatly separates representation and life, mimesis and production, the copy and the copied. This representative, dramatic model, as used by those such as Laurel, both underlies, and at the same time cannot come to grips with, a general cultural crisis about the status of representation as brought about by such technologies as VR.

What is proposed here is that performance models such as performance art and music - a bringing of harmony without sacrificing the difference inherent to disharmony - provide a much better method of understanding VR's machinic consistency and its potential productions. They enable us to counter-actualise the events and productions of VR.

John Cage, for example, attempted to expand harmony infinitely in his music, by making all 'noise' music simply by shifting the thresholds by which music was perceived. He often told the story of being told by Schoenberg that he had no feeling for harmony, and that he would reach a point in his creative life where he would come up against a wall that he would not be able to break through (Cage, 1990). He decided, since he had dedicated his life to music, that he would keep hitting his head against that wall. Eventually, he found himself thrown back away from that wall and considering the space that lay all around it (that is, around conventional, or even at the time non-conventional, harmony). Towards the end of his life[29] I heard him say that he finally felt that he was finding harmony in his work - something he has not expected since the meeting with Schoenberg. This was during a discussion accompanying the performances (in London) of his *Europeras 3 and 4*, in which

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[28] By "spiritual automaton" Spinoza means the manner in which "a true idea...shows how and why anything is or is made, and that its objective effects proceed in harmony with the formality of its object." The soul, in other words, "acts according to certain laws and resembles a spiritual automaton" (Spinoza, 1910:255). This accord between true ideas or the soul and the body and its affects is the basis of the process whereby an increased understanding results from increased interaction.

[29] Whilst speaking in London in 1990.

'harmony' consisted of two pianists playing operatic overtures, 12 old 78rpm record players with operas playing and several singers singing arias of their choice - all simultaneously, in combinations determined by chance operations! Cage's understanding of harmony here is a new concept of harmony - not the same as previous concepts, a new conglomeration of composites, the allowance of a different/ciator of great magnitude. His conceptions of silence[30], of interpenetration and unimpededness and so on, enabled him to develop a new process of different/ciation. Going around that wall effectively tore the wall down for him. His new conception of harmony (the concept of silence) broadened his (and our) zone of clear expression immeasurably. And when it is said that he created new concepts, this is meant in precisely the manner described by Deleuze and Guattari by which concepts are created , quoting Leibniz as saying "I believed I was entering the harbour, but I am thrown out on the high seas" (Deleuze and Guattari, 1991:27). A new concept throws one to the high seas and also enables walls to be torn down because it can expand the extension of the zone of clear expression so much. According to Deleuze and Guattari this makes Cage a philosopher as well as an artist because whilst an artist creates percepts and affects (154), only philosophers can create a concept. To recapitulate, a concept here defines itself by the coherence of "a finite number of heterogeneous components traversed by a point in absolute flight, at infinite speed" (26). The concept then, like Cage's music, combines a number of components into a kind of philosophical machine which is actual (it is a point) but works at infinite speed like the differential in *The Fold*.

Once again we can conclude, as regards the interactivity of new technologies, that *an ethics of interaction is in interaction itself*. This ethics lies in pursuing interaction beyond its present limits, and sustaining new potentialities of interaction, building new machines, whether they are artistic or philosophical. This is a constant movement of expansion of interactive possibilities. Yet it is not a colonial expansion. It does not constantly search for new territory to submit to a despotic 'interpretation'. Rather it seeks more interactive involvement in the immanent - in the difference at hand. Whether or not VR imitates actions is somewhat inconsequential compared to the ways in which it too involves interaction, expands it, or limits it, what machines it connects with or disrupts. It may be, for example,

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[30] For Cage, 'silence' was only silent when we chose not to hear it. For Cage, there was no part of the (often repressed, as in the spaces between the chosen musical notes of a composer's score) silence which could not become music if it was brought into a zone of clear expression.

that the telephone system, if it is more interactive, will always be more exciting than a 3-D narrative when it comes to how we define 'virtual reality'.

6 How do we Express Expression?

Once again, we see that VR, even in the early forms by which we began to become conscious of it, such as elements of Leibniz's philosophy, indicates a *shift in our threshold of perception as regards the threshold of perception itself.* VR involves the sweep of new abstract machines through the world, even more than new technologies (machines of control perhaps but *also* machines leading to different, perhaps broader harmonies - the two are related), of new organisations, new differentials. VR is not there to tell new stories, or even to enhance communications[31]. It is an effectuation of a change in the nature of the perception of the threshold of perception. Understanding VR as *technology* is secondary to understanding its *machinic indices as regards perception*, and perhaps Rheingold (1991) is right to compare it to primitive performances in the Lascaux Caves.

