COLIN CREMIN

ROUTLEDGE

EXPLORING VIDEOGAMES

WITH DELEUZE AND GUATTARI

TOWARDS AN AFFECTIVE THEORY OF FORM

EXPLORING VIDEOGAMES WITH DELEUZE AND GUATTARI

Videogames are a unique artistic form, and to analyse and understand them an equally unique language is required. Cremin turns to Deleuze and Guattari's non-representational philosophy to develop a conceptual toolkit for thinking anew about videogames and our relationship to them. Rather than approach videogames through a language suited to other media forms, Cremin invites us to think in terms of a videogame plane and the compositions of developers and players who bring them to life. According to Cremin, we are not simply playing videogames, we are creating them. We exceed our own bodily limitations by assembling forces with the elements they are made up of. The book develops a critical methodology that can explain what every videogame, irrespective of genre or technology, has in common and proceeds on this basis to analyse their differences. Drawing from a wide range of examples spanning the history of the medium, Cremin discerns the qualities inherent to those regarded as classics and what those qualities enable the player to do.

Exploring Videogames with Deleuze and Guattari analyses different aspects of the medium, including the social and cultural context in which videogames are played, to develop a nuanced perspective on gendered narratives, caricatures and glorifications of war. It considers the processes and relationships that have given rise to industrial giants, the spiralling costs of making videogames and the pressure this places developers under to produce standard variations of winning formulas. The book invites the reader to embark on a molecular journey through worlds neither 'virtual' nor 'real' exceeding image, analogy and metaphor. With clear explanations and detailed analysis, Cremin demonstrates the value of a Deleuzian approach to the study of videogames, making it an accessible and valuable resource for students, scholars, developers and enthusiasts.

Colin Cremin lectures in sociology at the University of Auckland, New Zealand. He is the author of *Capitalism's New Clothes: Enterprise, Ethics and Enjoyment in Times of Crisis* published with Pluto Press in 2011, *iCommunism* published with Zer0 Books in 2012 and *Totalled: Salvaging the Future from the Wreckage of Capitalism* published with Pluto Press in 2015. His interests are in critical theory, particularly the work of Marx, Lacan, Frankfurt School, Žižek and Deleuze and Guattari, and the utilising of concepts to examine recent developments in political economy, culture and society.

This book makes the bold prophecy that the 21st century will be the century of videogames. It then offers a dynamic toolkit of concepts drawn from the work of Deleuze and Guattari to think in new ways about videogames. Importantly, Cremin debunks the idea that videogames are virtual, meaning confined to the depths of their digital origins. Instead he shows us that they consist of actual processes of becoming that reach out from the console into every corner of life. This is an exciting and necessary book.

Ian Buchanan, *Director, Institute for Social Transformation Research, University of Wollongong, Australia*

EXPLORING VIDEOGAMES WITH DELEUZE AND GUATTARI

Towards an affective theory of form

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INTRODUCTION

Back in the late 1970s and early 1980s, visits to my local arcade were like journeys into the future. A showcase of innovation in technology and gameplay, the arcade was a laboratory in which new strains of the species were tested on eager volunteers with pockets full of coins. *Missile Command* impressed me so much that I phoned Atari to ask whether a version was planned for the VCS; they answered yes and provided the details. But by the 1990s, the most advanced and innovative videogames were bypassing the arcades and going straight to PC and console. I can trace my own life through this evolution, and wonder what the child I was might have made of, say, *Kid Icarus Uprising*, a frenetic over-the-shoulders shooter that plays in simulated 3D on a device that fits into a pocket. To that child, videogames today would be something alien, even magical. Between then and now are hundreds of games on many different consoles, handhelds and computers. Those that stand out for me have one thing in common, and it is not the technology, graphics or narrative complexities, but something that defies the language of representation. Like the Force said to flow through the *Star Wars* universe, there is a force flowing through every great videogame from *Space Invaders* to *Portal*. The medium is form in motion: force, affect and intensity are distilled in the simplified gameplay of early arcade games and saturate the colours, soundtracks and gravitational-themed levels of modern masterpieces such as *Super Mario Galaxy*. The force explodes on *Robotron 2084*, leaving an after-image in *Geometry Wars: Retro Evolved 2*, and multiplies in Platinum Games' hybrid *Vanquish*. As we will see, the common aesthetic of such diverse examples spanning the medium's not-so-short history is itself timeless. In this book we hop, skip and jump from one platform to another, from one world to another, embarking on a molecular journey through worlds neither 'virtual' nor 'real'. A third place? No, not a place: a becoming. A becoming that exceeds image, analogy and metaphor. This is a book about the videogame using concepts borrowed and adapted from

the philosophy of Gilles Deleuze and Felix Guattari to create a new plane of thought appropriate to the form.

If we can speak of a videogame aesthetic, i.e. one common to all videogames irrespective of the genre and technical accomplishments, that aesthetic is affective. *Exploring Videogames with Deleuze and Guattari* is a theory of videogames in motion, about play as force, immersion as becoming and interaction as enhancing and decreasing intensities of different assemblages of players, of avatars, in game objects and so forth that determine, in a fluid and open-ended manner, the possibilities of play. Concepts that box the medium into representational categories are qualified, sometimes eschewed – broken apart – by concepts that become tools – weapons even – for enabling a theory as dynamic as the form itself. Videogames are often defined by images, analogies and metaphors, untidy approximations of what they are about. As we shall see, Deleuzian concepts open a space for thinking anew. They are mobile and pragmatic, adaptive to the task of liberating desire – desire being a generative force, the desiring intensities of players – from the discursive constraints in which videogames are often entangled. With a controller in hand, the player becomes part of a 'machinic assemblage' extending into the screen by controlling the falling blocks in, say, *Tetris*, or controlling Link in *The Legend of Zelda*. In Link's case, compositions are formed with swords, grappling hooks, horses, water and air, actualised diegetic objects simultaneously virtualised in the event of play.

One such object is Mario, a corporate icon, a money-making machine stimulating the desires of children, an expression of videogames in their pure form, we can think about Mario, the most famous avatar, as both an image and affect, as both a 'molar' identity – red cap and blue dungarees – and a 'molecular' force – hopping, skipping and jumping in tune to the player's desiring intensities. 'Mario' is the name that graces some of the most critically acclaimed and also best-selling videogames ever made. There can be no map of the videogame that does not account for the contradictions Mario embodies, no theory of form that does not operate on Mario's plane, a plane of commerce and also creation. Mario is one point of reference for testing the limits and possibilities of the medium. We enter into *zones of proximity* with him and with many other avatars and videogames. We fly through and in between worlds, spanning genres and compressing time, embarking on *lines of flight* from the familiar to the more obscure, finding formal triumphs and formal failures. A conceptual apparatus is created, recreated and forever open to new processes of thought and becoming. The preliminary question is the classic one: *What is a videogame?* And we can add to this a more Deleuzian question: *What can videogames enable us to do?* Not about architecture or algorithms, the questions centre on how an aesthetic proper to the form is created, how it becomes form-in-motion.

Drawing on the work of Deleuze and Guattari, *action*, says Alexander Galloway (2006), is a definitive word for videogames and an appropriate starting point for videogame theory. A medium in which action is integral to the aesthetic requires a non-representational theory. But I would rather approach the medium from

another, albeit relational but more useful, starting point, that of *affect*. In Deleuzian parlance, 'affect' denotes a force rather than emotion, a force that varies in intensities as it combines with multiplicities of different objects and assemblages: exceeding a body defined by an identity society prescribes to it and endlessly produces the new. In the urban environment, for example, the body is overwhelmed by sensory stimuli. The mind acts like a filter to retain only sensations useful to it, the sound of a car engine, lights on a pedestrian crossing and so forth. A question is how to be receptive to the forces and sensations that saturate the body and to compose affects by entering into proximities with them, how perhaps to be receptive to the affects of videogames and do things with them. It is a question of experimentation, of an apprenticeship without end. Instead of thinking about Mario figuratively in terms of his red cap and blue dungarees, what in other words Mario *represents*, Deleuze and Guattari invite us to think of him as a *figure*: the flashes of colour, compositions of speeds and intensities, a molecular or *becoming-Mario*. The multiplicities created by software developers are only realised as videogames when the player adds their forces. The developer creates the program but it is only in play that the creation is realised or rather liberated from its sterile image, screen shots and cut scenes. The film critic Roger Ebert said that videogames are not art because 'art is created by an artist. If you change it, you become the artist'.[1] Players cannot change videogames, except perhaps by hacking into them; what they can do is liberate the aesthetic from the representational image, and in this respect the player is integral to the art form.

While the book is influenced by Deleuze and Guattari's philosophy, it is not as they might say a 'tracing'. They are a means by which to loosen our ties from existing scholarship and embark on a molecular journey in an unending theorising of videogames, a medium they ignored and would unlikely be sympathetic to. Call it a productive engagement, even a bastardisation, we can have fun with their ideas and go places with them. As Brian Massumi asks:

> why not hang up the academic hat of critical self-seriousness, set aside the intemperate arrogance of debunking – and enjoy? If you don't enjoy concepts and writing and don't feel when you write you are adding something to the world, if only the enjoyment itself, and that by adding that ounce of positive experience to the world you are affirming it, celebrating its potential, tending its growth, in however small a way, however really abstractly – well, just hang it up.
>
> *(Massumi, 2002: 13)*

We can have fun with Deleuze and Guattari without trivialising their work or the medium itself. It is an invitation to take flight that also extends to the reader, to explore different worlds and create new ones, to make propositions that provoke thought and open spaces for experimentation. What is a characteristic of all videogames? How about this for starters:

> Videogames are art only in motion and are only brought into motion through the added craft of the player.

Videogames are art only in motion, affective only through participation of two or more bodies, developer and player, a collaboration in the event of play. What differentiates the videogame from all other artistic forms is that its aesthetic quality is *only* realised in the *process* of play: in other words, the artistic work of the developer actualised in the program is incomplete and requires the player's artistic additions for it to come to life. Whereas some theatre invites play and participation, it is only in videogames that this quality is integral to the medium itself and is therefore vital to all of them. This requires elaboration. For now we are simply preparing the scene for subsequent chapters. Everything that is said in this book begins and ends with affect, a point of origin that is neither at the beginning – say with the developer – nor at the end – say with the player; not the start of the game or indeed game over: affect is always in the middle.

Virtual reality

What Deleuze and Guattari call the *virtual* is distinct from the concept of virtual reality. It is a virtue of becoming, of affect and motion, that has little in common with digital technologies as Massumi explains:

> Equating the digital with the virtual confuses the really apparitional with the artificial. It reduces it to simulation. This forgets intensity, brackets potential, and in that same sweeping gesture bypasses the move through sensation, the actual envelopment of the virtual.
>
> *(Massumi, 2002: 137)*

Unless qualified, in this book the word 'virtual' will only be used in a Deleuzian sense; words such as 'digital' and 'diegetic' are used to describe the videogame space and 'material reality' and 'non-diegetic' for the space our bodies inhabit.

The *actual* is what every virtual becoming has created: an object, image or identity. As Karl Marx may have put it, the abstract or combined labour power of the (desiring-machines of the) developer is the creative or virtual force congealed or actualised in the commodity, which is the program we buy from a shop or rip from the Internet. The desiring intensities or *virtual* becomings of players are simultaneously actualised in the event of play. They leave a trace on the high score table. Our desiring-machines are plugged into the industry, processed, filtered through and constrained by the practices and priorities of commerce. Business imposes its own kind of striation on play. Another striation in regard to how videogames are thought about is the language used to describe them.

Language operates as a system of judgement. Like the colonial power that forces English on an indigenous population, a bureaucratic and arborescent language, a 'language of the despot', overpopulates the field of videogame aesthetics, a

language imposed from the outside. Criteria and concepts perfectly adequate for assessing one artistic medium are often used, without refinement, to assess another qualitatively different one. For example, in the *Art of Videogames*, Grant Tavinor (2009: 130) singles out *Bioshock* for praise for the principal reason that the narrative engages with issues such as freewill and morality. Judged by such criteria, even the most sophisticated videogames would look shallow compared to literature, cinema or television. Such comparisons lead to the question: why play *Bioshock* when you have Dostoyevsky, Tarkovsky or even television series such as *Breaking Bad* on your shelf? If what stirs us about *Oblivion* is its 'wonderfully rendered pastoral scene including misty green hills, rippling water, and an enticing ancient ruin on a nearby shore' and 'literally hundreds of hours of gameplay', (Tavinor, 2009: 2) we would probably get more from watching the slightly less clichéd *Lord of the Rings* films instead. Graeme Kirkpatrick (2007: 82), here referring to Theodor Adorno's aesthetic theory, is correct to point out:

> If computer games are judged primarily with reference to the quality of their vivid graphical depiction of 'game worlds', they are guilty of the 'sin of semblance' … [reproducing] 'affirmative' depictions of the world and, as such, are implicated in ideological, even barbarous assertions of the rightness of the world and the human capacity for meaningful representation. If the game interface is as important as most gamers seem to take it to be then, judged aesthetically, games would indeed be barbaric.

Journalists, psychologists, sociologists and scholars of cognate disciplines are often too hasty to put the controller down and get to writing. They are too keen to box affect within a foreign language, an imposter language. Narratology has its head in a book while interactive theory is conversing with a pre-programmed code. At least ludology has its head in the game; the problem is that its feet are firmly in the playground. There is a trace of the language of the despot in ludology and shovelfuls of it in narratology. The arborescent – arbor as in tree – entangles thought within established discourses. As we shall see, the non-linear rhizome imposes no such limitation. It spreads across a plane with offshoots or lines of flight breaking out at any point along it. The rhizome, as Deleuze and Guattari (2003b: 25) explain, uproots the verb 'to be', liberating desire from identity through conjunctions 'and … and … and …'. Nomadic thought is smooth, open ended, rhizomatic: it liberates desire from its Oedipal entanglements, liberates videogame analysis from conceptual dead ends. Through Deleuze and Guattari, we can discover the aesthetic that flows through every videogame, the form in becoming, the plan(e) that is proper to the videogame and foreign to other art and media. By adapting their concepts, we develop a critical methodology that, when put to work, can explain why *Space Invaders* is an exemplar of the form and how ideology can disrupt the force of play, undermining the aesthetic of even the most finely crafted examples of the medium.

Deleuze and Guattari provide a toolbox of concepts that can be utilised to develop a general theory of videogames encompassing the context in which they

are played, the human/machine relations and the capitalist industry that finances and profits from those exploited to make them. Videogame scholarship has hitherto dabbled with Deleuze and Guattari, missing the fuller potential by utilising concepts in isolation. Machinic assemblages (Dyer-Witheford and De Peuter, 2009) are disconnected from rhizomes (Sutton and Martin Jones, 2008), from smooth and striated spaces (Wood, 2012), action-images (Galloway, 2006) and the virtual (Calleja, 2010). This is the first book to make comprehensive use of the philosophy to develop a general theory of form. Why bother? Because this is precisely what Deleuze and Guattari afford.

The century of videogames

Videogames were once the byword for low culture. Nintendo, which dominated the industry for the best part of a decade, were considered by some the saccharin entertainment behemoth sweetening their sinister purpose to colonise the dreams of American children with cute avatars and bright colours. At best videogames could serve an educational purpose. To encourage children to read or perhaps to encourage parents to part with their cash, Beam Software's 1982 graphic adventure *The Hobbit* came packed with Tolkien's book. This was around the time that the British videogame industry came of age; ironically, many of its innovations came from the very children berated for wasting their youth hunched over a ZX81.

Those who played *Atic Atac* on the ZX Spectrum, *Missile Command* on the Atari VCS and *Super Mario Bros*. on the Nintendo Entertainment System appreciated videogames on their own merits. They required no alibi for a pastime excoriated by the mass media. Now, thanks to smartphones and the like, videogames have become an integral part of our lives. The clearest sign of their acceptance, if not as art as such, then as an important medium of artistic expression, is not the current availability of videogames that address philosophical questions, encourage lateral thinking or deal with culturally sensitive issues. It is that even the more basic videogames of yesteryear are now regarded as classics, showcased and celebrated by intellectuals and art establishments. In 2012, Salman Rushdie recalled how he enjoyed playing *Super Mario World* while in hiding after the fatwa was issued against him after the publication of *The Satanic Verses*.[2] In 2013 the New York Museum of Modern Art (MOMA) announced it would begin collecting and exhibiting videogames.[3] In the same year, the hallowed Smithsonian American Art Museum in Washington DC organised a six-month videogame exhibition showcasing 80 or so classics.[4] In London, the Victoria and Albert Museum appointed Sophie George as 'game designer in residence' for six months.[5] This does not in itself mean that we can now claim videogames to 'be' art. Such developments should be taken with the utmost scepticism. As Adorno (2001) once said, the popularity of something is no measure of its quality.

Fredric Jameson, the Marxist cultural theorist who wrote the seminal *Postmodernism, or, The Cultural Logic of Late Capitalism*, explains why in the early

twentieth century people claimed that cinema would become that century's dominant art form. It was thought to serve, he says:

> as some supreme and privileged, symptomatic, index of the zeitgeist; to stand, using a more contemporary language, as the cultural dominant of a new social and economic conjuncture; to stand – now finally putting the most philosophically adequate face on the matter – as the richest allegorical and hermeneutic vehicles for some new description of the system itself.
>
> *(Jameson, 1991: 55)*

It is unlikely that Jameson, who was already 57 when the book was published in 1991, would have given much thought to videogames. Had he done so there may have been cause to question his claim that the 'videotext' (video as a form of artistic expression and experimentation) had replaced cinema as the now exemplary art form. Using Jameson's criteria, we can tentatively claim that the twenty-first century is the century of videogames.

Perhaps with the exception of cinema, videogames incorporate more forms of artistic practice than any other medium. They are the work of a collective. The most complex employ musicians, painters, filmmakers, photographers, animators, dramatists, novelists, scriptwriters and actors. They also involve programmers and technicians. Surpassing cinema, what to my mind elevates them to this preeminent status is that the artefact is designed to adapt to the viewer's own intensities. These engender aesthetic changes in line with though never fully determined by the original vision of the developer/artist. They embody the totality of artistic expression inclusive of the viewer who, as I have suggested, is a creative force on terms that the developer does not entirely determine. The player is defined here as the artist's apprentice, an artist in residence, an artist in becoming. By playing videogames we reveal aspects that at first are unknown, new levels, stages, zones, brush strokes, assemblages making their appearance only when the player has developed sufficient skills to reach those places hitherto off limits. The player in the respect that the work is incomplete without their additional input is an artist – as much involved in the composition as the developer – a claim elaborated on elsewhere in the book.

Videogames also embody the problems and complexities of society. They are labour-intensive creations involving a diversity of specialised tasks ranging from material production, through to design and programming. Whether at factories in China where consoles are made or studios in the United States where many videogames are developed, across the division of labour people working in the industry are often poorly paid and work exceptionally long hours. The industry displays monopolistic tendencies, Sony, Microsoft, Nintendo and major publishers such as Activision and Electronic Arts have a vice-like grip on artistic creation and, as production costs spiral and more emphasis is placed on profit, the less determination the developer has over the creative process. Innovation in game design is typically accompanied by technological innovation, sometimes the technology

itself being the premise on which the machine is sold. Videogames bring science to the masses in the form of Blu-Ray, gestural mapping, online play, miniaturisation, mobility, glasses-free 3D and so on. The fine art world mourns the death of influential artists. In the medium of videogames, those who play them mourn the death of businesses, sometimes for good reason. If Nintendo, for example, went bankrupt, the impact on the industry but also the form itself would likely be profound. No other medium is so dependent for its very existence on major corporations; even allowing for the occasional Indie sensation, in no other medium is quality so dependent on the quantity of monetary investment.

There is so much at stake, so many people of exceptional talent whose energies are invested in a medium that stirs so much passion. It is no wonder that theorists and players alike become fixated on and fetishise a particular element, game or company. If we are to avoid becoming fixated on graphics, narrative, representation, even gameplay, or zone in simply on the fact that as with every commodity videogames are produced by exploited labour, we need a method for taking each of these aspects into consideration as they individually relate to the whole, or rather are elements of broader assemblages. What in Deleuzian terms is needed is an assemblage theory. The word is an imprecise translation of the French word *agencement*, referring to connection. Its fuller significance becomes apparent when we examine how Deleuze and Guattari (2003b: 89) deploy it, here in respect to what they describe as the intermingling of bodies that define feudalism:

> the body of the earth and the social body; the body of the over-lord, vassal, and serf; the body of the knight and the horse and their new relation to the stirrup; the weapons and tools assuring a symbiosis of bodies – a whole machinic assemblage.

There are the various statements and expressions, a hierarchy reinforced by laws on heraldry, oaths and so forth. On another 'axis' there are the 'territorialities and reterritorialisations', including how the knight and his mount are carried away by the 'line of deterritorialisation'. Finally, we need to consider how these elements combine in the crusades (Deleuze and Guattari, 2003b: 89).

Analysing the assemblages of videogames, we consider the industry, those involved in production, the society in which the industry evolves, the gamer, the avatar, the diegetic objects and so forth. The actions of players are important to the assemblage as is the way those actions enable them to traverse new planes of possibility enabled by the design. The player is part of a machinic assemblage: player-avatar-gun-vehicle, combinations of organic and non-organic objects in different genres and play styles, their properties brought to life through such combinations. Then we have the collective assemblages of enunciation, the statements, expressions, commands, suggestions and hints comprising the videogame. On the other axis, we need to consider the deterritorialisations of both the developer and player; how, in other words, their ideas and the execution of them can disrupt what was hitherto thought possible, to create new earths and

embark on new becomings. We can think of a formula as a territorialisation. It begins with a creative process, a *virtual* one, in which new ideas are experimented with, then *actualised* as a completed product that sells on the market. The game then becomes a blueprint for future iterations. Now the 'smooth' space of creation is 'striated' by commercial interests, 'deterritorialisations' are *re*territorialised as a standard. In terms of the player, a territorialisation can be thought of as a reluctance to advance to more challenging, new and original videogames, instead to seek out the ever same and thus never expand the repertoire or improve their skills. The apprenticeship is suspended.

Form is what we think of when describing game mechanics, videogame genres, narrative sequencing and so forth. Form can be discerned from the various elements making up a videogame but it is not apparent in the way that content is, for example, the avatar and the different objects the player engages with. The mind discerns from the various signs of the diegesis (the signs that together denote the form) what kind of game it is and how to play it. Form is the 'grammar' of videogames, what essentially a videogame is and how it differs say from a still image of *Centipede* or cinematic sequence. When artists experiment with form the effect can be so profound that it changes the way we think of art or what, indeed, art is. When developers experiment with form they aim to challenge our expectations sometimes triggering a knee-jerk reaction among certain gamers.

To experience 'high' art requires us to make a choice, whether, say, to go to the art gallery or not. Popular culture is different. It is in the air we breathe. It saturates our vision. It rings like tinnitus in our ears. In the sense that we are constantly exposed to it, we are all experts of popular culture. Yet this proximity can prevent us from establishing a critical distance, or even recognising, as we might when going to an art gallery, anything worthy of serious thought and reflection. In reference to Adorno and Horkheimer's thesis on the culture industry, a critique of how factory-style techniques are adapted to cultural production and the far ranging implications for people and society, Heinz Steinert (2003: 15) notes that our inability to experience cultural phenomena in a critical way is due to a surfeit of knowledge. Gamers already know before playing a videogame what genre it belongs to and what to expect as a result. This frames the experience and overcodes it with meanings that obscure the nuances. Someone who has never seen a videogame will have to think through the different elements in order to arrive a sense of what it represents and what it is for, an issue we return to later. As Steinert (2003: 15) writes:

> Experiencing art is not simply a question of 'opening ourselves up', so that art may speak to us … In fact, in order for us to understand high or popular culture, we must work hard and learn to mobilise all our social knowledge and insight … Those who believe that cultural knowledge and reflexivity can be acquired without effort have fallen for culture industry's ideology of 'fun'.

This, says Steinert, involves reflecting on how we have been influenced when deciding what to evaluate and how that choice is evaluated. It involves taking an

active interest in all aspects of the object regardless of whether or not they meet our tastes or accords with our sensibilities. Reflexivity, he says, is vital.

The obstacles to the study of videogames are formidable. A film studies student tasked with writing an essay on Alfred Hitchcock's critically acclaimed *Vertigo* would not face the kind of problems that a student of videogames tasked with writing an essay on another masterpiece, *The Legend of Zelda: Ocarina of Time* (*TLOZ*), would face. Although predating any other commercial videogame, *Vertigo* is widely available and will play on a generic device most people are likely to own. The entire film can be experienced in a couple of hours and unfolds exactly the same way whoever watches it. The student studying *Vertigo* can watch it several times through and repeatedly view key scenes. The first issue the student writing an essay on *TLOZ* faces is access to equipment. If they are to experience it as intended, an N64 console will be required. Not only are the consoles and videogame cartridges no longer produced, the cost and practical issues involved in owning different consoles makes it near impossible even for a dedicated scholar to play videogames from different periods in videogame history. And to some extent, one would have to have 'been there' to appreciate the impact that certain games had. As noted at the beginning, I remember being overwhelmed by the graphics of *Missile Command* when seeing it for the first time. Many people had similar feelings when first witnessing *Super Mario 64*. While someone viewing *Star Wars* for the first time today is unlikely to be as impressed by the special effects as someone viewing it in 1977, it can be just as thrilling to watch and probably more so than many of the latest high-budget films. The same cannot be said for *Goldeneye 007*, a cast-iron first-person shooter (FPS) classic that I sunk many hours into on the N64 but which I now find almost unplayable. *Half-Life 2*, another masterpiece of the genre, does not fair much better when compared to the latest *Call of Duty* or *Far Cry*, with many of its gameplay conventions now appearing dated. Assuming the person is skilled in playing videogames, has a taste for the particular type of videogame and the time to invest in it, *TLOZ* will take around 30–40 hours to complete. Gaming preferences, experiences and biases are important to recognise. For this reason, I want to come clean, as it were, and state my own from the outset.

It began with *Pong* in the late 1970s on a simple machine that plugged into a black and white TV. It then progressed to the Atari VCS and, in quick succession, Mattel Intellivision and Colecovision and also many trips to the arcades up until around 1986. The ZX Spectrum was a game machine for me, as too the Atari 600XL that had a games library to match the more popular Commodore 64. I adored the games on my Commodore Amiga and completed *Doom 2* on my first PC. The Nintendo 64 was the first games machine I bought since owning the Colecovision. It was one of those why the hell not moments, influenced by exposure to the trio of *Super Mario 64*, *Goldeneye 007* and *Diddy Kong Racing*. I crossed the line. There was no turning back after this, no hiatus, every Nintendo console and handheld device from then onwards, the Sega Dreamcast – a great console with some excellent games but sadly the last from Sega – Xbox 360 and

now Playstation 4. Massive multiplayer online games (MMOs) have passed me by, though. No *World of Warcraft* or *Eve Online* or even *Minecraft*. I have played three videogames online, *Destiny*, *Mario Kart 8* and now the brilliant *Splatoon*, none of which require you to engage with bad-mouthed sexually frustrated teenagers. Lots of games, lots of gaps and lots of nostalgia; what we lack in experience we can make up for with research and where we do have experience it is all the more important to establish a critical distance. What can be said with confidence is that for all their diversity there are commonalities general to the medium and hence why, even with a limited experience, it is possible to theorise the form.

Chapter content

The first chapter begins with the videogame plane, the plane of all possible videogames as the baseline of a Deleuzian approach. It concludes with a tentative set of propositions or axioms that more or less define the form in general terms. These are referred back to in subsequent chapters and qualified in view of differences between styles of play, genres and assemblages. They are not intended as the final word and despite calling them 'axioms' set in stone.

No videogame theory is adequate unless it also assesses the impact of the industry on the kind of games that are produced and consumed. Nintendo, who are far and away the most influential and commercially successful company dedicated to making them, continue, in my mind, to eclipse every other developer in the quality of their output, hence my frequent references to them and their key franchises. It is especially the case today that to make videogames of Nintendo quality, huge financial investments are needed. This has given rise to a vast industrial apparatus that exploits the labour of dedicated artists, outsources hardware production to countries where working conditions are often egregious, and relies on manipulative marketing techniques to ensure returns on investment. Much has been written on labour practices in countries such as China where consoles are typically manufactured, so the focus here will be on the uneasy relationship between major publishers and developers in which commercial pressures are weighed against the possibility for dedicated artists to create their visions and produce the kind of games people love to play. This tension is the topic of Chapter 2, *The Smooth and Striated*.

The terms used to describe videogames and what we do with them are, as is the nature of language, imprecise and sometimes entirely misleading. Do we really 'interact' with a program? Are they simply 'games' that are 'played'? The words 'play' and 'game' are part of the lexicon of videogames. The temptation to replace them with neologisms is tempered by the fact that any word we use will also be imprecise and likely make for jarring prose. Chapter 3, *Rhizome-play*, retains the notion of play while adding a Deleuzian inflection to account for what it means to 'play' a video 'game'. Hence we have a trio of concepts referenced throughout the book: rhizome-play, play-force and the event of play.

An important concept of the book is one I adapt from Deleuze and Guattari (and

certainly 'bastardise'), *diagram*. The developer prepares a 'canvas' onto which the player 'paints'. Every videogame is a 'patchwork' of potentiality, the potentiality of play, hence the supplement ludus and the title of Chapter 4, *Ludo-Diagram*. Here, the developer-player assemblages are examined from the perspective of the developer.

This carries over into Chapter 5, *Artist and Apprentice*, where the focus shifts from the developer/artist to the player/apprentice. The diagram, it will be argued, is comprised of *force*-signs and *sterile*-signs; in simple terms these are signs indicating forces that can be 'liberated' by the player's actions and those that while sometimes serving a function are not affective as qualified later. A combustible oil drum is an archetypal force-sign, a 'storehouse' of forces that the player can 'explode'. An oil drum that can only be stood on is a sterile-sign. These terms enable us to map the game world and examine what comprises gameplay in any genre. They can be deployed critically to identify flaws in game design and, as with the general theory, are tools that perhaps developers will find useful. The chapter also qualifies the term 'realism' in respect to the blurring of the diegetic and non-diegetic divide in the 'event of play'.

In Chapter 6, *Molecular Mario*, we catch our breath by revisiting key concepts and describing them once again when discussing the place of the avatar (implied in first-person shooters, objectified in third-person games such as *Super Mario*). Deleuze and Guattari's term 'becoming-animal' helps us to theorise what happens when the player enters into 'zones of proximity' with the creatures populating the game environment. We also return to a term that appears frequently in this book, 'machinic assemblage', to examine the connections players make with diegetic objects and the multiplicities they are comprised of. The chapter elaborates on the unseen forces or intensities – heat, light, gravity and so forth – and how they are actualised in the event of play. Drawing on Deleuze's two books on cinema, the notions of time-image, movement-image and action-image are adapted to videogames and the concept *friction-image* added.

Whereas Chapter 2, *The Smooth and Striated*, focuses on the industry, the final chapter, *Major/Minor*, examines the ideology of videogames and the problems of representation. It assesses the gendered nature and misogyny of many videogames, as well as their implicit racism and imperialist narratives that fictionalise actual warfare from a perspective sympathetic to hegemonic powers. Drawing on Deleuze and Guattari's study of the writings of Franz Kafka, the chapter deploys the concept of 'major' to define this kind of videogame and 'minor' to define those that encourage the player to question and take flight from the major language of oppression. Representation cannot be addressed without consideration of the affective dimension of gameplay, what in other words the player actually does with objects in scenarios that reference real world issues. Whereas *Call of Duty* requires the player to kill stereotyped Arabs to proceed, at no point in the *Super Mario* series, despite its gendered 'damsel in distress' narrative, does Mario have to kill, objectify or humiliate Peach in order to advance gameplay. This, I shall argue, is a crucial distinction when differentiating videogames in terms of ideology and representation. The term ideology has different meanings but generally can be thought of as a linguistic filter

through which the world is interpreted. Deleuze and Guattari tend, however, to avoid this word, preferring instead to analyse the individual's (libidinal) investments in what they call a molar order. The book will approach videogames as 'ideological' texts to discern precisely what it is that the gamer is 'invested' in.

My hope is that, with patience and perseverance, the reader will develop a basic grasp of the theory and appreciate why I consider Deleuze and Guattari to be of immense value to videogame theory and analysis.

Notes

1 http://rogerebert.suntimes.com/apps/pbcs.dll/article?AID=/20070721/COMMENTARY/70721001/
2 www.eurogamer.net/articles/2012-10-10-salman-rushdie-was-an-avid-super-mario-world-player-while-in-hiding
3 www.theguardian.com/artanddesign/jonathanjonesblog/2012/nov/30/moma-video-games-art/print
4 http://americanart.si.edu/exhibitions/archive/2012/games/
5 www.vam.ac.uk/content/articles/g/game-designer-resident-sophia-george/

1
VIDEOGAME PLANE

Graeme Kirkpatrick (2007: 90) nicely enumerates what for him constitutes the form of a videogame:

> Like baroque dramas, their ostensible, symbolic content diminishes in proportion as we understand them to be saying something impossible. It is very hard to say what you have been doing with a game because the form seems to fit life, but doesn't, and this is what makes it form. Again, there is a reversal: unlike the artwork the impact of the game is not discharged in the moment of its appearance. It evaporates and fades the harder and more resolute we are in attacking it. If we soften, it confronts us with more solidity and permanence than we can stand.

Videogames, he suggests, are a puzzle that stymies and thwarts our freedom, but 'through violent, strategic, intense play, we undo [their] spell but are restored to the world with a new sense of the possible and of its limits' (2007: 89). Kirkpatrick's claims are not unsympathetic to propositions I develop in this book. What it lacks in my view is a theoretical grounding that enables him to flesh out a more comprehensive analysis of the form and also the many factors that influence it and our relationship to it. This is where Deleuze and Guattari put us at an advantage. Ian Bogost is too hasty in dismissing them in favour of Alain Badiou (2009) whose concepts strike me as useful only by analogy. Bogost (2010) deploys Badiou's concepts of 'event' and 'count as one', which in Badiou's philosophy has far-reaching implications. For example, Badiou refers to elements that are present in the world but not counted. When they subtract themselves a world-transformative 'event' occurs in one of the four domains of art, love, science and politics. Slum dwellers are not 'counted' in the democratic form of governance but were they to announce themselves upon the world, perhaps by descending en masse to the city,

they potentially rupture the world as represented within the established order they were hitherto invisible in. Badiou's one is different to Deleuze's notion of event. In the latter it is more of an everyday occurrence and lends itself better to the more mundane enterprise of analysing videogames. Although Deleuzian philosophy is adapted, the concepts themselves serve a literal purpose. There is no deviation in describing videogames in terms of assemblages or play in terms of affect or the industry as a 'plane of organisation'. Moreover, the concepts themselves are part of an assemblage that cannot neatly be divorced in the way that scholars utilising Deleuze and Guattari typically have. Their concepts when utilised together enrich their value. The chapter outlines some of the key concepts of the book concluding with some tentative propositions.

Into the light

Concepts bathe dark zones in light and aid us in becoming receptive to non-linguistic sensations, to invent planes, test forces and solve puzzles. For the game developer, concepts can help with inventing new styles of play, the concept of gravity in *Super Mario Galaxy* or 'worm holes' in *Portal*, for example. The player needs concepts in order to advance, such as the concept of a 'hookshot' in *The Legend of Zelda* that when possessed can be utilised to get to a higher ledge. The philosopher invents concepts on the plane of immanence that by opening thought to sensations help to tackle questions related to problems they have posed. The plane of immanence is present in every artistic expression on the creative plane of composition. 'The function of the artist', writes Ronald Bogue (1997: 259), 'is to render visible what has ceased to be seen, to paint the forces of the Strausian world of sensation. But the artist must also deconstruct representation and invent "a space of the invisible, of the possible"'. This is the role of the developer and the relationship the player has to form. The plane of immanence is defined by the concepts operating on it. The schoolteacher 'poses' problems that, as Deleuze (1991: 15) says in reference to Henri Bergson, keep us 'in a kind of slavery'; the freedom of thought is the 'power to decide, to constitute the problems themselves'. The thinker poses the problem from which questions are derived and concepts created. What is the videogame plane?

The videogame plane is the plane of all possible videogames, the plane on which developers and players, artists and apprentices, compose, a plane of composition. It is the surface on which all events occur, all possibilities arise. All variations emanate univocally from this single plane of pure multiplicity, differing by their intensities and how those intensities are assembled and diagrammed. 'A multiplicity', Deleuze and Guattari (2003b: 8) write, 'has neither subject nor object, only determinations, magnitudes, and dimensions that cannot increase in number without the multiplicity changing in nature (the laws of combination therefore increase in number as the multiplicity grows)'. Consider, for example, a single-celled amoeba from which complex life forms arise with multiplicities far greater than in the original form (we could also use the example of the

multiplicities of simple agrarian societies compared to highly industrialised ones today). Animal species operate on their own distinctive planes that determine what each can do: nest, burrow, glide; humans by contrast can invent and scramble planes. A bird with a beak designed for grubbing cannot, for example, learn to fish. Humans can learn from different creatures and embark on new becomings in alliance with them, exceeding a plane of nature to become something other to what could otherwise be presupposed by their organs. By learning how to hunt and fish the human exceeds their organs and escapes nature's contingencies. Variations produce differences in kind. For videogames, variations produce new and wonderful multiplicities of men and women, 'shoot 'em ups', 'role players', *Star Foxes* and *Final Fantasies*. Every videogame operates on its own plan(e), or diagram. With *Space Invaders* Taito invented or at least popularised the shoot-'em-up plane. Square did not invent the role-playing plane with *Final Fantasy*; they simply made it their own. It is because all videogames emanate from a single plane or origin that, for all their diversity, they can be compared. It is therefore legitimate for a videogame theorist to develop or work with a common language, one that applies to all videogames without exception. The language is not imposed but rather induced from concepts invented for the purpose of responding to questions, questions to be sure that can never fully be answered. Every answer is necessarily open-ended. 'There is a strict correspondence between the created concepts and the instituted plane', Deleuze and Guattari (1991: 59) say, that 'comes about through indirect relationships that are still to be determined'. Accordingly, the supreme act of philosophy is:

> not so much to think THE plane of immanence as to show that it is there, unthought in every plane, and to think it in this way as the outside and inside of thought, as the not-external outside and the not-internal inside-that which cannot be thought and yet must be thought, which was thought once, as Christ was incarnated once, in order to show, that one time, the possibility of the impossible.
>
> *(Deleuze and Guattari, 1991: 59)*

It is there in every invented genre; in every videogame we play.

What is a videogame? What do videogames enable us to do? Deleuze and Guattari do not oppose systems of analysis. Rhizomes are systems, albeit open ones. They oppose rigidity. This must be borne in mind when seeking answers to such questions. Videogames are assemblages of forces, of affects and pre-personal becomings; they are multiplicities, not closed systems at all, rather open to infinite variation and invention.

Interpreting Deleuze and Guattari's philosophy can be like clasping hands to hold water. There is always leakage. The impossibility in arriving at a watertight description is a factor in their warning against interpretation and what makes their philosophy open-ended. But, as Ian Buchanan (2006: 148) points out, if concepts cannot be interpreted they have no use. A passenger asked to pilot a commercial

plane would see plenty of instruments, dials and switches but would find all of them unfathomable. Practical philosophy would by definition be rendered impracticable. It is a fool who claims to have the word on Deleuze and Guattari. It takes a courageous fool to take them at their word and commit acts of philosophical buggery with their conceptual toolkit.

Given the subtitle of this book, a question that needs to be asked is what do they mean by 'affect'? How does it correspond to a host of terms such as 'force', 'intensity' and 'sensation'? Why affect and videogames? Ash (2012) explains affect as the force of an encounter, the capacity to affect and be affected. It denotes a force rather than emotion, a force that varies in intensities as it combines with other forces in different assemblages to engender multiplicities. Bodies affect and are affected. Spinoza is a touchstone for Deleuze's thinking on affect. 'When a body "encounters" another body, or an idea another idea', Deleuze explains, 'it happens that the two relations sometimes combine to form a more powerful whole, and sometimes one decomposes the other, destroying the cohesion of its parts' (Deleuze, 1988 [1970] 19). Form, Deleuze tells us, is constitutive of the interlocking relations of each body and each body to one another, how they affect one another, to increase or diminish one another's capacity to act, positively and negatively, for good and bad. So, for example, positively the act of raising the arm and clenching one's fist expresses the power of a body but decomposes another body when striking it (Deleuze, 1988 [1970]: 32). The good affect augments a body's capacity to act. The bad affect diminishes or decomposes a body's capacity to act. Of videogames, we might say that the body of Mario-the-avatar is strengthened by the power of the player's gestures that are mapped to it and enable that body as affect to successfully negotiate a hurdle. The same gesture, lacking the precision and intensity of the first, throws Mario into a pit of piranha plants. What is good in one relationship is not necessary good in another. The association of a player's bullet with the image of an oil drum in *Far Cry 4* is only good if the resulting explosion kills the enemy; not when it kills the player because they are too close to it.

Affect is between points, preceding and authoring images; it is the virtual force behind all actualisations or creations; it is the act of creating, of art, philosophy, science, our psychology and politics. Affect is not desire. It is intensities. Intensities are the indivisible durations of warmth and coolness, high and low pressure, speed and slowness, the haecceities that combine and give rise to multiplicities. Haecceities are individualities. Deleuze and Guattari (2003b: 261) again: 'A degree of heat, an intensity of white, are perfect individualities; and a degree of heat can combine in latitude with another degree to form a new individual, as in a body that is cold here and hot there depending on its longitude'. Extensions, by contrast, are divisible. A volume of water for example can be divided to make two volumes of water but the heat of that water is unaffected. (These points will be elaborated on in later chapters and also repeated for the convenience of the reader.)

Affect is motion, not emotion. Emotion is intelligible, felt but also interpreted:

I am happy today; I am sad. Interpretation comes after the fact, the moment in psychoanalytic theory when a sudden traumatic event is momentarily defined 'trauma'. As Massumi (2002: 35) explains, affect is the 'simultaneous participation of the virtual in the actual and the actual in the virtual, as one arises and returns from the other … For affect is synesthetic, implying a participation of the senses in each other'. The composition of affects and their decomposition through different bodily relations are perceived over duration as a vital or virtual force and actualised in every event that flashes in repeated iterations on the screen. The event of play is simultaneously virtual and actual.

Another touchstone of Deleuze's thought already intimated is Henri Bergson. Let us consider how our senses operate. I went for dinner a while ago with a person who lost the capacity for taste. She told me that it is the texture of food that now gives her pleasure and that influences her decision about what to order from a menu. When those with the capacity for taste are choosing a meal, texture is unlikely to be a conscious factor in the decision, unless the diner is a connoisseur or there are particularly distinctive textures on offer. The lesson here is that although the conscious mind may not register a sensation the body nonetheless perceives it. At a certain magnitude percept – akin to sensation rather than perception as such – passes over into affect, perhaps when the texture of our food is unusual. If you are eating something while reading this, you are probably now thinking about the texture of it. Now there are images in your mind and those images correspond to your memories of different textures that you compare to the one you are currently masticating. You have subtracted images that are not in this moment useful to you and now the image you have is of the texture rather than the taste. Philosophy, Deleuze tells us, is a thought without image. It does not settle problems but, as suggested, opens itself up to them. We can think about each videogame sensation in isolation, music, sound effects, colours, bright lights and shapes, and even the rumble effect of the gamepad. An affective philosophy encourages us to be receptive to sensations in much the way a tongue is receptive to texture, to accumulate images through experimentation and experience, to withdraw perception-images as circumstance requires, retaining those useful at that particular moment.

So, when perception (percept) reaches a certain magnitude it crosses over a threshold into affection (affect), like the difference between a hand that caresses and the hand that stings and leaves an imprint on the skin. The brain is like a photographic plate on which sensations are imprinted, an image that is in perception, condensed and accumulated in memory. The outer world of perception meets the inner world of affects. The mind functions as an interface between what affects us and our responses to them. This is the interval in which images that are not useful are withdrawn. Returning to the question of art, Deleuze and Guattari (1991:94) state:

> It should be said of all art that, in relation to the percepts or visions they give us, artists are presenters of affects, the inventors and creators of affects. They

> not only create them in their work, they give them to us and make us become with them, they draw us into the compound.

It is this capacity both to perceive and be affected by art that enables, in the context of videogames, the player to do things with affects. We are literally drawn into the compound of the creation and, because we are ourselves active in a *process* of creation, also inventors and creators of affects.

