

Vertiginous Mediations (draft version)

sketches for a dynamic pluralism in the study of computer games

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Abstract

There is much to be learnt if we situate the study of computer games in a broader “ecology”, combining media ecologies with sensory, political and other ecologies in a ‘*transdisciplinary* metamethodology’ (Genosko, 2003). This methodology enables a better understanding of both games themselves and of what games can tell us more generally about our new hyper-mediated lives. The paper departs from Félix Guattari’s concept of ‘three ecologies’ (here taken to include the technical aspects) of self, socius and environment. Sketches are drawn from recent research into computer games that allow for the diverse, often experimental, ecological niches of games. The first is a sketch of games’ historical contexts, crucially the concurrent rise of Capital, aesthetics as a problem of judgment, and industrial technics. Further sketches are of games’ activation of ‘relational histories’ (Harley, 1996: 108), the dizziness of their mediations, and what of Guattari called a ‘*transdisciplinary* metamethodology’ as a response to games’ vertiginous mediations.

Games’R’Us

Computer gameplay is an exemplary expression of whatever it is that society has recently become. Whether this society is correctly labelled the information, knowledge, ‘network’ (Castells, 2000), or ‘hypercomplex’ (Qvortrup, 2003) society, games are having no trouble creating many new ecological niches within it. As such, computer games have many things to tell us about our hyper-mediated lives. Yet games are proving difficult to fully capture within given research methodologies and established academic disciplines. For a start, computer gameplay challenges given methodologies because it is extremely experimental - with rapid evolutions,

differentiations and divergences, both within and beyond given rules, forms, technical assemblages, and genres. In this paper, I argue that this is a gift to researchers. Games might have something to tell us about the new mediations through which we live precisely because games are not easily amenable to many older styles of media analysis (as useful as *mixed* and *adapted* forms of older methods of media analysis still might be).

Games are not like older media. They are almost emblematically “new media” or “post-media”. Games fully accept the virtual dynamism of the potentially infinite forms of relation that mediation allows – something often disavowed by older broadcast media. This virtual dynamism has always existed within media but is only now being fully actualised - made more obvious and malleable - within new media such as games. Games provide unusually *intensive* instances of engagement with virtual structures of relation. This is because gameplay is nothing if not intense perception/action, which in turn propels a rapid, ongoing mutation of games. It is for all these reasons (and not just by virtue of marketing) that games are often found at the heart of domestic engagement with the network society.

The resulting success of computer games as a *divergent series* of mutating cultural forms, playing out intensive processes of perception/action, allows them, more than many other aspects of the ‘rise of the network society’ (Castells, 2000), to express what we might call the broader ecology of this society. This is an ecology that combines media ecologies with cognitive, perceptual, political and other ecologies in a way that further dynamises the resulting field. The result, for research into games, is that the specificity of the field of computer games may well turn out to be the difficulty of pinning this field down. Yet precisely because of this, the study of computer games can tell us a great deal about the strange ecologies of our increasingly mediated life, while not reducing this life to its media determinations (or even to the disciplinary restrictions of “media ecology”). Games force us to consider the strange ecologies in which we increasingly live along the less disciplinary lines of Félix Guattari’s (2000) three interactive ecologies of self, socius and environment. Moreover, games force us to consider the manner in which these interactive ecologies are complicated when they are considered to be technical ecologies.

In sum, games are us. Yet they are us right at the moment when we are not sure what we might become. This paper draws some sketches of possible approaches to games research that allow for the diverse, often experimental, ecological niches of games in relation to the new technics with which we are becoming something else (“technics” is defined here simply as the combination of technologies and techniques). First, I briefly outline much that is very familiar, in the concurrent rise over the past few hundred years of: industrial technics and human sensation as a problematic interface to this technics; the conception of aesthetics as the problem of recuperating increasingly industrialised sensations in terms of rational categories and disciplinarity (that is, forms of judgment); and the university as a disciplinary organisation promoting modes of research in the service of both industrial technics, and a general culture of disciplinary judgment.

Next, I outline three aspects of games that reveal their dynamic engagement with the broader mix of ecologies involved in industrialisation, sensation and disciplinary judgment, and the various attempts to further discipline these ecologies when they get out of hand. The first aspect described is the mobilisation of *relational histories* (Harley, 1996:108) in games. Relational histories are non-linear histories in which there are constant exchanges, feedback and actualisation/virtualisation between different technical and ecological “archives”. I next describe the *vertigos* crucial to gameplay, in which relational histories are experimentally brought into the future, with present experience often a kind of indeterminate dizziness in which the human/technical sensory and cognitive ecologies re-arrange themselves. Finally, in tandem perhaps with this vertiginous indetermination, *battle* is taken as a fundamental mode of games. It is also in the notion of battle as a mode of living that we begin to see some surprising things in common between games methods and disciplinary research methodologies. In both games and research, culture is often conceived in terms of warfare, not only theoretically but also *technically* (fighting technologies and techniques in games, fighting for funding through research). Furthermore, this conception of culture is often based upon a highly specific and influential disciplinary presumption of what has for many decades been called Game Theory throughout military and political institutions and industries.

The final sketch in this paper is of a ‘transdisciplinary metamethodology’ that attempts to provide a more effective research response to computer games under these conditions. This is partly a matter of a political commitment to transdisciplinarity, but it is also a matter of research keeping up with the experience of hyper-mediated modes of living. Transdisciplinarity is seen as a way through many of the difficulties that have arisen at the junction of aesthetics, industrial technics coupled with the rise of Capital, and the formation of modern universities as disciplinary apparatuses, beginning in the eighteenth century.

Judging Technics, Funding Technics, Playing Technics

As is well known, the eighteenth century conception of aesthetics was one in which sensation presented a series of problems to judgment¹. This was accompanied by a secondary series of problems of taste (that is, assumptions about a possible consensus concerning aesthetic value). This conception of sensation as a problem for culture and reason still haunts the study of computer games and has arguably dominated their study until quite recently (primarily in the “media effects” methodologies’ condemnation of the violence in games as an affront to enlightened culture).

Yet the enlightenment conception of aesthetics has always been fractured. First, as Kant realised, sensation is not easily recouped by reason. Second, the relation between sensation and forms of judgment has long been made more complex by industrial technics. In short, in intensifying sensation, industrial technics also seems to challenge rationality. Technics, initially an apparent product of reason, plays its part in the creation of new complex ecologies that pose problems to the human sensorium, to established forms of rationality, and to the relation between them. This is most obviously the case with the technics of amusement and spectacle, often viewed with suspicion, but still forming an important part of culture, down to the contemporary use of images of war as entertainment. However, it would be a mistake to think that the problematic complexity of the new technical ecologies only involves entertainment, amusements and spectacles. There are also problems – even for reason – in the technical ecologies of new forms of judgment, in the formation of the modern

university and its constant reformation in recent times, in performance measures and so on, and in new forms of Capital investment that often motivate these new modes of rationality. All involve the attempt to rein intensity back into reason *and* exchange through methodology.

