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This thesis is the result of my own investigations, except where otherwise stated. Where *correction services have been used, the extent and nature of the correction is clearly marked in a footnote(s).

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~ Acknowledgements ~

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~ Summary ~

This research seeks to establish a foundation for a posthuman theory of politics that permits novel and explorative politics for the post-anthropocene. The project is situated within new materialist philosophies and pursues its goal through the close engagement with a specific type of advanced technology or immersive gaming technology that is played for political purposes. The arguments and theories developed throughout the thesis are of a metaphysical nature. These claims rework the condition of being and becoming and engage with fundamental ontological, ontogenetic and epistemological questions. Addressing these questions through the thematic case study of gaming technology allows the thesis to trace posthuman bodies and thoughts from their emergence all the way to larger formations that affect political practices. In this sense, gaming scenarios are a test lab not only for emerging posthuman gaming bodies, but also a new political theory associated with it. As such, this thesis is not a gaming critique, but a future-orientated, speculative account on how political games, as a technology characteristic of the posthuman condition, can help to work towards new forms of politics.

~ Abbreviations ~

AFMP	<i>A Force More Powerful</i>
CRISP	Crisis Simulation for Peace
EPS	Emerging Posthuman Subjectivity
ICT	Information Communication Technology
I/ITSEC	Interservice/Industry Training, Simulation and Education Conference
HCI	Human Computer Interaction
NT	New Technology
T3	<i>Tekken Torture Tournament</i>
TPE	Techno-Political-Event
ZIF	Center for International Peace Operations

~ Preamble ~

Politics is philosophy continued by other means.

Brian Massumi¹

I feel myself to be a pure metaphysician....

Gilles Deleuze²

A book has neither object nor subject; it is made of variously formed matters, and very different dates and speeds.

Gilles Deleuze and Felix Guattari³

This research emerged out of an undergraduate dissertation for the module “Peace Processes and World Politics,” and it was a supervision session with Jan Selby that sparked the initial idea. The notion of new technology throws up a raft of images, but two elements stand out in the twenty-first century: *electricity* and *Virtuality*. Contemporary technology fundamentally depends on the speed of electrical transmission and transduction to produce effects that are commonly referred to as being virtual.⁴ Electricity is without question physical as it runs through technology, the body, even air. It is a fundamental part of what makes up this world and, in relation to investigating new technology, it implies very material questions. Virtual on the other hand seems to be more challenging and is often talked about in less corporeal terms than the electricity that produces it. Furthermore, virtuality prompts profound social, cultural, economic and political questions such as revolutions influenced and triggered by

¹ Brian Massumi, *Parables for the Virtual: Movement, Affect, Sensation* (Durham & London: Duke UP, 2002a), 243.

² Gilles Deleuze, interviewed by Arnaud Villani, *La guêpe et l'orchidée: Essai sur Gilles Deleuze* (Paris: Belin, 1999), 130.

³ “To attribute the book to a subject is to overlook this working of matters, and the exteriority of their relations.” Gilles Deleuze & Felix Guattari. *A Thousand Plateaus: Capitalism and Schizophrenia* (Minneapolis: Minneapolis UP, 1987), 4.

⁴ From here on virtual in lower case is only used to describe the commonplace equation of the virtual and the digital. To demarcate this reference to the digital realm by its popular shorthand ‘virtual’ from the philosophical notion of the Virtuality and the Virtual, the latter will appear with the first letter capitalised.

social media, cyber-war, and technologically simulated war and peace games. These questions often baffle the social scientist precisely because of their virtual, arguably less tangible, element. In short, virtual aspects of new technology appear far more problematic than technical aspects of programming for example, and make new technology an intriguing area of study in and of itself, which amplifies significantly when the political component is added to the analysis. It is from this curiosity about the tension between new technology and the political realm that this project has emerged. The central working hypothesis inspired by this relationship is:

New technology in the form of immersive political gaming can challenge conventional political theory, if it is analysed as a technology of lived abstraction and contextualised within a posthuman condition.