For Spinoza, then, affect concerns bodily relations, the 'good' being what augments or empowers a body and the 'bad' what decomposes or deprives a body. For Bergson, affect corresponds to the totality of what the sensory-motor-schema perceives and from which images (accumulated and condensed in memory and operative in the present) that are not useful subtracted. Affect filters into every aspect of Deleuze and Guattari's philosophy, including a term they adapt from Antonin Artaud, the body without organs (BwOs). As they explain:

> Whenever someone makes love, really makes love, that person constitutes a body without organs, alone and with the other person or people. A body without organs is not an empty body stripped of organs, but a body upon which that which serves as organs (wolves, wolf eyes, wolf jaws?) is distributed according to crowd phenomena, in Brownian motion, in the form of molecular multiplicities.
>
> *(Deleuze and Guattari, 2003b: 30)*

How do we make a body without organs? By multiplying. By exceeding what the body in its organic organisation was until then capable of. By making ourselves a body without organs we loosen the grip of organisation and compose with affects. Because affects exceed representation, they also exceed identity and the limits imposed by language on the body. We return to this later, but briefly, the body defined by its organs or the identity ascribed to it corresponds to 'molar' formations in Deleuzian terminology. In contrast, the 'molecular' is a loosening of one's identity, a virtual process of becoming, of creating 'molecules' or multiplicities, that exceed what the body defined by its (molar) identity was considered capable of. So in this respect as well as discovering affects immanent to us the body draws from the affects of others, from the power of other bodies, to produce new affects, new multiplicities. Thus begets the relationship between the outer world of images or percepts and the inner world of images or affects. The player makes his or herself a body without organs by discovering ways to exceed the organism. The player learns from the multiplicities of the game design how to enter into productive associations with them to reach new levels and diagram the possibility for new becomings.

Worlds are encountered in *Grand Theft Auto*, a mixture of genres each corralling the senses to predetermined opportunities and dangers. What does it mean to open the senses to videogame worlds? We do not put ourselves in them as such, we put ourselves in proximity with the affects that are stored in them by the developer and 'liberated' in the event of play. There is no dualism between the inside and outside,

the diegetic space of the videogame and the environment the physical body inhabits. We do not interact with videogames as such; we are part of a videogame assemblage. On the videogame plane, forces are selected and bodies without organs composed; the motion of the hand that connects to the controller augments or decomposes by our actions and relations the possibilities for new becomings, new actions and multiplicities. Deleuze and Guattari (1991: 169) write that Cezanne tells us: 'Not a "minute of the world passes", … that we will preserve if we do not "become that minute." We are not in the world, we become with the world; we become by contemplating it. Everything is vision, becoming. We become universes'. Affect is intensities. Affectations are states of mind (actualisations we might say), whereas 'affect is not the passage from one lived state to another but man's nonhuman becoming' (Deleuze and Guattari, 1991: 169).

Let us shift tact by thinking about the affect of music in an assemblage and relate this to Adorno's (2001) critique of the standardisation of music and, in particular, how specific elements of a piece are fetishised to the detriment of the whole. In pop music, for example, the song functions like a frame into which any hook line whatsoever can be inserted and swapped without impacting on the whole. The rest of the song becomes irrelevant. The regressive listener wants only what is familiar, with variations so minor that it may as well be the same song they listen to. Serious listening involves being receptive to the different parts as they relate to the whole of the composition. With videogames, music is part of a gameplay assemblage and which cannot for this reason be considered independently of the game it is composed for. Music is a vital though under-theorised component of the videogame assemblage that can make or break the player's non-human becomings. This is something Koji Kondo, composer of the music and sound effects for the Zelda and Mario series, recognises. In an interview he describes how in *Mario* sound is utilised to evoke rather than prescribe the pleasure of jumping. In *Zelda*, when the sword is swung the 'swoosh' sound aims to enhance feelings of bravery and courage. As Kondo explains, it is the player who feels and the player, not Mario or Link that, in such respects, jumps and swings. The compositions also reflect and adapt to the rhythms of play such as in *Super Mario Galaxy* when the chord progression shifts in anticipation of impending dangers. But, as Kondo warns, 'if the changes are not pertinent to the person playing the game but are merely changes based on the piece itself … the changes themselves impose a musical development (feelings of rhythm, excitement, etc.) onto the overall composition which is inappropriate'.[1] Even the most celebrated composition in *Super Mario Galaxy* is only as good as the assemblage it is part of and in the becoming of videogame play. Imagine, for example, the rousing theme of Gusty Garden Galaxy in the midst of a tense moment in *The Last of Us*. The good affect becomes a bad one. While film soundtracks are just as important in these respects, videogames differ in that it is the player as Kondo suggests who is active in the composition.

Music affects mood, creating tension, a sense of foreboding or feeling of sadness, sympathy and joy. Music is deceptive. It gives the auteur the power to direct the player – or viewer in the case of cinema – towards particular sensations, to impose

an authorial voice by imposing feeling. This is the function of sentimental music in Hollywood cinema. Like the dripping sound of a leaking tap, the intensity of the composition decomposes a body's capacity to open itself up to sensations and embark on their own becomings in proximity to them. Only the image of the leaking tap is retained; all others are deselected. A skilled composer guides the player through the affects they have created and also invites them to play with them, to learn and become augmented by them, learn new tricks, unlock puzzles and fell enemies that had once got the better of them. With patience, the player in due course acquires the force of the Triforce, and now the cack-hand of the amateur is the masterful hand of the artist, her brushstrokes liberating sounds and colours through encounters with different objects and multiplicities, be they avatars, hookshots, open plains or flowing streams.

Mikhail Bakhtin's thoughts on literature relate to the balance that Kondo strives for. Dostoyevsky is a writer who makes the authorial voice imperceptible as if the words originate in the characters themselves as opposed to the writer. There is a crack in every voice, Bakhtin says, a contradictory expression, the perception of 'profound ambiguity, even multiple ambiguity, of every phenomenon' (2003: 30). This crack is the uncertainty of the sword that Link wields, the decisions that Michael de Santa takes in *Grand Theft Auto V*, the experiments of a player who attempts to bridge a chasm in *Portal 2*. Nothing is determined, everything is open, the player has the opportunity to go smooth, to deterritorialise and reterritorialise space, to discover in amongst the arborescent entanglements a space for new becomings: rhizome-play or death. The event of (videogame) play is a becoming occurring in the interval. As Paul Patton (2010: 82) explains, 'The pure event is never a determinate kind of event but rather becoming itself, or the process by which something comes about. As such, it is the condition of all change'. It is the part that 'escapes its own actualisation'.

'In art, and in painting as in music', Deleuze (2008: 40) writes, 'it is not a matter of reproducing or inventing forms, but capturing forces. For this reason no art is figurative. Paul Klee's famous formula – "Not to render the visible, but to render visible" – means nothing else'. Artists produce sensations through the force of their creations. Sensations escape the frame and swirl in a zone of indeterminacy. It is life as an 'enterprise of co-creation' (Deleuze and Guattari, 1991: 173). The videogame is in this zone of indeterminacy. It is neither at the beginning nor end. It is where bodies meet and co-create, the (virtual) compositions of developer and player realised – simultaneously actualised – in the event of play. The videogame rewards those who are receptive to the affects they liberate through their actions. They encounter and compose with them. This is how we open new vistas, new levels and invent new planes. It is how skills are enhanced and why the game never ends because with each completion of a quest there is another to which the player is drawn, even if that quest is simply another videogame. Composition, Deleuze and Guattari (1991: 102) say, 'is the sole definition of art. Composition is aesthetic, and what is not composed is not a work of art'. The player is a composer hence why Roger Egbert's claim is misplaced that something you can change is not art.

The player is on a journey of rest and becoming, actual and virtual, between points, along nomadic lines in a permanent relay. A baton passes from artist to apprentice, developer to player, one learning from the other to diagram new worlds and galaxies. Actual creations and virtual lines; if the baton drops the journey is halted, becomings are blocked. A videogame that arrives broken is not a videogame. One that frustrates rather than rewards perseverance, a game we cannot learn from or grow by, that, in Spinoza's terms decomposes rather than enhances the body's capacity to act, is a formal failure. When we hit a wall and as a consequence return to the beginning of a sequence already conquered, but which now has to be repeated endlessly until the more difficult sequence is passed, it can turn the game into a mindless choir. In regard to the apprenticeship itself, the death affect is enhancing when it enables them to improve their skills. 'Becoming is supremely pragmatic, or it fails', says Massumi (1992: 100). Affect is about artistry and creation, about responding to and emitting forces, developing skills and mastery, about a spectrum of colours that trail off Mario in flight, intensities of yellow stars, and intensities of becoming-Mario that with enough force, composition and determination, acquire the power to knock Goombas over like skittles in a bowling alley – bad for the Goomba but good for the player. The relationship between Nintendo and millions of apprentices who play *Super Mario* through its different iterations is an enhancing one: the one learning and augmenting their power by the other. The relationship between Capcom and the millions of apprentices who play *Resident Evil* has, after the triumph of *4*, become a rapidly decomposing one. Numbers *5* and *6* are badly prepared canvases that only those at the beginning of an apprenticeship are likely to want to paint on and will perhaps soon tire of.

To summarise, videogames are affective or else defective. Videogames are assemblages. They are compositions of the creative forces of developers and players, artists and apprentices. Artists work with forces on a plane of composition: the plane of videogame creation. Philosophers create concepts on the plane of immanence. We bring the chapter to a close with twelve axioms that are qualified and elaborated on later in the book.

Twelve axioms

A videogame is not simply a thing that comes on a disk or is downloaded onto a screen. It is not simply a set of procedures, algorithms or codes. Steinkuehler (2006) describes videogames as a mangle of practice involving designers, players, diegetic objects, contexts and so forth in which the player wrestles control and meaning-making from the studio. The videogame exceeds the screen's two-dimensional plane or it does not exist at all. But this book aims to show that there is no wrestle, no struggle for control and 'mean-making'. Videogames are constellations or assemblages of affects, of forces that produce sensations, with videogame theory a constellation of active and dynamic concepts.

Axiom One

> *Videogames are art only in motion and are only brought into motion through the added craft of the player.*

Alternatively:

> *Videogames are defined by their motion originating in affective compositions between at least two bodies: the developer (denoting all those involved in the creation of the program) and the player (denoting all those who utilise the program as intended by the developer [i.e. to play the game rather than hack into it]).*

Example: combating The Tank in *Left 4 Dead*

Let us imagine a scenario. There is the player, the program, a goal and adversaries that stand between you and its completion. Those adversaries are zombies. There are many of them, hordes in fact. Some are infected in special ways. These are more dangerous. The most dangerous of all, though, is a hulking creature called the Tank. Four people are needed to take it down, at least two of which are computer controlled if playing offline. Otherwise there are four players, you and three others playing online. Together you devise tactics. How successful they are will in part depend on the skill of the players. The objective of *Left 4 Dead* is simple: get to the safe house! It is a visceral, often relentless exercise in killing as many zombies as necessary to arrive there. Few cut scenes, no inventory menus that take you from and pause the action, *Left 4 Dead* is a finely crafted and pure distillation of the first-person (FPS) genre in which combinations of objects, avatars, players, different skills, tactics and pathways allow for many possibilities of play. *Left 4 Dead* exemplifies rhizome-play, opening new pathways, cutting diagonals through formal striations and embarking on molecular journeys in which new styles of play are invented. While not all successful videogames are played at such a pace, all of them include the element of openness. The game world deterritorialises beneath the stationary player: foot-stirrup-horse-earth; hand-controller-any diegetic object whatsoever.

Axiom Two

> *Play is force*, and *forces produce sensations*.

Example: The drift in *Mario Kart 8*

The drift is what happens when affecting a sliding motion while cornering and sustaining it over a long enough duration that the forces accumulated by the contact of wheel and concrete unleash to produce a powerful boost. The drift is poetry in motion, the harmony of multiplicities that in their particular constellation generate

affects that augment the body's capacity to act. The drift is a joyous affect that nourishes the body in sensations through the force of an encounter. It is the expression of patience and timing, the realisation by the player of the forces the artist has diagrammed.

Axiom Three

> *Videogame play is rhizome-play, the capacity of player to compose with forces whose intensities enable the discovery of new possibilities through which lines of flight can be taken: to disentangle the design through a process of deterritorialisation.*

Example: The quick time event

The quick time event or QTE is a device used in action-oriented videogames for progressing the storyline. They are developer commands that the player must slavishly follow at a prescribed pace. This is where the skill lies. 'Press A' – duck, 'Press B' – strike, 'Press A' – duck, 'Press Z' – jump and so forth. These are not simply reflex actions; progress often occurs because previous attempts are remembered and the precise sequence then recalled through the action. The QTE is play by numbers. There are no lines of flight, no means of escape, simply do as I say without deviation. They are arborescent sequences of the game and thus serve as a counterexample to rhizome-play. The QTE is binary to the rhizome's analogue. A videogame comprised only of binaries, of yes/no, right/wrong, commands and expressions (one outcome or another); a game without magnitudes of intensity is not a videogame. *Dragon's Lair*, which we discuss elsewhere, is not a videogame for the reason that there are only questions for which the answers are always determined and the process is without variation: the choice of one of three paths, the decision of which path to take and the outcome which either opens up another such choice or if wrong causes death. Where there is an element of skill in the timing with QTEs, the choices in *Dragon's Lair* are made by recalling the effect of that choice the previous time it was played. Rhizome-play, by contrast, is intensive and deterritorialising. It is about experimentation and discovery, discovering among the arborescent thicket lines of escape. They are lines, to be sure, that are already immanent to design as a possibility of fact. The QTEs of *Resident Evil 4* are complementary to the open-ended rhizomatic spaces of the other parts of the game. The arborescent and rhizome are not opposing terms. A skilled developer will affect a balance that challenges the player to discover their own lines of flight through the entanglements they have devised.

Axiom Four

> *Videogames are prepared canvases on which the player paints forces.*

Or:

> *The videogame is a diagram of play, a ludo-diagram, in regard to which the player is an intensifier.*
>
> Example: *Pac-Man*

Deleuze describes Francis Bacon as a painter of forces and the prepared canvas a patchwork of zones, lines, colour patches and so forth. Force is an interminable presence on the distorted faces in his self-portraits. The ludo-diagram is the canvas of the videogame prepared by the developer made up of signs and images suggestive of forces that the player can compose with. Take *Pac-Man* as an example. We see a maze-like structure in which there are dots representing pills and larger ones representing power pills. There are also 'ghosts' and the pacman himself represented by a yellow circle, its 'mouth' like that of a pizza from which a slice has been taken and subsequently reinserted. Thus far we have described an animated scene. What makes it a videogame? Not the representation. It is the forces that sight is unable to discern except by their effect when the player enters into assemblages with pacman, pills and so forth to make a videogame. Play is integral to the diagram of a videogame, hence ludo-diagram and it is in the event of play that the composition of the developer is realised as a videogame.

While visually the earth upon which the pacman traverses appears to deterritorialise by the fact that the pills are 'eaten', what makes *Pac-Man* rhizomatic as per axiom three are variations, offshoots, lines of flight, the fact of becoming constituting the gameplay. It is the play of forces – the player affects – that differentiate between a representation of deterritorialisation and deterritorialisation proper. Hence the reason for the addition of *play* to the term rhizome and for variation, the Latin term for play, ludo, to diagram.

Axiom Five

> *The videogame is a relationship between an artist and apprentice.*
>
> Example: The ultra combo in *Street Fighter IV*

The artist prepares the canvas defined as ludo-diagram and the apprentice paints on the canvas, acquiring the mastery of an artist in a permanent process of testing and assembling forces to develop their own skills and potentialities. This is what it means to play videogames and master them, what makes a person not only a player but also an artist in residence. The player is always the apprentice artist, an artist's apprentice, always learning from whatever the developer has created what can be done with it. A ludo-diagram that frustrates play because of bad design or programming is the work of an artist that has failed or presented her work prematurely in which case the player is unable to develop their skills and thereby

advance their apprenticeship. *Street Fighter IV* is a difficult game to play but one that rewards patience and determination. The well-timed and executed ultra combo is the condensation, in one swift and fluid motion, of all the skills the apprentice has accumulated in this game and any other.

Books have readers, films have viewers and videogames have players: intensifiers. 'Player' and 'gamer' are common-sense terms; with 'intensifier' we refer to the point that videogame play is about painting with forces that rhyme with the gameplay; 'apprentice' notifies that by painting with forces and producing affects the players experiment with form, learning by the assemblages they themselves help diagram, the actions taken and the affects produced: how in an endless process of becoming to play videogames. Rhizome-play.

Axiom Six

> *The videogame diegesis or program* [*ludo-diagram*] *is comprised of signs, force-signs and sterile-signs, smooth space and striated space.*
>
> Example: The oil drum in *Goldeneye 007*

The ludo-diagram is comprised of all the signs that we come to recognise as belonging to a particular videogame or genre. The signs are visual cues but they can also be aural and haptic, such as when an electric fence is signalled by a buzzing sound or the rumble of a gamepad signals buried treasure. The ludo-diagram is the prepared canvas of the developer on which the player paints forces, play-forces that in combination with signs and their multiplicities vitalise the diagram. The ludo-diagram is the completed project of the developer from which all possibilities immanent to the game in question arise. It is what the player encounters and works with but cannot change, as in reprogram, except by hacking into it. The ludo-diagram is the algorithm or code of the videogame but a special one in that it is also like the battery a storehouse of forces. The oil drum in *Goldeneye* and countless other FPSs is analogous to a battery. A seasoned player will recognise that it signals an energy that can be emitted and combusts when pierced by a bullet. Force-signs can have multiple uses and produce many different affects. They can either change in composition or change the composition of what they encounter, to produce good or bad affects depending on the relationship. If the object itself cannot affect or be affected as in intensified, be recomposed and deterritorialised as either a direct or indirect result of the player's actions, then it is sterile-sign. Corridors in *Goldeneye 007* are striations and the space between them in which the apprentice moves a smooth space.

Axiom Seven

> *The ludo-diagram is sometimes a meta-diagram comprised of many diagrams.*
>
> Example: Base of operations in *XCOM: Enemy Unknown*

XCOM: Enemy Unknown is split between two major gameplay elements, each with different diagrammatic features. One is the operations area where the player prepares for battle by determining how best to use funds to maximise the power of the ground troops to be deployed in the other core feature, a turn-based strategy section. There are cut-scenes between the two while each section loads onto the host machine, and also in the base-of-operations section for narrative and explanatory purposes. The preparatory section contains inventory screens, assorted menus and so on. The ludo-diagram of *XCOM* is a prepared canvas with elements that are fractionally unprepared, in other words, that allow the player to change the game parameters. Any videogame with options to change the difficulty level has this but with *XCOM* and strategy-based games and simulations such as *SimCity* they are more varied, open and integral to the gameplay. The apprentice diagrams the diagram.

Axiom Eight

Unique to the videogame, and corresponding to the force-sign, is the friction-image.

Example: The gravitational theme of *Super Mario Galaxy*

Just as the rapid juxtaposition of images in cinema is essential to the sensation of motion, an image of friction is essential to the sensation of presence and orientation. The forces that cause us to speed up, slow down, fly or return to earth with a thud are present but not represented. Gravity is both an object the player has to think about in *Super Mario Galaxy* and multiplicities they compose with. By contrast, the cinematic viewer may think about gravity in a film set in space but they do not need to compose forces with it in order for the film to progress. Every videogame has its own immanent laws of physics that however different from the known universe are real. They have to be thought about, tested, played with and assembled. In *Super Mario Galaxy* the friction-image is signalled in force-signs such as ice upon which Mario acquires the speed and gracefulness of a skater. The player negotiates different surfaces by learning and experimenting with the intensities of different objects, how they interact with one another and so forth. In *Galaxy* they learn that gravity and movement are related to mass and that the flow of gravity can in certain sequences be reversed. In the typical racing game, the friction-image of the tarmac differs in intensity from the friction-image of the grassy verge, unlike *Galaxy* the direction and force of gravity are consistent throughout. By thinking in terms of the friction-image, we think of the videogame as its own law that emits particles of an entirely different order to that of the actual laws of physics. Through such thinking, Nintendo was able to reinvent the platform game and produce a genuinely innovative gravity-themed experience. Whereas the force-sign occupies specific zones of the game or a particular point in space, the friction-image permeates the entire field of play but which can vary in intensity at different times and in different zones. It is of greater explanatory value when describing the

immanent laws of physics, especially gravity, than specific zones or points in space occupied by objects for which the term force-sign is generally used.

Axiom Nine

> *Force-signs are comprised of haecceities. Bodies enter into proximities with them, to be augmented by them or decomposed by them.*
>
> Example: Link in *The Legend of Zelda: Ocarina of Time*

A degree of heat, the power of friction and densities of materials, these are haecceities. When Link enters Zora's Domain he either encounters water in which it is possible to swim or ice on which it is possible to walk. When the Goron Tunic is acquired, Link will be able to enter the Fire Temple without dying from heat exhaustion. Play-forces are composed with and enter into proximities with haecceities, to be augmented or decomposed by them, to play with fire or be consumed by it. Experimentation by testing the ludo-diagram, thinking in terms of friction, exploding force-signs, in every instance we are entering into proximities to and form assemblages with objects comprised of haecceities whose affects vary with the compositions formed.

Axiom Ten

> *Realism in videogames is primarily determined by the degree to which the player can become immersed in the game up to the point that the relationship between diegetic and non-diegetic space is imperceptible.*
>
> Example: the portal gun in *Portal*

The videogame is immersive when there appears to be no lag between the player's thoughts on an action and the outcome of that action. The player paints forces that produce affects that in turn reverberate on the sensory plate and when the gap between action and thoughts on it is imperceptible the game flows. *Portal*, which taxes the mind to solve spatial and gravitational puzzles, is not an obvious example given that it is a game that demands thought and reflection. The portal gun is a device that can be used to shoot a blue hole into one wall and an orange hole into another and then pass from one hole to another without having to negotiate the void in between. This is the premise of a series of increasingly difficult puzzles. As improbable as a portal gun is, the fact that the premise and the stunts it enables soon appear quite natural are exemplary of the quality of the design. At the point when portals appear natural, its own immanent laws of physics are from the perspective of the subject-as-avatar real.

There are five types of realism referred to in this book. The first is affective realism: the extent to which the game *feels* real, which is subjective, and

diagrammed primarily to engender a feeling of immersion, fast-paced action shooters for example, which is objective. The second is representational realism: the accuracy with which the videogame *appears* visually and aurally to represent the material world. The third is conceptual realism, how the world of the videogame structures or maps reality: the concept in *Grand Theft Auto* of the neoliberal city for example. The fourth type is contextual realism, the extent to which the different elements cohere to the idea of a world the videogame constructs, however fanciful. It establishes a consistency that affords a degree of predictability without which the game is potentially unplayable. The fifth type is self-referential realism. The game is a representation of its own reality that appears a simulation of the real world only in so far that we are habituated to the way a videogame genre appears to represent reality. These terms are unpacked in Chapter 5, *Artist and Apprentice*.

Axiom Eleven

> *Problems of ideology and representation centre on how compositions with different bodies or force-signs are rewarded and punished during the process of play.*
>
> Example: *Call of Duty 4: Modern Warfare*

The damsel-in-distress theme of the *Super Mario* series is clearly gendered. However, at no stage in the actual game can Mario fuck, maim, humiliate or harm Peach or what she represents as a woman in any way. This differs from *Call of Duty 4* (COD) where, in order to progress, racist stereotypes of Arabs, Russians and so forth must be slaughtered. They are force-signs whereas Peach is not. The very process of play in *COD* is defined by the so-called War on Terror, and United States paranoia generally, in reference to which the apprentice is compelled to play a sympathetic role. We turn to Deleuze's discussion in his cinema books on the action-image, to explore the relationship between the player and the story. The action (A) is bookended by two situations (S) and (S'), the problem and its resolution. It is in the moment of action (A), which the player authors, that the discourse and ideology becomes affective.

Axiom Twelve

> *The quality of the videogame rests on the combination of factors noted in the aforementioned axioms and which take into account specific aspects of genres.*
>
> Example: exemplars described above

All videogames involve rhizome-play or by my definition they are not videogames. However, the quality is determined by other factors such as the balance between the striations or structuring of gameplay and the capacity to go smooth through deterritorialisations and reterritorialisations in the event of play; the diagramming

of force- and sterile-signs; the capacity to advance the apprenticeship and the relation therein of artist to apprentice; the kinds of realism the game diagrams and so on. The importance of these different elements differs according to the genre and game. The quality of the game can only be judged by assessing the different elements as they relate to the specific assemblages including the player herself.

The twelve axioms are not assumed to be exhaustive. They function as placeholders that provide a general overview by which to gain our bearings in advance of the more difficult task of elaboration. One crucial axiom is yet to be defined, omitted from this list because it is general to society: the axiom of capital, surplus value. The next chapter considers the relationship of videogames to the machinery of capitalist abstraction.

Note

1 www.metro.co.uk/tech/games/879082-the-legend-of-zelda-at-25-exclusive-eiji-aonuma-and-koji-kondo-interview

2

THE SMOOTH AND STRIATED

We are desiring-machines plugged to a more massive machine of accumulation. Like The Matrix, it needs us, thrives on us, it's a monstrous body without organs. *Destiny* is one outcome of all the energies that feed this machine. Rumours circulated that it cost an estimated $500 million to make. Whatever the truth of the matter, hundreds of workers have been involved in the project over several years. As with any other commodity, its creation also relies on a vast infrastructure and countless other labours, those who mine the raw materials, ship them to factories, even service the checkout. It is a societal wide operation. For all the hardships and sacrifices, the wars and ecological despoliation, this is forgotten when finally the Warlock can strike down the Vex with one swift melee attack. Love affairs are sparked with objects not workers that even the most enlightened of gamers are likely to forget when making that day-one purchase. As Marx would put it, the fetishised commodity renders all such relations invisible.

The monster underneath our televisions is a machine for capturing our desires. We gave it our dreams, our time and our labours for a promise, a promise it never delivered on. And the more it promises, the less it delivers, the greater is the desire for new downloadable content (DLC). Each machine surpasses the last. Each game requires more labour and a larger market to absorb the costs of that labour. It requires that more people divert their energies into videogames. They shout fun. Their bright colours, funky sounds and multimillion dollar marketing budgets ensure everyone gets the message. The videogame industry is a global operation distorted by the global axiom of capital: profit or surplus value. Capitalism is a libidinal economy, Deleuze and Guattari tell us, that thrives on decoded flows of desire, the boundless energies of our desiring-machines that it captures in the workplace as surplus value and at home with our televisions and little boxes.

On the underside of every commodity are complex and often egregious social relationships, exploitative labour practices, punitive legal systems, state violence and

so on. Every console manufacturer today outsources production to places where the cost of labour is cheap, and they indirectly rely on access to suppliers in places such as the Congo where millions of people have been killed and displaced for the mining of coltan for microchips. The release of the PS4 was boom time for coltan traders. The videogame industry is part of the capitalist economy and in such respects is no different to any other industry. The focus of this chapter is not capitalism as such but rather how industrial practices, some of which are specific to videogames, more directly impact on the form itself. It is a huge topic that could easily take up an entire book. We have one chapter.

Nintendo land

> the striated is that which intertwines fixed and variable elements, produces an order and succession of distinct forms, and organises horizontal melodic lines and vertical harmonic planes. The smooth is the continuous variation, continuous development of form; it is the fusion of harmony and melody in favour of the production of properly rhythmic values, the pure act of the drawing of a diagonal across the vertical and horizontal.
>
> *(Deleuze and Guattari, 2003b: 478)*

Gameplay, says Jesper Juul (2005: 91), is comprised of three interactive elements: the rules of the game; the player's pursuit of goals that are a result of the game's emergent properties; and the competence and repertoire of the player's approach. Gameplay is a smooth space of experimentation drawing diagonals through the striated grid of the program. It is form in motion, the striations themselves allowing for this possibility. The procedures the game rules authorise and the rewards and punishments accompanying them are engendered at the points where the smooth and striated intersect but that can never entirely determine how the lines are drawn, elements assembled and striations crossed. This openness defines rhizome-play. The videogame industry is a striation of a different kind, striated by financial constraints and winning formulas. It is striated by the legal systems in which it operates, the state science that regulates the flow of capital. It weighs down on the creative war machines of the developer and, perhaps more positively, ensures they remain focused on producing games people want to play. Artists are after all an unruly bunch; their desiring-machines the key to innovation and sometimes a line to chaos. Plug them up too much and the business itself will suffer. Nintendo has learnt this, which is why the plane of organisation, referring here to the business itself, is structured to allow for its artists to take productive lines of flight as a collective war machine, to diagram on the plane of consistency, the plane of artistic creation, and produce new strains of videogame. Form ensures against chaos, striations are like the arborescent roots that the rhizome always discovers a way through. Without a game structure delineated by rules, goals and so forth, there would simply be a blank mess. Without financial constraints, an organisational structure or even technological limitations, the creative process itself would be

formless. Nintendo are masters of stimulation. They know which buttons to press. We can approach this dialectically: the positive of the *The Legend of Zelda*, the negative a finely honed machine of mass manipulation. Gamers want to be manipulated. They want to feel excited. With *Destiny* the artists making the videogame were no match for the artistry and cunning of those promoting it. With *Bayonetta* it was the other way round: without the marketing machine forever a 'cult classic', critically lauded but commercially unsuccessful. The smooth cannot persist without the striated, a plane of organisation requires a plane of composition and, in this world at least, the latter the former. Keith Stewart of the *Guardian* gets this about Nintendo:

> Nintendo games are about the ruthless and efficient production of joy. Every interactive system is designed and then tweaked by single-minded experts to wring out from the player a rising sense of pleasure. There is no escape; there is only submission. Whatever has gone wrong for Nintendo in the past two years, the doom-mongers have never been able to take that away. If you don't understand it, you'll never truly understand games.[1]

Videogames are not played in a vacuum. There is context and history affecting how we relate to and play them. They are designed under commercial pressures and irrespective of the motives of the artist, must be designed with profit in mind. Were it not for advances in technology, instead of human forms wandering the villages of Lionhead Studios' 2008 *Fable II*, we would still be square blocks wandering the labyrinths of games such as Atari's 1979 *Adventure*. With every new generation of console, the cost of producing high budget software for them increases, as quality and originality appear to diminish. In 2009, Ubisoft stated that games for the Xbox 360 and PS3 cost around $20–30 million dollars to make with approximately 1.5 million unit sales required to profit on such investments. The production costs are reckoned to double for games designed for the Xbox One and PS4.[2] We may have reached a theoretical peak in terms of what can technically be accomplished in a videogame while ensuring a return on the investment.

The story of Activision and Electronic Arts exemplify how the industry has evolved and moreover the monopolistic tendencies inherent to capitalism. The former, founded in 1979 by disgruntled ex-Atari employees, was the first third-party (companies independent of manufacturers) software developer and publisher beginning with videogames for the Atari VCS console. With the exception of *Pitfall!*, published in 1982, their early software is now largely forgotten, and even at the time, for this gamer at least, their titles seemed to pale next to Atari's output. Electronic Arts (EA), founded in 1982 by a former Apple employee Trip Hawkins, made its name developing and/or publishing innovative titles such as *Archon* and *M.U.L.E.* on early home computers. Bungie, the makers of *Destiny*, also began modestly. Jason Jones and Alex Seropian founded the company in 1991 and worked from their one-room apartment in Chicago to make *Marathon* and *Myth* on Apple Macintosh, both going on to be successful franchises. Many now-established

videogame developers started out in similar ways. In Britain, 'bedroom' coders working on ZX Spectrums produced games such as *Manic Miner* and *Horace Goes Skiing*. The Stamper Brothers introduced the world to quirky titles such as *Atic Atac*, a top-down action game in the style of the arcade *Venture*, and *Jet Pak* that took its inspiration from Williams' *Defender*. What started with two young men became Ultimate: Play the Game, multiplied in the 1990s, with Nintendo taking a 49 per cent stake, developed *Donkey Kong Country* on the SNES, the legendary *Goldeneye 007* on the N64 and others that significantly bolstered the N64's catalogue after Nintendo lost third-party support to Sony. Rare became headline news in 2002 when Microsoft paid $375 million for complete ownership of the company, a bold statement confirming to sceptics that Microsoft was in the industry for the long haul. Like that of Activision and EA before them, the story of Rare is emblematic of how the videogame industry has evolved and become what it now is.

The rise of the so-called 'indie' scene is exemplary of the rhizomatic nature of human enterprise; a line of flight that finds its way through the control schematics of the industrial behemoths by using the technologies that helped to make them what they are. The term is associated with low-budget, high-concept downloadable software, typically selling for a fraction of the cost of the high-budget titles distributed on physical disks and sold by retail establishments. Indie developers are not necessarily small or even independent. The aesthetic, though, is reminiscent of earlier videogames where the focus is more on gameplay than graphics. The *Bit Trip* (2009) series produced by Gaijin Games in California reflects on this old school approach. *Bit Trip Beat*, a variation on the first popular videogame *Pong*, involves the player moving a small vertical line either up or down to repel horizontally oncoming dots and lines. The coloured shapes in the background and techno-style music are the only things that consoles in the early 1980s were technically incapable of. It is unlikely that *Fez* (2012), made by Polytron Corporation, which involves the player scaling a building on a two-dimensional plane that upon rotation reveals gaps that the player can enter, would ever get beyond the design stage if produced on physical media. There is no return to the Golden Age here, though. The history of the medium displays the classic characteristics of capitalist expansion: smaller often innovative companies are either absorbed by bigger ones, controlled through financing and distribution rights, copied and sometimes put out of business. *Fez* was co-published by Microsoft Game Studios and the critically acclaimed 'indie' title *Child of Light* was made by 40 or so people at Ubisoft. In 2014, *Geometry Wars 3: Dimensions*, developed by Lucid Games, was one of the first games associated with the Sierra brand, a defunct developer that Activision revived as the label for all their 'creative, edgy, indie developers' to publish under.[3]

If artistic creation happens in a smooth space that draws diagonal lines through industry striations, it is a space as suggested that industry depends on for innovations to ensure that gamers jaded by the glut of identikit high-budget software are periodically fed something fresh to play with.

The smooth space is not monopolised by the so-called independents, it subsists even within studios wholly appropriated by major corporations. Were it not for the desiring-machines of the talented and dedicated pool of workers at Nintendo, there would be no *Ocarina of Time* or *Super Mario Galaxy*. Nintendo has established and maintains its reputation for the quality of its software; of the three major console manufacturers it is the only company whose primary business is videogames. The quality of their output is matched by the company's sophisticated and often 'ruthless' business practices.

In 2014 Nintendo celebrated its 125th birthday. What began as a card trading company accounted for nearly 90 per cent of the US videogame market by 1986. While today it faces tough competition from Sony and Microsoft, the company made an estimated $33 billion dollars profit between 1981 (when *Donkey Kong* launched) and 2011.[4] Nintendo's losses in 2012 and 2013 were negligible in comparison to their major competitors. Unlike Sony and Microsoft, Nintendo usually profits on every piece of hardware it sells. During the Wii and DS era they sold around 700 million pieces of software.[5] Not surprising then that even as the Wii U console flounders, in market capitalisation the company in 2014 was valued higher than Sony Corps.[6]

This is reflected in the position of Nintendo software in sales charts. At around 35 million units, the most successful non-packaged and non-downloadable videogame of all time is *Mario Kart Wii*. This amounts to more sales than every entry in the *Halo* series combined. Counting sales on single formats, at the time of writing there are only two videogames in the all-time top 20 list that are not on Nintendo devices. Just as remarkable, looking at the best-selling videogames of the 2000s counting multiple formats together, 12 of the top 20 titles were published by Nintendo, including the top 6. *Call of Duty 4: Modern Warfare* and *Grand Theft Auto: San Andreas* garnered news headlines for their popularity, but combined sales of each put the former in 18th place and the latter in 7th.[7] No other company in the entertainment industry is so dominant as Nintendo in their respective medium. And it is not just sales either. On review score aggregate site Metacritic, *The Legend of Zelda: Ocarina of Time* is the only videogame to have scored 99 per cent. Close behind are the two *Super Mario Galaxy* titles both scoring 97 per cent. On Gamerankings these three titles hold the top three places.[8] Aggregations of review scores is a crude way of measuring the quality of a game, but *Edge*, probably the most respected videogame magazine in the world, in 2009 placed *Ocarina of Time* at number 1, *Super Mario 64* at 2, *A Link to the Past* at 5, *Super Mario World* at 6 and *Super Mario Galaxy* at 8 in their '100 best games to play today' list.[9] It is often said there is a 'Nintendo difference', referring to quality, uniqueness and innovation and also their business attitude that at times appears baffling. As other companies rationalise operations with a managerial cadre, sometimes displaying near-contempt for the artistic priorities of appropriated studios, Nintendo appears to recognise the fundamental importance of supporting the talent they have amassed over the years. As said in the introduction, no serious scholarship can make general claims about either the industry or videogames without consideration of Nintendo.

Nick Dyer-Witheford and his colleagues have drawn on Deleuze and Guattari's work to critique the videogame industry. They make a number of important points that nonetheless need qualifying. The next section explores some of Deleuze and Guattari's ideas on capitalism with reference to their work, in particular their analysis of Nintendo's rise to power.

Captured war machine

> Games consoles … are not just hardware but techno-social assemblages that configure *machinic subjectivities*. They operate as corporate machines, eliciting ongoing expenditures on software; as time machines, commanding hours of attention; as biomachines, initiating intimate relations between players, artificial intelligence, and networked collectivities – but they also sometimes operate as nomadic war machines, appropriated by hackers and pirates challenging propriety controls and raiding corporate revenue streams, within the larger biopolitical machine of Empire.
>
> *(Dyer-Witheford and de Peuter, 2009: xxxi)*

Technical machines, Deleuze and Guattari (2003b: 458) write, are a medium between two subjects. Television, for example, is nothing without the viewer to watch it. People 'consume' television and also, by providing information for companies to tailor programming and advertising to, are producers of it. Here the subject of the statement, 'you, the viewer', is confused with the subject of enunciation, 'it is I the viewer with determination of content'. These machinic components made up of television and individual constitute what Deleuze and Guattari call machinic enslavement. Political economy is libidinally constituted by the 'desiring-production' of individuals or bodies that the abstract machine of capital gathers its strength from. Machinic assemblages are the connectors that in this context enable the circulation and flow of capital. All human and machine compositions are singular events that take hold of materiality and produce the new.

In the current context of free-market economics, capitalism becomes a 'full body without organs', a smooth decoded space in which people and money flow, where ideas germinate and can be plucked by capital much like a child would pluck daisies from among the grass. More pertinently, it is an orchestrated smooth space within a perfected striated one that, as an apparatus of capture, the state regulates. Capital thrives on the machinic components of labour, a desiring-production of the human species. As Marx put it:

> Nature builds no machines, no locomotives, railways, electric telegraphs, self-acting mules, etc. These are the products of human industry: natural material transformed into organs of the human will over nature … They are *organs of the human brain, created by the human hand*; the power of knowledge, objectified.
>
> *(Marx, 1973 [1858]: 706, original emphasis)*

But as Deleuze and Guattari emphasise, there is no distinction between man and nature. One machine is always coupled to another, the 'productive synthesis, the production of production, is inherently connective in nature' (2003a: 5), the rhizomatic conjugation: and … and … and. Humans, as they suggest, are desiring-machines, referring to the social production of a subject through different assemblages, technical or otherwise, another way of saying that we are socialised through particular social arrangements and processes but also invested in them. Desiring-machines are connected to the particular form of social production through machinic assemblages ranging from more simplified connections between hands and tools such as hammers, books and so forth, through to online communication networks. Marx's analysis stresses contradiction, whereas Deleuze and Guattari lay emphasis on assemblages, libidinal forces and capture. As they say:

> An assemblage has neither base nor superstructure, neither deep structure nor superficial structure; it flattens all of its superstructure, neither deep structure nor superficial structure; it flattens all of its dimensions onto a single plane of consistency upon which reciprocal presuppositions and mutual insertions play themselves out.
>
> *(Deleuze and Guattari, 2003b: 90)*

Capitalism is a system of 'anti-production'. Progress coincides with destruction, a system of never-ending and expanding crises that deterritorialises or decodes in order to reterritorialise or recode, to produce 'lack amid overabundance, but stupidity in the midst of knowledge and science' (Deleuze and Guattari, 2003a: 236). Capital has learnt from social machines, from the dynamics, instabilities and antagonisms of different formations or assemblages that fuel the flames of history. These feed 'on the contradictions they give rise to, on the crises they provoke, on the anxieties they *engender*, and on the infernal operations they regenerate' (Deleuze and Guattari, 2003a: 236). Capitalism will not end by attrition nor by contradiction because 'the more it breaks down, the more it schizophrenises, the better it works, the American way' (Deleuze and Guattari, 2003a: 151). The hacker and pirate who Dyer-Witheford and de Peuter hold as figures of a nomadic war machine, non-state tactical assemblages that exceed capture and control, are mere flies in the ointment of this operation.

We do not need to look far to appreciate Deleuze and Guattari's point that capitalism thrives on our libidinal investments. Consider, for example, the reactions of adult audiences of the annual E3 videogame industry convention when a new addition to a popular franchise is announced. In 2004, at the very end of their conference presentation, Nintendo, with no prior indication, revealed a new game in *The Legend of Zelda* series. When the clip begins it is unclear precisely what game it is. But slowly as more clues are revealed, a brief flash of a character on horseback, the rousing theme, and then, unmistakably, a collective gasp: 'yes, it's Link!'. What began with an audience rumble became in due course a collective expression of unsublimated joy, concluding with a raucous standing ovation for

Shigeru Miyamoto when, at the end of the sequence, he dramatically appears to burst through the screen sword in hand. With the exception perhaps of *Star Wars*, there is no other artefact quite like a videogame that can stir such emotions simply on the basis of a preview. Adorno (2001 [1963]: 186) said that 'Every commercial film is actually only the preview of that which it promises and will never deliver'. I doubt that even he could imagine that a preview could elicit such excitement. Standardised and schematised, a glut of first-person shooters, sports titles and so forth are distinguished by novelties that are ruthlessly exploited in the marketing hype, whipped up on game sites with trailers that appreciative fans pore over. It is a drip, drip feed: another *Super Smash Bros.* character added to the roster; downloadable content and oblique references to *Half-Life 3* that Valve may or may not be working on. Videogames are the full package: guns, explosions, worlds and vistas. Like the menu that Adorno and Horkheimer's (1997 [1944]) diner must be satisfied with, the videogame trailer is the promissory note for a product that is never actually delivered.

Consoles are today often differentiated according to whether a popular franchise plays at 30 or 60 frames per second. It is a difference even a discerning eye can struggle to notice, at least without having two screens juxtaposed to one another, and fetishised by a certain cohort of gamers, a marketed quality they stake their loyalty and identity to. This of course fits Adorno and Horkheimer's description of pseudo-individualisation. Namely, the individual identifies with (and in the case of gamers are often passionately attached to) differences that are miniscule and in regard to which their own identities are reduced to an equally insubstantial difference. It is a tendency that becomes more pronounced the harder it is to differentiate between either the console in terms of specifications or the games played on them, few of which with the exception of Nintendo are now genuinely exclusive.

It is well documented that Nintendo single-handedly revived the US videogame industry after it contracted by a massive 97 per cent in the US-specific 1983 industry crash. Imposing draconian controls on third-party software companies through licensing agreements that required all suppliers to submit everything from packaging to artwork, commercials and software for approval, Nintendo was able to control both the number and content of games for their systems. Companies were also required to pay for a minimum of 10,000 units in advance of sale and pay royalties of around five dollars on cartridges when sold (cf. Kline *et al*., 2008: 114). Their virtual monopolisation of the industry meant that companies had no choice other than to accept their demands in order to get their products released. This level of control was according to Nintendo necessary to maintain standards, symbolised by the 'quality seal'. These standards were deemed necessary to avoid another industry crash with the previous one considered to have been precipitated by a glut of low-quality games on the market. The most famous of these was Atari's *ET: The Extra-Terrestrial*, licensed from Stephen Spielberg at a considerable fee and rushed to market for it to coincide with the film's release. Unsold copies were eventually buried in the Arizona desert. As Kline *et al*. (2008:

114) note, Nintendo's strategy merely fulfilled their president Hiroshi Yamauchi's stated aim of creating one strong company that could dominate over many weak ones.

Nintendo was successful in controlling the industry through such practices and, through the 'ruthless and efficient production of joy', as Keith Stuart quips. For Kline *et al.*, Nintendo's research-and-intelligence network program involving children in testing out software is pure exploitation:

> By 1993, 1,200 kids played premarket games every week and rated them on the Nintendo evaluation instrument. The research extended previous taxonomies for game evaluation (i.e., challenge, fantast, curiosity) by measuring player engagement along eight dimensions of design (graphics, sound, initial feel, play control, concept / story, excitement / thrills, lasting interest and challenge, overall engagement). The company then developed four evaluative dimensions that were critical to successful game development – 'production values', such as good visuals; 'fun themes', with strong characters, intriguing storylines, and attractive fantasy environments; 'play control', that is, easy responsive interaction with console and screen; and 'challenge', the ability to produce excitement and repeat-playability.
>
> *(Kline* et al. *(2008: 116)*

Internal development teams competed with one another to produce videogames to meet their quality seal standard, which were then vetted by the unpaid 'Mario Club' comprised of staff and non-company enthusiasts. Kline *et al.* attribute the success of Nintendo in crafting some of the most beloved franchises to this strategy, one that testifies to Dyer-Witheford and de Peuter's claim that videogame consoles are 'biomachines' that colonise the dreams of the millions of children (and adults) who play on them. The very motion of Mario is perfectly calculated by armies of programmers feeding off the desiring-machines of players to produce the sensations that entangle us in a machine of abstraction. By comparison with current industrial practices, though, Nintendo's earlier experiments with free labour appear rather quaint.