All this is echoed in the contemporary attempt to legitimate the study of computer games, a product of the post-industrial revolution. Some interesting challenges result. First, the problems involved in such research – and its problems – are arguably emblematic of a deepening of the crisis of legitimacy of older agents of judgment and social regulation such as universities². Second, such study is unable to sensibly divorce itself from the newer and massive capital investments in the network society, as Capital attempts to meld the relation between older and newer forms of production, investment and consumption, particularly with regard to research in profitable areas such as computer games. Third, to the relation between Capital and university research in general. Capital is an increasingly compelling aspect of “academic respectability”, down to the disciplinary formation of research fields. This is not to point to a Capitalist “ideology” informing either games³ or research, but rather to the more diverse roles that Capital obviously plays in the *experience* of both⁴. Fourth, complicating all this, the study of computer games involves thinking seriously about new varieties of *highly mediated sensation* that produce a series of very culturally disruptive ecologies of sensation that we are only just beginning to understand.

Many (though certainly not all) current approaches to games tend to ignore these challenges, or, at best, recuperate them into forms of (aesthetic, psychological or simply moral) judgment and taste. These approaches are directed towards what should or should not be admitted into the study of computer games, especially from existing media/cultural methodologies and theories (or even from the position of the fan of particular styles of game). Yet games – as an important mode of life, or cultural *experience* - seem to constantly over-run these judgments. It is in this double-sided situation, of judgment on the one hand, and play as exceeding judgment on the other, that I wish to situate the question of games study.

To put this another way, how might ‘special effects, glitz and vulgar wonder...cross the threshold into respectability and affluence’⁵ (During, 2002: 245) within the university? That is, how might this occur while still taking into account contemporary society’s new technics of intensity, its new questions about perception, the processing of knowledge (from methods and institutions to the very basis of cognitive processes themselves) and the shifting status of life?

Transdisciplinary experimentation will be suggested as one way of beginning to answer such questions – if contingently. It is a way of reconceiving a politics of research into gameplay that begins with the complexities of experience⁶, acknowledges disciplinary factors and the importance of Capital, yet may at least partially escape the problems of Capital’s pervasive influence within games (by which I mean, just to begin with, the difficulty games developers have implementing ideas outside of the presently narrow confines of commercial games manufacture⁷) and research.

My path towards a ‘transdisciplinarity metamethodology’ will begin with some of the dynamic, elementary *series* that seem to constitute the field that such a metamethodology might inhabit. These series contribute to the basis for the ongoing evolution of games, both as technical successions of invented and recombined elements, and as evolving experience in interface with a networked society.

Relational Histories, Vertigos and Warfare

I shall suggest three elementary series that recur through the evolution of games: relational histories, vertigos and warfare.

First, then, I shall consider the series produced by the ‘relational history’ (Harley, 1996: 108) of previous technical series. This accounts, for example, for the proliferation of what we could call “actionable nostalgias” within games – involving perception/action within the hazy and indeterminate affective blur of past and present. In games any kind of nostalgia is actionable, such as in the re-enactment of, and participation in, film genres (zombie films or Westerns, for example, in *Timesplitters*

2) or specific films (*Blade Runner*, *Lord of the Rings*) or even specific effects (*Enter the Matrix*). However, I would not restrict the notion of relational history to nostalgia, or even actionable nostalgia. Ross Harley writes that when considering -

...how contemporary perception and realms of experience have been significantly changed by modern technologies of transportation, entertainment, architecture and telecommunications ...If the history of technology is not linear (in the sense that developments in one field do not automatically lead to changes in another), a more complete understanding of technological developments can be revealed in what might be called a 'relational history' (107-108)

This implies that relational histories involve series produced by the dynamic of a field in which the past is potentialised by the theoretically infinite possible connections of variously archived ecologies of technics⁸. Relational histories are therefore non-linear, in that there are constant exchanges, feedback and actualisations/virtualisations between different technical archives. Gameplay takes place within these relations between feedback and exchange, actualisation and virtualisation.

The second series important to the ongoing dynamic of games is formed by what could tentatively be called the *vertigos* in which these relational histories are taken into the future, for example in the dizziness of action common to many games, or the rapid evolution and remixing of game elements. The concept of vertigo is also meant to suggest the real affective indetermination (in terms of both passive and active affect) at the heart of gameplay at any given moment.

More simply, vertigo in gameplay is the sense of being between different structures (or possibly disciplines, frameworks, or even different technics). Although gaming is often considered in terms of its structures, a large part of the *experience* of gameplay is often precisely that of an ongoing loss of structure, or attempting – and never quite succeeding in the attempt – to recover structure. Judgment is one important component of the attempts to recreate structure – but equally important contributions

will be made by the modulation of habit, or the opening of complex ecologies of perception/action to an increased tolerance of vertigo (a major skill in games).

Vertigo can be considered quite *literal* in the players' dizziness when playing games, for example when "flying" upside down, or being "shot at" on every side. However, the term "vertigo" is only meant slightly more metaphorically, and still as completely *real*, when referring to a player's attempts to integrate their own technics (habitual, unconscious and conscious) with a complex game's technics in real time. There may even be a kind of vertigo found in attempts at aesthetic or disciplinary judgments of the vast field that is gaming (again involving a very real affective indetermination⁹, a kind of dizziness).

The third series important to the ongoing dynamic of games, in conjunction with relational histories and vertigos, and often noted within games study, is a series of *battles*. These emerge from relational histories between warfare and gaming and are complicated further by the relation of research to both. Gameplay (and often research) plays out these battles explicitly in its emphasis on combat, but *less obviously in many of its assumptions about what a game is*. For some critics, this is a defining feature of contemporary games (Crogan, Penny). The relation between games and warfare is important to games' redirection of experience in forms of training. It is argued that this training habituates the player to specific forms of struggle useful to a network society premised on something like information or media-based warfare¹⁰. There is a lot that is undeniable in this argument. At the same time, the combats involved also have other ecological settings, extending to other series, medias, cultural processes, methods, and so on. Whatever the case, the important point is that most of these can be folded back into gameplay. Indeed this forms a major, explicit part of gameplay (and, we could say, the "game" that is competitive research).

Of course, games have a pre-history in all these respects. Many previous "new" cultural forms at the junction of the technical and Capital have involved a mix of relational histories, vertigos and battles¹¹ (consider, for example, dodgem cars). Playing with this mix is often the way that cultures allow their members to learn to perform the new technics. Harley, for example, has detailed examples of this

acclimatisation to new technics in the relation between Capital and electricity in the rise of the amusement park (1996), or the relation between new forms of movement and technics in, for example, the conjunctive experience of the freeway and the rollercoaster (2000). Here we could also think of the local amusement arcade of the past, with its miniature bowling alleys, shooting galleries and train sets as all but forgotten ancestors not only to computer games, but an entire world fascinated by participation in the multi-mediated and mechanical.