The framing of *technologies of lived abstraction* means treating these games as producing experience, life, and reality, but in a way where the “*space of a body is really abstract.*”⁵ As such and crucially, they offer the possibility to produce different, alternative realities and to do so by different means. In short, new technology can produce political innovation. Taking technology as a political *being and becoming* (lived abstraction) requires the analysis to leave the comfortable realm of the anthropocene and this is a challenge to conventional political theory because it rests on the human condition and works within this sphere. The immediate implication is twofold: first, a more refined, detailed posthuman condition, body and landscape is the first step and implication simultaneously and, second, this can be used to turn political theory posthuman and show how in this way it can account for the emergence of something genuinely new such as political subjectivity. In this sense the initial challenge is actually an opportunity for political theory to reinvent itself along posthuman lines. The aim

⁵ Massumi, *Parables for the Virtual*, 177, original emphasis.

here specifically is to produce a form of posthuman politics, or more precisely, a conception of a micropolitics of the post-anthropocene.

In essence, the project lays the groundwork for a posthuman condition that allows for explorative other-than-human/posthuman micropolitics of change and new political subjectivities based on the analysis of technologies of lived abstraction in the form of gaming. In this sense, it is a defence and development of two things; first, materialism due to gaming's decisive role in producing and theorising *novelty*. The latter is argued to be absent in anthropocentric variants of Western philosophy and political theory, and materialism also allows dealing with the concreteness of matter that constitutes what is conceived of as humans and technology. The investigation of a specific type of technology (gaming technology used for political purposes) is analysed on the basis of its material being and becoming. In other words, matter does really mean matter in a molecular, atomic and sub-atomic sense, while material more generally refers to “stuff” and “physicality.”⁶ The argument as it will unfold throughout the project begins by suggesting that the turn to matter is not a positivist move, but a metaphysical and political one. In the age of ecological crises, high-tech warfare, uncurbed pan/endemics, outer-space warfare or persisting challenges posed by climate change, matter matters – everywhere, continuously, and politically.

Second, this project is a defence and development of political games that are another form of these matterings. Political games need to be defended and developed in light of their ontological status and as a political practice. The argument is that gaming is political due to its capacity to defamiliarise and produce different relations and habits. This is why they are

⁶ Levi R. Bryant, *Onto-Cartography: An Ontology of Machines and Media* (Edinburgh: Edinburgh UP, 2014), 1.

conventionally referred to as ‘games for change’.⁷ Given that intellectual history has always struggled with this peculiar matter formation loosely grouped together under the banner of ‘technology’, the incorporation of games into political training and education is challenging because of its other-than-human, machine, and generally ‘unknown’ attributes. The other challenge emerges from the fact that as a practice it is often perceived to be ‘only a game’. As such games are not considered as equally real as traditional political practices, but instead as simulations of the real⁸ and the technologically-mediated games concerned here are even less real given their assumed lack of materiality. In short, political games are often discredited because they are not proper to traditional human practices and the human as such, but a technology that produces virtual effects, which are conventionally considered less real. In this sense, the thesis is a defence of matterings against deep-running anthropocentric and humanist assumptions that prioritise certain matter formations, mainly those evidencing consciousness and with little material ambiguity (which means not technology). Matterings refer to concrete, actual bodies and mattering refers to the process of their emergence.

However, this is not only a defence, but also a proposition. It suggests that when leaving the anthropocene and working without the human as a referent (framed by humanist and anthropocentric ideas of existence) this opens up a whole new world in which being and becoming, agency and subjectivity among many other things are indifferent to the human condition and thereby open to change. Yet, in agreement with scholars such as Rosi Braidotti and Audra Mitchell, this is not achieved by simply rejecting anthropocentric views and indeed an approach that is fully committed to a posthuman condition also needs to undertake other theoretical alterations, such as expanding if not radically redrawing ontological

⁷ See for example this prominent movement *Games for Change*, <http://www.gamesforchange.org/>.