Betas of software that millions of gamers can download for free in advance of the finalised version expands on Nintendo's strategy. *Destiny* was tested by millions of players prior to its commodification. No pay, no discount and not even the opportunity to transfer their character tediously levelled up on the bought software. It would be absurd though to compare this kind of 'exploitation' to being exploited by an employer in the workplace. Those who labour usually do so out of necessity. Gamers that test betas do so for fun. They are no more of a workforce or exploited than a shopper who bags supermarket items herself rather than hand over the task to a paid employee who does it without additional charge. Anticipating the free-to-play (F2P) approach to smartphone and tablet gaming, Id software popularised the first-person shooter genre with their 1993 F2P download of *Doom*. As J.C. Herx explains, 'It was an idea whose time had come. Release a

free, stripped-down version through shareware channels, the Internet, and online services. Follow with a spruced-up, registered retail version of the software' (quoted in Manovich, 2001: 245). Around the world 15 million copies of the original were downloaded and, as Lev Manovich reports, players were encouraged to hack into the software to add new levels that could then be distributed online to add more value to the property. *Minecraft* takes this a stage further. The basic idea of Mojang's indie phenomenon is for players to construct their own buildings from three-dimensional textured cubes in a procedurally generated 'sandbox' environment. This is augmented with the availability of downloadable mods (modding) and the ability to interact with other online users. The company provides the form but the gamer creates the content. Eventually released onto home consoles, by June 2014 54 million copies had been sold in hard copies and downloads combined. When Microsoft bought the company and the rights to the game that same year for an all-cash deal of US$2.5 billion dollars, the true value of every player's libidinal investment was realised and the fate of an 'indie' developer, much one suspects to the delight of its director, sealed.[10]

No company is immune from the charge of being exploitative, a rather hollow one given that every company generates profit from the exploitation of its workers. Every company has to make profit to survive but particular companies can be singled out for their more pronounced exploitative practices, plunder of natural resources and techniques for selling their product. Coca-Cola has supported paramilitary groups in Colombia to crush trade unions; Nestle infamously marketed defective baby milk powder in Africa; Wal-Mart has ruthlessly pursued the bottom line to drive down the amount it pays to suppliers the world over (cf. Fishman, 2006). Electronic Arts has appropriated thriving game studios, rationalised and stripped them down, and sought every possible way to extract value from their increasingly standardised products. It is a difference with serious consequences for the industry and for gamers. Claims made by Dyer-Witheford need to be qualified and in certain respects further underlined.

Dyer-Witheford and de Peuter make a number of valid criticisms of the industry. Leaving to one side their interpretation of capital through Michael Hardt and Antonio Negri's work,[11] many of the issues they raise would with minor qualifications also apply to so-called creative industries in general. In their work, the videogame industry serves effectively as a case study for broader claims about 'informational' and networked forms of capital. Where I think they overstate the case is in the aforementioned conflation of exploitation with anything that a profit-oriented company can benefit from and also that power is ceded to companies such as videogame manufacturers and publishers that use algorithms to acquire different sorts of information for commercial purposes. Deleuze's influential essay 'Postscript on the Societies of Control' is frequently cited in the literature on new communicative technologies. Deleuze's central contention is that surveillance extends beyond the spatial boundaries of institutions such as schools and prisons described by Michel Foucault into every aspect of our lives. Activity can be monitored and information assembled that can be utilised by different agents such

as the state and corporations for purposes of security, product development and marketing. With the availability of new technologies to track behaviour (Deleuze wrote the essay before the Internet was popular but which appears to anticipate the use of algorithmic codes to mine data), people can be categorised more discreetly according to tastes and dispositions rather than by class, gender, race, age or location. What this means, Deleuze suggests, is that we are no longer 'individuals' belonging to a self-identifying class, we are 'dividuals' endlessly subdivided into competing bits of information that can be reassembled as blocks of data of specific relevance to a particular agent. The essay is several pages in length and as noted does not reference new media. In isolation, it takes no account of variations in the labour process, the power differentials between nation states or the differences between exploitation in the workplace and exploitation of freely distributed information. Deleuze and Guattari's two volumes *Capitalism and Schizophrenia* are more useful in this regard but even here their analysis of the state is sketchy and takes no account of inter-state rivalries or the different ways in which nation states regulate the flows of people and capital today.

To be clear, the videogame industry is highly exploitative, makes use of the latest technologies to mine information and market their product, has an uncanny ability to speak directly to the gamer's desires and command an absurd level of consumer loyalty as a consequence. But it was not videogames that turned us into machinic slaves of capital. What the changes taking place do suggest is that however negative some of the practices were in the past, as outlined by Dyer-Witheford and his colleagues, as their work appears to suggest, they are probably a lot worse now.

Plane of organisation

Nintendo as a company does not exist for the love of videogames. As with any other it is responsive to shareholders and has to turn a profit even if that means compromising on the aesthetic to which employees are likely dedicated. Whatever might be said about Nintendo in the past and notwithstanding the conditions of labour in territories where production is outsourced, in today's context at least, the company's influence on the medium itself is largely a positive one. Nintendo, as is often said, goes its own way but it is a way that favourably contrasts with that of its major competitors.

Companies including Nintendo operate at two interconnected levels: a plane of immanence or consistency and a plane of organisation or development. The plane of consistency, Deleuze and Guattari say, is a body without organs; it is the 'pure relations of speed and slowness between particles' that 'imply movements of deterritorialisation just as pure affects imply an enterprise of desubjectification' (Deleuze and Guattari, 2003b: 270). The smooth space of a creative assemblage constitutes a war machine that the plane of organisation, the company itself, depends on. The latter comprises 'forms and subjects, organs and functions, the "strata" or relations between strata'. As they explain:

> The plane of organisation is constantly working away at the plane of consistency, always trying to plug the lines of flight, stop or interrupt the movements of deterritorialisation, weigh them down, restratify them, reconstitute forms and subjects in a dimension of depth. Conversely, the plane of consistency is constantly extricating itself from the plane of organisation, causing particles to spin off the strata, scrambling forms by dint of speed or slowness, breaking down functions by means of assemblages or microassemblages.
>
> *(Deleuze and Guattari, 2003b: 270)*

It is not money as such that necessarily motivates artists to enter the industry but often a love of videogames that the industry exploits. Analysing Blizzard's Recruitment video, Williams and Walker note how it is pitched with 'appeals to creativity; glimpses of an idyllic nerd-chic workday; the promise of "small company" "focus and commitment"; nineteen permutations of "passion", "friendship", "family" and "love" squeezed into just six minutes. The message is hammered home that this is not a job, it's a new family'.[12] It is as if Luigi has gone into the firm and with his magic vacuum cleaner has cleared out all the ghostly reminders of what working in the videogame industry is really like. As the authors point out, there is 'no mention of benefits or wages; nothing about crunch time, that specter haunting the industry; nothing about the sort of material, tangible things that make a difference in how one is employed, rather than how one feels during employment'.[13]

In 2004, a self-proclaimed 'disgruntled spouse', Erin Hoffman, expressed for many what they had been experiencing at the hands of Electronic Arts, from hereon EA. Initially retaining her anonymity for fear of what would happen to her husband were her identity be made known, she writes of how he was asked at the interview for the job whether he was happy to work long hours during 'crunch' periods leading up to deadlines. She writes:

> The producers … set a deadline; they gave a specific date for the end of the crunch, which was still months away from the title's shipping date, so it seemed safe. That date came and went. And went, and went. When the next news came it was not about a reprieve; it was another acceleration: twelve hours six days a week, 9am to 10pm.[14]

The hours left employees stressed, tired and unfocused. 'And the kicker: for the honour of this treatment EA salaried employees receive a) no overtime; b) no compensation time! … The time just goes away'. The plane of organisation stratifies the plane of consistency of dedicated artists, exploiting those artists to the point where in instances such as these lines of flight are not only plugged they are thoroughly exhausted. As Hoffman concludes:

> No one works in the game industry unless they love what they do … They are and were more than willing to work hard for the success of the title. But

> that good will has only been met with abuse. Amazingly, Electronic Arts was listed #91 on Fortune magazine's '100 Best Companies to Work For' in 2003.[15]

A class action suit against EA was eventually settled for $15.6 million and another one in 2006 for $14.9 million. But with the second settlement a clause was included to reclassify employees who work paid overtime and thereby remove their stock options.[16] The situation has barely improved. Ten years later, *Game Developer* magazine issued the results of a survey of 1051 game developers from across the industry. 'Crunch times' vary, with 10 per cent claiming they work over 80 hours a week and over 50 per cent of the entire workforce upwards of 50 hours with the average crunch period of around four months.[17] Getting employees to work longer hours for relatively small compensation if any can benefit companies such as EA in the short term. It is the long-term consequences that ought to bother them. The strains and pressures, job insecurity and disgruntlements can turn the lines of flight of creativity into lines of death and ultimately undermine the very basis on which companies such as EA thrive: their workforce. The relationship between publisher and studio is often fraught with the former typically undermining the latter when the relationship between them ought to be mutually beneficial. From a creative perspective, as Deleuze and Guattari (2003b: 270) explain:

> once again, so much caution is needed to prevent the plane of consistency from becoming a pure plane of abolition or death, to prevent the involution from turning into a regression to the undifferentiated. Is it not necessary to retain a minimum of strata, a minimum of forms and functions, a minimal subject from which to extract materials, affects, and assemblages?

Relating this to gameplay, part of what made early videogames so innovative were the limitations of the technology itself. Having to design a game that could fit on a cartridge with tiny storage capacities and that could be played on consoles handling only a basic number of routines, forced developers to focus on gameplay rather than, as is often the case today, visually striking worlds bereft of what makes a videogame actually worth playing. Current technology is an incredible canvas on which to work, the possibilities seemingly limitless though which can be just as destructive on creation as a heavy-handed managerial style. This risk is outweighed by the financial ones that place pressure on developers to focus more on superficial qualities, good for generating hype but that hold little in the way of lasting appeal. With the huge sums of money needed to produce games that fully utilise the technology, more power is given over to the major publishers who finance and ultimately determine what developers can and cannot do. Budgetary discipline is necessary. This is not typically where the problem lies.

In a 2014 interview with David Jenkins of Metro GameCentral, Lorne Lanning, co-founder of the publisher Oddworld Inhabitants in 1994, spoke of his reasons for leaving the industry just over ten years later.[18] This happened after the release of *Oddworld: Stranger's Wrath*, produced in partnership with EA. Their interest,

Lanning claims, was not the game but acquisitioning the company. The reasons he gives for leaving the industry at the time illuminate the hazards of making videogames today: 'Well, we'd had enough of the terms. We'd had enough of what was happening. And what was happening was quite simply if you wanted to build big expensive games, and you were getting them funded by a publisher, you were basically giving up your company'.[19] While the costs of producing videogames have increased the retail price has not. Lanning continues:

> When I started making games people were on average building games for $500,000, maybe a $1 million, on the Sega Mega Drive and SNES. We come in on the PlayStation era and it's like, oh, it's going to go to multi-million dollars. And there were a lot of concerns about how teams would grow and all that stuff.[20]

As Lanning bitterly observes, 'the fact is I sold over 5 million games at retail and I never saw one royalty cheque.'

The circumstances behind the demise of Free Radical Design, a UK company founded by ex-Rare staff responsible for the acclaimed *Goldeneye 007* on the N64 and now owned by Crytek, further illustrates how the industry operates in such ways that it kills the creative war machine its future depends on. Interviewed by Rich Stanton at Eurogamer, the two co-founders, Steve Ellis and David Doak, explain what happened. For the sake of brevity a fraction of the story is summarised here.[21]

The problems came to a head in 2003 after the *Second Sight* project shifted hands from the publisher Eidos to Activision. As Ellis explains, Activision:

> decided they didn't like UK development anymore, they didn't like external development anymore, and they didn't like developer-owned IP anymore. Bad for us, because we ticked every box! On that day I think they canned ten projects and in the process put some companies out of business.[22]

Free Radical refused their terms and the near-completed project went to Codemasters, a company going through their own financial difficulties. They pushed for a quick release without the marketing support needed to ensure the title's success. Not surprisingly, sales were poor. EA came forward to support their next project *Timesplitters: Future Perfect*, a follow up to the first person shooter *Timesplitters 2*. Ironically, though, EA's budget was focused on another FPS, *Goldeneye: Rogue Agent*, trading on the legendary status of the game Doak and Ellis had worked on. As Doak puts it:

> We killed ourselves getting *Future Perfect* done, only to find that they had made a total balls of *GoldenEye* to the extent they had to throw more money at it to market it … I mean, it's like fiction that it's a *GoldenEye* game, isn't it? I don't think the irony of what they were doing ever occurred to EA.[23]

Future Perfect turned out to be a success, although Free Radical saw very little in the way of a return. Their next game *Haze* was produced under the umbrella of Ubisoft to whom they sold the intellectual property (IP) in order to secure their backing. In 2006 they began work on *Battlefront 3* under Lucas Arts, owners of the *Star Wars* license and once a developer of legendary titles such as *Ballblazer* (legendary in one teenager's eyes at least) and *The Secret of Monkey Island*. Free Radical could as a result upscale and produce something closer to their ambition. But under Darrell Rodriguez, appointed president in 2008, LucasArts embarked on a ruthless cost-cutting exercise that led to a shift in organisational strategy and involved making hundreds of staff redundant, including those Doak and Ellis had developed a relationship with. An entire layer of management was removed and projects, some of which were close to completion, were mothballed. In the words of Doak, 'They had some edict from above about restructuring, had to save a certain amount of money per year, and there you go. Game over'.

These stories represent the tip of an iceberg that threatens to sink, if not the industry itself, then the creative forces to make quality and original software. It is an industry prone to the same competitive pressures as any other but with unique problems relating to the rising costs of production of technology and the games the technology is designed to host.

Before examining the crisis tendencies of the videogame industry and specific responses to them, it is worth dwelling on the contrasting practices of Nintendo. In an interview with James Brightman at gamesindustry.biz, Shigeru Miyamoto was asked for his response to calls from analysts and executives to make games on all platforms, including tablets and smartphones, and thereby give up the hardware side of the business. With the popularity of titles such as *Angry Birds* and *Candy Crush Saga*, it would seem to make sense from a business perspective for Nintendo to cash in on their key franchises on tablets and smartphones. While they have now taken tentative steps in this direction, Miyamoto's response signals his understanding of the balance that has to be maintained between the plane of organisation and plane of consistency, the 'business side' and the 'creative side'. In regard to the latter:

> I think what people may not realise is we're able to design the hardware the way we want so that our creative teams are able to work with that hardware design and create a piece of hardware that can meet our designers in order to create the games we want to create.[24]

In an interview for *Edge* magazine[25] Miyamoto claims Nintendo do not design games for 'the sort of people who, for example, might want to watch a movie. They might want to go to Disneyland. Their attitude is, 'OK, I am the customer. You are supposed to entertain me'. This he argues is a 'passive attitude' and a 'kind of a pathetic thing. They do not know how interesting it is if you move one step further and try to challenge yourself. [If you do that] you're going to learn how fun it is'.[26]

As Steinert (2003: 25), referring to Adorno, puts it, 'If a cultural product does not challenge us, it despises us: apparently desperate to comply with our wishes, it secretly scorns us. When culture is commodified – when it promises to instantly gratify our desires – it relies on deceiving its customers'. The top-down managerial approach favoured by many publishers suggests that their executives regard players to be too stupid and closed-minded to appreciate anything that is not a repeat of what has already been delivered them. Miyamoto is typically restrained when talking about competitors but when discussing Nintendo's 'Garage' development program organised to enable young staff to experiment with different ideas, his comments on the glut of first person shooters at the 2014 E3 convention were unusually barbed: 'I feel that industry trends, rather than the creator's individuality and uniqueness, tend to be prioritised. When the people who manage the development budget take the lead in making a game, creators tend to make games that are already popular in the marketplace'.[27] By contrast, Nintendo, he claims, is 'a company that aggressively invests in something new – something born from each creator's individual characteristics'.

This approach, if taken at face value, appears in sharp contrast to the experience of many developers today whose work is increasingly constrained by rationalisations carried out by a managerial cadre that may as well be operating an insurance firm. Nintendo's current president, Satoru Iwata, himself under pressure from shareholders concerned about the poor sales of the Wii U console, was advised by one hedge fund to put Mario on mobile devices and charge 99 cents 'to get Mario to jump a little higher'.[28] Flatly refusing such requests, at their 73rd annual general meeting, Iwata acknowledged the difficulties Nintendo were under:

> It is true that our business has its ups and downs every few years, and of course, our ideal situation is to make a profit even in the low periods, return these profits to investors and maintain a high share price … I believe we should continue working toward this ideal.[29]

Cutting staff for short-term gains is not the answer though:

> If we reduce the number of employees for better short-term financial results, however, employee morale will decrease, and I sincerely doubt employees who fear that they may be laid off will be able to develop software titles that could impress people around the world.[30]

In contrast then to broader industrial practices, 'at Nintendo, employees make valuable contributions in their respective fields, so I believe that laying off a group of employees will not help to strengthen Nintendo's business in the long run'.[31]

Without examining internal hierarchies and deriving information on how crunch times are factored into salary, Nintendo's business practices appear on the surface at least to contrast favourably to some of its competitors, particularly EA, which I have focused on here. Whatever is happening behind the scenes, the

outcome for the gamer is some of the finest videogames that ever been made with recent titles of comparable quality to anything found in their back catalogue.

Now let us loosen our ties with Deleuze and Guattari by taking a more classical approach to the videogame industry by examining the crisis tendencies of capitalism through Marx.

Videogame industrial complex

Marx's (2001 [1867]) classic formula of capital is M-C-M': money (M) purchases means of production (MP) and labour power (LP), essentially the worker's energy, for the duration of their employment, to make commodities (C) in order to sell them for a return on the initial investment (M) and, crucially, expanding that investment by making profit (the dash above the second M representing surplus value). A software company, for example, rents premises, purchases computers, applications and so forth. Machinery that sits idle is of no value to the firm and indeed if sold back onto the market the return would likely be lower than the original investment. A labour force is needed to produce the software that the capitalist speculates consumers will want. Labour produces value and a surplus (surplus value), the additional value that capital exploits and generates profits out of. The 'dash' above the second M (M-C-M') denotes a recurring process, and with the completion of each cycle (the purchase of the item by the consumer) the return on the original investment increases. If this process continues uninterruptedly businesses can expand and eventually, aided by acquisitions and increasingly today speculative financial trading, reach the size of those such as Activision and Electronic Arts.

The crucial point here is that it is not machinery that generates profit but labour. Machinery is vital, of course, but is only a tool and as with any other tool you need a hand and brain to connect with it. No program writes itself. As noted, what once could be produced by a handful of workers now takes hundreds over a longer period of time. Not only does the company require more investment capital, the turnover time between initial investment and its realisation as profit also increases. The reliance of companies on post release 'patches', indicating that the software was released to market prematurely, is one method for decreasing the amount of investment required before a return can be made (shortening the turnover time). In the Xbox 360 and Playstation 3 era two studios, Infinity Ward and Treyarch, worked simultaneously to ensure that a new *Call of Duty* game was released each year. We can extrapolate from this that it took approximately two years to make a *Call of Duty* game. The developers of *Call of Duty: Advanced Warfare* are now added to the roster so in the current generation it takes approximately three years to make a *Call of Duty* game, at least one of the quality likely to maintain the franchise's popularity. Over time more money has to be generated to pay for the additional costs of technology, plant and so forth; that is, the means of production and the labour power to develop the software. The whole capitalist operation is essentially a speculative wager. A business can absorb losses as long as

investors are prepared to back the firm. The more pressure they are under the more they have to seek out different sources of revenue. The contradictions of the videogame industry are symptomatic of capitalism itself and, as Deleuze and Guattari have noted, the crises they give rise to lead to the very innovations that ensure the industry's durability; the rise of Nintendo after the 1983 crash is a case in point.

The more a company invests, the more is at stake, the more conservative it can become and, when profits are vulnerable and capital is required, it is often the labour force that suffers (although with the emphasis on profit, all workforces when not unionised are vulnerable to 'rationalisation'). The videogame industry displays the classic symptoms of falling profit ratios, if not bankruptcies, then redundancies, longer working hours that are not fully if at all compensated for by wages and micro-management to improve 'efficiency'. In short, businesses aim to squeeze more value from fewer workers, a tendency Marx identified in the 19th Century and still happening today. Labour power is 'variable' capital and machinery 'constant' capital. Simply, a worker can increase its 'specifications' through training and so forth and thereby be more 'useful' to a company, the specifications of machinery cannot self-improve: you simply need to purchase another machine. Highly profitable companies are also vulnerable. They can become complacent, also arrogant and, in anticipation of high volumes of sales, overinvest and overproduce. We can see this once again with the videogame industry. Atari, which dominated the industry at the beginning of the 1980s, overinvested when purchasing the rights for *ET* and, according to urban legend, producing more cartridges than there were consoles. Burying the excess in the Arizona desert actually made a lot of sense. At least then Atari could sell some copies at the standard retail price. Nintendo understood some of the factors that contributed to the US industry collapse in the early 1980s, but they should have read their Marx. Had they done so they would more likely have changed the formula before the new kids on the block, Sony, attracted third-party developers by dropping the stringent publishing demands of Nintendo developers were forced to kowtow to. Sony would have benefitted from a reading of Marx's *Capital* too, arrogance and complacency helping Nintendo, now forced to innovate, in recovering its position as dominant manufacturer during the PS3/Wii era. The lesson here is that there is no guarantee a company that dominates in one cycle will also dominate in the next. If anything the opposite obtains. Companies can also become over reliant on popular franchises, trading on the brand by releasing yearly updates that are barely differentiated and that, in due course, leads to the haemorrhaging of more forward-thinking staff. This makes it difficult to adapt to competition from more innovative rivals. When oil prices skyrocketed in the early 1970s, the entire economy was affected. The videogame industry as a whole is vulnerable to a range of global factors, including of course the rising cost of producing software on high-end machines. Nintendo and Microsoft's different business approaches reflect on crisis tendencies generally and also the specific problems of the videogame industry.

Nintendo's decision to release the Wii console with similar technical specifications to the GameCube was an attempt to reduce the cost of investment in new expensive technologies and the cost of labour necessary to create software on them. Innovations in cheap controller technologies alongside an aggressive push to expand the market to non-gamers were part of the strategy to maintain profitability. Microsoft and Sony's hi-tech approach, by contrast, incurred higher investment costs, making third-party developers and publishers more vulnerable to bankruptcy and acquisition, as noted by Lorne Lanning above. If it were not for the fact that videogames are a small part of Microsoft and Sony's operations, they too would sooner or later likely be forced down a similar path to Nintendo's.

The cost of entering the industry as a console manufacturer is now so prohibitive that only a handful of companies would have the financial clout to do so. Even then, they would have to develop internal game studios, purchase those that own successful IP and organise exclusivity deals with developers for key franchises. It requires a huge financial investment sustained over years, if not decades, to ensure the kind of market penetration necessary to turn a profit. Microsoft incurred sustained losses from their gaming division, reportedly $3 billion between 2003 and 2013,[32] leading to recent speculation that they were about to sell the division off, a strategy apparently popular among shareholders.[33] These results alone are likely to put even companies such as Apple off from directly entering the market. Including its Vaio laptop computers, Sony's Playstation division suffered losses of around $4.2 billion during the PS3 era.[34]

Microsoft entered the videogame market in 2002 with the release of the Xbox console. Having failed to buy Nintendo, they settled for Rareware Ltd for which, as noted earlier, they paid $375 million, an amount that at the time was considered excessive, even for outright ownership. It may have been a shrewd move for Nintendo to sell its share of Rare to Microsoft given the poor quality of the developer's output since, although unclear whether this can be attributed to Microsoft's managerial style, the loss of Nintendo's input or the fact that many key Rare staff had already left by then. All three factors are likely to have played a role in Rare's demise as an innovative and also successful developer. Crucial to Microsoft's early success was its 2000 acquisition of Bungie, developer of the critically acclaimed *Halo*, a 'triple A' exclusive for the new Xbox console. With a western-oriented focus on first-person shooters and sports titles, Microsoft was unable to penetrate the now dwindling Japanese market where preferences tend towards role-playing games (RPGs) and mobile gaming. The rationale behind Microsoft's decision to enter and remain in the market when they have little no indication of being able to generate profit can be extrapolated from their initial Xbox One console strategy. Their aim was to make the console a multimedia hub for the living room, thereby colonising that space much as they have colonised the office. Internet services, films, sports and so on would be streamlined through the console, each generating through licensing agreements and user fees considerable profit for the company. The Xbox One was designed with this in mind. The 'dashboard' and Kinect motion sensor included with the console would enable

users through physical gestures and voice commands to quickly access services displayed concurrently on screen. Microsoft introduced a number of features that, if they had been successfully implemented, would have changed the videogame industry. The most controversial of these was Digital Rights Management (DRM). To stem possible losses in revenue when gamers trade software second hand, restrictions were placed on selling and borrowing videogames. Even disk-based software would effectively be licensed from Microsoft rather than owned by the consumer. Moreover, to play videogames the user would have to be registered online and sustain a connection enabling Microsoft to check and monitor activity. The inclusion of the unpopular Kinect made the console more expensive than the higher performing PS4 and, despite improvements on the first model, it was unable to map physical gestures without any time lag (referred to as 1:1 mapping). The Kinect technology could also hypothetically be used as a surveillance camera. While the backlash from gamers and industry, including retailers fearful of losing the lucrative second-hand market, was damaging, the real blow came when Sony unexpectedly announced that their PS4 would not include any of these restrictions. Ultimately, Microsoft was forced to drop them all and eventually to sell a Kinect-free model. Their high-profile strategy and subsequent U-turn damaged their reputation among many gamers and probably impacted sales.

Nevertheless, Microsoft's strategy was not out of kilter with developments in the industry. Its Xbox One strategy did, however, prove to be premature and, unusually for the company, far too brazen. Paid subscriptions to online services such as Xbox Live, Steam and Playstation Plus are increasingly difficult to avoid given how many videogames now require connectivity. In 2013, EA published a new iteration of Maxis' (closed down by EA in 2015) popular *SimCity*. Once again, and in contrast to earlier entries in the series, the game could only be played online. To ensure this, the parameters of the city were artificially lowered, making them more like villages to encourage players to trade with others online. Servers kept crashing and the game itself proved so bug-ridden that it was almost unplayable. EA stated from the beginning that *SimCity* would only work online and that it would take considerable time to reprogram it to work offline. A hacker proved this to be a lie when demonstrating that the software contained a command that, if removed, enabled offline play straightaway.

Many videogames, particularly those designed for smartphones and tablets, are now F2P with revenues generated from micro-transactions for additional content. Helped by the fact that high scores are automatically posted on Facebook, the hugely popular *Candy Crush Saga* has been downloaded a staggering 500 million times. Despite the fact that 70 per cent of users have not paid any money to use it, the game generates an average of $576,458 in revenue every day.[35] *Dungeon Keeper Mobile* (developed by Mythic Entertainment, 2013), a F2P follow-up to the 1997 classic from the British developer Bullfrog (now part of Microsoft Studios), was awarded zero out of ten by many review sites due to its cynical weaving of micro-transactions into every aspect of gameplay. As one site explained: 'We were going to refer to *Dungeon Keeper* as a non-game, but that's not really accurate. It's an anti-

game. It is purposefully designed not to require thought, skill, or experimentation. Instead it rewards only money and, begrudgingly, patience'.[36]

But it is not only low-budget games that generate money from additional downloadable content; increasingly features are held back from full-price software and then later made available for an additional purchase. 'Year passes' are available for *Call of Duty: Advanced Warfare* and *Far Cry 4* at roughly a third of the original retail price of the game. Gamers can of course benefit from the DLC model when what is being offered is a genuinely new set of features that were not simply stripped from the original to generate later revenues. In a first for Nintendo, in 2014 they announced that the critically acclaimed *Mario Kart 8* would be getting two downloadable packs featuring eight courses on each and a handful of new characters costing a reasonable $7.99 per pack. The full retail version has only twice as many courses as the two packs combined, a standard 32 consistent with previous entries.

Exclusive content is a key factor when gamers decide which console to purchase. Unable to secure total exclusivity from third-party publishers, Sony and Microsoft have become more reliant on timed exclusives and doing deals on additional content so that, to take one example, content on the Playstation version of *Far Cry 4* is artificially omitted from the Microsoft version. Nevertheless, it has become increasingly difficult to discern a particular advantage in owning one or other console, especially as the improvements in graphical fidelity are now much harder to discern than they were when *Ridge Racer* showcased what the first Playstation was capable of and *Super Mario 64* the N64.

The increasing stress on sponsorship deals, spin-off products, and new forms of payment; the weaving of online services into gameplay; the rise of F2P and guerrilla marketing techniques; and, of course, consolidation, standardisation, rationalisation and so forth can be attributed to a combination of factors, including falling profit ratios and the industry's attempts to reverse them through innovations such as those cited here. The rising costs, performance and features of new technologies, including online capacities and miniaturisation, necessitate higher and longer term investments in means of production, labour power and research and development. This also requires larger marketing budgets and new techniques for publicising, distributing and exchanging products, many of which are deleterious to gaming. The changes that have arisen through the intermingling of different bodies, affects, broader economic and political processes, the development of new technologies, new markets, gaming innovations, the players themselves in their specific cultural environments with their own unique histories and their machinic enslavements, are part of a world-wide axiomatic in which the industry's misfirings can lead to innovations, some of which gamers benefit from. However, on balance, the situation from a gaming point of view appears to be getting worse with high profile titles such as *Driveclub* on the PS4 released to market broken. The facility for companies to use downloadable 'patches' that belatedly address design and programming issues is increasingly relied upon, as too micro-transactions and DLC to increase revenues. Alongside this there has been a general decline in the diversity and quality of full

price videogames with software generically designed for a range of machines (including for two generations of console), their specific features largely neglected. For now Nintendo appear reluctant to embrace such practices and so the quality, if not diversity, of its software is for the time being consistently high. It is the form itself that ultimately suffers when the negative practices outlined here become standard and why, with the above qualifications in mind, it is important that Nintendo can thrive and, notwithstanding their foray into smartphones, one hopes, maintain this stance. For all the contradictions inherent to capitalism and the videogame industry itself, the future of gaming rests on shoulders such as these.

While F2P software for mobile devices now represents a sizeable portion of videogame revenues, the continuing popularity of mainline consoles and high-end games suggests that the two markets can for now at least co-exist. The Red Ring of Death does however loom large on the horizon. Microsoft's original Xbox One strategy warns us of the changes likely to come. No speculation is required, however, when we can already see how the current generation has so far played out, particularly in regard to games defective on release and requiring endless patches, DLC that hitherto would have been included in the original package, micro-transactions and online requirements using subscription services.

Play is in the balance. Let's talk about play.

Notes

1 www.theguardian.com/technology/2014/jun/11/e3-2014-nintendo-joy
2 http://vgsales.wikia.com/wiki/Video_game_costs
3 http://metro.co.uk/2014/08/29/geometry-wars-3-dimensions-preview-the-return-of-sierra-4849734/
4 http://gimmegimmegames.com/wp-content/uploads/2013/06/nintendoprofits.jpg
5 www.zeldainformer.com/articles/a-deeper-analysis-of-nintendos-financials-why-they-cant-drop-hardware#.U__KUihZU04
6 http://metro.co.uk/2014/01/08/nintendo-valued-as-bigger-company-than-sony-4254425/
7 www.vgchartz.com/article/6901/the-top-selling-video-games-of-the-2000s-single-amp-multiplatform/
8 www.gamerankings.com/browse.html
9 www.edge-online.com/features/100-best-games-play-today/10/
10 http://en.wikipedia.org/wiki/Minecraft#Commercial
11 I have critiqued Hardt and Negri in *Capitalism's New Clothes* (2011) and *Totalled* (2015).
12 www.pastemagazine.com/articles/2014/08/working-for-the-love-of-the-game-the-problems-with.html
13 www.pastemagazine.com/articles/2014/08/working-for-the-love-of-the-game-the-problems-with.html
14 http://ea-spouse.livejournal.com/274.html
15 http://ea-spouse.livejournal.com/274.html
16 www.theguardian.com/technology/2015/feb/18/crunched-games-industry-exploiting-workforce-ea-spouse-software
17 www.gamasutra.com/view/news/187463/Happy_devs_make_better_games_The_qualityoflife_survey_results.php
18 http://metro.co.uk/2014/07/08/oddworld-new-n-tasty-preview-and-lorne-lanning-interview-weve-become-triple-a-indie-4790351/

19 http://metro.co.uk/2014/07/08/oddworld-new-n-tasty-preview-and-lorne-lanning-interview-weve-become-triple-a-indie-4790351/
20 http://metro.co.uk/2014/07/08/oddworld-new-n-tasty-preview-and-lorne-lanning-interview-weve-become-triple-a-indie-4790351/
21 www.eurogamer.net/articles/2012-05-04-free-radical-vs-the-monsters
22 www.eurogamer.net/articles/2012-05-04-free-radical-vs-the-monsters
23 www.eurogamer.net/articles/2012-05-04-free-radical-vs-the-monsters
24 www.gamesindustry.biz/articles/2013-06-12-nintendos-miyamoto-all-this-talk-about-our-earnings-is-silly
25 217, October 2014 issue of Edge (from iPad, so no page number).
26 217, October 2014 issue of Edge (from iPad, so no page number).
27 217, October 2014 issue of Edge (from iPad, so no page number).
28 http://online.wsj.com/news/articles/SB10001424052702304071004579406790303908038?mg=reno64-wsj&url=http%3A%2F%2Fonline.wsj.com%2Farticle%2FSB10001424052702304071004579406790303908038.htm
29 www.nintendo.co.jp/ir/en/stock/meeting/130627qa/03.html
30 www.nintendo.co.jp/ir/en/stock/meeting/130627qa/03.html
31 www.nintendo.co.jp/ir/en/stock/meeting/130627qa/03.html
32 www.neowin.net/news/report-microsofts-xbox-division-has-lost-nearly-3-billion-in-10-years
33 www.theverge.com/2013/11/8/5080192/microsoft-ceo-candidate-stephen-elop-bing-xbox-rumors
34 www.vg247.com/2009/10/30/sony-ps-division-has-lost-4-7-billion-since-launching-ps3/
35 http://metro.co.uk/2014/01/28/like-taking-sweets-from-a-gamer-the-numbers-behind-the-hugely-popular-apps-4279836/
36 http://metro.co.uk/2014/02/04/dungeon-keeper-review-microtransaction-hell-4289901/

3

RHIZOME-PLAY

A person can play football and they can play *Pro Evolution Soccer* (PES). They can choose a top to wear before tending to garden or a gun before embarking on another mission in the Himalayas. They can wander the streets of New York and they can wander the streets of *Vice City*. There is play and there is rhizome-play. Henri Lefebvre's description of urban life conveys the idea of the rhizome:

> The street is a place to play and learn. The street is disorder. All the elements of urban life, which are fixed and redundant elsewhere, are free to fill the streets and through the streets flow to the centres, where they meet and interact, torn from their fixed abode. This disorder is alive. It informs. It surprises.
>
> *(Lefebvre, cited Pinder, 2010: 217)*

Playing *Grand Theft Auto*, *Animal Crossing* and *Far Cry 4* differs, of course, from meandering the city, harvesting fruit or killing wildlife. We learn by videogames, grow by them, enter into assemblages with them, opening ourselves to sensations from which new creations follow: we are not simply the player we are the team, not a soldier, the power of multiplicities, going smooth in the program's striations. Deleuze and Guattari describe the game of *Go* as a smooth space and *Chess* a striated one. In Go counters are black on one side and white on another. If black counters are sandwiched between two white ones they flip over to become white and vice versa. Counters do not move. They deterritorialise and reterritorialise the board. In Chess the pieces have prescribed characteristics, they move in particular ways and are assembled into a hierarchy. A rhizome is not a striation. It concerns experimentation, deterritorialisation and lines of flight. The arborescent is about predictability, territories and tracings. The two are not antagonistic. Like the smooth and striated, they describe relations of being and becoming, molar and

molecular, the play of forces and their plugging. With a stress on experimentation, a process of discovering your lines of escape from a molar order and opening yourself to an affective body without organs, the rhizome is a useful concept for describing videogame play with the arborescent as the entanglements that slow down and block our becomings. The smooth and striated can also serve this purpose and so also referred to in the context of videogame play.

What can be extrapolated from Deleuze and Guattari's description of Chess and Go as striated and smooth is that rhizomes are not specific to videogames or indeed are all games rhizomatic. My claim that videogames are rhizomatic or else they are not videogames would appear then either to be meaningless because rhizomes exist everywhere or contradictory because videogame Chess, for example, is both a videogame and striated. By adding the hyphen and 'play' we signal that rhizome-*play* is something a little different. We return to videogame Chess and Go later in the chapter to specify the precise nature of this difference. First let us discuss general theories of play and how scholars have thought about play in the context of videogames.

Common play

Johan Huizinga and Roger Caillois have cast long shadows over discussions on videogame play. It would be remiss of a book not to reference their work and attempts by videogame scholars to get into the light as it were by adding their own qualifications.

It seems self-evident that videogames are *played* and that what is played is indeed a video*game*. In this much cited passage, Johan Huizinga (1992 [1950]: 13), whose book *Homo Ludens* is a touchstone for videogame scholarship, defined play as:

> a free activity standing quite consciously outside 'ordinary' life as being 'not serious' but at the same time absorbing the player intensely and utterly. It is an activity connected with no material interest, and no profit can be gained by it. It proceeds within its own proper boundaries of time and space according to fixed rules and in an orderly manner. It promotes the formation of social groupings which tend to surround themselves with secrecy and to stress their difference from the common world by disguise or other means.

Roger Caillois qualifies this by stressing the relationship between play (*paidia*) and game (*ludus*). The latter are the rules of a game that structure the space in which the game is played. According to Caillois (1962: 10) play is 'an activity which is essentially: free (voluntary), separate [in time and space], uncertain, unproductive, governed by rules, make-believe'. As Jesper Juul (2005: 13) notes, rules and make-believe are not, as Caillois claims, mutually exclusive. For example, a child playing with a toy truck maps its motion to those he sees in the real world travelling along roads, navigating traffic and carrying supplies to the building site on which he creates towers made of Lego. Huizinga claims that all play functions by illusion,

that, in other words, we have to suspend disbelief in order to take it seriously. It is a sacred space. We know it is 'just a game' or 'just for fun' and precisely because of this are able to thoroughly immerse ourselves in it. Competitive sports are played as if winning is a matter of life or death. Hence play is both sacred and serious. As Robert Pfaller points out, the illusion of play as something that is real paradoxically relies on knowledge of its unreality and thereby becomes something we can become intensively involved in. Pfaller (2014: 87) critiques Caillois on these grounds:

> Play is in no way tackled with less seriousness or tension than profane life. Instead, it has an inherent intensity that seizes players even more strongly than everyday life, and even leads them to disregard all considerations of that life. Precisely this powerlessness and defencelessness of the players against play prove that, in this regard, play cannot be differentiated from the sacred. Just like the sacredness of religion, which, according to Caillois, renders the player helpless.

Videogames obey the same logic of being both sacred and serious. By knowing there are no real consequences for shooting someone in the head when playing an FPS we can shoot someone in the head with conviction. To an observer who has no interest in playing videogames this would surely be a disturbing sight, the relationship between what occurs on screen and the player's emotional state appear all too real and in a sense it is. The rules of everyday life are suspended in the act of play precisely because the participant is cognisant of the illusion play maintains. The hypothesis nonetheless relies on a duality between two worlds. There is no such distinction with rhizome-play. It is always in between, neither of this world or another, of play events where the body is no longer defined by the organism but is one of pure affect. There are perceptions to subtract, affects that are good and bad, joyful and sad, lines of flight to be taken and so forth in the process of an undivided becoming.

Kerr *et al.* (2006: 68) argue that pleasure in videogames derives from 'testing or resisting the limits of rules in the process of play', an important element of videogame play discussed in greater detail elsewhere. Juul (2005: 5) distinguishes between 'progression games' in which predefined tasks must be successfully completed in order for play to proceed to higher levels, and 'emergence games' in which a 'small number of rules … combine and yield large numbers of game variations for which the players must design strategies to handle'. Drawing on Irving Goffman's work, Fine (cf. Calleja, 2007) describes play as a process occurring within and switching between multiple frames of reference; in the context of videogames, these frames are both diegetic and non-diegetic and each has its different meanings and significance. The frame, for example, in which an adversary is killed in a videogame has an entirely different meaning and significance to the frame of such an action and the interpretation of it in the real world. Sutton-Smith suggests there is an ambiguity of play: it is contained in frames but also disruptive of them. Variability, he says, 'is the key to play, and … structurally play is charac-

terised by quirkiness, redundancy, and flexibility' (Sutton-Smith, 1997: 229). The analogue to frames and switching presents a delineated perspective on play with parallels in Deleuze and Guattari's (2003b: 2009) description of segmented time:

> We are segmented in a linear fashion, along a straight line or a number of straight lines, of which each segment represents an episode or 'proceeding': as soon as we finish one proceeding we begin another, forever proceduring or procedured, in the family, in school, in the army, on the job. School tells us, 'You're not at home anymore'; the army tells us, 'You're not in school anymore'.

Huizinga's (1992 [1950]) concept of a magic circle referring to play as something occurring in a designated zone isolated from the rest of the world, superficially appears to speak to this: a segmented 'playground' and a 'playtime'. Videogame play is not so easy to delineate. There is always cross-contamination between games and genres, the intensities of one leave an afterimage in another through which developer and player find their bearings. There is a correspondence between and intermingling of the material and digital worlds. When a familiar object in our material lives is represented on a screen it provides information about the likely affects of the digitised one: a *representation* of a gun is always a weapon in the game world. Affect, however, is not a representation; it is not a simulation. To play videogames is to emit particles, produce forces, sense their reverberations and in the process discover our own lines of escape. There is a common code; a means by which to navigate new worlds and thereby play videogames but which becomes something other than a delineated space as soon as we compose. *Wave Race 64* codifies or rather actualises a jet-ski race and the tropes of the racing genre. A 'jetty' is to be avoided. A 'ramp' is an object that if travelled up provides the elevation to jump over the jetty (the ramp is a 'functive', it functions for another object, the jet-ski in this case). In the platform genre, ramps serve different purposes. They enable the avatar to reach a higher level. They signify different possible actions within worlds that are actualisations or references to other videogames as much as they are to the world as such, a self-referential realism but which becomes its own reality when the player is habituated to the particular abstraction. The correspondence is no longer between material and digital worlds or one videogame and another, there are no divisions in the event of play.

Michel Foucault calls the schools, prisons and workplaces that have specific rules and procedures disciplinary regimes. In societies of control such delineations are blurred. The workplace, for example, exceeds the office and enters the home where work is often now conducted. Family life and work life are scrambled together. 'Gamefaction' is another example. Here, the principles of videogames are adapted to the real world to 'incentivise' young people to engage in money-raising activities for charity: game + enterprise + charity. Play becomes instrumental and operates like a business. Play is delineated by different rules and the procedures those rules enable. *PES* is comprised of two disciplinary regimes with their own

segmentations, on field and off, scoring goals and tweaking the stats. There is a cross-contamination of disciplinary regimes in *Super Mario 3D World*. The established laws of platformers, racers, puzzle games and fighters segment play but are also shifting sands that merge and settle into new segmentations of a highly varied and innovative gaming experience. Qualities such as these can be found in the so-called open world or 'sandbox' game, analogous to a child who draws a line anywhere in the sand, to scrub it out, start over again, build a castle and so forth. *Grand Theft Auto* (GTA) includes third-person shooters, racers and even sports simulations. You are not in a car chase anymore, you are not in a gunfight anymore and you are not on a tennis court anymore; instead you are forever scrambling the planes. *GTA*, though, is rarely more than the sum of its parts, not quite as fluid as the more specialised racing mechanics of *Burnout* or gunplay of *Call of Duty*. Deleuze and Guattari (2003b: 209) continue that:

> Sometimes the various segments belong to different individuals or groups, and sometimes the same individual or group passes from one segment to another. But these figures of segmentarity, the binary, circular, and linear, are bound up with one another, even cross over into each other, changing according to the point of view.

Segments can be redrawn according to how the game is played. In the actual *Los Angeles* and the digital *San Andreas* of *GTA*, drawing a diagonal line, say by going against the traffic flow, can in either instance result in a police chase, but of course with very different consequences. Whereas such motion is strictly prohibited in a real city, *GTA* invites the player to draw such lines. Deviance is the axiom of the series. The player tests and exceeds the limits of the segmented law and by doing so is rewarded by the tacit one with the opening up of new gameplay options. Videogames such as these are thereby layered by two segmentations corresponding to disciplinary regimes: the law as represented and the immanent law of the game itself. You are punished for committing a crime if caught (represented law) and rewarded if not (immanent law). Videogames simulate movement in 'a continuous rather than discontinuous space', writes Ian Bogost (2011: 48). Each spatial striation of *GTA* presents its own variables and functives that subsist in an even looser space more akin to a rhizome in which the segmented law of the videogame is constantly being scrambled relative to the various embodiments and becomings of the avatar.