In all these technical amusements the aim is not only habituation to combat, but the more diverse 'engineering of experience' (Davis, 2002), the accommodation to the new forms of experience necessary to the successful functioning of the new technics. Previous amusements are often swept up and transformed in the process (such as the dodgem, the freeway, and even arguably the rollercoaster, in driving games such as the *Gran Turismo* series). This engineering of experience is work that is never finished.

The ongoing engineering of experience explains the importance of *continued* play¹², and in this respect games perhaps have a much more balanced approach to the relation between sensation and judgment than is given within more obviously disciplinary responses to aesthetic experience, such as university research¹³. In games, continued play brings about new skills – often those required in order to participate more broadly in new technics. Relational histories are lived out and new ones created in a meeting with the vertigos found in playing out the new technics at their limits. The evolution of skills involved is accompanied by the experience of new affects in the meeting of body and world, affects precisely to do with relational histories and vertigos.

In all this, games show us that habit never stands still. The modulation of habit is central to gameplay, motivated by the simple but in some ways difficult problem of what to do next, how to adapt given habit to the relational histories, vertigos and battles that might be coming up next. The contemporary ecological context for this – and perhaps *the* contemporary social problem involved - is the problem of what to do next in the midst of networked complexity.

Despite their long kinship to games that I shall shortly describe, research methodologies could still learn a great deal from games here. Yet relational histories and vertigos, because they are difficult to map out and categorise, give a linear history to, or perhaps write a funding application to study, are an often-forgotten part of the techno-cultural mechanisms of games. Games study already seems sometimes willing to fall back into now partly electronic, but often still out-moded, habits. The study of computer games has already experienced the outcome – in the form of uninteresting arguments (that is, battles) between micro-disciplinarity, such as that between ludology and narrative. In such battles, games research exhibits something in common with games (and fandom). The attempt to predetermine the outcomes of battles informs much of the attempt to structure experience in both game research and gameplay.

Warfare, Games Theory and Modes of Living

As is well known, this constant forming of alliances, disciplines, and antagonisms is no accident in the case of either research cultures or games. Both research cultures and games often assume specific modes of living – technics and rules of the game perhaps – that have a complex ‘relational history’ with cold war climate from which they emerged. One aspect of this climate that is interesting with regard to both games and research methods is a particular (heavily funded, massively researched and highly influential) rendering of what is called “Game Theory”. The famous “prisoner’s dilemma” (De Landa, 1991: 84ff)¹⁴ of this theory was one that became a metaphor that was to inform many of the techno-social developments of the cold war. This dilemma was really, as with the United States and the Eastern Bloc, one of *two* prisoners. Separated from each other but forced to decided on actions whilst guessing the actions of the other, the dilemma was precisely the dilemma of cooperation versus betrayal, with resulting individual/mutual freedom or individual/mutual destruction (De Landa, 1991: 97). This Game Theory, which began with the *assumption* of two sides captured in a particular framework, an assumption that lead to the ongoing techno-social realisation of a suspended and ongoing antagonism between “two

sides”, was to heavily inform the development of technologies and social formations – and research into both.

For one thing, it both assumed and justified a totalising theoretical, social and technical systematism (in algorithms for example, that would process decisions according to probable effects, and so on) that infiltrated many other forms of research. This would include research into computing in general and Artificial Intelligence in particular, and subsequently into the understanding of cognition as a process involving systemic logics. However, this systematics soon provided new vertigos, which were in turn to be systematised in the information theory that forms one basis for traditional media theory (Hayles, 1999).

In media theory the question of effective communication and noise repeats the problem of cooperation and betrayal. Moreover, the systematics and vertigos involved found entire ecologies in which many media and communications theories and practices find so many of their close and distant relatives (these relatives would range from cybernetics to the desire for systemic learning and fixed research inputs and outcomes). All these ecologies involve the development of enhanced systems that are based upon maximising performance, or optimising the probable outcomes of rational judgments within a *defined dilemma*. All again sacrifice everything to the presumption of a particular dilemma. All are subject to the mood swings between the vertigos produced by this presumption, and the attempts to re-establish order.

There is obviously much at stake as to how this is played out on a daily basis. Choices made within a given theory of gameplay – such as, but not only, the Game Theory based on the prisoner’s dilemma – are often validly the focus of research into areas such as games because the methodologies involved derive from inside the given framework of the game. However, such research methodologies ignore the distinctive vertigos and ecologies of areas such as games. They also tend to forget the initial presumption of particular game theories themselves (in this case “Game Theory”) *as a mode of living*. This calls for a transdisciplinary approach, one that might question the inherently destructive logics of pre-determined frameworks.

Games and research also have this in common, however, that although they both resist moving outside of frameworks, they both tend to agitate these frameworks, even when they do not want to. As in the “logic” of the cold war, or the “logic” of the current war against terror, this stubborn clinging to given frameworks creates its own intensities, mistakes and dangers. In short, frameworks contain their own vertigos, and none more so than at the junction of gaming, research and warfare.

In his *War in the Age of Intelligent Machines*, De Landa writes of a kind of foundational cultural vertigo that arose with the importation of Game Theory *as the basis for research methodology* into warfare. Firstly, for De Landa, the ‘Prussian war machine began its descent to hell when war games began to take the place of true politico-military strategic planning’ (1991: 84). When Game Theory began to inform war games at the birth of the computer age, it helped create the cold war. The rational basis for this was, ‘if you can’t maximize your gains by disarming, minimize your losses with a nuclear buildup’ (97). The systematic approach that attempts to win the game begins to edge towards apocalypse. In short, there is a complex and powerful dynamic between structure and chaos, frameworks and vertigos.

Computer games constantly – often obsessively - play this out (not only logically this is a major part of the affect involved). For example, the apocalyptic resolution of the problem of what to do next in a complex, networked world is echoed in many games (such as *Starcraft* – in which the nuclear buildup is quite literal - and in *Warcraft III: The Reign of Chaos* – which gives the apocalypse environmental pretensions). This does not, however, mean that games are always dangerous to culture. An interesting methodological response might see something else in games. Although this accompanies their obsession with warfare and apocalyptic systems’ logic, it might also have the potential, in its nonlinear indetermination, to deviate from this logic¹⁵. This methodological response might simply be to *focus on studying the relational histories and vertigo involved, before trying to resolve these into frameworks or genres*. Deploying the methodologies involved in the resolution into frameworks would only *seem* to resolve the vertigo that *is often the very substance of gaming*. To focus on relational histories and vertigos would be to focus on potential, indeterminate futures (for a start, in relation to the technics of a networked world).

Vertigo and Shifting Ecologies

One very clear example of this vertigo is found in the *Descent* series (and here I am referring to *Descent II*). In the *Descent* series one is placed within a flying craft battling robots of all kinds. *Descent* games enhance the affect of flight. They are set in confined mine shafts which are as likely to make you fly up or down as side to side.