We can take this a little further. Perhaps the reason that VR foregrounds the perception of the threshold of perception is that it expresses the obvious way in which the body and 'soul'[32] need each other *in order to express the world*. In terms of perception there are no differential or macro perceptions without microperceptions. There is no perception inside a helmet or cockpit without the vibrations of the physical world, the hand touching the inside of the glove (or no point to a fighter's weapons if there are no bodies to destroy), or even the synapses and computer connecting in Gibson's novel. VR is not an escape from the body, any more than (probably less than) television. VR is merely reconfiguring the relations between micro and macroperceptions, bringing to light the possibility that these relations are subject to change, and that different social machines, different conceptual apparatus may

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[31] More communications will not exist without increased thresholds of perception, differential mechanisms that will filter a harmony from them - a filter that is called the "vinculum" in *The Fold* (110-111).

[32] By 'soul', here I mean the incorporeal component of our individuation. Put more crudely, it is that, which through both its coherence *and* its incoherence or ability to shift with consistency, enables us to have an *idea* of ourselves. Put differently, if our bodies are a series of actualisations, our souls are real as a series of virtualisations. I do not of course, refer here to any inner residing spirit relating to a transcending beyond. In more Foucauldian terms, of course, this soul is socially and materially formed within political processes, like anything else.

make it possible to have different bodies, different souls, or different zones of clear expression without always having to submit them to a Major reterritorialisation.

There are at least two possible ways for these relations between macro and micro perceptions to be reconfigured which are of relevance to VR. The first is one in which *the body is deterritorialized* - for example its movement's significance is removed from its position in a small space and shifted to a virtual space of any 'size', which is largely perceived through the head (the eyes and the ears) and is therefore a kind of reterritorialisation of the body on to the face (Deleuze and Guattari, 1987:181). This often consists of an enhanced way of *seeing*, of determining *significations*. It is a stratified or "striated" (479) approach. The second way in which the micro and macroperceptions can be reconfigured is in conceiving of virtual worlds not as enhanced representations in this way but as "smooth spaces". In this model, rather than the face, it is the haptic[33], the use of the whole body which becomes the more important, and more nomadic, means of negotiating the space. It is here that we can, at last, valorise a conception of 'smooth space', not as the anything goes of 'textual promiscuity' but as a political and ethical specificity that engages with the striated by breaking it down. Here, smooth space is not one of organization, "things" or fixed dimensions. It is -

> *directional...filled by events or haecceities...a space of affects...It is haptic rather than optical perception...materials signal forces and serve as symptoms for them. It is intensive rather than extensive space...smooth space is occupied by intensities...The creaking of ice and the song of the sands. Striated space, on the contrary, is canopied by the sky as measure...* (479)

Of course, both the haptic and the optical are combined at the moment in VR, but it may be that the *domination* of one over the other is a matter of how the politics of VR are configured within general politics of representation or nomadism. It is a choice between the measuring sky and the "song of the sands". This is, of course, a choice that must constantly be made and re-made. However, to qualify this, it is not always a matter of the *literal* haptic[34] *or* optical[35], as the former can sometimes serve to striate space, whilst the optical

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[33] This relates both to the sense of touch and to the body's interior sense of its own movement.

[34] And what Deleuze and Guattari also call "close vision" (1987:496). Close vision is a way of determining the eye as more of a participant in the haptic than the representational. For example, in close vision, as when one sits too close the screen in a cinema, 'perspective' is lost.

can also reinstate the smooth, "liberating light and modulating colour, restoring a kind of aerial haptic space" (ibid.). It is a question of deciding whether smooth or striated space is *presupposed* in the use of the haptic or the optical; of whether the lines followed are abstract or nomadic lines (that Deleuze and Guattari equate with art) that pass 'between' and are "positively motivated by the smooth space" drawn. Or, on the other hand, whether the space of VR going to be subject to "concrete lines", which are motivated by "a feeling of anxiety that calls forth striation" (496-497).

The fact that VR is partially a representational technology enabling an 'image-ining' of a constructed world - even if this is in a quite remarkable way - is absolutely secondary to these considerations of the smooth and the striated in the formations of virtual space. On the other hand, to consider VR primarily as a representational technology is to summon up striation and anxiety, with little chance for the nomadic and the smooth. In all this, perhaps, an interaction between nomadism and anxiety will be forced upon us. For, as Deleuze writes when discussing Spinoza, imagination diminishes its own object over time - that is, what seems at first the magical assertion of the "presence of its object" (1992:295) soon enters into a kind of "vacillation" which will eventually lead to the object's "dissipation" (ibid.). In short, any magic to VR's representational illusions will soon disappear. Then the considerations of how it functions, what it *does*, will commence in earnest.