Videogames can be thought of as striated spaces in which going smooth is the practice of testing and exceeding the rules; it is the practice of creating nomadic lines of virtual becomings between points of actualisation, reaching a goal, achieving a high score and so forth, catching our breath and continuing forward. The code, whether *GTA, Rayman Legends* or *Sega Rally*, rewards the player for going smooth, and, in each of these cases, the criss-crossing grids are never so predetermined that flight is rendered impossible. The smooth space of the videogame is no metaphor in such respects: the player is a nomad.

Whatever film we watch, however we watch it and however long we watch it

for, the outcome is always the same. However the viewer engages with the film, there is no possibility to change the outcome or prolong the length. Change is the order of the videogame but never chaos. Lines of segmentation are not opposed to videogame play. The nomad does not oppose striated space; the nomad reterritorialises space by first deterritorialising or going smooth on it, discovering among the arborescent entanglements outlets, avenues, pathways, becomings: rhizome-play.

Videogame chess is not a videogame

Superficially, turn-based strategy games appear with their pieces, properties, moves and hierarchies, to fit the description of striated gameplay. Let us take two examples. First, *Advance Wars* (Intelligent Systems, 2001), in which battles are fought over territory covered by an invisible grid looked down upon. Pieces are tanks, infantry, rocket launchers and so forth. Second, EA's classic, *Archon* (developed by Free Fall Associates, 1983), which takes its inspiration from Chess, played on a checker board, with serpents, dragons and trolls in opposing white and black armies. Multiplicities can be generated by extension (spatial divisions that can be counted numerically) and intensity (durations of time in which differences are a result of changing magnitudes, for example the difference between walking and running). There are extensive multiplicities in both *Advance Wars* and *Archon*, such as the relationship between objects comprising the army of which I might have 30 operational units. But it is in terms of intensity that they can be defined as videogames.

Squares on the grid in *Archon* change in gradation over time from white to black, black to white, with greys in between. The white pieces are stronger when on white squares, weaker when on black ones, inversely for black pieces. Their power varies over time according to where they are placed. There are multiplicities of both extension (the relationship between pieces in the different squares, a difference in degree) and intensity (the increasing and decreasing powers of the individual pieces, a difference in kind). This alone makes it a videogame by my definition. When pieces are 'taken', a new section of the game opens in which the pieces battle it out as if in an action arcade shooter such as *Robotron 2084*. More complex still is *Advance Wars*. The intensities of pieces are affected and vary by the terrain on which they are situated, by weather patterns and the 'special powers' of commanding officers. A 'fog of war' envelops parts of the screen under which opposing armies hide and that also functions as camouflage because those armies cannot see you for the same reason. The fog clears only around our own pieces. It occupies no fixed place in space. Fog is intensive. It is a game feature that cannot be mapped to a game played on a board.

Just as it is possible for the nomad to go smooth in the striations of the city, so the player is able to transform the terrain on which they traverse; videogame play is intensive, terraforming; it involves changing the parameters of play. The 'code' is exceeded through the assemblages the player enters and the changes in intensity of

objects in themselves. Pieces are not simply 'taken' in *Advance Wars* or *Archon*. Their powers are affected by the intensities of the terrain but which are only realised as either good or bad affects in the event of play (when, for example, the two pieces battle it out in *Archon*). Lefebvre's description of urban wandering meets the definition of rhizomes as described by Deleuze and Guattari but, as the latter's example of Go and Chess makes clear, not all games are smooth and so from this we can extrapolate that not all games are rhizomatic. The simple qualification in respect of rhizome-*play* is that if the game can be reproduced outside of the digital sphere without compromising the gameplay, then it is not a videogame. A board game can be played on a digitised screen but a videogame cannot be played on a board or independently of a digitised screen. Neither (videogame) Chess *nor* Go are videogames by this qualification and therefore do not involve rhizome-play. Other factors can also be taken into account.

PES aims to simulate, in a highly abstract way, the game of football. *Animal Crossing* aims to simulate village life. Both are 'played'. The form of play they have in common is that irrespective of the game rules or striations it is possible to engage at different intersecting levels (managing and playing the team, for example), transform worlds, traverse different ones in the same space in little more than a blink of the eye (from handheld, to television screen, one game to another) and exceed them, to be a street fighter in the morning, a war veteran in the afternoon, a city planner in the evening without ever being or having the skill of a martial arts expert, soldier or mayor. There is no formal correspondence between a game of football played in a videogame and a game of football played on a pitch. The player of videogames is part of the assemblage that he or she helps author, augment, deterritorialise or destroy; more specifically, in the instance of rhizome-play we burst through the arborescent entanglements of the program, its structuredness and exceed what is possible or even conceivable in the material world. We enter into proximities and compose forces with different objects, avatars, balls, swords and so forth, in an endless process of creation. We are artists of the city, the racetrack, the football pitch and the jungle; in the same space and time and also a *not* of this space or time, a becoming. The *event of play* is 'in the game' as the EA sports tagline likes to remind us, but neither the 'digital' game nor the 'material' one; it occupies its own space-time in which *play-force* is the application itself, the intensification. Rhizome-play, the event of play and play-force are integral and relational aspects of videogame play.

Play occurs in a smooth space between the striated lines of the game rules that are themselves adaptable to the deterritorialisations of the player. We draw diagonals through the vertical and horizontal lines of the grid. The football pitch, for example, is literally striated by lines to denote the goal area or 'box' in view of which there are certain statements, actions such as kicking the ball into the net and scoring a goal, tripping up an opponent and thereby causing a penalty and so on. However, by also being able to scramble worlds, becoming-other in them, and embody, in the case of *PES*, different players from a range of perspectives and tactical positions on and off pitch, it is rhizome-play. Clearly, what takes place in

PES cannot be reproduced in the non-diegetic space, just as the actual game of 'soccer' cannot be reproduced except in a highly abstract way in the videogame. Hand-football player-ball-pitch; hand-kart-track-boost: *PES* and *Mario Kart 8*, a different order to actual football and actual karting. Even allowing for the possibility that at some point in the future reality could be simulated in a convincing way, we would still require the skills of a professional player; in our digital bubble we can occupy and switch between different positions in space-time, be in any fantasy, compose real magic, defy the laws of physics and commit crimes without it having any legal consequences.

A good videogame will ensure that its own arborescent lines are never so densely entangled that no intensive lines of flight are possible. Videogames can include arborescent segments but arborescent videogames are broken.

Arborescent-play

Videogames are art in motion. They are always in the middle and the middle is never always the same. Trees are predictable. They are strong enough to support daddy's tree house for his son to dwell in and in which his affects are boxed. Arbor – tree – arborescent, families, sexes, classes, categories, molar aggregates, molar lines. What does it mean to trace a molar line? For the child it means that daddy's little boys and girls become like their parents, stuck in a dead-end job for a salary that pays for and socialises the next generation into the same. Another child, perhaps from the same family, is by chance inspired by a mentor, learns from them, discovers means of escape and embarks on a journey of becoming-other, becoming-imperceptible. It is a process of desubjectification. She makes herself a body without organs through compositions with the creatures she encounters, the teachers whose own becomings give her the courage to take flight and become an artist, teacher, poet and magician. Molar lines are shaken and uprooted by molecular forces, by moderations more or less fluid, while lines of flight are more radical departures, offshoot, rupture and escape. Not opposing terms, 'molar' and 'molecular' are neither inherently good nor bad. They are more like aggregates of differing and intersecting lines; they are co-evolving, co-authoring assemblages that loosen, that sometimes bind in the case of molarities that plug lines of flight, to produce joyous or sad affects, and that, if we cannot cope with the change, suck us into black holes of isolation and despair. An arborescent assemblage interpenetrates and implicates a rhizomatic assemblage that operates through variation and spreads along a plane on which offshoots spring forth at any point. As said before, a rhizome has no beginning or end, no root or branch. The common image of a rhizome is the root networks of plants such as potatoes that spread along the surface of the soil and sprout saplings at various points. Players 'deterritorialise' space by terraforming the landscape of *SimCity* or the maze by eating a 'fruit' in *Pac-Man: Championship Edition*. These are graphical representations of deterritorialisation, the outcome of affects. Rhizome-play for this reason cannot be equated with the representation of rhizomes or the fact that visual transformations such as

in the above examples have occurred (a moving image does this). It is affect itself and thereby real. Rhizome-play is a process of mapping becomings rather than tracing what has already gone before:

> What distinguishes the map from the tracing is that it is entirely oriented toward an experimentation in contact with the real … It fosters connections between fields, the removal of blockages on bodies without organs, the maximum opening of bodies without organs onto a plane of consistency. It is itself a part of the rhizome … A map has multiple entryways, as opposed to the tracing, which always comes back "to the same".
>
> *(Deleuze and Guattari, 2003b: 12)*

There are rules to every game, molar aggregates with which to negotiate. Even *GTA* has them. In the real world sandbox, there are infinite possibilities for creation, offshoots and lines of flight, not prescribed by genre, tethered to a particular technology or some fixed assemblage. A player cannot, by contrast, make platforms on which to jump if the facility to do so is not already written in the code. Videogames are rhizomatic in a literal sense when conceived in the aforementioned ways, as assemblages and compositions of two or more forces, artist and apprentice, developer and player, algorithms and affects: intensities and becomings of endless experimentation. Codes are lines of segmentation; molar lines are loosened and broken apart when bridges are destroyed, doors opened and rainbows painted.

Even accounting for the earlier qualifications, can we really say that all videogames incorporate rhizome-play? In *Dragon's Lair* cut-scenes are spliced together to create a cartoon aesthetic, the action reduced to a decision about which branching pathway to take, to live or die. There is only one path. Get it wrong and it's game over. Get it right and the cartoon continues. To progress, one simply has to remember from previous mistakes which action to take. *Dragon's Lair* is, in this respect, arborescent. There is action in the decision but action in itself does not make a videogame, not without consideration of rhizomes, assemblages and intensities. *Dragon's Lair* is a tracing, not a map; a cartoon not a videogame: it could even be played out in a physical space, perhaps with drama students performing actions that correspond to the decisions of the audience. Quick time events (QTEs) are arborescent; they are dead zones in which force-signs (press A! move up!) are no longer analogues but digital molar binaries, ruinous to *Dragon's Lair* and a distracting supplement to the classic *Resident Evil 4*.

Geometry Wars is a pure distillation of the videogame: a two-dimensional plane with scrambling geometric shapes tracing their own preprogrammed trajectories. As they are reactive to the avatar, a triangular fighter craft that moves and fires in all directions, their paths are never entirely determined. Their molar lines are shaken. The player deterritorialises them, vitalises them and they draw their own molecular becomings in proximity to the player's affects. The more skilled the player is, the more geometrical shapes there are, the more intense the game

becomes and so forth. In *Dragon's Lair* and QTE sequences generally, every action has the same outcome. In *Geometry Wars* the possibilities are seemingly infinite. Rhizome-play is differing, even though the code itself is unchanging.

Distilled down to the atomic level, Game Atelier's *Gauge* on iOS consists of a horizontal line that expands and decreases depending on how long one's finger is pressed onto the touch screen. Hold down for too long and the line reaches its outer limit, release for too long and the line shrinks to its inner limit. Either way the game ends. The closer the line to the outer limit the faster the score ratchets up. A considerable amount of skill and deft fingering is required to hold this position. Despite its rudimentary gameplay, *Gauge* is rhizomatic. 'Playability', then, is about rhizome-play not whether the game is complex. It is about whether the game striates when it should be going smooth, smooth when it should be striated, whether it allows for experimentation and by experimenting enables the player to develop their skills. A space needs its striations for the game to be a challenge. However, if we move with ease through one part of the game and in the next encounter a boss that destroys us, yet, because there is no earlier save point, on death have to return to the first part again – perhaps many times before the boss is finally killed – then, boss battle aside, we are no longer experimenting. The quality of rhizome-play is determined by how the differing lines, molar, molecular and lines of flight intersect one another; whether, for example, the molar line is too dominant to allow for experimentation or too weak that lines of flight become lines of chaos. The quality of rhizome-play cannot be discerned independently of the arborescent striations and the different variables of the particular game and genre.

Some will have more patience for testing a videogame than others and be prepared to replay sequences a number of times in order to get to the next one. One person will flounder at a boss stage. Another will pass through it with ease. However good Treasure's *Ikaruga* is, the classic shoot-em-up gameplay and bullet storm hell may put off many gamers who find the action too intense and punishing. Its nature does not change, but if the player is unable to liberate its forces through their own experiments and can no longer progress, lines of flight are plugged. The developer sets the bar and the player works to exceed it or, where the option is available, reduce the level of difficulty themselves. A difficult game is still rhizomatic but whether or not we play it will depend on skill, patience and, essentially, how supple the game is to engender its own possibility for rhizome-play. The balance is subjective at one level and objective when the game is either so easy that there is no challenge or so difficult that even the most dedicated gamer is forced to concede defeat unable to discover openings in the arborescent entanglements.

Action and affect

Videogame play corresponds to the following schema:

- Play-force: the application of force or production of affects through compositions: play*ing* the videogame.

- Rhizome-play: the deterritorialisation and reterritorialisation of the videogame space: the videogame 'playground' that the nomad transforms by 'going smooth' between the striated grid of the program, cutting their own line through the arborescent code through experimentation.
- The event of play: the actualisations and virtualisations, the images and affects, of reiterative actions: play as a rupture that produces the new.

In as much as photography relies on a viewer and a film an audience, then whether the eye, hand or mind, action is integral to all art, the act of seeing, hearing, sensing, selecting. Defined by action, there would be nothing to distinguish between what a person does in Los Angeles or the fictional San Andreas of GTA. Watching and looking are actions of a kind, although as Alexander Galloway (2006) points out, the outcome of a film is not affected by how the audience relates to it.

Videogames exist as such only when brought into motion by a player's craft, the performance of actions that emit particles or that discover affects with which to draw new lines of becoming. The player composes affects that change the form that in turn produces sensations reverberating back onto the player in a fluid motion: the nomad sat upon the horse – with gamepad in hand – travelling without moving, on lines between points in a relay, breaks, pauses, game over, reboot: motion! The 'machine actions', Galloway writes, 'are acts performed by the software and hardware of the game computer, while operator actions are acts performed by players' (2006: 5). This is an artificial division, though. The two are caught in a 'cybernetic relationship' that exist as a '*unified, single phenomenon*, even if they are distinguishable for the purposes of analysis' (2006: 5, italics in original). Moreover:

> The activity of gaming, which only ever comes into being when the game is actually played, is an undivided act wherein meaning and doing transpire in the same gamic gesture. And in this one sees a central contradiction between gaming as an art form written in code and the lack of any such coding at the motor level.
>
> *(Galloway, 2006: 7)*

As Henri Bergson (1991 [1908]) has shown us, the body is awash with sensations. Memory does the job of selection. It subtracts images or memories that are not useful. 'You hear but you don't listen', says teacher. When crossing the road, the roar of the car engine is more useful than the tweet of a bird. The latter is perceived but not mentally registered. A newcomer to videogames does not have the memory of an old timer. The interval, the gap between perception and the registering of what is useful in the diegetic space prior to any action taken, becomes imperceptible as skills mature. The game becomes intuitive. This is the moment that videogame scholarship would likely call immersion. Immersion tells us nothing about the process or the variations though. As with 'action', it is a description not a conceptual tool.

Of course the forces the player adds involve actions but forces are not binaries, they are intensities that produce variables, more analogue than digital. Galloway does add some useful qualifications though.

First, 'gaming is a pure process made knowable in the machinic resonance of the diegetic machine acts' (2006: 37); in other words, how the code responds to the player actions and provides information that the player can in turn respond to.

Second, 'gaming is a subjective algorithm, a code intervention exerted both within the gameplay and without gameplay in the form of the nondiegetic operator act' (2006: 37). If understood correctly, the machinic algorithm enables player actions to have an effect on, for example, an avatar onscreen. They are intimately bound.

Third, 'gaming is a ritualistic dromenon of players transported to the imaginary place of gameplay, and acted out in the form of diegetic operator acts'. Taken from Huizinga, dromenon means '"something acted", an act, an action' (2006: 37). Galloway relates this to how the player's actions are mapped onto the screen such as when an avatar moves position when a button that signifies 'jump' is pressed. 'Expressive acts', that of pressing a button, can, depending on the game, produce a variety of outcomes, firing a gun, opening a door, scanning an item and so on. The 'acting agent', such as the player's character, is coupled to an 'actionable object' – a functive perhaps – those that, tautologically, the player can act on. However, there is nothing to discern here between an act that generates spatial changes, the opening of a door, for example, and one that generates differences in intensity, for example the drift in *Mario Kart 8* that provides a speed boost. An oil drum that can be carried from one location to another is 'actionable' but an oil drum that can be exploded is of the order of affect with different implications for progress. By putting force into action we sharpen our analytic tools.

Fourth, 'gaming is the play of the structure, a generative agitation between inside and outside effected the through nondiegetic machine act' (2006: 37). Drawing on Jacques Derrida's philosophy, Galloway describes how play reconstitutes the field in 'a sort of permanent agitation … filling in the structure itself, compensating for it, but also supplementing and sustaining it' (2006: 26). What he calls nondiegetic machine acts are actions the machine performs but which are not strictly part of what he calls 'gameplay'. The most obvious example is when the game ends, a 'death act', that momentarily takes the player out of the action; another example is when a player pauses to open up an inventory menu, in order to say resupply ammo in *Resident Evil 4*. Confusingly, Galloway includes health packs, power ups and so forth within his list of nondiegetic machine acts even though, as he acknowledges, they are integral to gameplay.

Despite his engagement here and elsewhere with Deleuzian philosophy, the affective dimension of videogame play – crucial in my opinion – is undertheorised in Galloway's work. This could be explained by the fact that he utilises Deleuzian concepts in isolation, which when considered as parts of a broader assemblage allows for a more detailed and nuanced analysis of the videogame. Compositional changes occur through actions. This much is clear. However, as I have shown in

this chapter and elsewhere, it is more useful, despite the fact that videogames are the product of a binary code, to approach them in terms of affect and conceive them less as machines in the common-sense notion of the word and more like artistic canvases or planes on which developers and players compose. We can think about this by comparing two types of machine, a car and a videogame, a driver-machine and a player-machine. Technologies enable certain kinds of action. The human-car assemblage can travel in excess of speeds that the physical body is capable of. The human-game console/PC assemblage is unable to do anything. Videogames are inter-diegetic machines, machines that are no longer defined by their physical technology, but instead the program brought to life on the screen through the non-diegetic actions of the player, an assemblage that connects worlds, the artistry of the developer and player, in an in between world. There is no human-console assemblage as such, but there is a human-car assemblage in *Mario Kart 8* and many other assemblages of different levels of sophistication of a different order of connection to those strictly taking place in the non-diegetic sphere.

Without the novel there would be no need for the paper on which to write one. Without the videogame there would be no need for the console on which to play one. A paper-machine and console-machine are nothing without the writer or developer and they are nothing without the reader and player. The technical machine is not our primary concern. Of concern to us are the co-creators, developer-artist and player-apprentice. The next chapter, Ludo-Diagram, approaches this relationship by focusing primarily on the developer as the artist who prepares the canvas on which the player paints.

4

LUDO-DIAGRAM

There are perfect videogames in our midst, pure distillations of form. Nintendo is once again out on its own here in that it can take the purity of form that *Tetris* represents and expand it, play with it, experiment and transform it with multiple play events, deterritorialisations and assemblages of different kinds to create consistent gameworlds. This chapter is about the videogame as a canvas prepared by the developer on which the player paints and plays with forces. The developer diagrams *ludus*, the possibility of play that becomes a play of forces through the added affects of the player. In that the ludic dimension of the videogame diagram is only realised in the event of play, we can say that the player is part of the artistic assemblage. They are as vital as the programmer. Without their affects the project is incomplete and given the open-ended nature of videogames it is in the process of becoming that that the artistry is brought to life. At their best, videogames are a joyous collaborative enterprise of creation.

Canvas

The videogame is a prepared canvas on which the player paints forces that produce sensations. The canvas is a diagram. A diagram is not a code or algorithm, it operates as a 'set of asignifying and non-representative zones, lines and zones, line-strokes and colour-patches' (Deleuze, 2008: 71). Francis Bacon, the artist Deleuze is referring to, is a painter of forces. His prepared canvas suggests the possibility for the living body to exceed its organs. For our purposes it is the possibility of rhizome-play, of acquiring the power to liberate forces that the developer (meaning the assemblage of all those involved in creating the program – the collective artist) prepares. The diagram is suggestive of the forces the player (artist's apprentice) can paint, to bring to life the ludic dimension. It is suggestive of play-forces and the possibility of the human player to escape his or her body in the desubjectified

events of play. They are suggested in the force-signs, discussed in the next chapter, and represented only by their effect (distortions) on objects, the currents that, for example, cause waves across the great ocean in *The Legend of Zelda: The Wind Waker*. The apprentice is a becoming artist and the artist a becoming apprentice, the one learning from the other, a joyous affect when complementary, a sad one when all that is learned is that the developer-artist, for whatever reason, has failed to deliver on its promise or that the player-apprentice has regressed in their demand for and satisfaction only in the ever same.

Forces are represented by the effect they have on objects. The rollercoaster hurtling down a steep incline gathers up G-force that distorts the faces of those on board. Gravity, wind, heat and light are increasing and decreasing intensities, percepts and at a greater magnitude of intensity affects. Recall that differences in intensity, perhaps the heat that connects with water, give rise to differences in kind, a solid, liquid or gas. Spatial multiplicities are differences in degree. Manuel DeLanda[1] gives the example of the TV weather map. The contours and boundaries by which territories and countries are represented are the extensive features of a map. Intensities are the high and low pressures, weather patterns and so forth that have no geographical boundaries. A volume of water can be subdivided in two; the heat in each is constant and indivisible. Changes in heat do not separate water into different volumes; it transforms over a duration of time its material state.

The face on Bacon's self-portraits is also deformed by a force that is present though not represented. The faces are not figurative in the sense of attempting verisimilitude. They are what Deleuze calls figures distorted by the interminable presence of forces:

> The insistence of the smile beyond the face and beneath the face. The insistence of a scream that survives the mouth, the insistence of a body that survives the organism, the insistence of transitory organs that survive the qualified organs. And in this excessive presence, the identity of an already-there and an already-delayed. Everywhere there is a presence acting directly on the nervous system, which makes representation, whether in place or at a distance, impossible.
>
> *(Deleuze, 2008: 36)*

A body that survives the organism, a body without organs, the developer, artist-composer-programmer-director assemblage or simply 'artist' (to avoid repetition I shall use the terms 'developer' and 'artist' interchangeably), diagrams this possibility for the player-apprentice (I shall use these term interchangeably too) who realises it in practice. As Deleuze and Guattari explain: 'The diagrammatic or abstract machine does not function to represent, even something real, but rather constructs a real that is yet to come, a new type of reality' (2003b: 136). The diagram maps dynamic interrelations of relations, as Massumi puts it. The diagram is the past of the prepared canvas codified by programmers and, in a dynamic relationship, the 'future of that past' (Massumi, 1992: 14), in respect of videogames that the program

will be utilised to play them: to diagram the diagram. The diagram is asignifying; its lines, brushstrokes and colours suggestive of the possibility of painting forces and in the context of videogames the playing *with* forces stored in it, thereby to reveal its ludic potential.

The artist who prepares the canvas does not work within an empty frame. It is never blank. It is the unruly plane of immanence saturated by every videogame that has ever been made and could be made. The artist makes selections. Deleuze (2008: 67) writes, 'The painter's problem is not how to enter into the canvas, since he is already there (the prepictorial task), but how to get out of it, thereby getting out of the cliché, getting out of probability (the pictorial task)'. Like the painter, if the videogame artist is to avoid the reproduction of the ever same, they have to discover their own lines of escape from a history they are immersed in. The artist plays with clichés, collects and accumulates them, assembles and disassembles them to create and subtract multiplicities to differentiate the canvas from all those that have gone before. It is the difference between form and formula. The history of videogames is rich with ideas that have not been fully developed, planes or genres that have not been connected (hybridised), potentialities that have not yet been thought about let alone realised. *The Legend of Zelda: Twilight Princess* is not a formal failure but is one of the weaker entries in the series for staying too close to *Ocarina of Time*. To invent new planes, the artist must break with a history that threatens to striate, by embarking on lines of escape from the cliché. The aim is 'to break down the old stereotypes' explains Eiji Aonuma, the current director of the *Zelda* series.[2] Otherwise, the delight of a new artistic plane becomes the sadness of a worn out formula. The first Zelda the player enters into a relationship with is typically for them the best Zelda. To continue the commercial success of the formulaic videogame an endless supply of new apprentices is required although realistically, as Activision has perhaps discovered with *Call of Duty*, there is a delicate balance to maintain or restore between the artistic plane of consistency and the commercial plane of organisation.

The diagram of *New Super Mario Wii* is finely crafted but assembled from worn-out scraps of past glories. *Super Mario Galaxy*, by contrast, reinvents the plane. There are similarities of course to *Super Mario 64*. These similarities provide a semblance of structure and a point of orientation for the apprentice. *Super Mario 64* is a map for *Super Mario Galaxy* whereas *New Super Mario Wii* is a tracing of *Super Mario World*.

Deleuze and Guattari (2003b: 134) invite us to think diagrammatically. What they say about this applies to both artist and apprentice:

> Destratify, open up to a new function, a *diagrammatic* function. Let consciousness cease to be its own double, and passion the double of one person for another. Make consciousness an experimentation in life, and passion a field of continuous intensities, an emission of particles-signs. Make the body without organs of consciousness and love. Use love and consciousness to abolish subjectification.

The artist does not produce chaos on chaos. The smooth space of rhizome-play is dynamically related to the molar lines of the form. The diagram brings a germ of order to chaos, unlocking sensations, and is the possibility of fact with painting/play the endless and expanding realisation of that fact, a body without organs that pulsates, bristles and vibrates.

The diagram is a preparatory work of painting that precedes the act of painting. It invites the player to paint forces and, by doing so, transform what appears to be a sterile image, e.g. the screen shot or clip, into a dynamic field for the apprentice to immerse herself in. The artist diagrams the possibility of play, the desiring-machines of the apprentice realises that possibility. The creation of the artist is merely a daub until the apprentice adds forces and produces sensations in a constant agitation of the canvas. Screen shots and trailers are an indispensible part of the videogame. They advertise both the product and the diagram, the plane of organisation and the plane of consistency. What are your desiring-machines? They invite the apprentice to bring the diagram, a ludo-diagram, to life by drawing lines of flight and skilfully avoiding lines of chaos. 'Bacon will never stop speaking of the absolute necessity of preventing the diagram from proliferating, the necessity of confining it to certain areas of the painting and certain moments of the act of painting' (Deleuze, 2008: 77) Moreover:

> Being itself a catastrophe, the diagram must not create catastrophe. Being itself a zone of scrambling, it must not scramble the painting. Being a mixture, it must not mix the colours, but break the tones. In short, being manual, it must be reinjected into the visual whole, in which it deploys its consequences that go beyond it. The essential point about the diagram is that it is made in order for something to *emerge* from it, and if nothing emerges from it, it fails.
>
> *(Deleuze, 2008: 111, original emphasis)*

The diagram inclusive of its ludic additions is a controlled chaos. It differentiates between a blank screen and a screen populated with objects of various kinds that can be assembled and disassembled, blasted apart and diagrammed by the player.

The videogame diagram is a special one. The lines themselves are in motion, the colours are varying in intensity, the zones are shifting – a fog of war – and the texture of the brushstrokes changing. It is a patchwork of emergent, shifting, configuring and reconfiguring possibilities, strong lines and weak lines, disappearing lines, reds, blues and greens that alternate, vibrate; of rhythms that speed up and slow down, becoming louder and softer, fading and echoing. It diagrams the possibility of play, and thus is a ludo-diagram.

Ian Bogost says that videogames, like any aesthetic medium, can be interpreted as a 'configurative system' made up of discrete, interlocking units of expressive meaning. What, alongside Nick Montfort, he describes as 'platform studies' sounds Deleuzian in its aim: to examine the relationships between player and videogame, hardware and gaming cultures. What we can take from Bogost and others such as

Dyer-Witheford and Galloway are insights, that whether or not generated by a Deleuzian approach, nonetheless relate to aspects of our affective theory. Bogost's notion of a procedural rhetoric, discussed in more detail Chapter 7 Major/Minor, is one such parallel. It refers to the way in which the ideology of a videogame is directed through gameplay. Videogames, states Bogost, are 'assemblages of procedural forms', like any bureaucracy. Furthermore (2010: 14), '[w]hen we recognise gameplay, we typically recognise the similarities between the constitutive procedural representations that produce the on-screen effects and controllable dynamics we experience as players'.

For Bennett (2010), videogames have a 'thing power' that exceeds both the designer's and player's intentions. But what is this thing? How is it diagrammed? How do we compose with it? What does it enable us to do? Ash (2012) draws on Bernard Stiegler's notion that media industries deploy 'psycho-techniques' to 'monetise' audiences through affinities established between desire and products. For Stiegler this blurs the boundaries between work and play. And so, Ash writes, videogames are affective designs that remove the absolute distinction between dead and live matter. Thus for Stiegler (1998: 17):

> between the inorganic beings of the physical sciences and the organic beings of biology, there does indeed exist a third genre of 'being': 'inorganic organised being' or technical objects. These non-organic, organizations of matter have their own dynamic when compared with that of either physical or biological beings, a dynamic moreover, that cannot be reduced to the aggregate or product of these beings.

Are we merely describing machinic assemblages here? Where does play feature into this? What do they enable in the context of form? Chang describes the videogame as a 'canvas' but misses the Deleuzian implications and the fuller import of the claim that ultimately flounders on its representational allusions to Mario: 'although the iconic plumber runs, bounces, and sometimes falls through a series of obstacles set against a simple, side-scrolling backdrop, the backdrop is less interface than canvas, a static representation that shifts only in parallax as the player hurtles forward' (Chang, 2011: 59). In this usage 'canvas' is not a concept, it is a representation. While the actions of the player bring life to the diagram, it is a life nonetheless immanent to it, the future of the player's actions – the apprentices own brushstrokes – already present as possibility.

Alysha Wood's (2012: 93) notion of a 'recursive space' nicely elucidates the relationship between the developer and player when she writes that 'through the very fact of entering a game world or beginning a puzzle, a gamer alters the configurations of objects making up space'. Interactive capacities are mediated by the technology, she says, which produces feedbacks that are related to one another: they emerge 'from and into the configurations of the programming'. Relations are assemblages composed by forces of differing intensities producing those dynamic effects that feed back as sensations reverberating on the body of the player. They

pulsate additional affects that exceed the code itself, or rather what the developer is able to conceive when programming it. The code is in the texture of the canvas. It contains forces. When they are liberated, the code itself is exceeded and becomes something other than what it was, prior to its encounter with the player. The ludo-diagram, created by the developer, is endlessly being *re*created by the player in an alliance with the forces immanent to it that their activity unleashes. It is a relationship in an undivided process of creation.

Chances are manipulated, accidents are always exploited, the ludo-diagram diagrams all possibilities even though those possibilities may not be thought about or accounted for by the artist/developer. As Malaby (2007: 107) explains:

> Making a game, then, is about creating the complex, implicit, contingent conditions wherein the texture of engaged human experience can happen. Once a player is practiced at a game … then something like 'flow' can be achieved, now understandable as the learned condition of mastery over the performative challenges of a game or task.

If videogames are simply technical machines then it makes sense to describe the operational logic as an algorithm. Manovich describes the algorithm of *Tetris* as follows: 'When a new block appears, rotate it in such a way so that it will complete a layer of blocks [not only or always the top layer] on the bottom of the screen, thus making this layer disappear' (2001: 222). In other words, the videogame can be described as a series of codes operating within a binary logic whereby one action opens up a series of options that the player chooses between that in turn open up another set of options in a permanent feedback loop. There is nothing essentially different in this respect to shopping on Amazon.com: open a menu, click on an option that opens to another set of options and so on until a selection is made that triggers a list of recommendations based on other customer's purchases and so on. While the options and the consequences of the choices made are typically more varied within a videogame, if this is all that is happening then we would have to conclude that videogames are arborescent formations. But in a moment we follow Manovich's lead and describe *Tetris*, only this time diagrammatically.

Patchworks of potential

The diagram provides a germ of order that enables rhizome-play. There are two artists at work, the developer-machine and the player-machine. While the relationship between artist and apprentice is reciprocal and, in a machinic sense, connected, playing the game is always a process of learning how to paint forces appropriate to the prepared canvas. The artist/developer functions like the state science, making the rules, policing them, giving form to the apprentice's creations and in these respects striating the game. Where it is possible to adjust variables, by introducing player handicaps for example, the apprentice can also striate the

videogame but always, as with the ludo-diagram, to deterritorialise and reterritorialise.

Forces are represented only by their effects, forces that are diagrammed into the work by artist and apprentice alike. The wind that presses against the sail in *The Wind Waker* and the change in the direction of the sail are compositions that emerge from this collaboration. 'One starts with a figurative form', Deleuze (2008: 109) says, but 'a diagram intervenes and scrambles it, and a form of a completely different nature emerges from the diagram, which is called the Figure'. Bacon paints Figures such as the self-portraits with distorted faces. The apprentice transforms the figurative Mario, an aggregate of molar terms – male, plumber (working class), corporate icon and so forth – into a Figure. In addition, Deleuze writes:

> if we consider the painting as a process, there is … a continual injection of the manual diagram into the visual whole, a 'slow leak,' a 'coagulation,' an 'evolution,' as if one were moving gradually from the hand to the haptic eye, from the manual diagram to haptic vision.
>
> *(Deleuze, 2008: 111)*

(I should note that the 'manual diagram' refers to the 'space without form and a movement without rest' (Deleuze, 2009: 109), a visual reality that appears to the eye like a blur, with haptic denoting that neither the plane nor the eye are subordinate to the other.)

In sum, the ludo-diagram is a patchwork of potentiality. It is future-oriented and always in the present of the player forces. It is the fact of possibility. It comprises striated lines, zones and colour patches that are composed and decomposed by the player: increasing and decreasing in intensities, making for a fluid space in which the rules themselves can alter as the game progresses, what Juul calls 'emergent gameplay'. The player apprentice diagrams by experimenting with the affects of a molar entity such as the avatar. It is a process of thinking about, testing and exceeding their own limitations and in doing so produce actual changes in the composition as first encountered.

The ludo-diagram is comprised of linguistic and non-linguistic, discursive and affective, assemblages constituting forms of content that enable and are interpenetrated by forms of expression. Let us go to the classroom to explain these terms. The 'form of content' is the assemblage of desks organised in a particular pattern to evoke a separation and hierarchy that includes instruments for writing, learning and computing; the clock; bell and so forth, all of which make up a disciplinary regime intersected by forms of expression. The 'form of expression' is made up of statements, commands: what can and cannot be said and done in the prevailing arrangement. In the classroom we fire up our writing-machines but not our eating-machines. Eat chocolate in class, be punished. Eat chocolate in the playground, be nourished. Too much chocolate upsets the tummy. A sick child is not a learning one, so homeward bound you go, a journey of various encounters

and possibilities. No form of content is so despotic that all possible lines of flight are closed. Each has to be tested, played with, pushed beyond its limits, broken apart. The form of content and expression imply, say Deleuze and Guattari (2003b: 67), 'a shared state of the abstract Machine acting not at all as a signifier but as a kind of diagram (a single abstract machine for the prison and the school and the barracks and the hospital and the factory)'. Content and expression are comprised of segments that are brought together by concrete assemblages accounting for their 'real distinction'. *Call Of Duty*, for example, is a form of content assembled to give expression to the war on terror in which killing Arab militants is rewarded and US military personnel punished. 'We are never signifier or signified. We are stratified' (Deleuze and Guattari 2003b: 67) by the abstract machine.

The diagram as an abstract machine relates to other terms as here described:

> There was a first group of notions: the Body without Organs or the destratified Plane of Consistency; the Matter of the Plane, that which occurs on the body or plane (singular, nonsegmented multiplicities composed of intensive continuums, emissions of particles-signs, conjunctions of flows); and the abstract Machine, or abstract Machines, insofar as they construct that body or draw that plane or 'diagram' what occurs (lines of flight, or absolute deterritorialisations).
>
> *(Deleuze and Guattari, 2003b: 73)*

Tetris is an abstract machine comprised of different parts that striate one another and enable particular kinds of expression. The space of rhizome-play is striated at the boundaries represented by lines beyond which there is information about upcoming shapes and the score (the counting and quantification of the apprentice's becomings). Gravity is the generative force whose presence is known by the direction and speed with which the shapes 'drop'. The shapes do not bleed into one another. They lie and accumulate onto one another. Their weight and density is diagrammed, multiplicities of differing haecceities, and which combine into a force to block or repulse anything that hits against them. The apprentice cannot presuppose without prior knowledge of *Tetris* or any game like it what the shapes will do, how they impact on other shapes and so on. As the game progresses, the force of gravity intensifies, giving the illusion that it is the blocks themselves that are propelling themselves. That all blocks fall at the same speed as each other suggests that there is indeed an external force operating on them and so we can say that the force of gravity is represented by these distortions. The artist programs the force of gravity. The apprentice determines the changes in its intensity, which increases as the game progresses – their own forces known only by the varying speed and trajectory of the blocks. At a certain magnitude easy becomes medium and medium hard, level 1 becomes 2 and so forth: a duration divided only by the magnitude of intensity. Phases are blocks of time and each transition a relay from artist to apprentice, apprentice to artist: to 'level up' when the apprenticeship has reached a certain pitch. The ludo-diagram diagrams the possibility for the player

to add their forces but it does not determine how those forces will be applied and what by this token they will give rise to. The player becomes part of an assemblage – with the Nintendo Gameboy, say – by connecting with the directional pad of the handheld device. The forces of the diagram in turn enter into proximity with the shapes that are comprised of haecceities: density, weight and so forth, which reverberate back onto the apprentice as sensations. In that the shapes can be manipulated – they can be turned, decomposed and produce life and death affects – they are force-signs. The relationship is only interrupted in the event of the game ending. There is no pause, no point of replenishment and reflection; simply rhizome-play. We could continue to describe the disappearance of lines when shapes are contiguous across the representational field and we could examine more closely the multiplicities created in the event of play and how the body of the apprentice is augmented and decomposed by them. Consideration could also be given to the music, sound effects, the broader industry and creative war machines that *Tetris* has grown out of and the player has advanced their own apprenticeship through.

What makes *Tetris* a classic? It plays with past forms but it is not dictated by them. It connects multiplicities on the plane of composition to produce a new kind of videogame that in turn liberates the player's own becomings. *Tetris* is not a puzzle game as such, but there are games *like Tetris*. A new plane was created when *Pac-Man* was first played. It is not a 'maze game'. It is *Pac-Man* and there are games like *Pac-Man* but either so close as to make them an inferior copy – a tracing – cue *Lock 'n' Chase*, a big hit on Mattel's Intellivision; or a 'reimagining', cue *Pac-Man: Championship Edition*; or too obscure to derive much meaning from the comparison. *Pac-Land* certainly incorporates aspects and motifs of the original: the avatar, ghosts, even power pills. The comparison ends when the diagram is considered and the abstract machine that it is. Namely, *Pac-Land* is a platformer.

A chapter could easily be dedicated to *Tetris* alone. When it comes to explaining ludo-diagrams as complex as *Super Mario Galaxy*, we will need to make a selection that exemplifies the game as a whole. It was by thinking diagrammatically that Nintendo came up with the cat suit for *Super Mario 3D World*. First there was the problem of climbing a vertical wall. Then there was the question of how to climb the wall. Then there was the concept, the cat and thinking in terms of the affects as opposed to the molar form of a cat, what in other words a cat can do and what kind of becomings are possible when Mario-apprentice enters into proximities with cat individualities. The developer and player are thinking in terms of what a cat can do, what affects it can produce and how the body of Mario can exceed its own limitations by entering into proximities with them, here to scale walls and kill adversaries with paws.[3] As we will see in Chapter 6 Molecular Mario, the apprentice in becoming-Mario – in becoming-cat – acquires the force to combat gravity and dispatch foe. As Yoshiaki Koizumi, a designer on the game, explains:

> we created Super Mario 3D World by rethinking traditional Mario game ideas. In addition to doing this, we went all out inserting elements [that

> allow] players to further enjoy the sprawling environments. There's still a lot more room for discovery and invention, and we'll continue to propose new and exciting game mechanics going into the future.

Music is also a force with its origin in what Deleuze and Guattari call the refrain, any rhythmic pattern staking out a territory. Ronald Bogue (1997: 265) nicely explains the three essential components of the refrain:

> a point of stability in a field of chaos (the reassuring tune a child sings in the dark); a recurring sequence that circumscribes a property (the droppings with which an animal demarcates its territory); and a mutant series that opens towards the outside (a bird's improvisatory salute to the dawn).[4]

There are also three kinds of forces associated with this – namely, chaos, terrestrial forces and cosmic forces – that both confront and coalesce in the refrain. 'The motif of the refrain may be anxiety, fear, joy, love, work, walking, territory… but the refrain itself is the content of music' (Deleuze and Guattari, 2003b: 300). The refrain lays hold of music in a form of expression, a block that music deterritorialises in its own becoming-other. An example of this is Ravel's *Bolero*, which constantly refers back to its signature motif, the block or territory, at the same time as it deterritorialises or embarks on lines of flight from it. The refrain is reterritorialised with formulaic or 'hackneyed' music. The *Super Mario* series contains several reiterative refrains that pick up pace and are deterritorialised by new rhythms and melodies that the apprentice, through her journey into the game, helps compose by effectively triggering them. The motif or territorial block can also be thought of in terms of the game's signature elements, such as the rescuing of Princess Peach from Bowser in *Super Mario* or the regular encounters with bosses in *Bayonetta* and the more cliched reterritorialised QTEs that even the more innovative *Call of Duty: Advanced Warfare* is reluctant to loosen its ties from.

A videogame is not one canvas. It is multiples: multiple diagrams within diagrams functioning as parts of one overall design.

Diagrams within diagrams

In cinema, the diegesis is suspended when, for example, the actor momentarily steps out of character to address the viewer directly as if they are the subject matter of the film. Michael Haneke used this device in *Funny Games* to draw attention to the viewer's own enjoyment of violent cinema. The film contains no plot devices and offers no explanation as to why two young men are torturing a couple and their child. Cleverly, the brutal acts occur off screen so all the viewer sees are the emotional effects and are made to feel culpable by supposedly wanting to see the action and hanging suspended for a resolution that never comes. In one dramatic sequence, the female victim grabs a gun and shoots one of the assailants only for the other to pick up a remote control and 'rewind' the sequence thus preventing her

from taking the gun. Such devices are integral to Haneke's approach to film-making but, unlike in videogames, they are not necessary to the form nor are they deployed in order that the film 'works'. The 'diegetic spell' is regularly broken in videogames by the crude way in which in the midst of a gun fight the action can be suspended to change weapons and so forth on menu screens. In *Deus Ex: Human Revolution*, the player can at any time return to the menu screen to change the difficulty level and by doing so pause the often intense action. This also happens when the player selects weapons from the inventory. Time is literally suspended. *Destiny* is more 'realistic' in this respect. When the apprentice wants to change variables, including accessing a different primary weapon, an inventory screen with submenus appears but unlike *Deux Ex* it is still possible to be killed by what happens 'behind' the screen. This creates its own set of problems, leaving a player completely exposed to a sudden attack simply for wanting to change a weapon in their inventory. While both sections of the ludo-diagram involve taking actions, on the menu screen actions are more like binary inputs, extensive rather than intensive but which can produce good and bad affects depending on the game. Is it a bad affect when the player increases the difficulty level thus making enemy fire more destructive? Whether the affect is good or bad can only be discerned in the given assemblage and what it means for the person playing it. Subjectivity factors into gameplay. While the button or switch may offer only two choices, either to turn something off or on, the changes it produces can profoundly affect gameplay. This is why *SimCity* and games of similar nature can still be considered rhizomatic: the inputs produce changes that affect the mood of populations, the speed and density of urban development and so forth, or the potential for buildings to catch fire. The point that videogames are defined by their motion should be read in this way, not that they involve the traversing of diegetic space, as after all the player herself is not physically moving, it is the earth beneath her in the game world that deterritorialises.

Data in videogames can be anything from a rudimentary map in *Mario Kart* layered onto the action through to the bewildering array of stats in *SimCity*. *Metroid Prime* integrates information on health and such like into the visor through which Samus sees. *Call of Duty: Advanced Warfare* takes advantage of its futuristic setting by projecting information into the game as if from a device the protagonist wears, their 'virtual reality'. Galloway examines videogame layering in *The Interface Effect* (2013). The interface of *World of Warcraft* (*WOW*), he says, 'is awash with information' that is as important as the diegetic layer of the game in which the action occurs. Writing and images sit side by side in videogames not as separate windows 'but an intraface [sic] between the heads-up-display, the text and icons in the foreground, and the 3D, volumetric, diegetic space of the game itself – on the one side, writing; on the other, image' (Galloway, 2013: 42). His central contention is that, because computers introduce 'a structure of action', they can be regarded as an ethic of practice. In other words, there is an ethos underlying the player-computer interface, determining what that interface is capable of. Computers are recipes 'for moving procedurelly toward a certain state of affairs' with the interface as the point of transition between different entities. The interface can be thought

of as a machinic assemblage, connecting the apprentice and artist or the 'non-diegetic' and 'diegetic' spaces as aspects of a more general abstract machine. Interfaces are neither doors or windows. Rather they are 'autonomous' zones where interactions occur and which break down as much as they connect. Break downs could include anything from electricity cuts to non-diegetic cuts in videogames. Disruptions to gameplay unrelated to either the artist or apprentice are strictly speaking unrelated to videogames.