Figure 1: *Descent II*

Many players find this vertiginous and nauseating at first, which may explain why it is often forgotten (that is, repressed) in analysis. Yet, as I have suggested the dizziness – which is precisely *non-systemic* – is an important part of the game. In fact, this dizziness has a lot to tell us about the merging of action and perception in games. It tells us something about the dizzying consequences of more obviously – as in games – *identifying with your own actions and perceptions in the very process of also simulating these perceptions and actions.*

The vertigo created by identifying with your own actions and perceptions, in the strong mode played out in games, is not only found in flying simulations. This kind of dizziness is arguably important to all games. For example, in strategy games such as *Warcraft III*, when “I” am being attacked on several fronts at once, “I” often don’t yet know what to do, or even what is happening in what the game itself calls ‘the fog of war’. This is a fog not just on the screen but also in my nervous system and beyond.

This is in fact a fog produced by *a dynamic ecology as it shifts* – and contemporary technics are more and more about shifting ecologies, not only about the fixed systems logic of war games. In other words, as much as they often are war games, games are

at the same time a way of playing with the vertiginous shifts in networked socio-technics as a whole.

Again method in games can tell us something useful about research methodology. Many methods within computer games are to do with the development of new methods. They are in fact *metamethods*. Even when similar techniques are involved across games (shooting, moving the mouse, learning where to look, how to scan the screen, or how to play the lag of an online game) each game requires us to enter into a certain training (Penny, 2002) that makes these techniques evolve, in their combination, into something new. This metamethod, somewhat paradoxically, is really method at its most basic. Here method is not about the conditions of consensus knowledge, taste or judgment, or even critique (all of which academic methodologies tend to focus on) but about specific action in a shifting ecology.

Games therefore have a lot to tell us about method/methodology itself, *here understood as a particular kind of intensity*, rather than just as a frame or system. Within games, there is a lot at stake surrounding issues of method in that you “live” or “die” by the methods you use. This is particularly apparent when you lose a game – after which of course the first thing you do is re-assess your methods. In sum, games show us that method is not just a form of discovery or reflection but a mode of production that is deeply engaged with – and should be deeply responsive to – the strange ecologies in which one finds oneself.

Different methods/methodologies – as engagements with these strange ecologies – produce different modes of living (or dying). An example might be the production of time by countdowns within games.

Time, Calculation and Duration

Time-limits and countdowns are methods that deliberately delimit experience. Yet they require responses that are not delimited in the same way. With their unavoidable calculations intensifying our actions and anxieties, time-limits and countdowns show us that calculated time can be an inflexible imposition upon experience. Yet the

experience so structured seems paradoxically an experience of the extreme pliability of time. We enter a strange experiential ecology of time when the countdown begins, one that becomes stranger the closer we get to 00:00. Moreover, knowing that our successful actions in a game can often postpone this moment makes the gameplay the more intense.

In short, clock time and existential time produce each other *as intensity*. Time is not just a fixed commodity in games in which calculation is divorced from other experiences of time – or it need not be (Mackenzie, 2002, discusses this extensively). Rather, calculated times are methods that produce modes of living in conjunction with games and players. One could in fact suggest that calculated times are modes of pseudo-living, particular durational modes of technics, or of what Bernard Stiegler calls the technical beings of ‘organized inorganic matter’ (1998: 49). Time itself is found not in the calculation but in the relation between these technical beings and human being. The ongoing production of time as a relation between technical and human being is a crucial part of the dynamic ecologies of games.

In part, this is because the new intensities of time that games actively produce allow for a basic retraining of our haptic habits – the technics and methods we employ to give us a sense of our own body in movement, or in relation to its changing self over time. The modulation of our haptic sense is arguably our most direct experience of life as lived. Undoubtedly, in retraining our haptic habits (see Penny, Mackenzie) games also allow for shifts – between structure and event, clock time and existential time – within regimes of commodification, spectacle and a life lived through computing. Yet games again provide at the same time for play within all the ecologies involved.

Thus in a particularly difficult mission of *Warcraft III*, ‘The Awakening of Stormrage’, while continuing to “mine gold” and generally engage with the screen, I must assist my Night Elves to break through a large camp of Orcs, destroy three Protector Guardians, and gain the Horn of Cenarius to awaken Furion Stormrage before the Undead destroy him. This normally takes about 20 minutes, and it is measured, as displayed in the top right-hand corner of the screen, in a countdown of

trees left standing (that is, the trees that the Undead have not yet destroyed). I can of course alter the time available by deciding to break with the obvious approach. For example, I could break through the Orcs, *by-pass* the Protector Guardians and destroy the Undead (or at least slow them down). There are a lot of other ways to do it, as any basic web search for strategies and walkthroughs will reveal. However, whatever way I do it, there is a constant tension between (what only seems a) given structure and event, between the time of the game (which despite its calculation, shifts in response to my responses to it) and the existential time of both my frustration with the structure and my eventual discovery of potential within it. Discovering this potential is not initially about narrative, *although narrative will emerge from it and fold back into it*. Rather this potential emerges as on the one hand, calculation becomes impure and, on the other, so does the supposed non-technical nature of my life. Calculation is compromised by my existential time as much as “I” am compromised by its *semi-systemic* nature. In short, in relation to my play calculation becomes a mode of expression of the technics of the games – one that will change in relation to other forms of expression as it comes into contact with them.

This is not to say that time is the aspect of computer games that defines their “essence”. Although it does suggest the importance of temporality, it also suggests that this temporality is produced *in situ*. In short, we are not talking about time here in any simple, given sense (in which, for example, different games possess different but fixed styles of “time”). Rather, we are talking about complex, mutually enveloping *durations* in which the player – and in a sense, the game itself, the computer, the PS2, the network - is caught up¹⁶. This also suggests that embodiment in games is not simply a matter of a given body playing a given game, let alone a “player and game” in neat separation. It is a matter of a body and game immersed in the production of shifting durations – registered for example in a different heartbeat (or perhaps increased consumption of pizza and beer).

The Essence of Gaming is a Shifting Essence

The same could be said about many other basic aspects of computer gaming: space and interaction in particular, also produced and productive in situ. Indeed, although

there is a great deal of value in the many commentaries on the essence of games that debate the primacy of such basics as time, space, interaction and so on, there seems no easy hierarchy when one considers the productive nature of gameplay. Often there sometimes seems little consideration that such apparent essences of gameplay:

1. might not be simply separated in play
2. might not be given in the game, but produced between player and the game
3. might form *intersections* of time and space, and we might add, interaction, play and narrative, cognition, perception and action, all these shifting in complex ways in what becomes *duration*.

Ignoring these factors results in some definitions of the “essences” of gaming that result in limiting methodologies. These in turn produce games studies as a field only by excluding certain types of games¹⁷, or many key aspects of the experience of games.