7 The Virtual, Aesthetics and Passion

This consideration of VR leads to a more general question regarding interaction. Is the body generally repressed within the new machinic by a new 'subjectifying soul' as much as it has been within previous machinic 'ages'?

More positively, how much can the 'new souls' of an ethical 'passion' be developed in order to express the percepts of a 'new body'. These souls, as the incorporeal expressions of individuation, arise from interactions between bodies in the first place, which in turn are produced by the events which inhere within them. As such, the body and the soul are, of course, interdependent. Nevertheless, the body *appears* in the world of the 'soul' as an other - as the intrusion of the multitude of heterogeneous microperceptions in the harmony of

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[35] Also "distant vision".

macroperceptions. If being bitten by hundred of insects, for example, it is *perhaps* better to feel even panic than each bite! Yet this is literally a movement away from our animality, as dangerous as that might be to feel. To feel the microperceptions clearly, not obscurely, is to feel the animal other that resides within the notion of the soul.

> *...and first of all the little animals inseparable from the fluid parts of my body..."our body is a type of world full of an infinity of creatures that are also worthy of life."* *The animals that I meet outdoors are nothing but an enlargement of the latter.* (Deleuze, 1993:109)

Paradoxically to enable the expression of the complexity of a 'new soul' in new technologies to begin, it may be necessary to 'become-animal', and to understand now how what Deleuze and Guattari refer to in *A Thousand Plateaus* as 'becoming-animal' relates to other becomings-minor and becomings-molecular. All are attempting to broaden the extension of the clear zone of perception, the resonance with the world, and of *a world that starts with the microperceptions of the body.* One can see why German artist Joseph Beuys' animals were so important to him, why talking to a dead hare about art, considering the hare, the bee, and so on as perceptive, and resonating with them, could relate to his idea of 'social sculpture' as a broader interconnection of actions, a happening which must always involve a becoming-animal on the level of the percept. It is precisely away from transcendent 'truths' and unifying subjectivities to such becomings-animal that one must move in order to then become-molecular. One must become more and more specific in order to know the world - or rather to resonate with it. One can understand here the specificity of Cage's work, and why following nature "in her manner of operations" (Cage, 1990) means introducing elements of chance which molecularise the whole aesthetic process, throw it open to the full specificity of the entire world; at that moment.

Once, purely by accident while visiting the Copenhagen Zoo, I stumbled across the back of the polar bear enclosure. There was a little barred window at which an enormous and seemingly bored polar bear sat, looking out, face right up to the bars. Of course, there was another set of bars between my face and the bear's, but we were close - less than a metre apart. It sniffed and sniffed and looked eye to eye with all comers. *It* would not be interpreted. *I* thought of it, given such a meeting in its own territory, preparing to attack and possibly eat us. Plainly this was a ludicrous, generalising and somewhat pathetic thought in

such sad circumstances. Yet when this thought evaporated what was left to think in the space of the insistent staring and sniffing of the bear? Could I follow such a becoming through and still think that I could leave the bear behind its bars? The world gapes at such moments and calls to us. How do we resolve such dissonances? VR, if designed only as a representational machine that reinforces the present State of our disharmonies, cannot. Several years previously, in the same city, I went to the holographic museum, which had an early VR game. I persuaded a friend, neither of us having tried it before, to go into the virtual world with me. So we strapped on our belts and pulled our guns out of our holsters. At first, neither of us could navigate as the pteradactyls flew overhead, but I was lucky enough to find the paths and the stairs. I could see my friend's figure at the edge of a platform, facing into 'space', and therefore unable to figure out where she was. *As a friend* I called out to her to turn around in order to be able to see where she was going. But I'd played so many of these games before. I knew the story, and as she turned around I, *as an enemy*, shot her. It was, after all, only a game. She, of course, never having been interested in such games, could not believe it. How stratified can it get? How much more serious can these issues be when it is no longer just a matter of idling amusing oneself in Copenhagen, but of how we are construct and reconstruct the world at every moment?