Montage, Galloway says, operates through the logic of 'windowing', thinking here of the sequence of alternating images that create a movement effect such as we see in Dziga Vertov's masterpiece *Man With a Movie Camera*. With their 'inter-diegetic' actions within smooth continuous flows videogames underline the shift away from montage, although it could be suggested that a montage effect is recreated when the apprentice jumps between 'gamic' layers. Cuts within a frame replace the cinematic sequence of cuts. So in Galloway's (2013: 114) words:

> This is one of the great aesthetic leaps of the graphical user interface beyond the example set by the cinema: no longer will the viewer experience montage via cuts over time, proceeding from shot to shot, one must now 'cut' (but in its opposite, as 'suturing') within any given frame, holding two or more source images side by side which themselves will persist montage-free over much longer 'takes' than their cinematic predecessors.

Referring to Deleuze's society of control, Galloway avers that it is no longer singular machines from which images proliferate. A multiplicity of machines produce singular images. The MMORPG-style *Destiny* with an estimated 3.2 million users per day after launch appears to fit this description.[5] Like *WOW*, it is the multitude of apprentices tinkering on their little machines that makes it what it is, a multiplicity of machines producing singular images.

Rather than thinking of the screen as a composition of diegetic and non-diegetic components, menus, 'mini' games and so forth, we can think of it as a composition of diagrams within diagrams. In *XCOM: Enemy Unknown*, each diagram is an integral element of the overall diagram, discreet parts of a broader more massive assemblage. We can talk about diagrams within diagrams when the different sections introduce distinctive gameplay features. The dungeon sequences of *The Legend of Zelda* obey the same gameplay mechanics as the outerworld sequences albeit with different challenges and variables. *Grand Theft Auto* includes diagrams of different genres in separate sequences, such as a shoot-out and a car chase, that also overlay one another.

All videogames are hybrids of a kind. Legend has it that Miyamoto came up with the idea of *Pikmin* from gardening.[6] This would be an instance of diagramming a real-time strategy from a hobby. Toru Iwatani once claimed to have come up with the idea of Pac-man from a partially consumed pizza.[7] The ludo-diagram has its origins in many different ideas that sometimes coalesce to form a new plane or plan, the plan or diagram of all possible Pac-man-style games,

platform games, racing games, first-person shooters and so forth with their various striations and affective possibilities. Miyamoto's criticism of the glut of first-person shooters at the 2014 E3 convention points to the danger that genres can become formulas striating the smooth space of artistic creation. This is especially the case when strict limits are placed on the developer by the publisher who wants a 'sure-fire' guarantee on their significant investment.

The afterimage

Rhizomes are maps, not tracings. Every videogame, as here defined, diagrams the possibility for rhizome-play, so a tracing in this respect can refer to what Adorno and Horkheimer (1997 [1944]) call 'standardisation', the reproduction of a formula on the basis that the original is successful so this is what the customer will always want. A standardised game diagrams the possibility for lines of flight but they become in due course lines of death sucking the apprentice into a black hole of regressive gameplay. Instead of augmenting the capacity to act, there is a diminution of the affective body without organs, which becomes, to deploy an analogy from Deleuze and Guattari, a cancerous body, bored, listless, inattentive, mechanical. The standardised videogame encourages regressive gameplay that, as Adorno put it in respect of listening, is the equivalent of a child repeateding requesting the same meal they once enjoyed.

A plateau, Massumi (2003: xiv) explains, occurs:

> when circumstances combine to bring an activity to a pitch of intensity that is not automatically dissipated in a climax. The heightening of energies is sustained long enough to leave a kind of afterimage of its dynamism that can be reactivated or injected into other activities, creating a fabric of intensive states between which any number of connecting routes could exist.

A Thousand Plateaus is organised to reflect this with each chapter referring to a specific date to connect the dynamisms signalled by different times and mediums in the other chapters. A plateau, Deleuze and Guattari (2003b: 22) explain, 'is always in the middle, not at the beginning or the end. A rhizome is made of plateaus'.

The most influential videogames are those that redefine what a game is by showing what was present though hitherto not diagrammed on the plane of composition. Their intensities reach a pitch that leaves an afterimage in every game that builds on its legacy. There is a ghostly afterimage of *Grand Theft Auto* in the generic *Watch Dogs* and multiples of *Wolfenstein 3D*, *Doom* and *Goldeneye 007* in every FPS that has been produced since. The challenge for every innovative studio is to build on these legacies, reinvent and sometimes scramble them, to take flight from the cliché as said elsewhere. Rhizome-play bears the afterimages of the history of influential videogames. The afterimage of *Donkey Kong* is in every 'platform' game that came since. 1978 denotes with the arrival of *Space Invaders* an

intensive high point or plateau of the shoot-em-up plane. 1997 is the year of *Goldeneye: 007*, the plateau of the first-person shooter. It plateaus again with *Half-Life 2* and then soon after with *Call of Duty 4: Modern Warfare*. The disappointment in Bungie's *Destiny* lies in the fact that the pitch of intensity intimated in the hype proved more like a faint echo. Although it introduced MMORPG elements, it is ultimately a cliché that has traced a worn out formula. The year of the real-time strategy (RTS) is 1992, when *Dune II* was released and leaving an afterimage in all subsequent RTSs. The sequence came to an end more or less when Westward Studios, makers of *Dune II* and the acclaimed *Command and Conquer* series that followed, was bought up, stripped down and absorbed by Electronic Arts' internally created studio Petroglyth Games. The crisis of the RTS is evident in the failure to reinvent the genre by diagramming new kinds of rhizome-play, a 'red alert' for any developer wanting to revive the RTS war machine.

To summarise: the ludo-diagram is populated with force-signs that without the apprentice's paint are figurative. They help the apprentice gain a bearing, operating as both a map and a form of expression that appears as blocks, points or actualisations that the nomad diagrams and takes flight from. Force-signs signal to the apprentice the possibility of flight. They are machinic connectors between artist and apprentice, the ludo-diagram and diagramming, and therefore integral parts of an assemblage, minimally apprentice-object-cum-force-sign-artist. The preparatory work of the artist has been the primary focus of this chapter; the next chapter drills down into the apprentice's role of liberating the forces immanent to the force-sign.

Notes

1 Lecture on YouTube, www.youtube.com/watch?v=50-d_J0hKz0 [accessed 10/08/12].
2 www.computerandvideogames.com/434129/interviews/interview-eiji-aonuma-on-the-evolution-of-zelda/
3 www.edge-online.com/features/the-making-of-super-mario-3d-world-how-nintendo-bridged-the-gap-between-marios-past-and-present/
4 http://nintendoeverything.com/super-mario-3d-world-devs-on-games-creation-and-more-new-concept-art/
5 www.eurogamer.net/articles/2014-10-13-destiny-averages-3-2m-players-every-day-a-month-after-launch
6 www.officialnintendomagazine.co.uk/44929/miyamoto-explains-the-roots-of-pikmin/
7 http://en.wikipedia.org/wiki/Pac-Man#Development

5
ARTIST AND APPRENTICE

Whereas cinema requires an audience, literature a reader, painting a viewer, videogames require an apprentice, an artist in the making. The screenshots, previews and box art notify the gamer that there is work to be done. Forces are to be painted that turn the figurative representation into non-representational figures. By composing with forces, the apprentice learns how to exceed the body defined by its organs. She embarks on a molecular journey of a becoming-artist. Like the Inklings in *Splatoon*, her paint deterritorialises the earth on which she travels.

The videogame is a collaborative project involving artist and apprentice, an encounter of two bodies, recalling Deleuze who on Spinoza writes:

> When a body 'encounters' another body, or an idea another idea, it happens that the two relations sometimes combine to form a more powerful whole, and sometimes one decomposes the other, destroying the cohesion of its parts … But as conscious beings, we never apprehend anything but the *effects* of these compositions and decompositions: we experience *joy* when a body encounters ours and enters into composition with it, and *sadness* when, on the contrary, a body or an idea threaten our own coherence.
>
> *(Deleuze, 1988 [1970]: 19)*

The artist and apprentice are bodies that encounter one another through ideas, the idea of the diagram and the idea of play. The player is the painter diagramming rhizome-play with lines, colours and brushstrokes of the prepared canvas. Artist and apprentice are in permanent communion through machinic assemblages of various kinds involving force- and sterile-signs discussed later. The chapter begins with the painter and ends on the question of realism.

The painter

Deleuze and Guattari (1991: 166) suggest that 'We paint, sculpt, compose, and write with sensations. We paint, sculpt, compose, and write sensations'. Sensations are our materials, what we work with and sculpt to engender game worlds. At a higher magnitude of intensity, percept becomes affect; the heat of a fire that kept us warm now burns our hand. The apprentice works with sensations, perceives and is affected by them, to embellish them and compose with them through a play of forces: to create a texture against which the body bristles. 'Force is closely related to sensation', Deleuze tells us, 'for a sensation to exist, a force must be exerted on a body, on a point of the wave' (Deleuze, 2008 [1970]: 40). We do not 'play' videogames as such. We intensify them. We are not gamers. We are intensifiers. Different quantities of energy bring about different states of intensity actualised at moments of rest and sensed by their affect that the apprentice diagrams with. An event that augments an apprentice's capacity to act becomes part of a memory of how to intensify and produce sensations that in turn engender either joy or sadness. To recall, the apprentice who becomes habituated to the same kind of game, repeats the same tricks and, because of their inevitable victories, seeks the ever same is a regressive player. They paint with forces and produce sensations that no longer augment the body-as-apprentice in becoming, instead mechanically responding to the affects they are active in producing. Such is the case with 'grinding' when in RPGs the same action is repeated over and over again to improve player stats and level up the class. Another example of regressive gameplay is 'button mashing' in fighting games where the player is rewarded simply by hitting buttons randomly. Button mashing in *Bayonneta* functions as a device for those at an early stage in their apprenticeship to familiarise themselves with the game before more precise fingering is demanded.

Turf wars frequently erupt between players unable to separate their own libidinal investments from the object, be it a particular game, genre or corporate brand. You're Team Sony, Nintendo or Microsoft. What seems to unite the gamer in this puerile attitude is their hatred of the so-called 'casual' gamer. There is a distinction however to be made that avoids the unwarranted elitism of the casual/hardcore divide centring on the question of whether, in playing a videogame, we are at the same time exceeding the game, cutting a line, on an apprenticeship that passes from one kind to another and leads us into experiments on new experiential planes. Even if a casual approach is possible *Angry Birds* is not a casual game. It rewards skill and patience. More negatively it rewards those willing to pay to get past bottlenecks in the game that are not a result of poor game design rather a device to generate revenue from micro-transactions. Selling over 7 million copies on the Wii and DS, *Carnival Funfair Games* by Cat Daddy Games is the epitome of the casual game, a mini-game collection that by rewarding random effort requires no skill to play and thereby offers no opportunity for an apprentice to improve their artistry. The arborescent routines plug the apprentice's own becomings; lines of flight become lines of death, rhizome-play thwarted. As Nolan

Bushnell, the founder of Atari, put it 'All the best games are easy to learn and difficult to master' (cf. Bogost, 2011: 125).

A poor workman blames his tools but sometimes those tools really are too blunt for the task. The apprentice's tools are the various devices their bodies connect with: a physical controller held in the hand, a touch-sensitive mat on which to dance or a camera that tracks movements. The tool must be fit for purpose if the apprentice is to sense the material and work with it. *Samba De Amigo* was one of the first rhythm action games to appear on a home console. Developed by Sonic Team for the Sega Dreamcast console, *Samba De Amigo* (1999) was controlled by a pair of maracas packaged with the game. Each maraca was plugged into a bar beneath the player's feet that could triangulate the position in which each maraca was shaken, the noise of which was recognised by a built in transmitter. The precision with which the technology was able to map the player's motion allowed for a highly nuanced and rewarding experience. The tools were perfectly attuned to the ludo-diagram to enable and reward experimentation. Playstation's *Dance Dance Revolution* that came packaged with a physically sensitive dance mat also rewarded skill. In contrast, *Samba de Amigo* on the Wii, which utilised the Wii-mote instead of maracas, inadequately adapted the diagram to account for the fact that the precision of movement demanded by the original could not be picked up by the sensor. A similar issue has arisen with arcade conversions of games such as *Marble Madness* where the specific type of controller, in this case a force-sensitive trackball, is integral to gameplay. Lacking the precision of a trackball, the digital inputs of the gamepad or perhaps keyboard, on and off, action and inaction, conversions that failed to account for this change made the negotiation of hurdles an awkward and frequently frustrating endeavour. The artist designing games from the ground up for systems with motion controls must consider, as a painter considers brushes and pallet knives, the materials the apprentice has to work with. *Child of Eden*, designed so that it could play on Kinect, is one of the few games that made good use of the interface. The hand was a broad brushstroke that could map the cursor to the broader patchwork of forces signified by colourful shapes coming at the player from a first-person perspective. Kinect is only as good as the games designed to play on it. The quality of a videogame is not determined by rhizome-play alone then. Referring to Deleuze and Guattari's earlier description, rhizomes are about experimentation and mapping this to videogames experimentation is vital to an apprenticeship but must ultimately be a means to advance it. In short, the quality of rhizome-play is defined by the capacity to experiment, learn and progress in an endless journey of a becoming-artist.

The force of motion brings to life the diagram by producing sensations that reverberate on the body as good or bad affects. The diagram does not have to be oriented to first-person viewpoint and rendered photorealistic in order for the uninitiated to be able to sense and work with the materials. A good artist recognises their duty to help the apprentice learn the basics so they can paint with forces in any videogame they play. The first planetoid in *Super Mario Galaxy* does this. It is essentially a training ground for the apprentice to learn about force-signs,

gravitational effects, the affect of running and jumping, and capturing rabbits without any danger of being killed. The world becomes unified and consistent as its own reality in the mind of the apprentice long before 60 stars are captured.

Bacon paints figures. The videogame artist sets this task for the apprentice. The artist's diagram is therefore incomplete. The apprentice also diagrams the canvas, adapts it, renders the forces perceptible and paints affects in an endless process of completing it. As long as there is rhizome-play there are always forces to add. The relationship of artist to apprentice, apprentice to artist is akin to Deleuze and Guattari's (2003b: 10) description of the wasp and orchid:

> The orchid deterritorialises by forming an image, a tracing of a wasp; but the wasp reterritorialises on that image. The wasp is nevertheless deterritorialised, becoming a piece in the orchid's reproductive apparatus. But it reterritorialises the orchid by transporting its pollen. Wasp and orchid, as heterogeneous elements, form a rhizome.

The orchid 'forms a map with the wasp, in a rhizome'. The artist forms an image that an apprentice can work with and do things to. They reterritorialise and thereby transform the videogame, becoming part of the artistic assemblage in their own image creation. The apprentice is not subordinate to a machine. She is not engaged in a mindless act of following commands. By thinking and working with affects she diagrams play and makes herself a body without organs. This is what being an intensifier entails. If an artefact does not afford the apprentice this agency, it is not a videogame. This is why *Dragon's Lair* is not a videogame and QTEs are arborescent. They do not reward experimentation and in this respect are extensive, whereas rhizome-play is intensive.

The apprentice traverses the videogame plane while rooted on the spot, sat perhaps on a sofa, just as the nomad sits astride a horse and guides it with arms, hands and fingers. It is not a journey without disruptions. There are various striations, territorial blocks to decompose. The tests and challenges that the apprentice encounters can kill the becoming-other in examples cited here and elsewhere but can also make them stronger if by failing in the task the apprentice learns and grows by it, developing their skills and finding new ways to experiment and eventually remove blockages to their own lines of flight. The apprentice must answer the question of how to traverse the canyon that striates the entrance to Gerudo Valley in *Ocarina of Time*; how to open a path that blocks the way in *Pokemon X and Y*; and how to reach a platform in *Portal*. For Bergson (1991), problems are stated and solved in terms of time rather than space. Space is extensive, a location and environment that exists as an object outside the self. Time is intensive, a duration of an intensity. Getting to the Gerudo hideout involves thinking about the affects of Epona, the horse carrying Link, and how to compose a body without organs in order to jump the canyon. The problem of space is resolved in time. The subject or duration actualises itself Deleuze (1991: 42) writes 'by creating lines of differentiation that corresponds to its differences in kind'. The

duration of an intensity 'plunges' us into another 'dimension' that is purely temporal, the difference in kind between the trot and the gallop that, skilfully composed and sustained, resolves the problem of how to cross the canyon.

The apprentice does not simply work with an artist and the various objects littering the diegetic field, they also compose with other apprentices. In a qualified way, videogames are an interactive media. As Gordon Calleja (2010: 344) explains:

> Players are beckoned to push the limits imposed by designers, to improve their dexterous and cognitive abilities, and to be emotionally affected by the digital game. Games afford the ability to communicate with, compete against, and collaborate with remotely located players or friends in their living rooms. It is not merely a matter of games being engaging but of games affording a variety of ways to be engaged… Game involvement is not a single experiential phenomenon but a multiplicity of overlapping and fluid forms of engagement.

Videogames occupy a physical space: what Jesper Juul (2009: 117) calls the 'player space' where people interact with one another. Replicating the dynamics of board games, meaning is derived from off-screen interactions and so in this respect, according to Juul, videogames are socially embeddable. There are different types of videogame interaction involving combinations of players: with avatars (allied or enemy) assembled by the artist whose movements are determined by AI routines or *simulated interaction*; with avatars assembled with players occupying the same physical space (offline cooperative and competitive gameplay) or *non-diegetic* interaction; with avatars assembled by players that encounter one another in the digital space alone or *diegetic* interaction; and combinations of each.

Valve's first-person zombie shooter *Left 4 Dead*, developed by Turtle Rock Studios, allows for several types of interaction, *simulated* in one-player mode with three artist assemblages; *diegetic* in four-player online mode; and a combination of *simulated* and *non-diegetic* in two-player mode. There is no standalone *non-diegetic* option in *Left 4 Dead*. Multiplayer *Goldeneye 007* and multiplayer *Wii Sports* are examples that are *non-diegetic* with no *simulated* interactions. *Pro Evolution Soccer* involves avatars whose movements are assembled by the artist. Even in two-player mode, interactions are always combinations of artist and apprentice. In Platinum Games *The Wonderful 101*, the '1' is the player who is part of an assemblage with a '100' AI (artificial intelligence) simulants. The apprentice traces the letter L on the Wii U gamepad and the 100 assemble into a rhizome-gun. This kind of assemblage bears comparison to real-time strategy games such as *Command and Conquer* and *Pikmin*, where the apprentice moves an army in one single block. These games alternate between complete control of every character to partial or no control. Interactions are combinatory and also fluid.

The computer-controlled allies and adversaries in *Left 4 Dead* are the artist's affective body, except here the body, whether organic or inorganic, is a force-sign that reacts to the apprentice. Games involving two or more apprentices occupying

the same physical space operate in parallax. The meaning attributed to an object is contingent on the perspective from which it is viewed. As Slavoj Žižek (2006) says of a parallax gap, the thing is objectively the same although from the perspective of the subject incommensurate. In terms of ideology, for example, capitalism is objectively subjective, what it signifies differs according to class perspective even though the thing itself is the same. The prepared canvas is always the same but by playing with forces the diagramming of each apprentice differs. Everyone is diagramming, adding their own affects. For the apprentice all human controlled players are force-signs, machinic assemblages of the artist and other apprentices obviating the need for artist to diagram 'artificial intelligence'. They are not simulants.

Developers diagram videogames. They prepare a canvas on which the player adds their own lines and brushstrokes. The player's brushes, pallet knives, oils and acrylics are the gamepads, keyboards, physical gestures and styles of play, the forces and affects that bring the developer's creation to life. Videogames are art only in motion and that motion belongs with the player of a duration in which the virtual is actualised and the actual virtualised. Epona is no longer a figurative horse. In the duration she is a virtual horse prior to which she is a force-sign, the past of the artist's affects signalling the fact of possibility, the future of the apprentice's own becomings when their own forces are added.

Schema of the force-sign

The affective properties of objects are revealed through encounters with other objects. What those affects are for one object is not necessarily the same for another. This is the case for force-signs, objects or zones that have the potential to affect and be affected, to produce a bad or good affect depending on the encounter within the particular game assemblage. Signs are an indicator, Massumi (1992: 10–11) explains, 'of a future potential and a symptom of the past' with interpretation consisting 'in developing what is enveloped in the sign'. They are statements that are evaluated in terms of their pragmatic function, what Deleuze and Guattari call 'order-words': 'collective assemblages, or regimes of signs [that] cannot be equated with language' (Deleuze and Guattari, 2003b: 85). The same can be said of the different signs comprising the ludo-diagram, collective assemblages whose statements – what they mean, what can be done with them – are evaluated in the course of play. We can think of them, as Cowley *et al.* (2008: 17) do, in terms of 'symbols, visual cues and entities, controller feedback, and so on [that] carry "bits" of information'. Let us begin with a definition of the force-sign and the contrasting sterile-sign and then examine how these signs are assembled in specific videogames.

What is a force-sign? It is a zone or point in space that represents the potential to affect or be affected by player-forces, to be acted on directly or through other objects such as when the explosion of one oil drum explodes another and another and then destroys an adversary – a force-sign that now expended begins to be, a

memory of the past that having learned how through such an assemblage foes can be dispatched is recalled in the future of that past as we repeat and experiment in similar scenarios. The potential of the force-sign to affect or be affected is signalled by images, sounds and haptic feedbacks.

Force-signs store affects. They can change in intensity and/or affect the intensities of other objects or zones in ways that impact gameplay (either as a direct or indirect consequence of player actions). An oil drum that can explode occupies a point in space. The murky liquid surrounding islands in *Metroid Prime* that corrode Samus's suit when stepped upon occupies a zone. They are extensions that are intensified by play-forces. The oil drum is a good affect when harming an adversary, a bad affect when harming the player. In *Prime*, the murky liquid is always a bad affect. Force-signs are concepts that enable apprentices to apprehend possibilities and dangers, to be used as tools and weapons, a grappling hook that enables Samus to traverse a chasm, a crowbar that enables Gordon Freeman to fend off a foe. While a crowbar that breaks a door in two produces only a difference in degree (two pieces of door rather than differing intensities), it is part of a machinic assemblage that Freeman experiments with and opens up new territories that he can deterritorialise. The crowbar is a force-sign in so far that within the given assemblage Freeman's power is augmented.

Force-signs vary in intensity (differences in themselves) but those intensities can only be known in the event of play (*Archon* where black has diminished our powers but which is only realised in battle). They also differ in their spatial arrangement (multiplicities in relation) either in dynamic relation to one another through which their properties change or in different parts of a particular sign such as when in boss battles the enemy has a particular point of vulnerability. By striking the red zone on a boss's back a good affect is produced, whereas the body that encases it can only produce bad affects.

What is a sterile-sign? It is an object without force potential, to either augment or decompose the body of the player. Even if it can be moved or broken in two, a ladder is only a force-sign if by the play of forces it can produce different intensive states. If the ladder emits heat that burns if not traversed quickly it is by this definition a force-sign. A bad affect may obtain if the apprentice falls off the ladder but nothing about the ladder itself produces a bad or good affect and so in this respect would be a sterile-sign. It has a use but is not a weapon. Sterile-signs are tools that can be assembled to produce differences in degree – passing from one space to another (extensions) – whereas force-signs are tools that augment or decompose the intensive capacities of the player and objects that affect play.

So as a general rule, if an encounter can produce changes in intensity either in the object or the object it is assembled with, including of course the avatar, it is a force-sign and if not a sterile-sign. Sterile-signs can be tools. They are never weapons. Where they are neither a tool nor a weapon they can serve a decorative function, perhaps conveying information or creating a sense of atmosphere or operationalised as part of a discursive regime making up the form of content in regard to which there are statements or forms of expression.

Sterile-signs can become force-signs and vice versa. For example, without a red tunic, Link's body decomposes in zones or regions where the magnitude of heat is greater such as in the Fire Temple in *Ocarina of Time*. This affect is neutralised when the red tunic is worn. A sword that can fell an enemy is a force-sign and simply begins to be when broken and irreparable, likewise a sterile-sign that ceases to have a use. In the next chapter we add the supplementary term friction-image as a more general concept of the intensities of the environment relevant in this respect to the environment of the Fire Temple. The terms force- and sterile-sign are more useful for thinking about the affective potentialities of specific points or zones in space. Corridors that cannot be smashed are simply striations, whereas the space in between that can be traversed is a smooth space. Sometimes it is possible to draw a diagonal across a striation by destroying a wall for example or passing over the top of it. If the wall is combustible it is a force-sign; otherwise it is a sterile-sign functioning as a striation that may or may not be traversable. If the wall can be spliced in half without producing changes in intensity either in the object or another then it has a use to unblock a striation and therefore is a sterile-sign. Border zones are fixed in *Tetris*, on one side the striated space containing information and on the other side the smooth space of rhizome-play where blocks are force-signs that can be decomposed when placed in an uninterrupted line. If a block can be stacked but not decomposed it is a sterile-sign unless by stacking blocks a threshold is reached which thereby ends the game (a bad affect), in which case it is a force-sign in its combinatory effect (combining with other blocks that together cause the death-affect). Border zones are also fixed in the *Geometry Wars* series even though as a result of movement their location visually changes. Corridors in FPSs are a more abstract variation on this type: their movement simply one of perspective. In platform games the background even when delineated from the foreground functions in effect as a smooth space. In *Kirby and the Rainbow Curse*, however, a colour background denotes that a line can be drawn on it for Kirby to travel on. The background in this respect has a special function: it has a use. This is also the case in the aforementioned *Archon* where gradations of white and black augment and decompose the affects of the opposing armies. But these are forces of the game environment and so while force- and sterile-signs in one sense they can simply be described in terms of the friction-image (intensities of the diegetic field).

To summarise, intensive objects that are potentially weapons are force-signs; extensive objects that are potentially useful but which cannot affect or be affected sterile-signs. Put another way, objects that can produce affects that augment or decompose the power of the apprentice are force-signs; sterile-signs if useful but not affective, sterile-signs or simply decorative if they cannot be interacted with. The falling blocks in *Tetris* are force-signs because they have the capacity to decompose other blocks. The oil drum was given as an example of the force-sign although only insofar that it can affect and be affected; if only a prop or tool it is a sterile-sign. In FPSs enemy computer-controlled combatants can also typically explode oil drums. In all instances in which whether directly or indirectly forces

are unleashed as a result of the player's own forces and which affect gameplay they are force-signs. Walls that cannot be smashed, doors that cannot harm, petals that fall from trees or birds that flutter away as the racing kart approaches, are either striations (walls), sterile-signs (doors) or perhaps decorative signs (birds). Ice that affects the movement of the apprentice is a force-sign and also by occupying the field of play a smooth space. If ice serves only a decorative function because its state cannot be altered and it has no discernable effect on the player, either good or bad, then, assuming it can be traversed, it is smooth space, a striation if not. However, if later in the game the player gets hold of a torch that can melt the ice, it retroactively becomes a force-sign after which, if its affects are exhausted, it simply begins to be, now a hole (smooth space) through which the player can pass (a clue perhaps of where a hidden key is located).

In certain games the background or ground under which we tread can be smooth spaces that affect movement in different ways. Ice, as suggested, can be both smooth and a force-sign. The same applies for any space whatsoever that can affect compositional changes when encountered. Mist that affects visibility in an FPS; a grassy verge that causes the racing car to slow down; even the invisible presence of heat that causes health to diminish; these are smooth spaces that are also force-signs but which generally fall under the category of the friction-image.

The representation of fire in a videogame denotes heat signalling the possibility of danger. Irrespective of any common-sense interpretation of what the sign represents for another object there is always a process of learning about their affects – if they are force-signs or sterile-signs or mere decoration – or how by entering into proximities with them gameplay is affected. It is a process of experimentation with different assemblages, learning, for example, that the flaming torch can melt ice. But is a torchlight that reveals hitherto hidden parts of a room a force-sign? Yes, because changes in light intensity as a result of its usage make the torchlight a force-sign but not the scenery it reveals because unlike ice the scenery itself does not produce affective changes. Force- and sterile-signs, the smooth and striated and the corresponding image of friction are the means by which the artist communicates with the apprentice and through which the apprentice learns their craft. The more abstract the sign, the more uncertain its affects, the greater is the need for experimentation. The arrows in *Super Mario Galaxy* that signal the direction of gravity are communicative. Sometimes they appear on a backdrop and at others on an object that can be spun to change the gravity's direction in which case a force-sign. The arrow itself is not intensive but if by the effect of spinning the object the direction of gravity changes, even though the magnitude is constant, affective changes are produced. Switches or activation points that open doors and such like have uses; they may reveal zones in which a new power is acquired but the action in itself does not combine in any way to produce changes in intensity.

Force-signs are multiplicities. They are comprised of haecceities, degrees of heat and so forth that can be assembled in different way to produce variations in gameplay that can only be known through the compositions, alliances and proximities. As with other concepts of the book, the schema of the force-sign is a

tentative answer to what videogames are and what they enable us to do, the images and affects specific to them in contrast to other artistic forms. There is no definitive answer and so it is not claimed that all possible permeations are accounted for here. The schematic as defined here is an opening for thinking about the extensive and intensive features of the game environment.

The artist communicates either by instruction, literally telling the apprentice that something can or cannot be done through the use of voiceovers, written text and cut scenes, or by suggestion, suggesting that perhaps this or that object if drawn into an assemblage will liberate forces. Like the writer who describes the character of the book through words rather than actions, the artist can explain what each sign is for and how they correspond to the overall objective. Better, though, that the apprentice learns by discovery, to play with force-signs and by their actions and the affects they produce learns what they are capable of and how those capabilities can be diagrammed in relation to a problem that is presented through them. This is how Valve communicates with the apprentice in *Half-Life 2*, the opening stages of the game an object lesson in how to diagram a story through force- and sterile-signs, the smooth and striated:

> 'Rise and shine Mr Freeman. Rise and shine'.
> 'Wake up Mr Freeman. Wake up and smell the ashes'.

It begins on a train in which there are no force-signs, only the striations of the carriage and seats on which the protagonist Gordon Freeman can climb but which serve no function. Extra-diegetic overlaid text (words that are not within the environment of the game itself) provides basic information about the controller schematic (I played this on the Xbox 360). The doors of the train are a striation that Freeman can pass when upon arriving at the platform they open, thus revealing a smooth space. A huge television monitor is mounted on the wall of the station on which a man announces: 'Welcome to city 17… it's safer here'. It is part of a mise en scene that evokes Big Brother and with a number of other decorative signs conveys an atmosphere that feels oppressive rather than telling us, perhaps through cut scenes, that we have entered a dangerous environment. The monitor is entirely out of our reach and cannot be affected either by throwing an object at it or switching it off. Much like a clock in the classroom, it is an object that functions in correspondence with other objects as part of the form of content comprising statements: what is sayable and doable. This operates at two intersecting levels. First, what is sayable and doable in the fictive world of *Half-Life 2* and second what the ludo-diagram itself authorises. We learn through experimentation that within the established law of the fictive world certain actions are punishable and that the game itself rewards us if that law is broken in certain ways. Deviation from the established law is diagrammed by the artist, first communicated by a soldier who beats a civilian and who will harm Freeman should he intervene. In this respect, as in others, the player is always the apprentice. The soldier is a force-sign. The scene, like the television monitor, is evocative while also in this case potentially

affective but only in a bad way. Skipping forward, we enter a room with a dentist's chair where there are blood stains on the floor. These signs are also suggestive of the malignant nature of the regime but which cannot be enacted on to affect changes or which serve any function in respect of the gameplay itself. They are evocative. Another soldier accompanying Freeman now reveals himself to be an ally. This provides us with important information: not only is it an oppressive regime we are also antagonistic to it, signalling the immanent law of the game. Now we encounter the first of many ladders with instructions overlaid on the screen that X on the control pad enables us to interact with objects, to pick them up, mount them and so forth. By these actions Freeman is able to climb the ladder and make his escape into an open space reminiscent of Berlin. There are soldiers guarding electric barriers that function to striate the smooth space in which Freeman can roam. Soldiers block open doors. No action in the game will cause them to move out of the way, attack or be killed. They are a decorative part of a striation. Nothing in this environment is affective. There are no force-signs and so there is nothing that can harm Freeman, not even the passing of time. We can simply wander this space as long as we like without it having any impact on gameplay. It is typical of many environments at the beginning of a videogame in which a player can unhurriedly wander and experiment, here learning that walls and electrified barriers are striations and which objects function as tools or sterile-signs. The striations are a problem for which the solution is either a force- or sterile-sign that has to be located in order to progress. Perhaps there is a grenade that can blast a gap in the wall, a door that can be opened or a ladder that can be climbed. It is a game of hunt the force-/sterile-sign, a device that artists frequently use to create linearity in what otherwise appears as a non-linear environment. It enables Valve to simplify the design by avoiding having to program branching pathways and also enables the apprentice to familiarise themselves with the environment of *Half-Life 2* by testing the signs/motifs comprising it without being harmed. Let us pause on this briefly.

If overused or too obscure such bottlenecks, rather than providing necessary structure, unnecessarily inhibit gameplay. Valve over-relies on this device in both *Half-Life 2* and *Portal 2*, in the latter solving puzzles is often the case of spotting a surface into which a portal can be placed. *The Legend of Zelda* series contains many such bottlenecks/hunt the force/sterile-sign. In one example from *Ocarina of Time*, Link needs to speak to the Goron king whose room is blocked by a door guarded by a Goron who hints that entry is attained by playing Zelda's lullaby on the ocarina. However, it is not enough simply to play the lullaby, one has to be standing on a precise spot in order for it to have the desired effect. The ocarina has to be played while standing on a mat with the royal family's insignia on it. If, as in my case, this is not spotted, the act of playing the ocarina produces no effect and so raises the question of whether the clue from the Goron points to something else. This leads to a variety of experiments, in my case with *Ocarina*, the first Zelda I played, going back and forth through different parts of the game world to discover the key to progression. Eventually, I realised what had been missing from the

assemblage. A seasoned player of the Zelda series is more likely to recognise the motif, having experimented before. By now the solution to the puzzle seems obvious; the apprenticeship has advanced. Such bottlenecks can cause frustration and, even in the most finally crafted videogames, put the apprentice off from playing them.

Back to *Half-Life 2*. Progression occurs through discovery; we discover that in one alleyway there is a dumpster that can be climbed on, above which there is a ladder that can be climbed up and a ledge that can be walked along that takes us over a fence enabling us to drop down on the other side. Dumpster-ladder-platform are parts of an assemblage comprising two sterile-signs and a smooth space that draws a diagonal across the striation of the fence opening up a new zone that leads to a door into a building in which troops are encountered and a chase across rooftops ensues. This ends in capture and then rescue from Alex Vance. Finally we are introduced to the mission and acquire the orange suit, its significance and the power it affords underlined by the *Half-Life* refrain. Freeman is powered up and ready for action. By this stage we have already learned that crowbars are force-signs used as tools to augment Freeman's power over objects, to break them, and weapons that can harm enemy combatants. Soon he will discover the forces of the gravity gun and the power of oil drums that soldiers conveniently stand in front of. This device, used repeatedly in *Half-Life 2*, is an unimaginative way of enabling progression in the midst of overwhelming opposition but only by comparison to later FPSs by which lights it appears aged. As *Half-Life 2* unfolds many other force- and sterile-signs, striated and smooth spaces, will reveal the complexities of a ludo-diagram that despite this stands as an object lesson in game design that has left an afterimage in every FPS that has followed.

Clint Hocking's description of *Minecraft* conveys the richness of the various signs of a videogame. He writes that in *Minecraft*:

> there is not one byte devoted to verisimilitude that is not directly supporting interactivity. Nothing is represented in the world that does not have mechanical meaning. Every block has meaningful properties, every pixel communicates information, and every player action over every clock-tick interacts with those properties and updates the information communicating the world state.[1]

What Hocking is describing is the visible representational plane of the ludo-diagram comprising different signs that the experienced *Minecraft* player knows also to be a storehouse of forces. Just as a cook assembles the ingredients for an imagined meal, the apprentice assembles the signs for an imagined building. Metaphorically speaking, on one axis is the assemblage of onions, broccoli, tomatoes, seasoning, fish and so on crisscrossed by the hand, the frying pan and the heat from which something entirely new is created. Intensities are the magic ingredients that produce differences in kind. It is not the quantity of ingredients available that determines the quality of the meal but how those quantities are

diagrammed, assembled and transformed in the process of cooking when heat is added. The question for the videogame artist is how to coordinate those elements in such a way that when the apprentice adds their forces it is possible for them to produce something new. What makes *Advance Wars* so rewarding in this respect and gives it such longevity, is that there are multiple strategies to pursue in an environment where every sign is a force-sign for one unit or another. The skills demanded of the apprentice are unrelated to the complexity of the ludo-diagram but rather how the variables are assembled and what the apprentice can do with them, the original *Donkey Kong* demanding greater skill than the more varied though less-punishing *Super Mario Galaxy*, for example.

The more familiar we are with a particular genre, the easier it is to translate the different signs comprising the diagram and work with them such that the interval between perception and our responses to the affects or vibrations on the sensory plate becomes imperceptible. A videogame that aims to visually represent the world as a person encounters it in life would seem already to provide the clues as to the affect of the force-sign. While this will often be true, what makes a videogame realistic is first and foremost how it affects and can be affected: the image and the images produced by our actions.

Five varieties of realism

What began as shock when the plane plunged into the World Trade Center on the morning of 11 September 2001 was by the nightly news bulletins the drum call to war. The lesson of Jacques Lacan is that what we experience as reality is except in the very moment of trauma already filtered by language. What Lacan calls the Real, the reality prior to interpretation, like the forces on Bacon's self-portraits, is (subsequently) accounted for in the Symbolic Order of language. Realism is only ever a representation of the Real and so when describing a videogame as realistic we are not only referring to a visual and aural verisimilitude, there is the question of how that reality is imagined and symbolised; in other words, how reality is being interpreted. For there to be an encounter with the Real as such, in a videogame it would have to elicit trauma of a kind that would pull the symbolic rug from under our feet, putting the player momentarily in contact with the abject void of human existence. Not a particularly useful concept then for describing videogames. But there is another kind of real, affect, the sense of being in the game and flowing with it such that the material and digital divide is blurred: the moment we are neither in one world or another but between worlds, in the space of a duration. Five varieties of videogame realism are identified here, none of which are in themselves barometers of a good videogame. It will depend on the game, the motifs of a genre, intentions of the developer and, on a more subjective level, how realistic it appears to the apprentice. Affective realism is the most generic form of realism to videogames so let us start with this by reminding ourselves of axiom ten:

> *Realism in videogames is primarily determined by the degree to which the player can become immersed in the game up to the point that the relationship between diegetic and non-diegetic space is imperceptible.*

All videogames by my definition allow for rhizome-play or they are not a videogame as in the case of *Dragon's Lair* or else they are arborescent tracings that entangle and block the player's becomings, inhibiting rhizome-play and halting the apprenticeship, if only momentarily. But what determines affective realism is not rhizome-play as such. It is a combination of factors as noted in the final axiom, such as how force- and sterile-signs are diagrammed and striated to establish at least a minimal form that the player can work through and intensify to advance their apprenticeship. The quality of *Bayonetta* and fighting games such as *Street Fighter IV* rests on the potential for an immersive experience. I tend to find fighting games too fiddly to get much enjoyment from them and so their potential is never fully realised when I play them. The elements comprising both games, however, are finely diagrammed to enable those with the patience and aptitude to become immersed in their worlds. They are designed first and foremost to enable affective realism and irrespective of the player amply succeed in their design by achieving this. *F-Zero GX* is a fast paced futuristic racer designed on this principle, one that its ludo-diagram lies or dies by. *Gran Turismo* can also be affectively realistic for a gamer habituated to its world but that is designed first and foremost to represent an actual car and the more complex mechanics of racing one. Qualitatively *F-Zero GX* is more affectively realistic than *Gran Turismo* but not necessarily for this reason alone a better game. If, however, *Gran Turismo* were designed to play in the vein of a fast-pace arcade racer then it would have failed on its terms. So while we can say that affective realism is possible in all videogames, it is a more pronounced aspect of the design ethos in some of them. Fast-pace arcade-style videogames, FPSs – especially the quality of 'gunplay' – and so forth are typically more affectively realistic than games with more complex control mechanics that are less action-oriented. The quality of a shoot-em-up rests on affective realism and the principal reason why *Ikaruga* is a classic of the genre. Affective realism matters more or less in all videogames. If *Ikaruga* and *F-Zero GX* are at one end of the scale those at the other, such as a complex flight simulation, will be affectively realistic only for the most committed gamer whose gaming interests are likely to be more singular.

The second kind is *representational* realism, the common-sense realism that at its most authentic achieves photorealism. *Gran Turismo*, *FIFA Soccer* and *Call of Duty 4: Modern Warfare* are more or less successful variations of this type.

The third kind is *conceptual* realism. Here we are talking about games that aim to reproduce through an ideological filter the social dynamics, discourses and so forth associated with reality. *GTA* maps the idea of a neoliberal city, crime and deviance and *COD4* the war on terror and tactical warfare. The closer conceptually the game is to reality, the harder it can be to achieve affective realism. Piloting an aircraft in a videogame, for example, is nothing like piloting an aircraft in reality. The closer the correspondence between representational realism and conceptual

realism the more complex in this example the control schematic is, perhaps by mapping the different controls to a keyboard or touch screen. This would present a major obstacle to working fluidly with the game dynamics and so requires a higher degree of dedication from the apprentice. It does not necessarily make a bad game. The question would simply be one of preference and patience. On another vector, an FPS that aims to conceptually *and* with an increasing degree of representational realism map the actual horrors of war risks alienating the player to the extent of making the game unplayable. It is too close, as it were, to the bone of war. It also risks by this token trivialising the suffering caused during real life conflicts by making it into an object of entertainment. The more conceptually *un*realistic the game is in terms of how it corresponds to actual warfare, the more likely a player can immerse themselves in it knowing, after all, that it is 'only a game'. While I have qualified Pfaller's (2014) point that intensive play relies on a suspension of disbelief, when for the apprentice the game is too conceptually real and therefore uncomfortable to play, no matter how finely diagrammed it risks becoming unplayable. In the final chapter we discuss the potential of videogames to deploy strategies to bring our libidinal investment in oppressive narratives into the foreground by doing precisely this.

The fourth category is *contextual* realism. In the made-up laws of physics of *Super Mario Galaxy*, the intensity of gravity relative to the size of the planetoids is more or less consistent and predictable, therefore contextually realistic. *Destiny*, by contrast, attempts to conceptually map actual planets in the solar system but which fails to account for their different gravitational pulls in the actual gameplay. Judged according to its own immanent laws of physics and its attempt to achieve conceptual and representational realism the game is inconsistent. In this particular respect it is contextually unrealistic. Shooters typically fail on this count when, in spite of their representational realism – against which contextual realism can be judged – foe are taken down only when peppered with bullets many times over. The representational and conceptual realism of *The Last of Us* is state of the art but flounders contextually for this reason.

Finally, supplementary to representational realism, is *self-referential* realism or simulacra. *FIFA Soccer* and 'soccer' simulations in general fit this category. *FIFA* is representationally realistic in the sense that it follows a convention of presenting gameplay from a birds-eye (televisual) perspective, as opposed to say the first-person perspective of the football player. Consider, for example, *COD* presented from a top-down perspective, perhaps in the vein of the representational realism of real-time strategy *Company of Heroes* on the PC but more akin in gameplay to the arcade *Commando* or *The Chaos Engine* on the Amiga. Videogames follow conventions. They are afterimages of those that were influential before them. *FIFA Soccer* is the afterimage of games such as Mattel Intellivision's *Soccer* (my friends and I were hugely impressed by the graphical realism of *Soccer* in 1980, which is always relative to the state of technology of the time). All representational videogames are abstractions of reality. With simulacra we refer to the particular convention of representing reality such that we can say that *FIFA Soccer* is self-referentially realistic

because it obeys the aesthetic of representing videogames (in the case of soccer) we are accustomed to. Essentially, videogames are simulations of simulations with the reality that is referenced simply the videogame itself. As Jean Baudrillard said of the hyper-real, the image is its own reality. It is because we are so habituated to an idea of reality as conveyed in videogames that there does not have to be any bodily correspondence to the actual world we inhabit for a game to appear realistic in this respect. *COD: Advanced Warfare* is a fictionalised representation of the future but one that retains a level of representational realism in that it maps a visual and aural perception of reality as defined by the genre it belongs to. Its ability to effectuate realism lies in part in the representational conventions of FPSs (and science fiction) and, as such, is self-referentially realistic. The same points can also be made about *Destiny*.