Again, this problem calls for an open, transdisciplinary methodology (Genosko, 2003). Only such a methodology can, for example, account for the wide experience of commercial games, art games, community-developed games, games that use computer networks to enhance offline interaction as much as online, games that are portable across platforms, web games, the immense amount of research into games and learning.

It is perhaps the moment to consider transdisciplinarity in more detail.

Interdisciplinary or Transdisciplinary?

I have argued above that games are both a new set of media and, at the same time, arguably not media in the traditional sense. Although all media are constellations of other media, and although all media remediate other media and are remediated by them (Grusin and Bolter, 1999), computer games belong to what I have called *electronicas* or *differential media* (Murphie, 2003). This means that their evolution is too fast paced, their combinations, variations and mutations of media forms are too

many, to study them in the manner given by, for example, the media coherence of film, television, radio or even video. Games remediate themselves as they go. They remediate each other, other media (more extensive than any other post-medium I can think of, including perhaps the Net), warfare, other media industries¹⁸, and arguably life itself.

Games, it also had to be said, are not *only* games. Games find a host of other uses beside gaming per se. For example, one of the most popular recent uses of *Warcraft* has been to develop maps so that one can simulate the Battle of Helms Deep from *Lord of the Rings: The Two Towers*. There are many other examples. The military, as is well-known, has long used games in its more experimental modes of training, for better or worse. Artists have made games for a long time (for example, VNS Matrix's All New Jen from the early 1990s, Troy Innocent's work, or Holmes, 2003). In addition, it would be naïve to deny that games in themselves are always a significant social experiment. They have formed a significant part of the change in social relations occasioned via networked media. More generally, games' general potential for simulation – even for simulating the embodied perception that is itself the engine of simulation – leads them to create many divergences from actual gaming. Games are meant to leak into that which surrounds them. So is play. An example of this is the use of networks by gaming communities to solve real-world problems as described below with regard to the *Beast*.

For me, all the above suggests that the major methodological choice for games study is between interdisciplinarity and transdisciplinarity. Although these are probably always found in combination, interdisciplinarity suggests a simple combination of existing disciplines, while transdisciplinarity suggests something more transformative and inventive. Arguments over the respective merits of more specific approaches (narrative and ludology, visual versus interactive media, for example) or concepts (space, time, interaction, play, games) might be rather mute when subject to the rather variegated light of games themselves, the relational histories of games studies, their active interventions in other fields, and the broad ecologies involved.

Guattari and Gary Genosko reject interdisciplinarity in favour of the radical engagements of transdisciplinarity¹⁹. Yet the former is useful in that it allows a variety of approaches to co-exist, while posing the inability of individual methods to address the totality of game experience. Interdisciplinarity makes us look at the ‘ands’ in narrative *and*, gaming *and*, play *and*, simulation *and*, visual cultures *and*, embodiment *and*, theories of identity/disidentity *and*, industry *and*, semiotics *and*, perception *and*, cognition *and* – and perhaps, crucially, technics, life *and* culture all together²⁰.

Transdisciplinarity is necessary, however. It is about new methodologies, not just a mix of old methodologies. It is based on what Guattari calls the ‘transversals’ that cut across disciplines and methods and *transform them in the process*. It does not leave disciplines intact. The subsequent bringing together of new ecologies is Guattari/Genosko’s (Genosko, 2003) transdisciplinary metamethodology, one that crucially allows for experimentation – and for the development of responsive *institutions* necessary to this experimentation²¹. It is perhaps important to emphasise that experimentation here is an *ecological* experimentation. This is not an experimentation only with how to play games differently or even make them differently, but experimentation with what diverse engagements games might set up in broader ecologies such as the social.

Such a diverse engagement was found in the on and offline game, *The Beast*, of 2001 (McGonigal, 2003). This game involved Internet-based discussions, the finding of clues throughout diverse media (famously in the credits of Spielberg’s *A. I.*), phone calls, meetings in the flesh, and so on. In short, it was not only played on a computer but in the networked world at large. As Jane McGonigal documents, after September 11, a group of players, over 7000 in number, who called themselves ‘Cloudmakers’, decided to use the game forum to attempt to solve the very real-world problem of who had done it. McGonigal successfully demonstrates –

...how games like the Beast challenge...popular notions about the absorbing, virtual realities of 21st-century digital entertainment...immersive gaming is actually one of the first applications poised to harness the increasingly

widespread penetration and convergence of network technologies for collective social and political action. (2003: 110)

Inter- and transdisciplinarity may assist such technosocial experimentation in games. Yet transdisciplinarity in particular often has a rather fragile existence in institutions, such as the modern university, that want to measure performance in defined terms with pre-defined and industrially-bound outcomes. Forms of judgment so often try to tame new relational histories and vertigos before they have got off the ground. Even the Cloudmakers were told to stop using the online forum for real-world purposes. At this dynamic but also somewhat fragile moment in games study, *we might therefore need general concepts that might preserve the specificities and transdisciplinarity that will continue to mobilise experimentation in the area*. For this, I shall follow Genosko's account of Guattari's work as an activist concerned with how to use media in experimental work with groups.

Transdisciplinary Metamethodologies

Genosko²² writes of Guattari's career (from the mid-twentieth century on) as one of 'creating experimental assemblages, between and beyond the covers of books, towards transdisciplinarity' (2003: 129). This involves a 'metamethodology' that is significantly about forming – and reforming – appropriate institutional frameworks for 'the rethinking of method – rather than its migration across epistemological boundaries'²³ (129).

Media played a significant role in this for Guattari and his collaborators. In perhaps a similar manner to Gregory Ulmer's more recent use of multimedia in education, for Guattari and co. group work via the printing press became a significant expression of this experimentation, of 'complexifying, componential heterogeneity, respecting singular (automodelling) and collective (general modelling) assemblages' (130). Although of course games do not automatically have the 'radical' social importance of Guattari's work in institutions, there is no doubt that they are very open to the notion of *assemblage* here. This is another reason that a kind of political transdisciplinarity makes a lot of sense as a basis for the study of games. It opens

games to their communities and to their broader social ecologies. It asks how games might play the role played by the printing press in Guattari's work²⁴, or the Internet in Ulmer's (or in Henry Jenkins' work on games and education at MIT).