Such questions are painful, and they reflect our pain in adaptation to a shift from a world of bears trapped in order to be representative to a world in which the biggest trap lies in not knowing how to manipulate the virtual controls without leading to further entrapments. I shall take a short digression to begin to discuss this pain, and attempt to understand the function of the pain that is famously prominent in performance art, and subsequently in our performative work of making and remaking the world. I have discussed performance as providing better guidelines than the classical theatre of representations for work with new technologies. The pain often involved is usually not masochistic (someone such as Australian artist Stelarc rightly denies any such psychoanalytic or mystical purpose to his various painful engagements such suspensions from hooks, or them movement of his muscles by triggers sent over the Internet) or sensationalist but a way of clearly expressing and "resolving dissonance" (Deleuze, 1993:131). Once again this involves a broadening of the zone of clear perception, of the threshold of which pain is the signal and therefore entirely legitimate material for artistic practice when this is directed towards an extension of

expression. State art simply refuses to cross or even approach its limit and instead demands the negative masochism of identity in confirmations of limits about which it pretends not to know, of clear separations between things such as representation and life, the copied and the copy. The classical theatre, for example, demands natural*ism*, but never the shifting *real*.

The artistic use of pain to *cross* limits in the work of artists such as Marina Abramovic and Ulay, where for example, in *Night Sea Crossing* (1983), they sat still facing each other for seven hours at a time on 90 (non-consecutive) days, is specifically differentiated from this kind of contractual Majoritarian masochism[36] because in masochism, according to Deleuze's account (1991), the point seems to be to *reaffirm limits*, in fact, to contract them out to a 'third party' in order to have them reaffirmed. As opposed to this, an artistic use of pain is that which seeks to break the rules of the game. While it is important for masochism to *maintain* the fantasy against reality and against the danger of the return of the father, *the artist, on the other hand, uses pain to contact reality and to dismantle the father.* When pain is understood this way, both in performance, and in the crossing of the barrier of *conceptual* pain brought on by some new technologies, it can point the way to new contacts with the world, and to the dismantling of oppressive social contracts. For Deleuze the "resolution of dissonance is tantamount to displacing pain, to searching for the major[37] accord with which it is consonant" (1993:131).

Harmony here, as opposed to the unities and identities which State art and masochism assume, is a harmony *between differences*. The harmonic different/ciator in nomad art practices describes the relations *between* series, the process of each remaining intact. It can provide a harmony *between* dissonances without always *resolving* them. Pleasure and pain are intrinsically related in testing this harmony's limits. In short, "harmony has many formulas" (132). According to the formula of *The Fold*, and in the promise of VR, such notions as the action, or even simple stories are like melodies which come after, not before, the creation of a harmonic plane of consistency. In other words, stories, like melodies, only have their uses later, when they interact with other harmonic elements. *The Fold* suggests, in fact, that at this point there can be a "harmony between harmony and melody" (135). This in

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[36] I am indebted to my colleague Nick Mansfield for an understanding of masochism and culture, about which his book, *The Art of Power*, should soon be published. This is not to say that he would be in agreement with these points.

turn suggests a possible place for the mimesis of an action *within* broader considerations of *inter*actions. This is an action or melody conceives as the ongoing "horizontal and collective extension" of harmony which Deleuze places at the limit of "the material universe" (ibid.). Some would think Bach, but the feedback on a guitar is as good an example of this extension of harmony through a melody. Here, in a kind of "counterpoint", each melody is "spilling over its frame and becoming the motif of another such that all of Nature becomes an immense melody and flow of bodies" (ibid.). Melody (or story, or action) is a realisation in "extension" (ibid.) of the intelligible (interactive harmony) to the sensible (vibrating bodies and matter). At this point it makes sense to talk about an action, or even mimesis, not as explaining or copying, *but as resonating, and expressing.*

Harmony and melody, interaction and action are confounded in technologies such as VR or work such as Cage's. The perceptual threshold is so thrown by the dynamic of the diagram's effectuation that it is hard to tell the difference between vertical harmonies and horizontal melodies. This is the point at which Deleuze says that our world differs from that of Leibniz, and new tonalities are required (such as Cage's, Glenn Branca's, or for that matter punk music or bands such as Sonic Youth's, to give just musical examples) which accept dissonance.

In this, our playing with the perception of the virtual is moving us all from "monadology" to "nomadology". For the consequence of the Baroque's fragmentation of *the* world is that there is no longer *a single* world but "several worlds". It is these several worlds that the monad must contend with, and in doing so, Deleuze suggests the monad "is kept half open as if by a pair of pliers". This is a world now composed "of divergent series (the chaosmos)" and "It now opens on a trajectory or a spiral in expansion" (137).

To sum up, by following Deleuze and Guattari's accounts of the virtual, the machine and technology, we can begin to assume that the "Virtual Age" has only just begun. Until we begin to participate in its machining of the modulation of modulation itself more freely, and with less anxiety, we will not be able to convert our monadological lack of an outlook into a nomadological participation in the outside.

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[37] Once again a slippage of terms. The "major accord" here is one which can tolerate dissonance *as* harmony. Again the work of Cage is exemplary.

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