COD: Advanced Warfare is more or less realistic in each of these five ways, whereas *Advance Wars* is only affectively and contextually realistic in respect to the latitude such a cartoon-style aesthetic affords, it is faithful to its own immanent law. Put another way, if a game makes no attempt to be representationally realistic, it does not have to contextually map the actual world we inhabit, only the world defined on its terms. So in summary:

1 Affective realism: the immersive potential of the game relating to how the various elements comprising it are diagrammed to maximise the possibility for separation between the digital and material worlds to dissolve in the event of play. All videogames can be affectively realistic so it is a question of how immersed the player is in the game world which is always subjective and how the game is diagrammed to enable this potential. Arcade-style action games are more likely to engender affective realism for this reason and it is a quality upon which their status rests.
2 Representational realism: the resemblance of the videogame to the world beyond the screen, particularly in its visual and aural representations. Related to the common-sense idea of realism.
3 Conceptual realism: the intentional and unintentional mapping of social relations, discourses and ideologies of the non-diegetic world to the videogame though in a largely superficial way. The closer the correspondence between the concept of reality, say of war, and reality as such, the more affective realism is potentially undermined and the concept brought into question.
4 Contextual realism: the extent to which the world of the videogame conforms to its own immanent laws.
5 Self-referential realism: the extent to which what is represented appears realistic is due to an aesthetic convention.

The particular genre and intentions of the developer to achieve different levels of realism signal the importance of balancing these various types of realism to engender forms of playability.

This chapter examined how the apprentice develops the skill to intensify or liberate the forces of the ludo-diagram. Force- and sterile-signs are the principal means by which the potential of the diagram is explained to the apprentice who composes new gameplay possibilities through experimentation. According to this thesis, the apprentice is an artist in residence, a becoming-artist. If the videogame blocks this capacity by being too easy or too difficult and obviates the need for or makes experimentation pointless and (overly) frustrating, it ceases to be a rhizome-map, depending on the game, sensibilities and capabilities of the player relative to the diagram itself, and objectively and/or subjectively becomes a tracing.

Note

1 www.edge-online.com/features/why-minecraft-is-the-most-important-game-of-the-decade/

6
MOLECULAR MARIO

The videogame plane is the plane of all possible videogames, the plane on which developers and players compose. It is the surface on which all events of play occur, all possibilities arise. Videogames enable us to loosen the ties to our molar identities, those rigid categories of class, race, gender and so forth structured by unequal power relations, and escape the worlds we ordinarily inhabit – but only in the process of becoming. The question for this chapter is not 'who is Mario?' (referring to the stereotyped molar form) but rather 'what can Mario (enable us to) do?'. How do we emit a molecular Mario? Not by imitation but through composition, compositions of different creatures or animals. Becoming-animal is the process by which intensities of different creatures enter an affective alliance with one another through compositions that are molar (bodily) in origin. There are many different compositions: a becoming-wolf, a becoming-whale, a becoming-writer, poet, gamer and, for our purposes, Mario, Sonic, Master Chief and so on. The player does not become Mario, he enters into an affective relation with the molar (representational) Mario to produce a molecular Mario who, through assemblages of different kinds and complexities, hops, skips and jumps with various magnitudes of intensity (speed, slipperiness) that affect every aspect of play. The lines separating or striating digital and material worlds dissolve in the space of becoming-animal. This differs from the concept of 'post-human' in a number of ways, principally that the concept denotes a quality inherent to all of us to exceed our organs through relations of affect as opposed to prosthetic supplements. Becoming-animal is part of a broader family of concepts that enrich its meaning and applicability.

This chapter presents an opportunity to pause for breath and reflect on where we are by revisiting concepts fleshed out previously. We return to intensities, bodies without organs and machinic assemblages, both to recall and advance the argument on human/object relations from a Deleuzian perspective. The book has so far

neglected Deleuze's two volumes on cinema with their pronounced Bergsonian angle. We make amends for this here by bringing the movement-image, action-image and time-image into the orbit of videogame analysis, further enumerating on Bergson's philosophy, supplementing this with our own addition to this list, the friction-image, which, it will be argued, is unique to videogames.

Becoming-animal, becoming-Mario

Deleuze and Guattari write: 'The becoming-animal of the human being is real, even if the animal the human being becomes is not; and the becoming-other of the animal is real, even if that something other it becomes is not' (2003b: 238).

Animals and organisms of various kinds have definite properties and patterns of behaviour. A dog has four legs, makes a 'woofing' sound, wags its tale when excited and develops close familial bonds with humans. In Yorgos Lanthimos's film *Dogtooth* (2009) the children of a family are kept in isolation from the rest of the world and socialised to stand on all fours and bark when sensing danger. This is not what Deleuze and Guattari (2003b: 274) mean by becoming-animal, although one could be forgiven for thinking so when reading their work out of context: 'You do not become a barking molar dog, but by barking, if it is done with enough feeling, with enough necessity and composition, you emit a molecular dog'.

The keys to understanding this concept are the terms, touched on before, 'molar' and 'molecular'. The first, to recall, describes identity, the language used to define a person, dog or whatever as an actualised or fixed image. The children in *Dogtooth* are mimicking a molar dog but they do so with such force and intensity that for them the act feels real. 'Becoming is always of a different order than filiation. It concerns alliance' (Deleuze and Guattari, 2003b: 238). The molar Mario is the one we think of as a plumber with moustache, blue dungarees and red cap. The molecular Mario can only be defined by a series of affects or intensities, speeds and slowness, of 'stompiness,' 'slidiness' and so forth. Molar lines are shaken and uprooted by molecular forces, moderations more or less fluid and lines of flight. These last, to recall, are more radical departures, offshoots, ruptures, escapes, intersections of differing lines, co-evolving, co-authoring assemblages that loosen, sometimes bind or that, when change is so radical as to derail us, suck us into black holes of isolation and despair: useless machines!

Molar is extensive and molecular intensive. Recalling the example given earlier, here in Deleuze and Guattari's (2003b: 483) words:

> a temperature is not the sum of two smaller temperatures, a speed is not the sum of two smaller speeds. Since each intensity is itself a difference, it divides according to an order in which each term of the division differs in nature from the others… one can divide movement into the gallop, trot, and walk, but in such a way that what is divided changes in nature at each moment of the division, without any one of these moments entering into the composition of any other.

Another recollection, the different states of the horse's motion are immobile durations of intensity, differing in kind. The same can be said about videogames. Every achievement, every new power, every level originates with the ludo-diagram that the apprentice composes forces with to produce multiplicities in the event of play that in the space of a duration relate to specific states. When Mario becomes a bee he composes forces with the intensities of a (videogame) bee exceeding his own organism in the process. There is a difference in kind between Mario in dungarees and Mario the bee and these differences are intensive. We are signalling a relationship between two (or more) creatures: an alliance, a becoming-animal.

Becomings are independent of the creature. The animal or, in the case of videogames, avatar becomes like a phantom limb; the feeling is there but the thing, the object, is not. To illustrate the process that begins with two molar beings to create an in-between molecular force of becoming, we can use Brian Massumi's example of the body without organs which he draws from former president Ronald Reagan's autobiography *Where's the Rest of Me?* The title of the book is a reference to the role of an amputee that Reagan played in his early acting career. To get into the part Reagan went through a process of training his senses to perceive a gap in place of his leg and ultimately *really* feel his limb to be missing. As Massumi (2002: 56) explains: 'Reagan's line of sight is trained on his own body. It moves down his torso toward his waist, his centre of gravity, and then disappears as if moving through his body's centre into another space, experienced as one of affect'. Instead of seeing an actual body, Reagan only experiences a molecular affect, the feeling without a physical source, whether his own molar body or that of an amputee. In other words, Reagan composes a body without organs in proximity with another molar entity – that of the amputee – by which he gains the strength and power to exceed, in his case, what hitherto were the limits to his acting abilities. Becoming-animal is a relationship between two or more bodies – Reagan + amputee, player + Mario – multiplying in the alliance of an in-between of self-differentiating becoming. Herman Melville's classic tale of *Moby Dick* provides Deleuze and Guattari (2003b: 244) their example of becoming-animal. The story centres on Captain Ahab who has to wear a prosthetic leg made from whalebone after being crippled by the eponymous whale that he goes on to hunt. As he chases Moby Dick across the ocean, Ahab acquires the force of a whale, the force of the pack, by sensing and emitting new rhythms, movements and speeds, the force of becoming-whale. Every loosening of identity, all lines of flight, risk annihilation or a point of no return, and when finally Ahab harpoons the creature, his molar organism is ensnared in the rope and, through the force of the whale's own becoming-other (exceeding his own body), Ahab is dragged poetically into the depths of the ocean.

Reagan does not have to be amputated to experience the affect of an amputee just as Ahab does not have to swim like a whale in order to track one down. I do not have to jump up and down in my living room or go into space to affect a becoming-Mario. Short of being other, there is an affective becoming-other, becoming-imperceptible. The ordinary and extraordinary bleed together through

a process of gradual contagion. By affecting the role, being in the shoes, as it were, of an amputee, the act feels real and now, paraphrasing Reagan's description of his own becoming, we no longer see ourselves in the rushes. In the case of videogames, we no longer self-consciously engage in an act of play; the reality/digital relationship is deterritorialised and thus momentarily forgotten, the point perhaps of immersion. Reagan, as Massumi (2002: 57) puts it, 'is in the space of the duration of an ungraspable event. The feeling of the event washes through him (or that in-between of space and time), a wave or vibration that crests in the spoken lines'. It is this space that Ahab inhabits and, in a qualified way, the apprentice and avatar, qualified because videogames – except perhaps in the most extreme of cases – never put the bodily organism who plays them in mortal danger.

But is there really a becoming-animal in the assemblages of apprentices and avatars when the former has, in effect, taken possession of the avatar and not the other way around? Consider Deleuze and Guattari's (1986) discussion of Franz Kafka's stories of human/animal relations. The most famous of these is *The Metamorphosis* in which the protagonist Gregor Samsa awakes to find himself transformed into a large insect. Such relations are:

> a sort of conjunction of two deterritorialisations, that which the human imposes on the animal by forcing it to feel or serve the human, but also that which the animal proposes to the human by indicating ways-out or means of escape that the human would never have thought of by himself.
>
> *(Deleuze and Guattari's, 1986: 35)*

All becoming-animals consist of a conjunction of at least two bodies, those that are diagrammed by the artist that the apprentice enters into proximities with, the force-sign of a bee, a rhizome-gun, a metal suit that enables Samus Aran to morph into a ball and diagram affects consistent with a ball's capacities and, more fundamentally, the avatar itself. The human imposes her will on the animal (avatar or force-sign) while, at the same time, in a never-ending apprenticeship, the avatar indicates ways to proceed, to exceed, in other words, what the apprentice was, until then, capable of doing. And so, in *Super Mario Galaxy* when Mario acquires the force of the bee, he composes forces with whatever affects are immanent to the bee as composed by the artist inspired by the image of an organic bee. The videogame bee is not a real bee but it becomes real through compositions made possible by the artist's diagramming of play. Human *and* Mario *and* Bee *and … and … and …* conjunctions that enable the apprentice to reach new heights and acquire new skills. As Muhammad Ali may well have put it, when playing videogames we float like butterflies and sting like bees, acquiring new affects that enable us to embark on new lines of flight.

The becoming-animal/becoming-Mario is part of the apprenticeship in the art of mastering the form. Becoming-Mario is the process by which we test and liberate the storehouse of forces immanent to the program. Avatars, whether represented or implied (such as the case in first-person shooters), and the objects

that can be manipulated (for example the blocks in *Tetris*), are molar entities that decompose or become molecular through a process involving thinking in terms of the avatar or object and exceeding the limits of bodies defined by their organs, the multiplicities of the given object in its form prior to the apprentice's introduction of play-forces. By becoming-animal, the player acquires the strength of the avatar connecting with bees, wings, environmental affects such as wind and heat and so forth, creating assemblages that are composed and decomposed in the event of play.

Machinic assemblages

Deleuze and Guattari's retelling of the story of Little Hans, one of Sigmund Freud's famous case studies, illuminates the difference between thinking in molar and molecular terms, and, for our purposes, also illuminates the combinations of bodies as assemblages that enhance and decrease the intensities of play. The issues they raise are also relevant to the next chapter on the problem of interpretation.

At the age of four, little Hans witnessed a carthorse collapse under the weight of a heavy load. Traumatised by the scene, Hans developed a fear of stepping out of his home in case of witnessing the same thing happen again. Freud saw the event and the various elements making it up – the horse, cart and boxes carried on the cart – as symbolic of sibling rivalries. Freud considered the horse to be a representation of the father who threatened Hans with castration (read: punishment) for desiring the elimination of his sister who stood as a rival for the attention of the mother – the caregiver satisfying Hans' needs and desires. Told that storks deliver babies, Hans found the cart, according to Freud, symbolic of a baby-delivering stork while the boxes were the cloth wrapping up a new rival for the mother's attention. In psychoanalytic theory, the Oedipal triangle of daddy-mummy-me is key to understanding the dynamic processes by which children are socialised, the Father being a symbol of authority compelling social norms and the Mother a symbol of desire embodying the fulfilment of needs and desires.

For Deleuze and Guattari (2003b), Little Hans' horse is affective, 'not a member of a species but an element or individual in a machinic assemblage: draft horse-omnibus-street'. Rather than molar names for fixed identities, 'Horse', 'Dog' or even 'Mario' can be thought of in terms of the 'speeds that compose them and the affects that fill them' – as molecular. Deleuze and Guattari go on to say of the horse and cart and so on that 'it is by virtue of the event they are in themselves and in the assemblages – the becoming-horse of Little Hans' that the body is (re)formed (Deleuze and Guattari, 2003b: 264). The ungraspable *virtual* event contaminates the *actual* body and this produces enhancing and decreasing intensities producing good and bad affects.

The example underlines the problem Deleuze and Guattari have with interpretation, a language imposed as it were from the outside. It is a recurring problem in videogame analysis, as discussed in the introduction. Consider Tavinor's (2009: 121) critique of the *Half-Life* series:

> The narrative of *Half-Life* has been consistently praised by reviewers and gamers, which is quite astounding given that the protagonist of the narrative does not even speak … the protagonist in this game, held in high repute for his deeds throughout the game world, cannot even contribute to a conversation, and so is forced into following along a mostly passive force in the narrative, ordered here and there to perform various tasks.

Tavinor is baffled that other critics have not picked up on what for him is an important flaw in *Half-Life*. By his lights, *Call of Duty 4: Modern Warfare* is more deserving of critical acclaim because the character 'Soap' McTavish communicates verbally. Intensities do not register in this schema, only dialogue and narrative. Even allowing for the fact that dialogue and narrative are important in some videogames, without a consideration of affect not only do we miss their essential qualities we also fail to appreciate how the player is invested in ideologies pregnant in the gameplay, as discussed in the next chapter.

Newman, by contrast, does understand the importance of affect. He cites Hideo Kojima, the producer of the *Metal Gear Solid* series who explains why it is sometimes preferable to make avatars more one-dimensional:

> We tried not to give him [Snake, the *Metal Gear Solid* avatar] too much character because we want players to be able to take on his role. Snake isn't like a movie star. He's not someone you watch, he's someone you can step into the shoes of. Playing Snake gives gamers the chance to be a hero.
>
> *(Kojima, 1998: 43)*

Newman (2002: 413) is more emphatic though and perfectly conveys the becoming-animal of the molar form without actually naming it:

> it does not make sense to even talk about 'he' on-line, because here there is no 'he' as distinct from the engaged player. Like Lara Croft or Sonic the Hedgehog, it only makes sense to talk of 'him', 'her', or even 'it' outside the on-line gaming experience as, on-line, 'Lara' is the player's ability to run, jump, shoot … while 'Sonic' is speed, looping-the-loop, collecting rings.

It is not a question of who the character is, the backstory or anything else, but rather what the character – essentially the apprentice – can do.

Atmosphere is evoked in *Half Life 2* at an affective level through the various force-signs and sterile-signs described in the previous chapter. By thinking in terms of affect, a deeper sensibility than one evoked by cut scenes is revealed. The avatar does not sit in isolation from the environment it is in or from the apprentice who enters into zones of proximities with forces immanent to it. In other words, the depth of Gordon Freeman's character is discerned in the broader assemblage of forces constituting the videogame inclusive of the player. Freud translates affect into molarities of the socius he is part of and wants it to fit his particular worldview.

Tavinor has no conception of affect and so does not recognise the despotic, arborescent nature of his interpretation. The difference with Deleuze is that representation is thought about in terms of compositions, lines of escape and becomings.

The Last of Us begins with what is surely one of the most affective moments in the history of videogames. The character is essentially hollow, so why is the absolute and premature death of the child we play so affecting? We experience death at three intersecting levels: the character itself, from the point of view of the other embodied by the father and our own line of death in the assemblage we form with the character and the affects they produce.

As noted previously, nothing can be known about a body until it is known what its affects are; what, in other words, it can do, how it can enter into compositions with other affects – of another body – 'to be destroyed by it, either to exchange actions and passions with it or to join with it in composing a more powerful body' (Deleuze and Guattari, 2003b: 257). Affects can be understood as 'effectuation of a power of the pack' that transforms or rather exceeds a molar subject. The pack is the power of the multiple, of the compositions of a body without organs, compositions of intensities, accidents and events together creating unique individuals or haecceities such as degrees of heat. As Deleuze and Guattari (2003b: 253) explain:

> A degree of heat can enter into composition with a degree of whiteness, or with another degree of heat, to form a third unique individuality distinct from that of the subject … A degree, an intensity, is an individual, a Haecceity that enters into composition with other degrees, other intensities, to form another individual.

By playing with forces the apprentice encounters multiple haecceities and composes individuations from them, hence axiom nine:

> *Force-signs are comprised of haecceities. Bodies enter into proximities with them, to be augmented by them or decomposed by them.*

A leaf greens and water chills through changing intensities of heat, light and pressure. At a certain level of intensity, the horse changes its gait or Mario – through the application of force, *play-force* – switches from a walking to running pace, gathering additional momentum by entering into assemblages with ice that affects degrees of slipperiness and enables Mario to acquire the speed of the skater. This is the (machinic) assemblage of the affective powers of the developer-apprentice-Mario-ice. Mario increases his speed by combining with different haecceities, warmth and coolness – the affect of ice – at the same time as his power to control his movement decreases. The figurative Mario becomes Mario-the-figure. The capacity of bodies to either enhance or diminish the intensities of a becoming depends on the potentialities inherent in the design that are composed

and recomposed in every event of play. By thinking of the different compositions of videogames, we can discern their non-representational elements – the videogame plane and the diagramming of it – and distinguish them from representation as such. In the most finely crafted ludo-diagrams on which the most skilled of apprentices apply their forces, there is poetry to be found in play, evoked by Deleuze and Guattari (2003b: 262) when they say:

> You are longitude and latitude, a set of speeds and slownesses between unformed particles, a set of nonsubjectified affects. You have the individuality of a day, a season, a year, *a life* (regardless of its duration) – a climate, a wind, a fog, a swarm, a pack (regardless of its regularity). Or at least you can have it, you can reach it.

Jumping, spinning, stomping, sliding, growing, shrinking, becoming-Bee and so on; these are some of the molecular affects of Mario, Mario the artistic figure – a figure skater. Mario himself enters into compositions with atmospheric and environmental changes, intensities of heat that turn ice into water, intensities of light, penumbras and darkness, and, crucially, the unseen force of gravity, the friction-image described below. Paraphrasing Deleuze and Guattari, you do not become a jumping molar Mario, but by making the avatar jump, if it is done with enough feeling, with enough necessity and composition – skill and poetry – you emit a molecular Mario. The apprentice acquires the force of Mario, and Mario acquires the force of the apprentice's human becomings in proximity with aforementioned environmental intensities, together composing a body without organs. It is inconsequential whether the avatar is represented like Mario or implied, as in the case of *Half-Life 2*, or even an abstraction, perhaps the crosshair in *Missile Command*. It is the apprentice's legs that spring forth when jumping onto a platform in *Rayman Legends*, their hands that hold the weapon and their finger that releases the trigger in *Vanquish*. Calleja (2007: 242) claims that the 'lack of an intervening avatar can induce deeper involvement than third-person manipulation because it anchors the player more directly in the world'. But it is the quality of the ludo-diagram and the compositions of the apprentice that determine how deep the involvement is, not whether the perspective is first or third person.

We enter compositions with other bodies when traversing the fantasy worlds of videogames. Those playing Mario for the first time may just as well be entering zones of proximity with Sonic or Lara Croft whose affects we have already assembled during our apprenticeship with form. If they have never played a videogame before, clues in the aesthetic will point to symmetries in the non-diegetic world: the human form can run and jump, dies after falling from a great height and so forth indicating that this may also apply to Mario. Recollection images enable us to embark quickly on new lines of flight in unfamiliar worlds. The apprenticeship is carried through different lines. As a child I played with marbles and then played Atari's 1984 arcade classic *Marble Madness*, joining the marble-trackball-*Marble* assemblage, learning about the intensities of catapults,

wind and wave, becoming-Marble … a marble becoming-other, worlds within non-subjectified worlds, play events: the (de)subject(ified multiplicity) of duration. Nearly 20 year later, Sega released *Super Monkey Ball* with the launch of the Nintendo GameCube. Echoing the play dynamics of *Marble Madness*, the game, though in many respects fresh and innovative, was already familiar to me. Traversing the isometric mazes with ease, I was becoming-marble again, becoming-Aiai (the monkey character trapped in a transparent ball). *Super Monkey Ball* also contained mini-games such as *Monkey Race*. By entering into proximity with the molecular affects of *Mario Kart*, the closest kin to *Monkey Race*, I emitted molecules of a different kind of Mario, the *speeding* Mario: Kart-Track-Boost strip – increasing and decreasing intensities of speediness. The action adventure elements of certain games draw me into the compound with Link of *The Legend of Zelda*. Intelligent System's turn-based strategy *Advance Wars* enters a relation with *Skyward Sword*, as I work through some of the trickier strategic elements. Genres wash through me, contaminating and leaving their after-image in one another in endless becomings, on the platform plan(e), the racing plan(e), the turn-based strategy plan(e), the shoot-em up plan(e). In my childhood I was becoming-base on *Space Invaders* and becoming-Juno when later playing Rare's innovative *Jet Force Gemini* on the N64, a game that crosses three-dimensional platforming with *Galaxians*-style shoot-em-up. Compositions with Williams' *Robotron 2084* are revived with each shoot-em-up I play, new particles are emitted as I hit 30 million on *Geometry Wars: Retro Evolved 2* before, that is, I am crushed by the gravity of a black hole.

Timeshift

Earth, wind, fire and water – all the elements; the invisible and enigmatic forces of gravity, tactility and viscosity; the three material states – solid, liquid, gas; speed and trajectory; involuntary actions compensated for by the apprentice's reactions: this is the order of the friction-image. There is no reference to the 'friction-image' in Deleuze's repertoire; but then, he never studied videogames. The effects of friction are present in cinema, most notably in science fiction with Kubrick's *2001* being one of the first to create a visual simulation of the diminished effect of gravity on people in space. The videogame inaugurates the friction-image proper as an object of conscious reflection and experimentation that is integral to both the feel and mechanics of videogames. Let us begin with Deleuze's two books on cinema by way of a detour through one of the most remarkable sequences in *The Legend of Zelda* series.

What is the eye of the rabbit? The eye that a child draws on their two-dimensional picture of a rabbit can only be in one place, even the slightest deviation and the rabbit appears deformed. For David Lynch, the eye of the rabbit represents the scene in which all the elements of a film are in perfect harmony. Lanayru Sand Sea is the eye of the rabbit in *The Legend of Zelda: Skyward Sword* and the perfect expression of nomadic deterritorialisation and the time-image. A vast flat desert plain is the only trace of an ancient sea that once flowed. The desert has

the appearance of being smooth space, a space of shifting sands, but in actual fact is a striation: a block that cannot be traversed. The problem for Link is that he must nonetheless get to the other side. He does this through the concept of time. Great film directors understand the medium they work with and are able to do things with it that were impossible before the advent of cinema. Shigeru Miyamoto and Eiji Aonuma understand the videogame. They think on its terms.

Galloway (2013) discusses how the Fox series *24* divides the drama into simultaneously displaced sequences through the introduction of frames within the frame. In the Lanayru Sand Sea sequence of *Skyward Sword*, the past of the present and the future of the past are represented simultaneously in the same frame. With the timeshift stone, the desert becomes a force-sign. Wherever Link travels with it something magical happens. The past returns within the circumference of the stone and Link finds himself standing on a boat, floating on the ancient sea. The desert is deterritorialised. He sails on the plane of immanence, diagramming the diagram of artists past and present whose work on *The Legend of Zelda* condenses in this eye-of-the-rabbit sequence. By such accounts memory, as Bergson states, is in matter, the past is pregnant in the future of that past accumulated and contracted in the present event of play that anticipates the future.

So far I have avoided any detailed elaboration of Bergson's philosophy, providing instead what at best can be described an entry point more or less sufficient to the analysis so far. The reason for this is twofold: first, to effectuate a desirable balance between dense theoretical description and videogame analysis; second, because it is also for me one of the most difficult aspects of Deleuzian theory and also perhaps the hardest for me to summarise. The following exegesis is perhaps the most theoretically dense of the book. Hopefully, the earlier references will bring some clarity to this.

Bergson invites us to conceive of time as a whole. The past exists in the present and the future of that past. Deleuze represents this in a diagram of a cone. The point at the tip of the cone represents the present that condenses the past represented by the expanding circumference of the cone. The past is an accumulation of 'images', sheets of time, contracted into the present of the tip from which images are retained and subtracted. Think here of multiplicities generated by intensities rather than through a relationship to other objects. What we sense are differing intensities of a virtual past that are actualised in present moments or becomings. In such respects we find the virtual of the past actualised in the virtual of the present as blocks of duration. Consciousness, for Bergson, is the capacity to act on the accumulation of images, converting perception into action that anticipates a future, an integration of 'the dead into the living', as Maurice Lazzarato (2007: 95) puts it. Memory creates a gap or 'temporal interval between the movements that are received and those that are carried out by each body'. Force is duration, acting and exploiting this delay, a 'moment of indeterminacy between action and reaction … will and sensation, spontaneity and receptivity, memory and habit' (Lazzarato, 2007: 95). It is the capacity to affect and be affected with perception-images (recollections of the past in memory) that are not useful

subtracted. The future redolent in memory that in respect of videogames is the means by which selections are made appropriate to the desired outcome of the actions taken. Memory conserves and accumulates images of the past while also operating as a force that affects and produces images of the future. Memory in the respect that it is actualised in the present is in the matter of perception.

Memory acts like a binding force that condenses the trillions of vibrations on the sensory plate into a duration that puts memory into matter with one body distinguished from another according to the complexities of these perceptions and how we actively respond to them. What we are describing then is not simply an organic reaction to something that affects us, such as that of an animal that reacts to imminent danger. Perception corresponds to the accumulation and condensation of images, image-matter, from which active (as opposed to passive mechanical) choices are made in the continuum of a duration; the images and corresponding actions and reactions are no longer identical to pure perception (perceptions without a corresponding memory of affects). Our bodies-as-images appear in this sense to choose returning in the form of (differentiated) images what it appears to receive. The brain functions as interface, translating 'one speed into another, one movement into another; an interface that translates the infinite flow in accordance with the needs of our actions' (Lazzarato, 2007: 99). In regard to the time-image, the broader is the field of images embraced by perception, the greater, says Deleuze, is the body's power (as duration) to act. This is the function of memory. As Lazzarato writes, to 'interpolate time means to accumulate it, conserve it and introduce it into the present, in order to create an indeterminacy, a delay' (2007: 100). All the videogames the apprentice has played are conserved and accumulated into a condensed present (the point on the cone) from which images are withdrawn and actions taken. The quality of those actions is more or less determined by the images that are accumulated and the selections made by the (desubjectified) body of the duration. 'Memory begins as automatic recognition, which is to say through movements, excitations of time-matter'; however, memory, unlike the body's sensory-motor movement, 'produces increasingly precise true images of the perceived object' (Lazzarato, 2007: 101). Perception in this respect is attentive to the vibrations on the motor-sensory plate. Memory is first fixed in the body as habit in respect to which sensations are passively or automatically responded to – a kind of animal instinct. The 'second memory' is 'true memory', Lazzarato explains, 'in which the past 'survives' in independent remembrances'. This memory is not installed in the body as such. It exists in time represented in the cone diagram as split durations of affect. Attentive memory comprises both ontological memory (a memory that is effectively without an image) and remembrance. The 'reflective immobile unity' of remembrance is thus transformed by the intensive expressive movements of the affective body (cf. Lazzarato, 2007: 107).

Modern cinema begins with French New Wave and experiments with the time-image where, as with the films of Alain Resnais and Jean-Luc Goddard, images of the past, present and future of time are out of joint, non-sequential and scattered. Cinema therefore presents time in a pure state. A film captures sheets of time by

fragmenting narrative, foregrounding it and so revealing time as a fragmented object that exists independently of our ability to control it. In Resnais' *The Last Year in Marienbad* time is fragmented into immobile sections. The past is spliced within the frames of a present that signals the future of that past condensed into the present. Lanayru Sand Sea is simultaneously desert and ocean. Desert and ocean are extensions that with the aid of the time crystal become expressive moments of the affective body. The haecceities of the desert differ from the ocean. With the timeshift stone, Link is able to traverse time, compose forces with it that produce sensations. The three syntheses of time cohere in this sequence: the present or 'customary cycle', the synthesis of the past or 'memorial cycle' and, the third synthesis, 'time of the future', the 'empty form of time' or 'crystal of time' (cf. Lazzarato, 2007: 109). The heat, wind and light of the past of the ancient sea is simultaneously that of the present desert. With reference to St Augustine, Deleuze remarks: 'there is *a present of the future, a present of the present and a present of the past*, all implicated in the event, rolled up in the event, and thus simultaneous and inexplicable' (2005: 97). What we see in a crystal, Deleuze claims, 'is time itself' (2005: 79). The time-shift stone is a concept of the crystalline-image, the image of pure affect, an image that is its own reality. On the films of Alain Resnais, Deleuze (2005: 114) writes: 'events do not just succeed each other or simply follow a chronological course; they are constantly being rearranged according to whether they belong to a particular sheet of past, a particular continuum of age, all of which coexist'.

The apprentice is in the event of the crystalline-image, a recurring motif of *The Legend of Zelda* series and referenced in titles such as *A Link to the Past* and *Ocarina of Time*. By far the darkest of the series, *Majora's Mask* is set in Termina in the shadow of the moon on a collision course with the planet. Link has three days to save the world. Nietzsche's endless return of the same is evoked by the game's structure, only with a Deleuzian twist, an endless return of difference. To succeed in his task, Link utilises the power to return to the beginning of the first day and each time he does, the memory of the previous cycle is actualised in the event of the next. Termina itself is a crystal-image, folding past into present, future into past, a totality of affects that permeate the game world in which Link traverses: coexisting sheets of the past and a continuum of an age. Link composes with sheets of time, fragmenting and scrambling them.

The image of cinema is 'actualised from the virtual plane', Flaxman writes, but paradoxically this happens at the point when images are ambiguous, 'when we cannot tell what is real and what is imagined, what has happened in the past and what is happening in the present' (Flaxman, 2000: 32). A 'succession of moments/movements engineered by action' gives 'way to presents lapsing back into the past and a past flooding the present' (Flaxman, 2000: 32). Both expressive and intensive, the crystal or crystal-image is the point of indiscernibility of the actual and virtual, the indiscernible point when images are pure descriptions divorced from any organic or representational reference. It is from this centre of indetermination that the subject makes selections, what Deleuze refers as the

perception-image of the movement-image. Deleuze (1991: 24) is worth reiterating on this in view of the earlier description:

> By virtue of the cerebral interval, in effect, a being can retain from a material object and the actions issuing from it only those elements that interest him. So that perception is not the object *plus* something, but the object *minus* something, minus everything that does not interest us.

At one moment in Dziga Vertov's 1928 masterpiece of montage cinema, *Man With A Movie Camera*, we see a young woman dancing, at the next the audience watching the film of her dancing and the next Vertov filming a family in their car speeding along the Odessa streets. According to Deleuze (2009: 83), Vertov thought that what montage does:

> is to carry perception into things, to put perception into matter, so that any point whatsoever in space perceives all the points on which it acts, or which act on it, however far these actions and reactions extend. This is the definition of objectivity, 'to see without boundaries or distances'. Thus in this respect all procedures are legitimate, they are no longer trick shots.

Whereas French avant-garde is characterised by the time-image, the films of the silent period are characterised by the movement-image, the perception of movement and the perception of action. So with the time-image, durations of time are scrambled and thus the film presents time as perception whereas in the movement-image, time is sequential. It is composed of presents. Deleuze explains in an interview that cinema puts the image in motion, or 'rather endows the image with self-motion' (in Flaxman, 2000: 366). The screen traces the circuit of the brain. Films that play on violence and sexuality respond to the lower circuits of the brain whereas 'real' cinema takes us on molecular journeys through violence and sexuality, the difference perhaps between the gratuitous violence of a Quentin Tarantino film and Haneke's exploration of the libidinal investment in cinematic violence in *Funny Games*. A comparison can be made between videogames that trade on the libidinal investments of players in misogynistic violence and those that draw to attention their enslavement in the majoritarian language of domination discussed in the next chapter.

Real movement, says Bergson, is an image of time or duration that passes from representation to affection through intensification. 'Affections by diminishing in intensity become representations… [perception] becomes affection by an increase of intensity'; at a given moment affection '*must* arise out of the image' (Bergson, 1991: 43). So for Deleuze, affection or the affection-image occurs in this interval in which there is 'a kind of motor tendency on a sensible nerve', 'a motor effort on an immobilised receptive plate' (Deleuze, 2009: 68). In Bergson's case, Flaxman explains, perception withdraws from movement by 'taking snapshots' of reality and recomposing them 'like the projection of film' (Flaxman, 2000: 18). Given that all

we are seeing are still images exchanging at a rate of 24 per second, cinema, it can be said, presents a false image of movement. There is no illusion, though. Movement is the affect on a sensible nerve and thereby immanent to it. The material universe itself is the '*machine assemblage of movement-images*' (Deleuze, 2009: 61, original emphasis). The movement-image puts perception in matter. It actualises the virtual through machinic assemblages of images that recall the past, a recollection-image that authors its own future.

The question that modern cinema asks, says Deleuze, is 'what are the new forces at work in the image, and the new sign invading the screen?' (2005: 260). The same question can be asked about videogames. What are the new forces at work? What are the new signs invading the screen? It is worth pausing on the action-image of cinema and how it corresponds to videogames before discussing the friction-image, our tentative answer to this question.

Action-image in fragments

In videogames the perception of movement is created by the alternation of pixelated particle effects on parts of the screen but as with cinema is real nonetheless. If *Skyward Sword* integrates movement and time within one uninterrupted rhizomatic space, split-screen modes such as in *Mario Kart 8* enable up to four apprentices to compose forces simultaneously in parallax, the same object viewed from incommensurable non-diegetic perspectives. When competitors appear on each other's screen we are reminded though that this is no 24, instead it is the perception-images of differing forces on an undivided ludo-diagram. In other words, 24 displays sequences within different locations that are happening simultaneously, whereas *Mario Kart 8*, *Goldeneye 007* and other multiplayer offline games present different viewpoints in the same time and general location while merging them at certain moments into one another (such as when a competitor's avatar is present on another player's screen segment). How does this relate to the action-image?

Deleuze distinguishes two action-images (aspects of the movement-image), the large and small form formulated as SAS' and ASA' respectively. The large form in a nutshell: problem (e.g. a ticking time bomb), action to overcome problem (deactivate bomb) and outcome (bomb deactivated). We have the perspective of the frame (S), i.e. the image from a particular point in space and the time between this point – the ticking time bomb – and another point (S') – bomb deactivated. The decisive action – deactivate bomb – (A) connects these two points enriched by the images accumulated in memory and what actions are taken. Thus we arrive at the formula SAS'. By contrast the small form moves from action to situation to a new action: ASA'. The situation itself is disclosed by the action: I am running (A), a fire is consuming the surroundings (S), I jump through the window (A'). So as Deleuze (2009: 159) says in regard to film:

> The great organic representation, SAS', must not only be composed, but engendered: on the one hand the situation must permeate the character

> deeply and continuously, and on the other hand the character who is thus permeated must burst into action, at discontinuous intervals. This is the formula of realist violence, completely different from naturalist violence. The structure is that of an egg: a vegetable or vegetative pole (permeation) and an animal pole (acting out) … Unfolding of the film, its framings, its cutting, its montage.

The fundamental difference between cinema and videogames is pregnant in this formula. Whether in respect to large or small form, the action (A) is engendered by the apprentice. The apprentice composes the action-image. *The Last of Us* begins with a young girl awakening to an empty house. The artist has created a problem: the father is absent. This is the situation (S) from her point of view, the point of view of the apprentice. The situation presents its own resolution in the return of the father. The decisive action (A) is taken by the apprentice who traces a (linear) path downstairs to where the father suddenly bursts through the door. While the resolution is already diagrammed it is not, despite the linearity of the sequence, inevitable or known in advance. The action of the apprentice is required to engender the action-image. The large form of videogames, denoting the two points from the perspective of the apprentice who views and anticipates the frame S to S' is contingent on action (A) they must author. Hence the formula can be represented as S(A)S', the bracketed A signifying that the action itself and therefore the action-image is not guaranteed. The artist has determination of S and S' but relies on the apprentice to complete the action. The apprentice has no determination over what S and S' are. The situation itself may only be revealed once a certain stage in the game has been reached, perhaps beginning with an action that reveals the situation in regard to which further actions are taken, the small form (A)S(A'). In every instance, the apprentice is author of the action even if what is enacted is already diagrammed into the sequence as the only possible action. Galloway begins with action. We could equally begin with situations and the problems they reveal. Replace character with the word apprentice and Deleuze's (2009: 146) description would apply to videogames:

> The character reacts in his turn (action properly speaking) so as to respond to the situation, to modify the milieu, or his relation which the milieu, with the situation, with other characters. He must acquire a new mode of being (*habitus*) or raise his mode of being to the demands of the milieu and of the situation. Out of this emerges a restored or modified situation, a new situation.

Racers are the archetypal large form: the situation, S, of the race with the apprentice at the start of it with S' the outcome of either completing or winning the race and the determinate action (A) in between the two points that complete the action-image of the genre with multiple action-images that imbricate one another when the actions of competing apprentices are represented on the screen

of the multiplayer version. Racers usually include incentives for winning a race, opening of new tracks, cars, livery and so forth. So the sequence SAS' that is both operationalised and realised in a single race is part of a larger sequence of action-images strung together (and imbricated) that constitute the greater objective. The situation of *The Legend of Zelda* is of paradise lost (S) in regard to which S' is paradise recovered. Between these overarching points comprising the action-image of the game in its entirety, there are many other situations and the non-sequential and non-linear actions they necessitate. The movement-image is fragmented into discreet and imbricated segments. The series motif to restore harmony to the universe by defeating Ganondorf frames multiple linear and non-linear action-images, self-contained sequences and sequences that can be broken and re-entered later on. For example, in a linear sequence, Link must go from one platform (S) to another (S') through the use of a hookshot, but must also break from the sequence by first climbing a ladder above the first platform to reach a treasure chest in which the hookshot is found. The use of the hookshot is the determinate and only possible action to engender the sequence but there are a variety of different sequences that the apprentice is free to embark on first, only one of which is the necessary one of getting the hookshot and therefore advancing the narrative. The simplest of videogames are comprised of one action-image. In *Space Invaders*, S is the situation of an attacking armada and S' is the elimination of the armada or completion of the wave with the determinate action (A) shooting the craft and dodging the missiles. More complex videogames such as *The Legend of Zelda* are comprised of multiple action-images represented by the formula $S(A^{[S(A)S']})S'$. In other words, the overarching action-image, S = paradise lost, S' = paradise recovered (or death in the attempt), A = the entirety of the quest in between which there are discontinuous multiple other action-images, both large [S(A)S'] and small [(A)S(A')] form. It is never certain what the apprentice will do with the forces available to them, whether indeed their actions will complete the image. If Link fails in his quest to defeat Ganondorf, the action (A) engenders a different situation (S'). The sequence is completed but the outcome of that sequence differs. Videogames are comprised of action-images in which A is indeterminate and there are at least two possible S's, at minimum success or failure: S(A)S'/ S'2: S' = success, S'2 = failure. The more advanced the apprenticeship, the greater are the images that can be withdrawn to produce the desired outcome.

In the Golden Gate Bridge sequence of *Advanced Warfare* the action begins in the middle with the player in control of a fast moving vehicle. The action (A) of steering and firing missiles at enemy vehicles engenders its own situation (S), to neutralise the threat of a rogue army leading to further actions (A'), in this case dismounting from the vehicle and shooting enemy combatants on foot. The situation presents itself irrespective of whether the player does anything (the action is already taking place irrespective of the player but which the player takes control of) but only gives rise to further actions if the first action-image is successfully composed. *Call of Duty* intersperses both the small and large form within its overarching action-image which can be represented by the formula

$S(A^{[S(A)S'][(A)S(A')]})S'$, with the number of all subsequent situations (to win or lose) already determined by the artist. Action-images criss-cross and overlay one another. One sequence can be initiated but paused midway while another is completed, perhaps a side quest such as in the case of *The Legend of Zelda*. In such respects the videogame introduces the non-linear, non-sequential, scattered action-image as compared to a more linear action-image characteristic of simpler videogames, especially classics of the early arcade period. *Centipede* is essentially the same action-image as *Space Invaders*: S is a garden infestation and S' the clearing of all bugs; the intervening action (A) is to kill bugs without being hit by them (or the already occurring action and the situation that the action presents). The accumulation and condensation of all images from the apprentice's experience of playing comparable videogames puts them at an advantage to a player who encounters this action-image for the first time. The action-image is composed with the completion of a level but as with *Space Invaders* there is always another invasion that follows. So irrespective of how good the apprentice is, eventually the battle will be lost. The overriding action-image is thereby completed when the apprentice loses (S'2) and so in this sense it is appropriate to describe both *Space Invaders* and *Centipede* as the large form. While there is no determination over the future diagrammed by the artist, there is determination over when and how that future arises.

Advances in storage and processing power enabled developers to experiment with the action-image and now it is the industry standard for high-budget videogames to include multiple discontinuous action-images within an overarching goal structure more immediately apparent in 'non-linear' videogames. While not so pronounced in the history of computer gaming, a gradual shift has taken place in console gaming from the classic arcade-style S(A)S' and (A)S(A') to the multiplication of action-images that imbricate and take flight from each other, a schema more akin to a rhizome than of a branching arborescent formation. This shift became more pronounced with the Playstation and N64 era with low-budget titles typically of a purer S(A)S' aesthetic.

2007: friction-image

What are the new forces at work? What are the new signs invading the screen? It is the forces of friction and the friction-image. 2007 was a vintage year of the videogame, giving us *Super Mario Galaxy* and *Portal*. Both games are, in different respects, exemplars of the friction-image. They announce the coming of age of the friction-image in game design. It is by way of the ludo-diagram that the nature of the friction-image is understood. Whereas the diagram of a painting occupies a fixed physical space, the ludo-diagram is in a permanent flux, painted on, redrawn, rediagrammed and smoothed over by the apprentice. The diagram appears to move across space, to produce one sensation and, with the stroke of a hand, give rise to another. The ludo-diagram is fluid within its limits, smooth in this respect, not striated: it alternates and intensifies with the help of the apprentice. In reference to

McMahan's (2003: 78) discussion on Char Davies Osmose, it is an environment akin to scuba diving that appears 'slightly blurred and without horizon lines'. Here, 'users move from space to space by breathing or adjusting their balance'. As the apprentice applies forces, she tests the environment by impressing herself upon the ocean of the ludo-diagram, sensing the currents and is affected by the vibrations on the sensory-motor plate from which selections are made that liberate the force-signs through precisely crafted actions. The apprentice experiments with an image of friction. The friction-image is the pure expression of the ludo-diagram, a sheet of affects that permeates rhizomatic zones of play, instilled in the force-signs, comprised of haecceities, alternating, synthesising and splitting segments, depending on the game we are playing. Friction is not simulated in videogames. What enables the apprentice to negotiate worlds such as *Super Mario Galaxy*, that are alien from the laws of physics in the space our bodies inhabit, is that the friction-image of the videogame is real, an affective realism, its own unsimulated kind of physics. Now we can unpack axiom eight: *Unique to the videogame and corresponding to the force-sign is the friction-image*.

In order to negotiate the patchwork of the ludo-diagram and work through nonlinear fragmented action-image sequences, the sensation of friction is needed. Objects have properties. Certain metals are good conductors of heat. Woods have different magnitudes of buoyancy. Objects have density, texture and weight, haecceities that respond in different ways to intensities of heat, gravity, wind and so forth. Friction is generated from and is differentiated by the relative properties of different objects and the intensities that inhere or are affected on them, the most important of which is gravity. The friction-image is foremost an image of gravity, a remembrance of the affects of previous experiences with form, an affect that in videogames occupies differing zones and that has no correspondence to gravity as a real world affect. It is immanent to the diagram and must therefore be thought about, experimented with and even composed on its terms. If then the force-sign is an object of stored forces, the friction-image is what (unevenly) envelops the smooth space of rhizome-play.