The methodologies involved would be extremely disciplined in their ongoing responsiveness to the ecologies involved. Yet this would be a discipline in the sense of focussed work that denies such methodologies disciplinarity *as in the formation of fixed disciplines*. A metamodel 'ensures precariousness, uncertainty and creativity over fixity, universality and automatic articulations' (Genosko, 2003: 134-135). This uncertainty and creativity is not about the 'postmodern condition' (135), however, or to put it simply, "French philosophy" or "theory", but rather about aligning research more closely with the shifting complexities of living in the hypercomplex society that has produced computer games. Significantly in the light of everything I have written about the complex ecologies of computer games so far, the movement from interdisciplinarity to transdisciplinarity is an –

irreversible movement ... an internal force whose very existence necessarily transformed how interrelations between living systems, social structures and psychical process are conceived. (134)

IT are obviously a central part of this movement today. Significantly, even in the past, Guattari saw the rise of IT not only as symptomatic of this new configuration of forces but as creative of it.

because its complex objects compose a world of interdependent hypercomplexity irreducible to unidimensional evaluation on the single basis, let's say, of the market, or of predictive, objective science...[this leads to] a call to rethink relations between science, society, politics, ethics and aesthetics through the development of a metamethodology adequate to this new field of relations. (Genosko, 2003: 134)

Such a metamethodology, itself in part inspired by the ‘IT revolution’²⁵, in turn would appropriate the dynamism of the IT revolution – and computer games as a part of this revolution.

In this, metamethodologies would not just categorise games. They would be more concerned with changes and dynamics, with ‘the transitions, transformations and effects of complex objects ... because they constantly undergo changes based on imbalances between their elements’ (137). ‘Technological convergences’ such as those exemplified in computer games with their emphasis upon play within the network – may ‘overcome static individuated systems, as well as more global interconnectedness’. In this respect transdisciplinarity would seem ‘inevitable’ in terms of ‘technico-cultural evolution’.

It might also be worth considering research into the *future dynamism* of computer games here as much as their past rapid evolution. Online gaming, and its combination with offline gaming, access to the creation of levels and other aspects of game play, the combination of all these in vast game worlds such as *Everquest*, the creation of online games in Flash, the increasing portability of platforms, and so on: all these point to the overcoming of static individuated systems not in favour of totality but in favour of dynamic, inter-connected, individuating systems²⁶.

Post-Evolutionary Ecologies

In such a situation, we are no longer thinking in terms of the *evolution of humanity* energised by technics. Instead, as I began to suggest earlier, we might need to take seriously what Bernard Stiegler calls the beings of ‘organized inorganic matter’ – technical beings (1998: 49). There is no doubt that interfaces such as the PS2, or computers in general, bring this technical being to the foreground for us. Another way of putting this is that computer games highlight a mix of post-evolutionary ecologies²⁷, and of *economies* – in the broadest sense of dynamic structures allowing exchanges within these ecologies.

The technical being involved is something most simply recognised in a kind of negotiation/engagement with major figures in *Tekken*, *GTA* and so on²⁸. In this negotiation the interface plays us as much as we play it²⁹. In other words, when we play games such as *Warcraft III: Reign of Chaos*, we are not only, if at all, identifying with the characters Prince Arthas the corrupt human, Thrall the noble orc, or Tyrande Whisperwind the Night Elf on her tiger. We are in negotiation with them as active and ‘organized inorganic matter’ – that is, as *post-evolutionary ecologies* of pixels, algorithms³⁰, commands, and affects, powers that interact with our own ecologies to form individuating systems.

If there is something like identification here, this is not necessarily (or only) with characters, or even virtual worlds, but with computer processing itself (Friedman, 2002a, 2002b; Crogan, 2003). Furthermore, even if there is a kind of *mimesis* of actions between games and players, it is well to remember that *mimesis* does not always equal identification. As Roger Caillois has famously pointed out, *mimesis* can be as much about losing oneself (to space – thus to the *pleasure* of vertigos) as finding oneself. For Caillois, 'Mimicry would thus be accurately defined as an incarnation fixed at its culminating point and having caught the sorcerer in his own trap' (Caillois, 1984: 27). And from this culminating point, perhaps, we can begin to talk of the kind of *emergent* spaces, times and narratives that come out of games.

Yet as my previous discussion of relational histories, vertigos and battles suggested, we are not only losing ourselves to space, but perhaps to the networked ecologies in general. This complicates any use of Caillois’ conception of *mimesis*. How would we understand *mimesis* in Caillois’ sense within the immense complex ecologies of the network society, its virtualities and interactions? Capital and warfare are a large part of this, but there are other aspects of the network society that also need to be considered. Other incorporated media elements, forms and processes from film, sound (music tracks), 3d modelling, artificial intelligence and expert systems, forms of pedagogy, together with psychological and social economies, and finally audience economies – of the living room, the bedroom, the games parlour, the network – all play their part. We lose ourselves in all of them. Again, games have a lot to tell researchers about what this might mean. Games play forcefully with the whole notion

and conditions of (technical) ecologies as a redistribution of human action, perception, and cognition. This notion of series of technical, redistributive ecologies is intrinsic to the network society. Network ecologies are not just given, autopoietic (self-creating) ‘systems’ with an interface to a range of external possibilities. Network ecologies are also ecologies of allopoietic (created in external interaction) potentials of future connection (as demonstrated in the *Beast* example above).

Teaching and Research

It is the issue of teaching in relation to technology that most clearly brings up the question of the relation between self-creating systems and interacting ecologies I have just alluded to. So, finally, we should not exclude teaching as an important consideration within games research methodologies.

Games themselves are famously good (or occasionally bad) at teaching the player how to play them – at bringing him/her into their ecology/economy. Games might even be ahead of teaching academics when it comes to education and technology³¹. There are therefore complex issues about the diverse ecological and pedagogically expressive potential of games being squandered by poor institutional interventions and overly rigid methodologies. In short, there are serious issues regarding what Guattari would call ‘assemblages of enunciation’ (Deleuze and Guattari, 1987: 80³²) within the teaching and research of computer games.

A broad platform from which to begin to approach this question might be a consideration of the relation between instruction and immersion as forms of pedagogy. There has long been a series of arguments, especially relating to media technologies and education, as to whether one learns via instructions and external models (allopoiesis) or via immersion³³ (autopoiesis), or perhaps via an abandoning of the opposition between the two.

Games again suggest that it is best to take an ecological approach – one that does not *oppose* instructors, environments and learning but rather looks at the transversals that bring them all together and transform them in the process. This ecological approach

would be based on the meetings of all the involved ecologies' 'distinctive points' – their shifting and varied specificities as they enter into series of interactions (something crucial to the consideration of the heterogeneity and dynamism of embodiment, perception and cognition with gaming). *Learning in this approach is seen as an immersive meeting of these points* (as in, for example, those 'distinctive points' of a swimmer learning to swim and a wave that the swimmer encounters) that is in itself instructive because it is transformative (Deleuze, 1994: 23).

In this respect the immersed learning that takes place within the technics of the games is exemplary from a pedagogical point of view. Computer games exhibit an intense relational dynamics between the active distinctive points of gamer, 'technical waves' and procedures and signs (in the material form of algorithms, pixels, interfaces), gestures and so on³⁴. Research methods can learn from this in terms of activating the relational histories of series of distinctive points. This would give the specific coordinates for the application of a transdisciplinary metamethodology.

Conclusions: Ask not what methodologies are telling us about games but what games can tell us about methodologies...

Games and game play involve extremely efficient, real-time processes of automodelization. This makes them slippery in terms of research methodologies, but it also makes them quicker to adapt to the different contexts of networked ecologies. The intensive automodelization intrinsic to games is combined with an intensive "allomodelization" (a series of active relations to the outside). This makes games even more slippery for research methodologies, as the result is that games are subject to more variation than, for example, film or video or even perhaps processes such as word processing.

As such, games are perhaps telling researchers to become more adaptable themselves, and to pay more careful attention to the distinctive points and relational histories of specific contexts. Context is as crucial to games as dynamic individuating systems. Unfortunately, as the consideration of context has often been reduced for decades to the cheap psychology of media effects, researchers have often felt compelled, in

underplaying the media effects' critiques of game play, to underplay context in general. Yet, ironically, this only repeats the problems of earlier, media effects-based research into games and violence that vastly underestimated the powers of variable and contextual adaptation of games.

Again, a transdisciplinary metamethodology will help research into the variable contexts involved. For Genosko, the 'transdisciplinarity ... is caught up in the general movement of deterritorialization that is rhizomatic and mixes heterogeneous axiological dimensions' (2003: 137). A transdisciplinary metamethodology would make the study of games more valuable, as it would allow research into a vibrant set of dramatic intersections found in the upheavals of 'global cultural, political and institutional transformations'³⁵.

Dare I suggest that this could also be reflected in the *life* of the researcher into computer games? Genosko puts it this way.

...can a researcher make known to him/herself (by drawing a map) the potentialities...of multidimensional complex objects and their many, many "registers" (the references they make to dimensions, categories, things, backgrounds, and characteristics other than themselves, with which they intersect)? (137)

Such questions are difficult but increasingly unavoidable in a networked world.

Indeed, it may be that the study of computer games exemplifies the new approaches needed to methodology in general in a networked world. Not only does such study question the individual disciplines with which it has contact. It also provides the university system with heterogeneous pathways out of its current fixations when confronted by the hypercomplex, networked society. For those studying computer games, that is both the joy and the problem. They will not be able to fall back onto previous solutions but instead will have to carry these solutions in a series of mutated forms into the future. Then again, isn't that what game play is all about?

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¹ See Crogan's more detailed account of the Kantian aspects of this in relation to disciplinarity in this issue of *Media Information Australia*.

² See also Cameron and Carroll in this issue of *Media Information Australia*.

³ Here I agree with Deleuze and Guattari when they write, 'There is no ideology, and never had been' (1987: 4). Once we abandon the terms of ideology, however, a vast horizon opens up for the study of Capital in relation to games.

⁴ This is not a criticism, just a reality that all those studying games have to deal with. Lyotard pointed out long ago that Capital changes the nature of research, and that this was assisted by the technical.

⁵ This is reflected in Fanny Burney's novel *Evelina* (1778). One episode in *Evelina* details the heroine's visit to Cox's Museum, a regular site for exhibitions of the new spectaculars. Here Evelina finds mechanical marvels such as a pineapple that opened to reveal a nest of singing birds and a 'concert of mechanical music', the effect of which 'was pleasing' but the mechanics of which could not be explained (Daring, 2002: 243). The forerunner, one might hope, to the academic studying computer games, Evelina is commended in the novel for 'her fineness of judgment as a consumer of attractions, at least in comparison with her companions'. *Evelina* (1778) was written shortly after the formulation of the notion of aesthetics by Baumgarten in 1735 in his *Reflections on Poetry*. Kant's *Critique of Judgment* was published in 1790.

⁶ Aarseth's (2003) emphasis on the importance of play is extremely important, here, but I would emphasise a wider notion of experience in relation to games, one that might take into consideration the broader ecologies of play from the beginning, and not delimit play in quite so strict a fashion.

⁷ As Eric Zimmerman (2003) writes, 'You already know that gaming is an important form of culture... The question is, what's next? Computer and video games are at a crossroads. They are making lots of money; they are driving dozens of technologies; they are gaining a global audience. But something, I tell you, something is missing... It has been said before, but it cannot be said enough. Games stink. Digital gaming today represents an embarrassment of cowardly imitation, an avalanche of adolescent male fantasies, a risk-averse business of look-alike clones.'

⁸ See for example, Mary Flanagan's work on the relation between *The Sims* and paper dolls in the nineteenth century. I heard her speak about this at the Digital Arts and Culture conference in Melbourne in May, 2003.

⁹ See Eugénie Shinkle's work for an example of a much more complex approach to this affective indetermination. Her account of *Rez*, a game that emphasises synesthesia, also gives a much more interesting approach to the issue of time in games.

¹⁰ See Patrick Crogan's useful discussions of this point, both in this issue of *Media Information Australia* and in Crogan, 2003.

¹¹ Games are so full of examples of nostalgia and vertigos that it seems almost unnecessary to cite them. One set of examples of nostalgia would involve the weaponry in many games: for example, in *Warcraft III*, there are the old catapults that remind one of films about the Roman Empire, knights on horses, ancient wizards and so on, all in combination on the same battlefield. Another would be the constant remediation of warfare, and particular wars, as in the *Medal of Honours* series. Another would be older media genres, so that in a games such as *Timesplitters 2* levels are set in the Wild West, a James Bond-like scenario, a B-grade alien invasion and an "attack of the zombies" scenario. Driving, shooting, even managing your Sims when things get complex, all involve certain kinds of vertigo. I would argue that this vertigo persists even within skilled play. It is what skill manages.

¹² It also explains what Chris Chesher, in an as yet unpublished paper, has termed the stickiness of 'the glaze', as opposed to the gaze of the cinema, or glance of the televisual experience.

¹³ See not only Aarseth's injunction that researchers must play games, but Morris' comments on researchers' gameplay as a problematic but necessary part of ethnographic methodology (in this issue of *Media Information Australia*).

¹⁴ As the basis of computerized war games, the "Prisoner's Dilemma" was 'created in 1950 at the RAND Corporation... In this imaginary scenario, each of two prisoners accused of committing a crime together is confronted with the option of either helping the police by testifying against their partner, or claiming innocence and thereby avoiding betrayal. The catch is that they are separately offered the following deal: if only one betrays the other, he walks out free and the other gets a long sentence; if they betray one another they get a mid-sized sentence; while if neither one accuses the other, they both get a short sentence' (De Landa, 1991: 84).

¹⁵ Patrick Crogan (2003), for example, has recently pointed to the nexus of games and information warfare, so that 'the First Person Shooter provides an aporia of its own to the theoretical journey that discovers it at the heart of the cybernetic world picture of contemporary technocultural experience'. Yet for him this is not necessarily a criticism. Games are not only immersed in a culture of information warfare, but 'computer games are a valuable means of interrogating the relation between war and peacetime culture, technology and civilization'.