Friction is implied in the diegesis of cinema only appearing as an object to us when represented in unusual ways such as in films set in space. Friction holds no particular value in the cinematic form per se; it is only in videogames that there is a friction-image, an image of friction: a pure intensity proper to the form that must be negotiated.

The videogame artist has to think about friction even if the apprentice does not. Friction is intensity. The artist has to judge how intense to make friction in order that the game is playable. The more intense the effect, the more the ludo-diagram drags on the apprentice's movement, the slower typically is the pace. In *Pac-Man* the intensity of the friction-image, what essentially causes the Pacman to speed up and slow down, decreases as the game progresses thus making movement faster and harder to control. By contrast, the greater the friction is, the slower is the Pacman and the easier it is for the apprentice to apply her brushstrokes to negotiate the hurdles and engender the action-image. With *Space Invaders*, friction determines

the positioning of the various craft and the speed at which the missiles drop. It orients the apprentice to the composition of SAS' through the spatial representation of up, down, right, left, ground and sky. These relations are diagrammed within the form of content (base, enemy craft, barrier, missiles) in regard to which certain expressions are engendered, enabling particular actions.

The friction-image is realised in the event of play. In early videogames such as *Space Invaders* the image of friction is a given, a memory that is effectively without an image (up and down are descriptions of the material world), whereas in *Marble Madness*, perhaps the first to fully experiment with friction, it is an integral component of the design process. *Marble Madness* is one of those rare videogames like *Pac-Man* that invents its own plane without ever becoming an established genre, perhaps because the idea is exhausted as soon as it is realised. The afterimage can only subtly be traced in videogames that obliquely reference the original or it is imprinted with such force only clichés of the original are generated.

Mark Cerny who designed *Marble Madness* was perhaps the first to recognise the potential of creating a videogame from its own immanent law, the friction-image as a design concept. It infuses every aspect of his diagram. What makes *Marble Madness* an exemplar of the friction-image is not that the marble travels by the force of gravity in the direction in which the isometric maze is tilted, but rather that gravity, sound waves and such like are themselves obstacles to negotiate and objects for a deft hand on the trackball control to compose with having learnt from experimentation how to do so. The apprentice has to work against gravity when the incline is steep, compose with the unusual haecceities of an ice-blue uneven surface that causes the marble to veer wildly to the edge of a precipice, intensify her motion when passing a vibrating horn and compensate when gravity drags the marble up rather than down in the Silly Race. It took another 20 years before the friction-image came of age with the release of *Super Mario Galaxy* in 2007. But let us first turn to *Portal* released in the same year.

Portal is the classic action-image SAS' in which the situation of being in one space is a problem that corresponds with the fact of having to get to another one. The puzzle is presented in terms of extension, a difference in degree, but the intervening action to resolve the puzzle is intensive, a difference in kind. To recall, the apprentice has a portal gun that can be used to blast a blue hole onto one surface and an orange hole onto another and pass between them without having to negotiate the space that otherwise separates them. In science fiction terms, what the apprentice creates is a wormhole. Gravity is always consistent in *Portal*. So it is possible to anticipate how particular actions, speeds, trajectories and so forth will be affected by its force. So, in a typical situation, the exit is on a ledge that is striated by a chasm and that is higher than the ledge on which we stand. How do we get there? First we have to determine whether the surfaces are malleable, are they smooth or striated, force or sterile signs? Only the floor of the chasm and the wall behind us are force-signs. All else are striations. The solution lies in the image of friction, the memory of the immanent law of *Portal* contracted in the present of the duration in which the sensations of gravity are enacted on. The image of

friction is our gateway to the other side that begins by placing the blue portal on the wall above and behind us and the orange portal on the floor of the chasm as we descend into it. By travelling through the orange portal we exit the blue one and are projected by the force of gravity to the other side. Apprentice-avatar-portal gun-force of gravity-orange portal-blue portal-force of gravity, in this assemblage gravity is a duration that increases the apprentices motion the longer it is sustained uninterrupted. The avatar descends and is projected towards the platform on the other side. S and S' are spatial extensions with the event constituting the action (A) arising through the above assemblage whose intensities complete the action-image. Valve is able to take the concept of a portal gun and diagram a whole series of puzzles around it. The wasp has found its orchid and embarks on lines of flight. The friction-image puts gravity in perception.

Whereas the immanent laws of *Portal* are conceptually mapped to the image of gravity in the real world enabling the player to get a bearing on its forces, the immanent laws of *Super Mario Galaxy* (SMG) are contextually realistic: they are realistic on the terms of the videogame and therefore consistent with the overall concept of the game world, not inhabited reality. As with *Marble Madness*, the friction-image is at the core of game design. By thinking in terms of the created law, the developer could generate worlds whose physics are alien to our own and proceed to diagram forces that experiment with and test permeations of the friction-image as so conceived.

For all the permeations of the design, the friction-image of *Portal* is fairly easy to describe. With *SMG* there are multiple permeations spanning many different 'galaxies' that multiply in each. To simplify matters, I shall refer to two galaxies (essentially worlds), the first which is represented on a two-dimensional plane is Rightside Down Galaxy from *SMG2* and the second Gusty Garden Galaxy from the first *SMG*.

The classic motifs of two-dimensional platformers are found in Rightside Down Galaxy. There are slopes down which Mario slides, platforms on which he jumps and walls from which he springs. There is a sequence towards the end of the level that switches to a top down perspective. But let us focus on the more classical sequences and how they are diagrammed with the concept of friction. There are up to four juxtaposing directions in which gravity pulls, signified by directional arrows projected onto the background. Down is up when the arrows point upwards and when pointed downwards the bottom of the screen is the ground. At certain points there are switches, force-signs with the power to reverse the flow of gravity thus enabling the apprentice to traverse 'above' what, if gravity were in the other direction, would be a chasm. In order to get the star at the end Mario has to pass in quick succession through four gravitational zones that draw him into an orbit in which eventually the star can be taken.

Gusty Garden Galaxy diagrams the friction-image on a three-dimensional plane. In one sequence Mario has to get from one apple to another, each functional as planetoids with their own consistent gravitational pulls that he passes between on the body of a giant caterpillar with its own corresponding gravita-

tional pull. In other sequences in the same galaxy there is a cube around which Mario chases a rabbit and larger planetoids that he passes between by clinging onto a dandelion that floats with the wind. In videogames, friction is an object of reflection but crucially because affection arises from the image – the friction-image is in this sense real, not a simulation of friction – it is possible for the brain to disassociate itself from the laws of physics (to withdraw images of real world friction) that operate in the inhabited space of the apprentice's body and inhabit the avatar such that we are no longer of this world but of another, a subject of duration. Hence we can say of videogames that memory is in matter and matter is the game world condensed in the friction-image with the brain as an interface as if the brain itself is that of Mario. Friction is situated at the threshold between digital law and physical law. Put a different way, the friction-image excites the sensory-motor-schema thus generating a response in the form of an executed movement corresponding to the videogame as opposed to the physical laws outside of it. Between the two is the cerebral interval comprising the affect of friction, its recollection in memory (what friction does) and the contraction of matter in the perception itself (the reality of the immanent law of the videogame) in respect to which only those images that are perceived to be useful are retained. The more familiar we are with the friction-image of the particular videogame the better we are at making relevant selections – subtracting the perception-images that are not useful – and diagramming forces with them such that even in a universe as abstract and varied as that of *SMG* it begins to feel real. When this happens, even the new, as long as contextual reality is maintained, can be affected with a degree of precision. We are in the moment of affective reality. Put another way, by exceeding their organs in the event of play, the apprentice is not of this place or another, nor a third place; they are becoming by diagramming with the friction-image and, referring back to the becoming-animal, if done with enough feeling, with enough necessity and composition, they emit a molecular Mario. As with *Advance Wars*, the unreality of the aesthetic liberates the design from the kind of constraints of games evoking a representational realism. In other words, contextual realism is on the terms of the fantasy not whether the different game events are consistent with anything that relates to the actual world. That said, the world of *SMG* is never so otherworldly that up/down, right/left has no correspondence to the inhabited world. There is always a degree of verisimilitude in this respect.

In *SMG* we sense gravity in our manipulations, registering its presence across the game world as we enhance our skills. We have to think about the surface, the size of the planetoid and the effect of the small blue floating stars used as slings to propel Mario between them. When we play *SMG* for the first time, we have to think about, look for and see friction, we have to think about the ways its intensities will affect our movements. We familiarise ourselves with the sensation of running around different sized planetoids with their varied gravitational intensities and how the presence of ice, represented figuratively, will affect our movements, and what happens to those movements when ice turns to liquid. In

each action-image sequence, friction materialises as an object that is thought about and then enacted on. In *Super Mario Galaxy 2*, signs that point in the direction in which gravity flows can be knocked to point another way and change the direction of gravity accordingly. The sequel takes the concept of *SMG* a stage further: every aspect of play is thought about in terms of the friction-image. The lesson of Nintendo Tokyo EAD is that any world whatsoever can be diagrammed and any world whatsoever can be real. From the folding of space in Boo Moon Galaxy in *SMG2* to the folding of space in Christopher Nolan's *Inception*, the portal gun in *Portal* to the mutant that blasts portals in *X-Men: Days of Future Past*, cinema learns about the friction-image from videogames but it is only in videogames that friction has any real significance.

The friction-image is the form that mediates between the work of the artist (the form of the ludo-diagram) and the ludo-apprentice (the form of rhizome-play), of pure affect. It is sensed in every movement. It is immanent to the videogame and to the apprentice's own diagramming. The interval segues particle effects to produce sensations of movement, time and action that, in their complex and multiple ways, are negotiated with the aid of the friction-image.

At its simplest the friction-image is implied by the way a world is represented where top is above and bottom is below or that a concrete surface allows for more traction than a loose one. In this respect one can 'read' the videogame as one would 'read' reality and quickly become oriented in its world. At more complex levels the friction-image alters in a patchwork of intensities, becoming more or less perceptible, more or less affective; signified by the elements, earth, air, fire and water, compelling the avatar to speed up or slow down, jump or climb. It is a duration that excites haecceities and enables apprentices to exit worlds and enter new ones. Forces are thereby relative to one another, and the ability to intensify immobile sheets of time is dependent on how those forces are balanced. The image is present in all videogame events, signified in *SMG* by directional signs, black holes and so forth, a presence that more generally is only known by its affects, much like the effect of forces on the faces in Bacon's self-portraits. Its presence is known by the speed at which blocks fall in *Tetris*. It enables us to achieve incredible feats in *Portal*. It creates a germ of order in what would otherwise be chaos and generates the possibility for affective reality even when the immanent laws of the game are as otherworldly as they are in *SMG*.

We now have a family of concepts for exploring videogames in terms of the forces and affects that are immanent to them with which the apprentice composes and embarks on their own lines of escape. The friction-image is like the dark matter of every ludo-diagram, a form that is implied rather than represented, that ensures against chaos, establishes consistency and produces its own reality. It corresponds to the becoming-animal in the zones of proximity between creatures and assemblages that enable us to exceed our bodily and this-worldly striations. When finally crafted to the ludo-diagram and the signs, both force and sterile, impossibility becomes reality and the friction-image is thereby real, not a representation of real-world friction.

The discussion on the movement-image has for our purposes focused on the action-image, large and small form, qualified in view of the relationship to the apprentice and how in more complex videogames they are multiplied, non-sequential and divided (we can pause during one sequence to complete another one). As with cinema, time and movement are real, not simulated, but their reality stems from the fact that the apprentice has thought about, experimented with and played with the forces to the point that the image of movement and time becomes expressive. However rudimentary, every videogame is comprised of these different images but, as has been shown, there are variations in how those images are diagrammed.

An affective theory of form does not omit questions of our non-diegetic material relationships; nor does it omit questions of representation. It does enable us to think about our material universe and how that universe is perceived, interpreted and re-presented, deterritorialised and reterritorialised. The next chapter underlines the value of a Deleuzian approach to analysing narrative and representation, particularly gendered stereotypes and ideologies sympathetic to dominant interests. It is here where the libidinal investments of players extend beyond the game itself into the realm of politics and vice versa.

7
MAJOR/MINOR

Videogames are often celebrated for their realism and immersive qualities, but consider what Adorno and Horkheimer (1997 [1944]: 126) said about cinema:

> The more intensely and flawlessly his [the producer's] techniques duplicate empirical objects, the easier it is today for the illusion to prevail that the outside world is the straightforward continuation of that presented on screen. This purpose has been furthered by mechanical reproduction since the lightning takeover by the sound film.

One might wonder what Adorno and Horkheimer would make of the 'immersive' qualities of many of today's videogames that attempt verisimilitude in recreations of actual war. They would no doubt find the very notion that videogames are immersive, interactive and realistic highly disturbing. From this perspective, the inclusion of the 'viewer' as participant in the action places videogames at the current high watermark of the conquest of the imagination by the cultural industry: a fatal compact of business, entertainment and politics that draws its energy from our desiring-machines and plays them back in an endless self-reinforcing and all-encompassing loop.

In 2014, an article was published in the *Guardian* that advised parents about the risks and benefits of playing videogames.[1] They can be addictive, sexist and violent, the article notes. But more positively there are also instrumental benefits including jobs in the industry. Aside from any feelings of guilt we ought to feel when playing them, and thankfully we have the *Guardian* to help alleviate us of some of that, what is remarkable about the many claims about the detrimental effects of videogames is how powerful they are considered to be. For clearly videogames transcend all other artistic forms if they can cause such profound changes in our personality that we commit acts of violence in the real world. Not toys, by this

token they are weapons. Perhaps they are weapons to make us lazy and docile, or, more dangerous to the status quo, war machine assemblages that show us who the enemy is and how to fight it guerrilla style. And not simply at the conscious level, videogames are machines into which our libidinal energies are channelled, channelled and fired up for revolution.

If videogames were as powerful as mainstream media appear to claim then perhaps it would be understandable for the state to intervene and ban them. Those that are singled out in the commentaries of tabloid newspapers are not typically those such as *Call of Duty* that glorify war and present combatants as either good, typically US and British forces, or bad, Arabs, Russians and so forth. Whether rightly or wrongly, *Grand Theft Auto* (GTA) is the game that gets the most attention for glamorising crime and rewarding gendered violence, offering the headline example of killing a prostitute to recover the money after having sex with her. The broader issue is that videogames are generally complicit in their uncritical embrace of hegemonic ideologies, gendered and racial stereotypes, while also silent on class divisions, state violence, inequality and exploitation. The player is part of the action that authors plot developments and in such respects can be considered complicit in advancing the causes favourable to capitalist interests when represented in such ways. In that videogames are immersive and are libidinally stimulating, they arguably lead to a loss of critical distance on the part of the player.

This chapter examines videogames as ideological texts, primarily on issues of representation and verisimilitude, particularly in war games. Whatever the game, the 'text' and the discourse in which it is embedded, corresponds to the world beyond the screen. Moreover, and this is the key point, the medium is characterised by affect, which the apprentice is involved in the production of, and for this reason representations cannot be interpreted without recourse to their immanent qualities. I have said elsewhere that 'interpretation' is the testing of signs and not primarily a reflection on their 'meaning' except in terms of the affects they are capable of. But interpretation here will also refer to the majoritarian language, or put in Marxist terms, dominant ideologies, that the player is active in reproducing. Many videogames have to be interpreted via the artist's own ideological perspective (approached in terms of libidinal investments) through the reward structure. Whereas many of the critiques of ideology in videogames centre on the text, the more pertinent question for this chapter is why the player's desiring-machines are so invested in videogames that mimic, with an increasing degree of verisimilitude – representational and conceptual realism – the violence, machismo and misogyny codified in the socius.

Significant gameplay

Language is structured, said Ferdinand de Saussure, through an arbitrary relationship between a linguistic signifier such 'apple' and the signified, the object or idea that the word represents. This is not a fixed relationship. A word is not equivalent to the object it represents and so something is always lost in translation.

The signifier 'apple' relates to the image of something that can be eaten but also the Apple Corporation, although it would be a fortunate child who upon asking their mother for an apple was rewarded with a new iPad. Context is obviously important. Roland Barthes (1993) adapted this theory, one that Deleuze and Guattari depart from, to examine advertising images and how they reinforce ideological myths. Words, gestures, images and sounds have signifying qualities. Those that have a common-sense meaning, such as the image of a chair, are denotive. They denote a quality, that of being something to sit on. A photographic image, by contrast, can incorporate a range of signs whose meaning is not immediately obvious. They connote something, but what that 'something' is requires translation often through the concerted effort of advertisers to associate a brand, for example, with a set of complementary values. Nike signifies sports, health, fitness, action and effort rewarded with success. Most gamers will likely recognise, without any perceptible delay, an image of a gorilla at the top of a screen along which circles representing barrels tumble as they trace the downward motion along lines representing girders that a character travels along as a screen shot of *Donkey Kong*. These different signs comprise the content that calls for the player to motion the character to walk along the girder, climb ladders and jump barrels. It is 'obviously' *Donkey Kong*, a 'platformer' and arcade 'classic'. It is obvious to a gamer that *Call of Duty 4: Modern Warfare* (COD) is a 'first-person shooter'. This was not always the case. As Kirkpatrick (2013) notes, game reviews in magazines in the early 1980s spelled out precisely how the actions correspond to the images that today are largely denotive. In their review of *Pac-Man 2*, *Computer and Video Games* stated that 'the player controls munchman using his keyboard', which guided their 'readers into making a connection between their actions and the behaviour of the game program by explicitly identifying which game elements they control' (Kirkpatrick, 2013: 84).

Videogames are about achievements structured by goals: to rescue the princess, to defeat the boss, to clock a high score, to build a new bridge, to level up. Goals are defined by what you lack rather than possess, an issue at the core of Deleuze and Guattari's (2003a: 342) critique of Oedipalisation:

> There is no society that does not arrange lack in its midst, by variable means peculiar to it. (These means are not the same, for example, in a despotic type of society, or in a capitalist society where the market economy raises them to a degree of perfection unknown before capitalism.) This welding of desire to lack is precisely what gives desire collective and personal ends, goals or intentions – instead of desire taken in the real order of its production, which behaves as a molecular phenomenon devoid of any goal or intention.

All videogames can, in this respect, be described as Oedipal. They weld desire to lack. In the classical Oedipal complex, the primary object of desire is the breast. It can be proffered and taken away: gone/here: fort/da! Fort/da! was a game Freud observed his grandson playing, which involved a wooden toy tied to a string tossed

away and then reeled back. What fascinated Freud was that while its retrieval appeared to generate the more profound pleasure, the child displayed pleasure in the act of casting it away. From this simple observation Freud discerned a human predisposition towards a pleasure in loss or pain that he named the death drive. Lacan took this a stage further by claiming that the libidinal economy is structured around loss, or rather that pleasure or *jouissance*, corresponding to drive, is fundamentally aim-inhibited, it circulates around a missing 'thing'. Drive differs from desire in this respect. Whereas desire derives pleasure in attainment, drive derives pleasure in the aim. In Žižek's (2000: 304) words:

> The most succinct definition of the reversal constitutive of drive is the moment when, in our engagement in our purposeful activity (activity towards some goal), the way towards this goal, the gestures we make to achieve it, start to function as the goal in itself, as its own aim, as something that brings its own satisfaction.

Analogous to the goal structure of videogames, by Lacan's lights there can be no desire without a missing object to attain. The 'thing' is never it. While the 'object' of *Super Mario* is to rescue Peach from Bowser, the pleasure is in the aim itself. As soon as the object is attained it is game over and another object is sought in the form of a different game or perhaps sequel. Without a missing thing representing a goal, the game would lack structure and a sense of purpose. Where the goal is to best a high score we could say that the pleasure is in the aim rather than the outcome of achieving that end for as soon as we do there is another high score to best. Capitalism introduces lack in the form of scarcity. As long as we are alienated, hungry and invested in the acquiring of something that our desiring-machines are socially attuned to, the 'thing', perhaps a consumer product or that perfect job, there is reason to pursue the objects that enable capital to circulate. In this respect, human drives and the capitalist drive for surplus value are correlative; the subject can never attain the object to end dissatisfaction and capital can never attain the object that will end its drive for profit.

On the surface, *Animal Crossing* is a cute and altogether charming evocation of a simple life: fishing, tending to orchards and playing silly games. There is no violence or stress, everyone is a friend and nobody has a bad word to say about anyone. It is a utopian fantasy that millions of gamers escape into, but it is a fantasy that nonetheless is remarkably consistent with the values promulgated in the market economy. In the game, Tom Nook is a mortgage broker to whom we are constantly indebted. Reese, in the 3DS version *Animal Crossing: New Leaf*, owns the recycling store in which prices fluctuate, and buys turnips from the canny trader who can sell them for a profit. Isabelle the secretary works at the town hall where the player is the mayor making charity appeals to other villagers and commissioning public works paid for by their enterprise. Whether offering the opportunity to the player to plant trees, gather fruit or pull out weeds, *Animal Crossing* is most of all a game demonstrating that pleasure derives from work and

in a sense is conceptually realistic. It embodies the work ethic. McKensie Wark makes a similar point about *The Sims*, calling it a game 'in which everyday life is the subject of play but where play is nothing but work' (2007: 49). *SimCity* involves creating zones for commerce and industry, managing finances, trading, setting rates of taxation that maps to an idealised capitalist economy. There are token references to a labour force – public sector workers strike when hospitals and schools are underfunded. *M.U.L.E.* was an early trading game in which up to four players claimed sections on an open plain on which to prospect for oil and other sellable commodities. *Eve Online* features complex trading, pirating and manufacture. Without feelings of anxiety regarding health and fitness, body shape and so on, *Wii Fit* would unlikely have sold in the numbers that it did.

Videogames cannot be divorced from the society in which they are produced and consumed. Like everything else, including play, they can serve a capitalistic function as commodities and as ideological text (play, for example, has been integrated into corporate cultures to encourage teamwork and company loyalty). There is nothing *inherently* capitalistic about videogames or play. Nevertheless, having examined videogames in relation to commodification in Chapter 2, we now need to examine them in relation to ideology. Let us put this in Deleuzian terms by exploring in more detail Deleuze and Guattari's critique of Freudian psychoanalysis and recall what they understand by desire. For the central problem, as I want to show, is not the content of videogames as such but rather the form of expression they authorise, how they reproduce myths that literally play out misogynistic and racist fantasies among other things and also that such fantasies have mass market appeal.

Gameplay and schizophrenia

A question was originally asked: What is a videogame? Our answer was an open-ended one. Videogames are assemblages of affects or forces that augment or decompose a body and that are iterated by events that appear as flashes along lines between points in a relay in the assemblages that are formed. Rhizome-play involves composing forces that open up new vistas, new earths and new becomings: a nomadic journey that deterritorialises by going smooth in the striated space of the program. But Oedipus tethers the becoming-Animal to its own mode of interpretation. Arborescent or despotic languages are the soft muddy bed into which the galloping horse sinks, the sodden ground are languages in the major key, the languages of domination corresponding to racism, sexism and so forth. The event of play refers to the affects produced by play-forces. When those affects enter a pact with the major language of oppression, they risk decomposing a body. But we are not talking here of decompositions of pure affect that happen through the assemblage of forces. These are linguistic assemblages where play-force is processed through a majoritarian language such as when, in order to proceed in the game, the player is compelled to interpret the molar representation of an Arab as the evil for her American Army to expunge. This bodily decomposition is that

sickening feeling that comes when another bullet plunges into the black skin of a zombie. The red marks they affect are arguably symptomatic of the developer's and society's racist investments. The horse on which the nomad is perched is not immobilised by the density of the ideological soil; after all, rhizome-play is possible even in *America's Army* and *Resident Evil 5*, but only by the player's own desiring-machines and how they relate to such linguistic assemblages. The majoritarian language can knock one player, recoiling from the implicit racism, from her horse or be the wind that invigorates another's mane. We cannot know the player's investments in the molar order simply by the fact they play videogames that are racist and misogynistic. We can, however, objectively discern how force-signs such as stereotyped avatars are structured into a storyline that involves doing things with or to them that uncritically reinforce in the event of play the language of domination.

Deleuze and Guattari describe a schizo-analytic method that aims to liberate the prepersonal flows of desire from their Oedipal entanglements. 'The animal within us', they say, 'is not merely the object of a preconscious investment determined by interest, but the object of a libidinal investment of desire that only secondarily derives an image of the father from desiring-production' (2003a: 173). What do they mean by this? Desire follows interest. Desire, to recall, is by its nature productive, hence the term 'desiring production'. It is not a language or code, merely a flow that the Oedipal complex assigns a name to, in the above description by associating it with an object represented as missing. An example of this is the shame someone without a job may feel. Objectively, it is not in our interest to work hard to perpetuate capitalism but, at the unconscious level, desire is made precisely to want this. We become libidinally invested in the machine that produces 'lack amid overabundance, but stupidity in the midst of knowledge and science' (Deleuze and Guattari, 2003a: 236). Their argument (2003a: 180), they say, is simple:

> desire is a machine, a synthesis of machines, a machinic arrangement-desiring-machines. The order of desire is the order of production; all production is at once desiring-production and social production. We therefore reproach psychoanalysis for having stifled this order of production, for having shunted it into representation.

Schizo-analysis, then, is the task 'of tirelessly taking apart egos and their presuppositions; liberating the prepersonal singularities they enclose and repress; mobilising the flows they would be capable of transmitting, receiving, or intercepting' (Deleuze and Guattari, 2003a: 362). Desiring-machines are, as Buchanan (2006: 13) puts it, matrices of desire encompassing different matters and flows. Schizo-analysis aims to discover those flows by considering what the machines are, how the subject is invested in them and what these machines give rise to. It aims to discern how our desiring-machines function, how they operate and what use we make of them, in 'transitions that extend from the molecular to the molar and inversely' (Deleuze

and Guattari, 2003a: 290). As Buchanan (2006) suggests, it concerns how the 'mental matrices' which 'trap, interrupt and divert libido' are made up of flows of every kind that are capable of exceeding or escaping the social field or socius into which we are preconsciously invested.

Buchanan explains that, in opposition to Freud, Deleuze and Guattari show how 'desire can invest the social field directly', in other words without mediation, which is quintessentially the case with cinema. Buchanan argues that in contrast to other modes of analysis, schizo-analysis of cinema is at an advantage because it raises the problem of desire. We know for example that certain high budget films are designed and marketed for a certain type of consumer. This does not explain, however, 'why, stereotypically, teenage boys appear to desire movies of that type; nor indeed, given the vast number of box-office bombs made in pursuit of this particular market, does it reliably tell what they actually desire' (Buchanan, 2006: 12). This equally applies to videogames into which it can be said the subject is directly invested. We know that *Call of Duty* appeals to adolescent boys and anyone who has played it online will have experienced the xenophobia of some of them, but what is often not questioned is why they are invested in the first place. The game cannot tell us the nature of our investments. We cannot discern, for example, that by enacting a massacre in a videogame the player is predisposed towards such acts in real life. Videogames do not in themselves cause anything. It is the first form, however, in which immersion itself corresponds to quality. That makes it all the more important – considering how the player is invested in the games – to interrogate the secondary layer of representation. Claims can be made about videogames being one small component of a broader ideological machine or hegemony. They are forms of content criss-crossed by forms of expression, the doing of a given assemblage.

Sin and punishment

A player's capacity to go smooth is generated first within a pre-programmed diagram of forces that the player liberates through compositions that liberate them from their molarity. This nomadic freedom is the definition of rhizome-play that Oedipus, through various striations and apparatuses of capture, codifies. Along different vectors – the virtual and actual, rhizome and arborescent, smooth and striated – lines interpenetrate and becomings bleed into one another.

Unlike the cinema viewer, the player has some determination over the character and storyline. Pleasure is heightened by immersion and the principal motive for playing games is to 'have fun'. The player has fun in the simulated universal of actual warfare. The viewer can interpret the film however they like without affecting either its duration or outcome. The player affects duration and outcome but is more beholden to the 'text' for this reason. Why? Because if they were to identify the army their avatar represents as the oppressor they would still be compelled to interpret the game through a consciousness outside of themselves, that is, through the developer who determines who or what must be shot.

Interpretation is no longer one of questioning the moral righteousness of war. It is one of interpreting and acting on what, by testing the diagram, can be discerned the desire of the developer. The developer is the Daddy. He can punish us for interpreting and enacting the game against his wishes. In this respect all videogames, by their capacity to reward and punish, are Oedipal. If this, however, was all there was to say on the matter, the term would not be particularly useful for discerning differences between games. A more useful distinction can be found in Deleuze and Guattari's book on Franz Kafka. There they write of major and minor languages and, as they put it: 'There is nothing that is major or revolutionary except the minor' (Deleuze and Guattari, 1986: 26).

The dynamic interplay of forces latent to every ludo-diagram is signposted visually, aurally and through haptic feedbacks. The apprentice tests and experiments with these various signs, liberating them by doing so. The player learns through their apprenticeship that this can be done along that pathway, this with that gun and this through that portal. In the event of play interpretation is a process of testing and entering into compositions with such signs. All too often, however, the signs themselves become an obstacle to rhizome-play, creating an ineluctable feeling that the videogame being played is filtered through an oppressive language, often of a sexist, racist or imperialist kind. Would *Portal* still be considered a classic if, instead of being bordered by either the colour blue or orange, portals were bordered by representations of vaginas? Would *Super Mario* be such a joyous experience if the Goombas we squash were stereotypical representations of Arabs? Nothing about the gameplay itself would be any different, both *Portal* and *Super Mario* would play exactly the same.

Because desire itself is revolutionary, going smooth in the striated space of state science, there can be no becoming-bourgeois, no movement, in other words, from being oppressed to being oppressive. Because 'man' in a society based on patriarchal relations is the dominant/molar identity *par excellence*, there is no becoming-man. Becomings are minoritarian. They are molecular journeys that loosen as opposed to reinforce molar affiliations. If the body were to acquire new powers and intensities through the molecular affects of patriarchy it would simply acquire the *power over* another body to block their lines of flight, a bad affect. By entering into proximities with the molecular forces of a minor being as defined by its position within the socius, the dominant loosens its grip on the dominated. By composing forces with a molecular woman, the majoritarian male takes flight from patriarchy, a journey of becoming-woman, becoming-imperceptible. This is a never-ending process of 'emitting particles that enter the relation of movement and rest, or the zone of proximity, of a microfeminity' (Deleuze and Guattari, 2003b: 275). Nevertheless, in videogames, there are plenty becomings of man, boys who, through the course of play, become the archetypal molar male, the punishing Daddy. The signs of a ludo-diagram can represent and evoke a molar order, but the game itself is not major unless the force-signs are diagrammed to ensure the player through her actions has no choice other than to identify with the molar order being represented.

Giving players the option of driving a car into pedestrians is one of several

elements that have given the *Grand Theft Auto* series its notoriety. Another, as mentioned, is the option to kill a prostitute to get the money back after having paid to have sex with her. The ludo-diagram does not have to be tested in such ways. Whether or not the forces are liberated from these signs will depend in part on the apprentice's own interests and investments. Insofar as progression in *GTA* is not determined according to which way or indeed whether the signs are interpreted, in other words tested and enacted on, the signs are not Oedipalised. One is not punished for failing to kill the prostitute although by so doing it is certainly a bad affect detached from any statement about gendered violence. Rewards, though, are obtained by embarking on missions involving activities codified as criminal but which in carrying them through augment the body, the implicit law of *GTA*.

Deleuze and Guattari describe three characteristics of minor literature that can be used to explore videogames. First, language is deterritorialised by wresting it from the enclosed striations of arborescent discourse. Second, everything, even that which concerns the individual, has a political dimension. Third, every individual enunciation also enunciates a collective value. The central character of *Grand Theft Auto 4: Vice City* is minor: Niko Bellic, a poor immigrant trying to survive in a divided and disintegrating urban milieu. This suggests a moral ambiguity. However, as Dyer-Witheford and de Peuter (2009: 162) point out, by rewarding ruthlessness and enterprise *GTA* is in fact endorsing neoliberal ideology. What for them makes the game 'properly neoliberal' is that money is fetishised without any allusion to the labour force that produces commodities or the state that defines criminality and polices the law. In its attempt at (mythologised) urban verisimilitude, *GTA* is, as Dyer-Witheford and de Peuter suggest, a conservative videogame. Returning to Deleuze and Guattari's criteria, it is contained in, and never breaks from, the arborescent discourse and so fails at the first hurdle. *GTA* is not a minor text. The process as Dyer-Witheford and de Peuter note is one of becoming a despot, a pawn overthrowing the king through ruthless enterprise simply in order to be king. It is not a political expression or a collective one. Leonard's (2009: 266) criticism of *GTA: San Andreas* is worth noting here: 'this game disseminates dominant ideologies and common sense ideas of race toward the sanctioning of state violence. Beyond playing on hegemonic visions of people of colour and criminality, *San Andreas* equally deploys reactionary visions of communities of colour through its narrative and virtual representations'.

Ian Bogost (2011) provides an obscure example of what could be regarded a minor videogame, but which also fails according to the above criteria. *Darfur is Dying* was part of Susana Ruiz's MFA thesis. The game she created involved playing the role of a child who retrieves water for his family from outside the village where the violent and oppressive Janjaweed militia are based. As with Niko Billic, the character is minoritarian, though in this instance the goal of aiding the oppressed is collective. However, the context in which the game was created is suggestive of a majoritarian discourse. Why is the child in danger? The implication (in view of the broader context) is that it is because the West has not come to the rescue. *Darfur is Dying* is entwined in the arborescent discourse of western humanitarianism. Darfur

was at the time a cause celebre for western media, which put pressure on the US and its allies to intervene there. Whether intentional or not, *Darfur is Dying* functions by association as part of a molar aggregate of military and ideological forces playing out the myth that western-style intervention is humanitarian.

A minor videogame is a collective assemblage that enounces the cry of a war machine rather than aids in the appropriation of one. For a sympathetic depiction of the struggles of a victim to be considered minor, the dominant economic and political interests that nourish the global capitalist axiomatic would have to be represented in combustible force-signs, something that both *GTA* and *Darfur is Dying* fail to achieve. How would such a game be assembled? How about a hypothetical *Palestine is Dying* in which children have to run from building to building carrying whatever of their family's belongings they can while dodging the shells and bullets of the American-supported Israeli Defence Force? It would conform to the three qualities that Deleuze and Guattari describe as belonging to a minor language above: deterritorialising, political and collective. It would operate against the arborescent discourse that presents Israel as victim of a people whose land it has occupied. Everything concerning the actions of the apprentice-child would have a political dimension. Every individual enunciation would also enunciate a collective value.

The broader political and economic context is as important a factor to consider as the form itself. Unlike in literature where the reader has no agency over outcome, with videogames the player is also an author. If *Palestine is Dying* existed, it would have to be criticised for structuring the narrative around such a limited variety of goals, with the force-signs acting like beacons directing the player along the only course of action. Testing the ludo-diagram would simply involve interpreting the game as intended by the developer. The game would function as dogma rather than inviting the player to reflect, through their own choice of actions, on the morality of the conflict. As Deleuze and Guattari (2003b: 215) point out, there are micro-fascists on the left as well as the right:

> What makes fascism dangerous is its molecular or micropolitical power, for it is a mass movement: a cancerous body rather than a totalitarian organism… It's too easy to be antifascist on the molar level, and not even see the fascist inside you, the fascist you yourself sustain and nourish and cherish with molecules both personal and collective.

Several years ago the US air force banned their pilots from scrawling homophobic messages on bombs about to be dropped in Iraq (cf. Douzinas, 2007). It was relatively easy for the US air force to oppose homophobia at the molar level of representation; however, at the same time, homosexuals were officially banned from serving in the air force (and would be until 2011). Ultimately, it is the bomb not the graffiti that causes the most harm. A minor videogame that operates at an affective level would bring to attention issues of social and political importance but do so in such a way that the player has the space to work through them. Deleuze

and Guattari's warning is relevant in this respect: 'A revolutionary preconscious investment bears upon new aims, new social syntheses, a new power. But it could be that a part at least of the unconscious libido continues to invest the former body, the old form of power, its codes, and its flows' (2003a: 347).

In a society that polices racist and sexist utterances (although institutional oppression is arguably as strong as ever), it is in the interest of the player to disavow any racist or misogynistic pleasure they may get from videogames that stereotype the minor ethnicity and sex. But we discover in the assemblages of videogames the linguistic cues that provide a libidinal outlet for the majoritarian male whose feelings of inadequacy play out their frustrations.

First-person fighting-machines

A hegemonic ideology, according to the Italian communist Antonio Gramsci, operates by consensus. The US is an archetypal hegemonic power, its status assured through partnerships with allied countries and support from citizens identifying with the values enshrined in the Constitution and embodied in nationhood. Consensus is only possible when ideological affiliation is voluntary and so all hegemonic powers rely on dissenting elements to legitimate claims that affiliations are indeed freely chosen. It is only when the established system is threatened that dissent is met with coercion, typically out of sight of the consenting groups. Exceeding mainstream cinema in their uncritical embrace of racism, sexism and militaristic violence, videogames often reproduce ideologies that in their brittle uniformity are hegemonic in the crudest of ways.

The combatants in various iterations of the *Call of Duty: Modern Warfare/Black Ops* series are not a generic alien species; they represent the US and British army on one side and Arabs, Russians, slum dwellers and so forth on the other. The player, in the US or British armies, can test the ludo-diagram by training her weapons on members of her team but discovers in doing so that the game will be brought to a halt and progression made impossible. The only way to progress is by interpreting the 'other' as enemies to overcome with bullets, grenades, rocket launchers and bombs. Lines of flight are overcoded in the major language of an imperialist army. 'No Russian' (i.e. don't kill any Russians), from *Modern Warfare 2*, is perhaps one of the most controversial sequences in videogame history (although killing a doppelganger for Fidel Castro in *Black Ops 2* is certainly a contender). It involves the player working undercover with a Russian terrorist unit that enters a civilian airport and fires randomly at civilians and security guards, their screams and bloodied bodies adding a level of realism that is both sickening and invigorating. The ostensible narrative justification for the scene is that the avatar is infiltrating a terrorist cell but the scene nonetheless uses terror as a vehicle for sustaining the player's enjoyment. In the finale, the battle shifts to Washington DC on which Russians have made a full-scale assault. The US capital resembles a warzone. As with 'No Russian', formally it is an interchangeable background on which the player practises violence. Discursively, it follows the arborescent cold war tropes and

current paranoia around Russia's geopolitical ambitions. *COD* belongs to a subgenre of military shooters that attempt representational and conceptual realism by referencing either actual or potential conflicts and/or peoples vilified by the global hegemon. That *America's Army* was financed by the CIA and is used to train US soldiers is well documented. With a far-greater reach and more crafted aesthetic, *COD* makes for a better recruitment tool. The similarities between recruitment advertising for the British army, shot from a first-person perspective, and *COD* is no coincidence. As McKenzie Wark (2007: 16) puts it:

> The utopian dream of liberating play from the game, of a pure play beyond the game, merely opened the way for the extension of gamespace into every aspect of everyday life. While the counter-culture wanted worlds of play outside the game, the military entertainment complex countered in turn by expanding the game to the whole world, containing play forever within it.

While, as noted above, the particular investments of the desiring-machines cannot be known simply from the fact that a person plays *COD*, it is possible to ascertain from how this subgenre is assembled, the molarities it represents and molar lines it traces in-game and through marketing, that they aim squarely for the fascistic-paranoia pole of desire. In other words, they aim to appeal to those who are libidinally invested in the machine of oppression and exploitation. As Massumi (1992: 119) explains,

> Fascism-paranoia, the molar-moral drive of Oedipal desire, works to fashion society into samenesses of varying scales – a *mise en abyme* of homologous organic structures (normality as the embodiment of analogy; being as self-similarity). Fascism-paranoia is the condition known as being in the molar-moral 'majority.'

Outside academia, Markku Eskelinen (2001) notes that people are usually excellent at making distinctions between stories and games, a distinction that is not so readily apparent to many academics who often view videogames as 'interactive narratives, procedural stories or remediated cinema'. The discussion on how play and narrative imbricate one another has given rise to a series of false binaries and artificial divides such as between so-called narratologists and ludologists. Kerr (2006: 20) suggests the fatal flaw of narratology is that it '[transposes] theories from static texts to more dynamic texts', as the variability of videogames points 'to a multiplicity of possible meanings and experiences' that result from the player engaging with a videogame. Narrative comes then to signify anything from the cut-scenes of *Metal Gear Solid*, to quick time events in *Resident Evil 4* and the successful interlocking of blocks in *Tetris*. All videogames are more or less goal oriented and in this respect contain their own 'narrative' sequences. But to be clear, what we are actually describing are assemblages of force- and sterile-signs, what the ludo-diagram enables us to do with them more or less corresponding to our

libidinal investments in the social machine.

The *Bioshock* series is one of the few mainline videogames that can arguably be called minor as a linguist assemblage and in terms of the (affective) compositions of the player. The force- and sterile-signs constituting the form of content enable statements that both conform to and exceed an implied morality. Created by Irrational Games in 2007, the shooter is set in a post-apocalyptic underworld city populated by monstrous life forms, the result of a social and genetic experiment gone wrong. Formally, *Bioshock* is fairly unremarkable. Where it excels is in how the context and backstory are assembled within the gameplay to enable the player to compose forces that deterritorialise the molarity of the arborescent order it references. Much like the world inhabited outside the digitised space, it is a free-market dystopia afflicted by war, corruption, class conflict and environmental devastation. The Victoriana of the first two entries in the series is reproduced in the third, *Bioshock Infinite*, set in the fantastical floating city of Columbia, dominated by a white supremacist Christian elite. The player is Booker DeWitt who rescues the enigmatic Elizabeth, a non-playable character, from her captors. As the game progresses we learn of Elizabeth's incredible powers and importance for the city. The analogy to current real-world social issues of racial segregation, inequality and exclusion is explicit without being trivialised by a moral overcoding. This is achieved in part by its setting and art style that in this respect makes no attempt at real-life verisimilitude. While the struggle is characteristically one involving a male overcoming adversity, it is also political and collective in its implications, although to be clear, we are being generous to a game that stands out simply because so many other FPSs play in the major key. The situation does however appear to be improving with games such as *Spec Ops: The Line*, questioning the morality of US involvement in the Middle East and Afghanistan that exposes as well as raises questions about the extreme disparities in wealth and power in the United Arab Emirates referenced in the game.

A videogame that reinforces a majoritarian position is not necessarily a bad one. *Triumph of the Will* is after all a formal masterpiece of cinema. *Call of Duty 4: Modern Warfare* is finally crafted. The aforementioned *Resident Evil 5*, however, is both racist and a formal failure. Clearly designed with the American market in mind and trying to capitalise on the success of *COD*, *Resident Evil 5* (Capcom, 2009) aimed to build on the excellent *Resident Evil 4* (Capcom, 2005), and spectacularly failed. The stark differences between the two are only apparent when playing them. The open spaces, light intensities, unintuitive warrens and listless gunplay deprive the game of tension. The apprentice composes on a ludo-diagram seemingly cut and pasted from the dregs of the previous one. It striates when it should be going smooth, frustrates when it should feel exhilarating. The worst aspects of the game though are the context, storyline and characters. The lead is once again the white American Chris Redfield, only this time he is on a humanitarian mission in Africa to contain a virus that turns people into zombies. The standard cliché about zombies is that they function as stand-ins for our innermost fears, a perfect blank canvas to project them onto. In the *Resident Evil* series, Krzywinska (2002: 3) notes,

the player's avatar 'has to restore balance to a world corrupted by evil forces that threaten humanity and rationality' and so operate through a moral duality of good versus evil. Zombies are the 'manifestations of such forces' the player must defeat. Videogames utilise various culturally embedded symbols to convey the idea that the zombie is irrational and inhuman. As Edward Said wrote, 'one of [the West's] deepest and most recurring images of the Other' as its 'contrasting idea or experience' has been the non-Western world (1978: 1–2). The West is often portrayed as civilised and rational, the East barbaric and irrational, an ideology that Said termed 'Orientalism'. *Resident Evil 5's* playground is an impoverished town in a dry barren environment evoking Somalia, where gangs of black-skinned locals maraud around committing random acts of violence. Their eyes are bulbous and bloodshot. In the centre there is a crowd gathered around a speaker whipping up passions with calls to terror. Soon after Redfield encounters his first zombies, men and women whose features become more pronounced and deformed, an African variation on the kind of caricatures found in Nazi propaganda of the Jew. Redfield repels the approaching waves by firing bullets into their bare torsos producing red pockmarks on their black skin. Inadvertently Capcom draws attention to the point that humanitarianism is imperialism by stealth. It is a thinly veiled justification for committing violent acts of oppression.

Set on a tropical island near Thailand, *Far Cry 3* is a first-person open-world shooter in which the player is an American tourist, Jason Brody, whose friends are abducted and sold into the slave trade. The plot centres on revealing the various secrets of the island where the player hunts down the leader and exacts revenge. Often working by stealth, Brody infiltrates command posts armed by black men that he kills in order to survive and progress. The men have thick accents, a caricature perhaps of a Nigerian accent, and a vocabulary that consists of phrases that include 'fuck' and 'shit'; 'die shithead' being one of the more imaginative. *Far Cry 3* diagrams a vast array of forces that the player can unleash through compositions with animals, their skins, weapons, terrains and so forth to produce multiple affects on journeys that can be interrupted and on which divergent lines can be drawn. The crude ethnic stereotyping and white/black, western (major)/eastern (minor) binaries where the latter are presented as the bad guys, although the fact they are working for the slave trade, makes this less problematic. *Far Cry 3* is as much about survival as it is revenge and unlike Chris Redfield, Brody is accidently caught up in the conflict rather intentionally there as a representative of an army or organisation. Notwithstanding the aforementioned issues, the problem with *Far Cry 3* is as much about balance; it is an example of the videogame's typical format: the predominant hero or figure is white, Caucasian and male or a westernised variant, and the enemy, if not a zombie or alien, is explicitly 'other'. On a more positive note, some independent developers are producing stories told from an indigenous perspective. As one article reports, in consultation with the Cook Inlet Tribal Council, a non-profit Iñupiaq organisation, E-Line media developed *Never Alone*. The storylines, characters and settings immerse the player in the Iñupiaq culture.[2] However, as with *Spec Ops: The Line*, if anything such games are the exceptions that prove the rule.

As Galloway (2013) points out, the character does not have to resemble a human in order for it to be a racial caricature. Galloway refers to the 'Jar Jar Binks' effect, the notorious character from *Star Wars: The Phantom Menace*, whose 'exaggerated facial features and a Jamaican accent' are racial significations. As Galloway (2013: 133) explains, 'the more one seems to extricate oneself from the mire of terrestrial stereotyping, the more free and flexible the bigotry machine becomes, able to repopulate the racialised imagination with "aliens," but aliens that conveniently still stick to the gangly comic relief of the blackface minstrel'. But his call for game studies to define realism in regard to 'games that reflect critically on the minutiae of everyday life, replete as it is with struggle, personal drama, and injustice' (Galloway, 2006: 75) generates another set of problems. Namely, a medium in which fun and 'playability' are the principal criteria for judging its quality risks trivialising the issues that such a game would highlight. Realism in this respect has to be carefully weighed against the actions and what those actions signify. While obviously not an everyday example, the pointed question is whether it is possible to make a videogame about the Holocaust without at the same time trivialising it. *Wolfenstein: The New Order* references the Holocaust but literally and metaphorically circles around the concentration camp rather than entering into it. Developing a complex narrative that thoughtfully engages the player with the horrors of the Nazi regime could serve an educational purpose but for reasons further elaborated below would potentially be detrimental to the game itself. To put it bluntly, if such a game were in the vein of an FPS what essentially would make or break it is the quality of the gunplay.

The Triforce

Like the emasculated 'Joe' in Hollywood movies who rescues the world from oblivion, the apprentice is taken on a journey from castration or powerlessness to potency or power. In *The Legend of Zelda*, this happens with the help of a Triforce. After 'Gamergate' which began in 2014 with the harassment of an indie developer, Zoe Quinn (detractors falsely claimed that her relationship with a videogame journalist had resulted in him publishing a positive review of her game), and similar attacks on Anita Sarkeesian for her 'Tropes vs Women' Youtube videogame series, there can be no doubting the problem with the libidinal investments of many gamers. Gamergate helped bring attention to the violence and misogyny displayed against women in videogames by males who play them.[3] Sarkeesian was vilified and at one stage driven from her home by gamers issuing death threats because of her criticisms of the medium.[4] It underlines the point made at the beginning of the chapter that the issue is not necessarily the videogame as such but rather the desiring-machines of those who play them, and how they are invested in the molar aggregates of male domination.

The castration complex looms large in videogames. Women, subject of the male gaze, are to be controlled, dominated, ridiculed and fucked. In her first video dissection, Sarkeesian problematises the damsel-in-distress motif. The ultimate

objective in the *Super Mario* series is to rescue the very delicate and stereotypically pretty Princess Peach from the clutches of the evil Bowser. Here we have the classic Oedipal triangle of 'it's a Me, Mario' in a battle with the more powerful Bowser, Daddy, who has stolen Mario's love object, Mommy Peach. The game ends with the resolution of the complex, the death of the Father and the crowning of Mario who triumphantly rescues Peach. Here is Bowser's monologue after capturing Peach at the beginning of *Super Mario Galaxy 2*:

> You're too late, Mario.
> The power of the stars is already MINE!
> And look what else I got …
> [Breaks to image of Peach in Bowser's paw, a giant towering over the surrounding buildings, crying out 'HELP ME!']
> I'm HUUUUGE!
> Even scarier up close, huh?
> [Peach wails 'Mario']
> Maybe I'll have Peach bake ME something for once …
> I sure could go for a galaxy-sized slice of cake right now!
> I'm way too huge for this puny planet!
> I deserve an empire that's more ME size!
> And I'll put it in the centre of the universe!
> Have fun with your stupid mushrooms!

And so begins the finest videogame ever made. We do not need to revisit the discussion on Oedipus to recognise that Bowser is the all-powerful Daddy and Mario the emasculated male with Peach the object that satisfies desire with her cakes. Defeating Bowser also liberates the creatures that help Mario on his way, so in a sense it is a collective struggle undermined by the fact that this is simply an instrument for Mario's more singular (and selfish) aim to rescue Peach. The game clearly does reinforce gendered stereotypes but which are so prevalent in mainstream media that Nintendo could be excused for the fact that it does so in a sugar-coated world in which for the most part characters are gender neutral. In regard to videogames, the crucial argument in mitigation is that one does not have to fuck, maim or humiliate Princess Peach in order to progress. There are no force-signs that either represent molarities or, in view of Galloway's qualification, arguably reproduce the Jar Jar Binks effect. In the abstract universe of Mario, the adversary is always the oppressor. This clearly differs from *COD* in which the force-signs represent stereotypical (less powerful) adversaries of the US and, as force-signs, can only be 'liberated' by neutralising them in order to progress. Returning to the action-image, the issue is not the situation (S) and/or necessarily the outcome (S') but the forces the apprentice diagrams through the action (A).

The Legend of Zelda series is on something of sliding scale, and like *Super Mario*, is structured overtly around the Oedipal myth. The Zelda games typically begin with the kidnap of Princess Zelda whom Link then sets out to rescue from the evil

Ganondorf. As the game progresses Link acquires new powers, and eventually acquires the power of the Triforce to defeat Ganondorf. In *Ocarina of Time*, Link starts as a boy and defeats Ganondorf as a man. But although rescuing the princess is an individual goal, the wider objective is more explicitly, relative to Mario, a collective one: to remove the evil from the land and thereby liberate its inhabitants from oppression. *The Wind Waker* subverts the gendered formula through the inclusion of the female pirate Tetra. A non-player character, Tetra is a feisty, rebellious, sharp and playful foil to the immature Link. However, with the revelation late in the game that Tetra is in fact Princess Zelda, the pirate is turned into a more one-dimensional feminine and delicate character, now adorned in her signature attire. With Zelda entombed in the safety of a fortress, Link finally takes charge and alone continues the journey towards the final battle. The game suggests that Zelda is the authentic core of the inauthentic Tetra, with the tomb-like space in which she is sequestered an unintentional metaphor for the position of women in society.

A notorious commercial for *Ocarina of Time* ends with the lines: 'Willst thou get the girl? Or play like one?'. This however belies the fact that *The Legend of Zelda* includes many characters that can be considered either gender-neutral or positive female role models, including Tetra (up to a point) and Midna from *Twilight Princess*, who is strong, brave and sympathetic. The male characters in Nintendo's flagship series are rarely macho and, if anything, they are the apotheosis of what a typical (sexually insecure) adolescent male would likely admit to identifying with. Toad, in *Super Mario*, is a vulnerable, cowardly but kind, caring and aesthetically somewhat surreal character. Fluzzard from *Super Mario Galaxy 2* is a shy male bird with a beautiful colourful plumage. Pink is the dominant colour. Male penguins are chirpy and playful.

In the critically acclaimed *Bayonetta* by Platinum Games, the apprentice controls the eponymous female witch dressed in a highly fetishised tight-fitting body suit. The artistic style is influenced by Japanese anime and includes many over-the-top surreal boss-style battles in which Bayonetta punches, kicks, lunges and conjures magic spells to dispatch her typically male adversary. Bayonetta is seductive in her wit and playfulness, making light through her facial expressions, physical gestures and utterances of the obvious gendered connotations but which in view of the wider context and gameplay are neither inherently sexist nor misogynistic. Lara Croft of *Tomb Raider* is a more established female lead hailed by critics at the time as a positive female role model who is both strong and assertive. Unlike *Bayonetta*, in *Tomb Raider*, especially in the promotional materials, the focus is Lara's breasts, which grew with each new iteration. Nevertheless, simply making the lead a female character was, for a new franchise in the wider cultural context, a brave move for Core Design. After the huge success of *Goldeneye 007* on the Nintendo 64, Rare's decision to replace James Bond with a female protagonist Joanna Dark in the much-anticipated follow-up *Perfect Dark*, was arguably an even bolder move. In contrast to *Ocarina of Time*, the commercial for *Perfect Dark* challenges the gendered assumptions of the first-person shooter genre it belongs to. It begins with

a real-life actor in the role of Joanna Dark getting dressed before going to work. There are close-ups of her body and face as she puts on her underwear and applies lipstick overdubbed with a male voice and the words: 'So you've got an important decision to make. What are you going to wear to work?'. The twist now comes … 'meet special agent Joanna Dark in *Perfect Dark*, where you'll find out that the only person man enough to handle a job like this is a woman'.

Gears of War is a typical testosterone-injected shooter in which men have gruff voices and preposterously large muscles, with the environments drained of colour. Men are defined by their strength, women by their sex. Masculine and feminine are of course social constructs but there is nothing inherently sexist, misogynistic or even majoritarian in avatars that display characteristics according to one or the other stereotype. The issue is one of context and balance, that women can be masculine and men feminine, with haecceities that can be assembled on flights of micro-femininity, becoming-minor, becoming-revolutionary.

The *Metroid* series is one of the first action adventures in which the playable avatar is a female. It is the classic example of a beautiful 'feminine' woman beneath a tough masculine exterior. A hybrid that includes platform, shooter and puzzle elements, the *Metroid* series takes its aesthetic inspiration from Ridley Scott's *Alien* and is set on a similarly hostile world populated by bizarre and threatening life forms. Presented on a two-dimensional plane, Samus Aran is permanently covered in a muscular metal suit (though with distinct feminine curves) and were it not for the non-playable sequence where, upon her death, the suit disappears to reveal a 'babe' in bra and panties, it would have been a milestone in its gender depiction. We had to wait until the release of the Nintendo Gamecube and the handing over of the *Metroid* series to Nintendo-owned US Retro Studios for it to realise this potential. *Metroid Prime* (2002) is the first of the series rendered in three dimensions that shifts between first behind the visor and third behind the body perspectives. In visual terms the only clues that the protagonist is female is the aforementioned curvature of the suit, feminine facial features seen through the visor during cut scenes and, in first-person perspective, the subtle tracing of the facial features in the reflection of the visor when the background environment is dark. There is no 'babe' moment upon death or even in cut scenes. Samus is always suited up. Only after the punishingly difficult final battle is the gender made more explicit and even then we see just Samus's head after the helmet is taken off; there are no words or gestures, just contemplative silence. The eyes of the avatar in first person are directly mapped to the eyes of the player. The woman's face in the visor is therefore a mirror image of our own. The mirror double, Jacques Lacan claims, is a placeholder into which the subject projects his or her identity. In *Prime*, Samus is our mirror double. She returns our gaze and is posited as the idea of the self, an embodiment of the player's ego housed in an illusory masculine physique. Having no bodily substance, the face itself is an affect of light intensities. The becoming-woman of Samus Aran takes possession of the tools and weapons hitherto the armoury of the dominant man and, for both the man and woman defined by their molar identity in the Oedipal relation, the tools here serve a practical purpose of

overcoming an oppressive force. Samus is both the sign and operation of the molecular becoming-woman. *Metroid Prime* and the two sequels developed by Retro Studios invite rather than command male players to loosen their ties to the molar male through proximities to micro-femininity.

In cinema, the viewer identifies with the protagonist. In videogames the player is the protagonist. The male player does not perform the role of Samus. He is the affective Samus. There is considerable potential for producing genuinely disruptive and subversive gameplay experiences that bring players face-to-face with their own investments and that can operate as vehicles on which lines of escape from molar formations can be taken. The power of the medium in this respect can also explain why in view of the market, in terms of characterisation, narrative and so forth, videogames are so conservative. Publisher unease with sci-fi adventure *Remember Me*, eventually published by Capcom, was due to the gender of the playable main character, Nilin, and in particular her relationship with a man. As creative director Jean-Maxime Moris explained:

> We wanted to be able to tease on Nilin's private life, and that means for instance, at one point, we wanted a scene where she was kissing a guy. We had people tell us, 'You can't make a dude like the player kiss another dude in the game, that's going to feel awkward.'[5]

Videogames can model the player's libidinal investments and reveal them in the process of play. The fact that so few do can to some extent be attributed to publisher unease about the possible backlash from male gamers whose fascist-paranoia is so easy to stoke and expose. Moris's experience underlines this. The clue to the subversive potential of videogames is not in the representations as much as it is in the affective qualities that the player helps generate. Those who criticise videogames for their representations without taking this into account are only skimming the surface.

Galloway makes the important point that because videogames are an active medium involving physical input, 'a realistic game must be realistic in doing, in action … it follows in a structural sense that the gamer has a more intimate relations with the apparatus itself, and therefore with the deployment of realism' (2006: 83). It is because of this intimacy that representational realism cannot be studied apart from affect.

There is a scene in Antonioni's *La Notte* of spectators watching a group of young men firing small rockets into the air. The men are so close to the rockets that the smoke emanating from them means they cannot observe their trajectory, only the spectators standing at a distance can do so. It is easy for the player to be so immersed in the smoke of the game that she no longer has the perspective to recognise what those who are not 'in the game' are able to see. In the mist of affective realism, the molar realism of xenophobia, misogyny and first-world terror is potentially lost.

But intensity can also give rise to nausea, that sickening feeling described in relation to *Resident Evil 5* above that we are invested in a racist plot. It is important

that a minimal distance is sustained in order that the player can, for example, fight a war on terror, without being affected by war. Venture too close to the rocket whose trajectory is not obscured by smoke and the heat can burn. There is a sweet spot between affect and representation that the game tries to occupy. Immersion is sustained insofar as representation is not so realistic that it causes the player to recoil or renders the game unplayable by attempting to map all the complexities of utilising real machines of war onto the controller.

Videogames, according to Bogost, have a unique 'persuasive' power. Persuasion to recall occurs through a 'procedural rhetoric'. Rather than words, images and so forth, the player is persuaded by the actions they are compelled to enact, the A of the SAS' formula. Computers, Bogost claims, function like a bureaucracy with their procedures that determine how actions can be taken. Bogost writes, 'Because computers function procedurally, they are particularly adept at representing real or imagined systems that themselves function in some particular way – that is, that operate according to a set of processes' and which magnify 'the ability to create representations of processes' (2010: 5). These are implied by the way actions map to the screen such as when, in a platform game, the force, direction and duration of a movement determine how far the character jumps and at which point on the screen it stops. By determining how the game will be played, the code can persuade through the player's actions rather than by images or words. *COD* would according to this argument persuade through what the ludo-diagram enables. *Killer is Dead* by Suda51 is a sexist text for this reason. In the 'Gigolo' missions the male protagonist goes on a date and ramps up the 'guts' meter by gazing at the various parts of a scantily clad wide-eyed manga-style girl. The reward is a 'sexy shot' from her. The ludo-diagram is thus tested and the forces liberated through an act (A) of objectification.

A procedural rhetoric can serve counterhegemonic purposes. Bogost gives the example of *The McDonald's Videogame*, which the Italian social critic collective Molleindustria created to expose the company's unethical practices. As Bogost (2010: 29) explains:

> The player controls four separate aspects of the McDonald's production environment, each of which he has to manage simultaneously: the third-world pasture where cattle are raised as cheaply as possible; the slaughterhouse where cattle are fattened for slaughter; the restaurant where burgers are sold; and the corporate offices where lobbying, public relations, and marketing are managed.

The apprentice is forced to reconcile whatever moral misgivings they might have with the logic of running a successful business. This, as Bogost notes, underlines the fundamental corruption of the fast-food industry. Action is enmeshed in a counterhegemonic message. It is unclear, though, how this could be more persuasive than reading a book on the fast-food industry. In fact, one could argue the opposite. The player is not so much persuaded as forced to interpret the text

according to the developer's own ideological position, procedurally standing as the correct (dogmatic) message.

In 2009, Konami announced they were pulling out of a deal to publish Atomic Games' controversial *Six Days in Fallujah*, which ultimately sank the game. The developer wanted the shooter to accurately depict the second US and British offensive on Fallujah in 2004 in which an estimated 1500 people, including 95 US soldiers, were killed. In an interview with Randy Nelson at Joystiq, president of Atomic Games Peter Tamte explained that the project came about when a US battalion they had been involved with on a separate project returned from battle and asked if they would make a game based on their experience. Tamte wanted to produce a war game that did not, in his words, seem 'fake'. All of us, he said, 'are curious about what it would *really* be like to be in a war'.[6] Videogames can bring us closer to the feel of war than cinema because it is the player not the actor who performs the action. As Tamte explains:

> There are things that you can do in video games that you cannot do in other forms of media. And a lot of that has to do with presenting players with the dilemmas that the Marines saw in Fallujah and then giving them the choice of how to handle that dilemma.[7]

This, according to Tamte, enables the player to gain a deeper understanding of the nature of war. Asked if the game was going to be fun, creative director Juan Benito responded, 'for some, they may have fun. They may enjoy it. We are recreating and presenting these events and people, I think, will have their own individual reactions to it and those will be across the board'.[8]

Whether *Six Days in Fallujah* would have ended up being another example of barbarism made fun or, through its design and execution, sensitised the player to the horrors of war is unclear. Given the sums of money required to produce such a game, one would suspect that ultimately it would err towards the former. Released onto PC, *Red Orchestra 2: Heroes of Stalingrad* aimed for a realistic depiction of that famous battle, while also creating tense gameplay scenarios to provoke constant fear of instant kills, unseen sniper attacks and ambushes. The apprentice passes down ruined streets absorbed by the possibility that at any moment he could die, in a thick atmosphere in which one can almost smell the blood. As one reviewer wrote, 'it is one of the grimmest and [most] unpleasant video games we've ever played'.[9]

As Deleuze (2005: 152) said of cinema, 'Everyone knows that, if an art necessarily imposed the shock or vibration, the world would have changed long ago, and men would have been thinking for a long time. So this pretension of the cinema, at least among the greatest pioneers, raises a smile today'. Without clear-cut examples to analyse, the potential for videogames to impose the shock or vibration Deleuze speaks of is difficult to qualify and it seems that at present we are a long way from realising this potential, at least in full-price commercial videogames.

Is there such a thing as a minor videogame?

> Minor languages do not exist in themselves: they exist only in relation to a major language and are also investments of that language for the purpose of making it minor. One must find the minor language, the dialect or rather idiolect, on the basis of which one can make one's own major language minor. Conquer the major language in order to delineate in it as yet unknown minor languages.
>
> *(Deleuze and Guattari, 2003b: 105)*

Neither the affects nor attempts at representation can be isolated from the social machine that videogames are part of. With the stress on 'game' and 'play', using 'the minor language to send the major language running' comes up against the problem of trivialisation. The open-ended nature of videogames requires an open-ended language to enable players to author their own lines of flight from the majoritarian discourse. It is questionable how far this can be taken with games that attempt verisimilitude. Those that only obliquely reference lived experience can more easily avoid the charge of trivialisation. *Metroid Prime* arguably affects or opens up the possibility for a becoming-other from a molar masculine male. *Bioshock* brings attention to issues of racism, inequality and exclusion but does not impose a morality in the way, say, that *COD* does. This can even be said of *Red Orchestra 2*, which presents war without necessarily representing a particular standpoint on it. Even though the figure of the immigrant is minoritarian, *GTA* cannot, for reasons made clear by Dyer-Witheford and de Peuter (2009), be described as a minor text. Niko Billic is on a journey but it is one from being minor to becoming a despot. At no moment in *GTA* does the player ever confront the inherent contradictions of neoliberalism the game obliquely conceptualises or have cause to question the ideology through gameplay. *Bioshock*, *Spec Ops: The Line* and to a lesser extent *Metroid Prime* show that it is possible to diagram the possibility for deterritorialising the major code, in very limited ways to be sure, while also making a return from the vast amount of money required to make them. But it is understandable, given the commercial restraints, that critical scholars are turning to the indie scene as the most likely source of what Galloway calls 'countergaming'. This too is Dyer-Witheford and de Peuter's answer to *GTA* and comparable examples in Empire's repertoire.

While the content of commercial and non-commercial videogames often differs, production constrains what can be achieved by attempts to utilise videogames as a tool for counterhegemonic persuasion. Without the resources, genuinely independent game designers will not be able to compete with major companies investing vast resources to produce the kind of videogames people want to play. Put simply, people do not typically (self-consciously) play videogames because of their ideology or representations, though, as critiques of videogame texts become more prevalent, one can hope that increasingly they will avoid those that are explicitly racist and misogynistic, thereby undermining their commercial potential.

A becoming-woman, a becoming-African, a becoming-revolutionary might involve exposing the violence of western imperialism or the monstrous effects of capitalism on society, or challenge racial and gender stereotypes. This is the ideal but videogames have some way to go before they can be considered minor in their own inimitable way. Where commercial interests prevail, the minor videogame is very much in its infancy. But the lingering question is whether developers should even try.

In view of the above, we can distinguish between three types of videogame. In the first type, *overcoded videogames*, linguistic assemblages are weaved into the action. The ludo-diagram codifies the action and also translates it through the player actions. The artist/developer is the colonial despot who forces the player to perform its ideology through the action-image S(A)S'. *COD* and, in a less problematic way, *Darfur is Dying*, fit this category. In the second type, *coded videogames*, S and S' frame the action (A) through what can be conceived as a major language but in which the action itself (A) does not involve the procedural issues Bogost refers to of *enacting* the ideology and cannot therefore be considered persuasive in terms of the gameplay itself. The *Super Mario* series in which Peach is never the object to oppress or conquer fits this category. In the third type, *uncoded videogames*, the situation (S) and its resolution (S') are, as with the action (A), too vague or abstract to allude to any definitive ideological interpretation. *Tetris* is one example and, despite allusions to consumerism and the gendered nature of the character, *Pac-Man* is also too abstract to be considered anything other than uncoded. *Ms Pac-Man*, by contrast, with its cut scenes involving marriage falls into the second category. So to summarise:

Type one: *the overcoded or major videogame*

- Irrespective of the situation and its resolution (S + S') the action (A) is always procedurally determined to generate meanings that confirm to a particular ideology or discourse that traces the desiring-machine of the developer.
- Archetype: *Call of Duty 4: Modern Warfare*

Type two: *the coded videogame*

- The situation and its resolution (S + S') are either (1) ideologically and/or discursively significant but the action (A) is not, or, as in the case of competitive racing games such as *Mario Kart*, (2) the situation (S) and its resolution (S') are not ideologically and/or discursively significant, but, perhaps in a more oblique and less problematic way, the action (A) is, such as in the case of *Mario Kart* by encouraging competition amongst players.
- Archetypes: (1) *Super Mario*; (2) *Mario Kart*

Type three: *the uncoded videogame*

- Neither the situations (S + S') or actions (A) are ideologically or discursively significant.
- Archetype*: Tetris*

To this we can add:

Type four: *the decoding or minor videogame*

- The action (A) that bridges S and S' is not encoded to a particular viewpoint. It evokes a moral ambiguity that invites rather than compels the apprentice to take flight from an arborescent discourse or major text. The text disrupts or draws to attention to the player's libidinal investments in the language of domination.
- Archetype: ???

Bioshock, *Spec Ops: The Line* and *Metroid Prime* are comprised of elements that fit the fourth category but in the final analysis only ever hint at this possibility. They signal a future present in the multiplicities of the plane of immanence that are not fully evoked.

If what has been developed in this book constitutes a method, it is one that is open ended, with arguments and analyses that are also open to qualification. There is no final word on the videogame, only a theoretical becoming that I hope readers have found illuminating and useful. Rather than summarise the content of the book in a conclusion that risks becoming a convoluted recap on what has already been said and reiterated in the different chapters, I invite the reader to return to the Introduction and the first chapter, Videogame Plane, to reassess the central claims in view of subsequent qualifications and additions. Readers will want to develop their own divergent lines of thought and perhaps find some of mine arborescent, something that within the broader literature and becomings of apprentices we can continue to explore. Neither at the beginning nor the end, there is no 'game over', no final word only an invitation to open up to new planes of thought and becoming.

Videogames cannot be considered in isolation of the order they are part of or the desiring-machines of those who play them. A theory of the videogame adapted from Deleuze and Guattari's philosophy is always a theory in motion. There is no outcome. Whether in terms of gameplay or the evocation of a minor language through player actions, the future of the videogame, its potential for becoming this century's preeminent form of artistic expression, has to be weighed against the social machine that threatens to plug its becomings. The future of the videogame is at stake, a future pregnant in the form itself and the alliances of artists and apprentices the world over.

The final word goes to Deleuze and Guattari who notify all artists and apprentices of the task that awaits them:

> The writer twists language, makes it vibrate, seizes hold of it, and rends it in order to wrest the percept from perceptions, the affect from affectations, the sensation from opinion – in view, one hopes, of that still-missing people … This is, precisely, the task of all art and, from colours and sounds, both music

> and painting similarly extract new harmonies, new plastic or melodic landscapes, and new rhythmic characters that raise them to the height of earth's song and the cry of humanity: that which constitutes tone, health, becoming, a visual and sonorous bloc.
>
> *(Deleuze and Guattari, 1991: 176)*

Notes

1 www.theguardian.com/technology/2014/aug/04/violence-video-games-fun-a-beginners-guide-for-parents
2 http://au.ign.com/articles/2015/01/16/the-rise-of-indigenous-storytelling-in-games
3 http://en.wikipedia.org/wiki/Gamergate_controversy
4 www.theverge.com/2014/8/27/6075179/anita-sarkeesian-says-she-was-driven-out-of-house-by-threats
5 www.eurogamer.net/articles/2013-03-19-why-publishers-refuse-games-such-as-remember-me-because-of-their-female-protagonists
6 www.joystiq.com/2009/04/13/joystiq-interview-six-days-in-fallujah/
7 www.joystiq.com/2009/04/13/joystiq-interview-six-days-in-fallujah/
8 www.joystiq.com/2009/04/13/joystiq-interview-six-days-in-fallujah/
9 Hyper-realism of war to the point of revealing how awful it is: www.metro.co.uk/tech/games/876680-red-orchestra-2-heroes-of-stalingrad-review-the-real-call-of-duty

BIBLIOGRAPHY

Aarseth, E. (1997) *Cybertext: Perspectives on Ergodic Literature*. Baltimore: Johns Hopkins University Press.

Adorno, T. (2001 [1963]) *The Culture Industry*. London: Routledge.

Adorno, T. and Horkheimer, M. (1997 [1944]) *Dialectic of Enlightenment*. London: Verso.

Ash, J. (2012) 'Attention, Videogames and the Retentional Economies of Affective Amplification', *Theory, Culture & Society*, 29(6): 3–26.

Badiou, A. (2009) *Logics of Worlds: Being and Event, 2*. London: Continuum.

Bakhtin, M. (2003) *Problems of Dostoyevsky's Poetics*. Minneapolis: Minnesota University Press.

Barthes, R. (1993) *Mythologies*. London: Vintage.

Bennett, J. (2010) *Vibrant Matter: A Political Ecology of Things*. Durham: Duke University Press.

Bergson, H. (1991 [1908]) *Matter and Memory*. New York: Zone Books.

Bogost, I. (2010) *Persuasive Games: The Expressive Power of Videogames*. Massachusetts: MIT Press.

Bogost, I. (2011) *How to Do Things with Videogames*. Minneapolis: Minnesota.

Bogue, R. (1997) 'Gilles Deleuze: The Aesthetics of Force', in Patton, P. (ed.) *Deleuze: A Critical Reader*. Oxford: Blackwell: 257–269.

Buchanan, I. (2006) 'Practical Deleuzism and Postmodern Space', in Fuglsang, M. and Sorensen, B. (eds) *Deleuze and the Social*. Edinburgh: Edinburgh University Press: 135–150.

Caillois, R. (1962) *Man, Play and Games*. London: Thames and Hudson.

Calleja, G. (2007) 'Digital Game Involvement: A Conceptual Model', *Games and Culture*, 2(3): 236–260.

Calleja, G. (2010) 'Digital Games and Escapism', *Games and Culture*, 5(4): 335-353

Chang, A. (2011) 'Games as Environmental Texts', *Critical Humanities and Social Sciences*, 19(2): 57–84.

Cowley, B., Charles, D., Black, M. and Hickey, R. (2008) 'Toward an Understanding of Flow in Video Games', *ACM Computers in Entertainment*, 6(2): Article 20.

Cremin, C. (2011) *Capitalism's New Clothes: Enterprise, Ethics and Enjoyment in Times of Crisis*. London: Pluto Press.

Cremin, C. (2015) *Totalled: Salvaging the Future from the Wreckage of Capitalism*. London: Pluto Press.

Deleuze, G. (1988 [1970]) *Spinoza: Practical Philosophy*. San Francisco: City Lights.
Deleuze, G. (1991) *Bergsonism*. New York: Zone Books.
Deleuze, G. (2005) *Cinema 2: The Time-Image*. London: Continuum.
Deleuze, G. (2008) *Francis Bacon*. London: Continuum.
Deleuze, G. (2009) *Cinema 1: The Movement-Image*. London: Continuum.
Deleuze, G. and Guattari, F. (1986) *Kafka: Toward a Minor Literature*. Minnesota: University of Minnesota Press.
Deleuze, G. and Guattari, F. (1991) *What is Philosophy?* New York: Columbia University Press.
Deleuze, G. and Guattari, F. (2003a) *Anti-Oedipus: Capitalism & Schizophrenia*. London: Continuum.
Deleuze, G. and Guattari, F. (2003b) *A Thousand Plateaus: Capitalism & Schizophrenia*. London: Continuum.
Douzinas, C. (2007) *Human Rights and Empire: The Political Philosophy of Cosmopolitanism*. London: Routledge.
Dyer-Witheford, N. and de Peuter, G. (2009) *Games of Empire: Global Capitalism and Video Games*. Minneapolis: University of Minnesota Press.
Eskelinen, M. (2001) 'The gaming situation', *Game Studies*, 1(1): 1–14, http://gamestudies.org/0101/eskelinen/
Fishman, C. (2006) *The Wal-Mart Effect: How the World's Most Powerful Company Really Works – and How It's Transforming the American Economy*. London: Penguin.
Flaxman, G. (ed.) (2000) *The Brain is the Screen: Deleuze and the Philosophy of Cinema*. Minneapolis: University of Minnesota Press.
Fuglsang, M. and Sorensen, B. (eds) (2006) *Deleuze and the Social*. Edinburgh: Edinburgh University Press.
Galloway, A. (2004) 'Allegories of Control in Civilization', *Radical Philosophy* 128: (November/December).
Galloway, A. (2006) *Gaming: Essays on Algorithmic Culture*. Minneapolis: University of Minnesota Press.
Galloway, A. (2013) *The Interface Effect*. Cambridge: Polity Press.
Gordon, M., Prakash, G. and Tilley, H. (eds) (2010) *Utopia–Dystopia: Conditions of Historical Possibility*. Princeton: Princeton University Press.
Gregg, M. and Seigworth, G. (eds) (2010) *The Affect Theory Reader*. Durham: Duke University Press.
Huizinga, J (1992 [1950]) *Homo Ludens*. Boston: The Beacon Press.
Jameson, F. (1991) *Postmodernism, or, The Cultural Logic of Postmodernism*. London: Verso Books.
Juul, J. (2005) *Half-Real: Video Games Between Real Rules and Fictional Worlds*. Massachusetts: MIT Press.
Kerr, A. (2006) *The Business and Culture of Digital Games: Gamework/gameplay*. London: Sage Publications.
Kerr, A., Kucklich, J. and Brereton, P. (2006) 'New Media – New Pleasures?', *International Journal of Cultural Studies*, 9: 63–82.
Kirkpatrick, G. (2007) 'Between Art and Gameness: Critical Theory and Computer Game Aesthetics', *Thesis Eleven*, 89: 74–93
Kirkpatrick, G. (2013) *Computer Games and the Social Imaginary*. Cambridge: Polity Press.
Kline, S., Dyer-Witheford, N. and de Peuter, G. (2008 [2003]) *Digital Play: The Interaction of Technology, Culture, and Marketing*. Montreal: McGill-Queen's University Press.
Kojima, H. (1998) 'Hideo Kojima Profile', *Arcade* 1(1): 42–43.

Krzywinska, T. (2002) 'Hands-on horror', *Spectator*, 22(2): 12–23.
Lazzarato, M. (2007) 'Machines to Crystallise Time: Bergson', *Theory, Culture & Society*, 24(6): 93–122.
Lefebvre, H. (2010) 'The Breath of the Possible: Everyday Utopianism and the Street in Modernist Urbanism', in Gordon, M., Prakash, G. and Tilley, H. (eds) *Utopia–Dystopia: Conditions of Historical Possibility*. Princeton: Princeton University Press: 203–230.
Leonard, D. (2009) 'Young, Black (& Brown) and Don't Give a Fuck: Virtual Gangstas in the Era of State Violence', *Cultural Studies <=> Critical Methodologies*, 9(2): 248–272.
Malaby, T. (2007) 'Beyond Play: A New Approach to Games', *Games and Culture*, 2(2): 95–113.
Manovich, L. (2001) *The Language of New Media*. Massachusetts: MIT Press.
Marx, K. (1973 [1858]) *Grundrisse: Introduction to the Critique of Political Economy*. London: Pelican.
Marx, K. (2001 [1867]) *Capital: Volume 1*. London: Penguin.
Massumi, B. (1992) *A User's Guide to Capitalism and Schizophrenia*. Cambridge: MIT Press.
Massumi, B. (2002) *Parables for the Virtual*. Durham: Duke University Press.
Massumi, B. (2003) 'Translator's Foreword: Pleasures of Philosophy', in Deleuze, G. and Guattari, F. (2003b) *A Thousand Plateaus: Capitalism & Schizophrenia*. London: Continuum: ix–xv.
MacCormack, P. and Buchanan, I. (eds) (2008) *Deleuze and the Schizoanalysis of Cinema*. London: Bloomsbury Academic.
McMahan, A. (2003) 'Immersion, Engagement, and Presence: A Method for Analysing 3-D Video Games', in Wolf, M. and Perron, B. (eds) *The Video Game Theory Reader*. London: Routledge: 67–86.
Milne, E., Mitchell, C. and de Lange, N. (2012) *Handbook of Participatory Video*. Plymouth: Altamira Press.
Newman, J. (2002) 'In Search of the Videogame Player: The Lives of Mario', New Media & Society, 4(3): 405–422.
Patton, P. (ed.) (1997) *Deleuze: A Critical Reader*. Oxford: Blackwell.
Patton, P. (2010) *Deleuzian Concepts*. Boston: Stanford University Press
Pfaller, R. (2014) *On the Pleasure Principle in Culture: Illusions Without Owners*. London: Verso.
Said, E. W. (1978) *Orientalism*. New York: Vintage Books.
Steinert, H. (2003 [1998]) *Culture Industry*. Cambridge: Polity Press.
Steinkuehler, C. (2006) 'The Mangle of Play', *Games and Culture*, 1(3): 199–213.
Stiegler, B. (1998) *Technics and Time 1: The Fault of Epimetheus*. Boston: Stanford University Press.
Sutton, D. and Martin-Jones, D. (2008) *Deleuze Reframed: A guide for the arts student*. London: I.B. Tauris.
Sutton-Smith, B. (1997) *The Ambiguity of Play*. London: Harvard University Press.
Tavinor, G. (2009) *The Art of Videogames*. Chichester: Wiley-Blackwell
Wark, M. (2007) *Gamer Theory*. Boston: Harvard University Press.
Wolf, M. and Perron, B. (eds) (2003) *The Video Game Theory Reader*. London: Routledge.
Wood, A. (2012) 'Recursive Space: Play and Creating Space', *Games and Culture*, 7(1): 87–105.
Žižek, S. (2000) *The Ticklish Subject: The Absent Centre of Political Ontology*. London: Verso.
Žižek, S. (2006) *The Parallax View*. Cambridge: MIT Press.

Videogames

Advance Wars (Intelligent Systems, 2001)
Adventure (Atari, 1979)
America's Army (United States Army, 2002)
Angry Birds (Rovio Entertainment, 2009)
Animal Crossing: New Leaf (Nintendo EAD Group no. 2, 2012)
Archon: The Light and the Dark (Free Fall Associates, 1983)
Atic Atac (Tim and Chris Stamper, 1983)
Ballblazer (Lucasfilm Games, 1984)
Bayonetta (Platinum Games, 2009)
Bioshock (Irrational Games, 2007)
Bioshock Infinite (Irrational Games, 2013)
BitTripBeat (Gaijin Games, 2009)
Burnout (Criterion Games, 2001)
Call of Duty 4: Modern Warfare (Infinity Ward, 2007)
Call of Duty: Advanced Warfare (Sledgehammer, 2014)
Call of Duty: Black Ops II (Treyarch, 2012)
Call of Duty: Modern Warfare 2 (Infinity Ward, 2009)
Candy Crush Saga (King, 2012)
Carnival Funfair Games (Cat Daddy Games, 2007)
Centipede (Atari, 1980)
Chaos Engine, The (The Bitmap Brothers, 1993)
Child of Eden (Q Entertainment, 2011)
Child of Light (Ubisoft Montreal, 2014)
Command and Conquer (Westward Studios, 1995)
Commando (Capcom, 1985)
Company of Heroes (Relic Entertainment, 2006)
Dance Dance Revolution (Konami, 1998)
Darfur is Dying (Susana Ruiz, 2006)
Defender (Williams Electronics, 1980)
Destiny (Bungie, 2014)
Deus Ex: Human Revolution (Eidos Montreal, 2011)
Diddy Kong Racing (Rare Ltd., 1997)
Donkey Kong (Nintendo, 1981)
Donkey Kong Country (Rare, 1994)
Doom (Id Software, 1993)
Doom 2: Hell on Earth (Id Software, 1994)
Dragon's Lair (Cinematronics, 1983)
Driveclub (Evolution Studios, 2014)
Dune II (Westward Studios, 1992)
Dungeon Keeper (Bullfrog Productions, 1997)
Dungeon Keeper Mobile (Mythic Entertainment, 2013)
Elder Scrolls IV, The: Oblivion (Bethesda Game Studios, 2006)
ET: The Extra-Terrestrial (Atari, Inc, 1982)
Eve Online (CCP Games, 2003)
Fable II (Lionhead Studios, 2008)
Far Cry 3 (Ubisoft Montreal, 2012)
Far Cry 4 (Ubisoft Montreal, 2014)
Fez (Polytron Corporation, 2012)

FIFA (International) Soccer (EA Sports, 1993)
Final Fantasy series (Square, 1987)
F-Zero GX (Amusement Vision, 2003)
Galaxians (Namco, 1979)
Gauge (Game Atelier, 2012)
Gears of War (Epic Games, 2006)
Geometry Wars: Retro Evolved 2 (Bizarre Creations, 2008)
Geometry Wars 3: Dimensions (Lucid Games, 2014)
Goldeneye 007 (Rare, 1997)
Goldeneye: Rogue Agent (EA LA, 2004)
Grand Theft Auto IV: San Andreas (Rockstar North, 2004)
Grand Theft Auto IV: Vice City (Rockstar North, 2006)
Grand Theft Auto V (Rockstar North, 2013)
Gran Turismo (Polyphony Digital, 1997)
Half-Life 2 (Valve Corporation, 2004)
Halo (Bungie, 2001)
Haze (Free Radical Design, 2008)
Hobbit, The (Beam Software, 1982)
Horace Goes Skiing (Beam Software, 1982)
Ikaruga (Treasure, 2001)
Jet Force Gemini (Rare, 1999)
Jet Pak (Chris and Tim Stamper, 1983)
Kid Icarus Uprising (Project Sora, 2012)
Killer is Dead (Suda 51, 2013)
Kirby and the Rainbow Curse (HAL Laboratory, 2015)
Last of Us, The (Naughty Dog, 2013)
Left 4 Dead (Turtle Rock Studios, 2008)
Legend of Zelda, The: A Link to the Past (Nintendo EAD, 1991)
Legend of Zelda, The: Majora's Mask (Nintendo EAD, 2000)
Legend of Zelda, The: Ocarina of Time (Nintendo EAD, 1998)
Legend of Zelda, The: Skyward Sword (Nintendo EAD Group no. 3, 2011)
Legend of Zelda, The: The Wind Waker (Nintendo EAD, 2002)
Legend of Zelda, The: Twilight Princess (Nintendo EAD Group no. 3, 2006)
Lock 'n' Chase (Data East, 1981)
Manic Miner (Bug-Byte, 1983)
Marathon (Bungie Software, 1994)
Marble Madness (Atari Games, 1984)
Mario Kart (Nintendo EAD, 1992)
Mario Kart 8 (Nintendo EAD Group no. 1, 2014)
Mario Kart Wii (Nintendo EAD Group no. 1, 2008)
Metal Gear Solid (KCEJ, 1998)
Metroid Prime (Retro Studios, 2002)
Minecraft (Mojang, 2011)
Missile Command (Atari Inc, 1980)
Ms. Pac-Man (Namco, 1982)
M.U.L.E. (Ozark Softscape, 1983)
Myth (Bungie, 1997)
Never Alone (Upper One Games, 2014)
New Super Mario Bros. Wii (Nintendo EAD group no. 4, 2009)
Oddworld: Stranger's Wrath (Oddworld Inhabitants, 2005)

Pac-Land (Namco, 1984)
Pac-Man (Namco, 1980)
Pac-Man Championship Edition (Namco Bandai Games, 2007)
Perfect Dark (Rare, 2000)
Pikmin (Nintendo EAD, 2001)
Pitfall! (Activision, 1982)
Pokemon X and Y (Game Freak, 2013)
Pong (Atari Inc., 1972)
Portal (Valve Corporation, 2007)
Portal 2 (Valve Corporation, 2011)
Pro Evolution Soccer (Konami, 2001)
Rayman Legends (Ubisoft Montpellier, 2013)
Red Orchestra 2: Heroes of Stalingrad (Tripwire Interactive, 2011)
Remember Me (Dontnod Entertainment, 2013)
Resident Evil 4 (Capcom Production Studio 4, 2005)
Resident Evil 5 (Capcom, 2009)
Ridge Racer (Namco, 1993)
Robotron 2084 (Williams, 1982)
Samba De Amigo (Sonic Team, 1999)
Second Sight (Free Radical Design, 2004)
Secret of Monkey Island, The (Lucasfilm Games, 1990)
Sega Rally (Sega AM5, 1994)
SimCity (Maxis, 2013)
Sims (The) (Maxis, 2000)
Six Days in Fallujah (Atomic Games)
(NASL) Soccer (Mattel, 1979)
Space Invaders (Taito Corporation, 1978)
Spec Ops: The Line (Yager Development, 2012)
Splatoon (Nintendo EAD Group no. 2, 2015)
StarCraft (Blizzard Entertainment, 1998)
Star Fox (Nintendo EAD, 1993)
Street Fighter IV (Dim/Capcom, 2008)
Super Mario 64 (Nintendo EAD, 1996)
Super Mario Bros. (Nintendo R&D4, 1985)
Super Mario Galaxy (Nintendo EAD Tokyo, 2007)
Super Mario Galaxy 2 (Nintendo EAD Tokyo, 2010)
Super Mario 3D World (Nintendo EAD Tokyo, 2013)
Super Mario World (Nintendo EAD, 1990)
Super Monkey Ball (Amusement Vision, 2001)
Super Smash Bros. for Wii U (Sora Ltd., 2014)
Tennis for Two (William Higinbotham, 1958)
Tetris (Alexey Pajitov, 1984)
Timesplitters 2 (Free Radical Design, 2002)
Timesplitters: Future Perfect (Free Radical Design, 2005)
Tomb Raider (Core Design, 1996)
Vanquish (Platinum Games, 2010)
Venture (Exidy, 1981)
Watch Dogs (Ubisoft Montreal, 2014)
Wave Race 64 (Nintendo EAD, 1996)
Wii Fit (Nintendo EAD Group no. 5, 2007)

Wii Sports (Nintendo EAD Group no. 2, 2006)
Wolfenstein 3D (iD Software, 1992)
Wolfenstein: The New Order (Machine Games, 2014)
Wonderful 101, The (Platinum Games, 2013)
World of Warcraft (Blizzard Entertainment, 2004)
XCom: Enemy Unknown (Firaxis, 2012)

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