¹⁶ In such a notion of duration, for example, the relation between space and time as mutually productive is not resolved.

¹⁷ An example is that of "hard-core gamers not liking *The Sims*". Other examples of games that are not easily reconciled with many prevalent definitions of games are those produced by artists. One notable

example would be the games/art works *Desert Rain* and *Can You See Me Now* by the group Blast Theory <<http://www.blasttheory.co.uk/>>.

¹⁸ Notably, but not only the film industry - by which I mean not only films based on games, or games based on films, but the dynamic remediation of (special) effects between games and films (in the latter, for example, explosions and so on seriously compromise more traditional notions of narrative). *Enter the Matrix* is about playing special effects, or at least this is perhaps the only interesting aspect of it as a game. Of course, games and films also have animation in common. There are other films (such as *Run Lola Run*, which has a clear games structure - repeat the events until you get them right) that could arguably not have been made before games, even though they have no immediately obvious relation to games.

¹⁹ They reject the interdisciplinary for excellent reasons. Guattari saw 'interdisciplinarity in its limited sense...as an abracadabra word deployed cynically by many pretenders'. In the academy, 'interdisciplinary activities ...were indelibly stamped with the paradox of the between: subject to an institutional orthodoxization and normopathy that allowed them to be valorized from an already established disciplinary perspective as exciting places to visit' (Genosko, 2003: 129).

²⁰ So while I might violently object to the *insistence* on narrative or any other theory/methodology in a kind of disciplinary imperialism, this would not be because such methods are incorrect in themselves, but because to insist in a particular methodology imperially might miss out on how, for example, enhanced modes of haptic perception in play transform narrative elements and vice versa. For me, then, the only useful methodological imperialism would involve a very broad concept of ecology as the basis for interdisciplinarity.

²¹ An example of the latter would be Melbourne's Selectparks <<http://selectparks.net>> (Oliver, 2003). Selectparks aims to provide not only a community platform, but also an open source games engine for independent games development. Other examples would again be provided by the many artists working on experimenting with the games format so as, for example, to provide new spaces for women within gaming (Holmes, 2003; Flanagan, 2003) or even for a meeting between semiotics, art and computer games (Wardrip-Fruin, 2003; Innocent, 2003).

²² Genosko's account is by far the most integrated account in English of a very wide body of work. It is perhaps the only integrated account. I shall therefore follow him quite closely.

²³ The quote continues '(supplementation/accessorization by "other" methods, or simple multiplication of perspectives without adequate integration - a concern for theory and practice)'.

²⁴ See Henry Jenkins' *Games-to-Teach* Project.

²⁵ Lars Qvortrup has characterised this at length as a 'hypercomplex society'. This is a very useful addition to concepts such as Castells 'network society' and the general notion of the 'information society', although it does not have to replace such notions. Qvortrup uses Niklas Luhmann's systems theory to argue that the prime characteristic of contemporary society is neither information nor networking but economies of complexity (so that for example, the new classes are those that are involved in a distribution of access to means of negotiating complexities - such as filters). Although the notion of the hypercomplex society surpasses work such as Habermas' on consensus and communicative action, in favour of what Qvortrup calls a 'polycentric' culture, there is still something of a notion of a central filtering via rational processes within the work. To this valuable account of hypercomplexity I might therefore add Guattari's notion of the hypercomplex, which might include more of the affective and embodied (we might say a more Spinozan account of hypercomplexity). Guattari, an admirer of Francisco Varela's work on the autopoietic that forms the basis for Luhmann's systems theory, also criticised Varela's work for the extent that it opposed the autopoietic to the allopoietic (Guattari, 1995).

²⁶ Of course, this consideration of the future has many dimensions, three of the most important of which may be: relations and partnerships with industry; relations to the vast worlds of (seldom-academic) gamers; and, for my part the most interesting, relations to experimentation in gaming (artistic and otherwise).

²⁷ Games' self-awareness of these ecologies is seen, for example, in the irony about mediation in a game such as *GTA 3* - and in the choice of radio stations in stolen cars given the player in the stolen cars.

²⁸ In a paper given at the *Plaything* conference in Sydney, Melinda Rackham spoke of 'soft skinned species' and the need to treat avatars, for example, as others, thus of a kind of ethics of the other with regard to technical being.

²⁹ See Friedman (2002a, 2002b) regarding identification with process of computing. It is also true that all games require identification with the game itself - although identification is an unsatisfactory word

in this context. I mean something broader than identifying with the computer process. This is a question of parallel, relational forms of post-evolution.

³⁰ Lev Manovich has quite rightly pointed to the fact that we learn to play the algorithm in the game.

³¹ Cameron and Carroll discuss the issue of teaching and games at length in this issue of *Media Information Australia*.

³² ‘Assemblages of enunciation’ are always ‘collective’ (Deleuze and Guattari, 1987: 80). They consist of ‘acts immanent to language that are in redundancy with statements or constitute order-words’. ‘The order words or assemblages of enunciation in a given society...designate [the] instantaneous relation between statements and the incorporeal transformations or noncorporeal attributes they express’ (81).

³³ See, for example, Salankis, 1996, who argues with Deleuze about this.

³⁴ One issue here is that any semiotic methodology in relation to computer gaming will have to take this dynamic, heterogeneous series of meetings – in which signs are involved – into account (Troy Innocent’s work on semiotic morphism – bringing together game development and theoretical work - is exemplary here). Signs here are not seen so much exact representations or even stable systems of reference or relation to the same (or even perhaps a question of *différance*). Signs are instead seen as one set of technics in a high degree of relation to others. As such, they are *operators*, avenues of transmission for forces, rather than isolated systems of reference. In other words, semiotically there is a world of difference between playing games (and therefore, we could say, playing signs) and interpreting them. Following both Deleuze and Brenda Laurel’s idea of ‘computers as theatre’ we can see that within computer gaming, precisely because it does not matter primarily what signs mean but what we do with them –

Signs are the true elements of theatre. They testify to the spiritual and natural powers which act beneath the words, gestures, characters and objects represented. They signify repetition as real movement, in opposition to representation which is a false movement of the abstract. (Deleuze, 1994: 23)

Deleuze’s notion of repetition here, of course, involved a heterogeneous repetition that is the dynamo of difference.

³⁵ This is not to say that there will no interesting and valuable work coming out of the various institutes studying games. It is quite the opposite, and the fact that the field remains ambiguous only makes these institutions the more necessary. Yet there may be no metanarratives to computer games, only metamodels, which ‘eschew universality for the sake of singularity’ (Genosko, 2003: 138) (or perhaps in Pierre Lévy’s [2001] terms they eschew totalization in favour of a universality of variation). This even applies to the histories of games. They must be researched, but must remain open to their contexts. No medium has a virgin birth, but computer games – as meta-media (Coyle: 162) - are even harder to pin down in terms of origins, stability of connections and so on.