⁸ The academic treatment often couches this in theories of the hyperreal as articulated by Jean Baudrillard, see for example James Der Derian, *Virtuous War: Managing the Military-Industrial-Media-Entertainments Network* (Abingdon, Oxon: Routledge, 2009).

categories.⁹ The term “posthuman” (different from posthumanism or post-Humanism) in the context of the thesis is not used in the conventional way as a shorthand to articulate, theorise and develop the effort to include more-than-humans, mostly in form of objects or other species, into the analysis and practice of world politics.¹⁰ Although drawing on similar literature and overlapping in theoretical inclinations, the term posthuman here refers to a specific form of being and becoming,¹¹ an ontological and ontogenetic unit. The words ontological and ontogenetic are highly anthropocentric already and are at times replaced by onto-material, as a mix between ontological and ontogenetic, to signal awareness of the general anthropocentric aspect in our language. The term posthuman is not without its difficulties. ‘Post’ for example can be misleading because it can suggest that due to certain technological developments the human is replaced by a posthuman, locating the latter in a later stage of development. This thesis argues, in contrast, that the posthuman has always existed. As such, even though the posthuman here is analysed and derived through gaming technology, the form of life that is described here is nothing unique to the twenty-first century. Furthermore, the philosophical project here is also uneasy with ‘post’ as a temporal reference in light of the argument that conceptions of time unfolding as past-present-future and the teleology and linearity that ‘post’ thereby implies are structures of three-dimensional human space-time, which is precisely something the thesis seeks to challenge. Terms such as ‘non-human’, ‘more-than-human’, ‘transhuman’ or other creative inventions are all problematic with regard to the form of life conceptualised here.¹² Yet, considering that

⁹ Audra Mitchell, “Only Human: A Worldly Approach to Security,” *Security Dialogue* 45, no. 1 (2014); Rosi Braidotti, *The Posthuman* (Cambridge: Polity, 2013), 1-5.

¹⁰ See for example Erika Cudworth’s *Social Lives with Other Animals: Tales of Sex, Death and Love* (Basingstoke: Palgrave Macmillan, 2011) or Mike Bourne’s “Security with Things: The Political Materialities and Mobilities of the “Objects” of Security,” (conference paper, Millennium 2012, London School of Economics, London, October 20-21, 2012).

¹¹ Similar to Rosi Braidotti’s “zoe,” which she used to refer to an expanding notion of life away from the human. Even though *zoe* is different from the posthuman here, the latter also refers to a form of life that is not the human as we know it. Braidotti, *The Posthuman*, 50.

¹² Occasionally these terms are employed when referring to becomings that are not human, but nonetheless different to the specific posthuman here.

language is one of the most developed tools specific to the human animal (and, after conscious contemplation, the second ingredient in this thesis), the four letters composing ‘post’ are a relatively minor blemish. In short, the use of the ‘posthuman’ is a practical compromise and does not stand in the way of analysing political gaming beyond the anthropocene. The thesis aims to explore the posthuman world through an investigation of game-matterings (as an example of technologies of lived abstraction), which, when analysed through a post-anthropocentric lens, enable new forms of the political, the political subject and a political theory on a theoretical level. On a practical level, political gaming in the post-anthropocene allows the development of posthuman methods, analysis and pedagogy, which are argued to influence the posthuman landscape.

On a philosophical level, the analysis will oscillate between the theoretical case made for matter (metaphysical) and the practical application and significance of this case through gaming (political). A philosopher’s weapon is his/her imagination through the method of thought experiments and invention. In the same way that Protevi argues that “my approach is highly speculative, but I hope the concepts are empirically reasonable,”¹³ it is based on the practical marriage of philosophy leveraged through the analysis of particular political games. In this sense and to note an important difference, the thesis and arguments are diagnostic, deductive and speculative, not deconstructive, predictive or prescriptive. This is because the question as well as the mode of investigation is driven by an appetite for innovation and change, situating itself within affirmative philosophy and methods, which are “techniques which embrace their own inventiveness.”¹⁴ The rational lies in the priority of augmenting, inventing and adding to reality, and, thus, celebrates theoretical and practical innovation, irrespective of its scale and reach. The purpose is for the analysis to be pragmatic and

¹³ John Protevi, *Life, War, Earth: Deleuze and the Sciences* (Minneapolis & London: University of Minnesota Press, 2013), vii.

¹⁴ Massumi, *Parables for the Virtual*, 12-13.

productive above all. As such, the project is part of a wider trend to restore the speculative philosophy that rejects the assumed requirement for philosophical, especially metaphysical, claims having to be verifiable within the human sensorium and palliative of the empirical. The wider trend in Western philosophy, especially post-Kantian, was to do away with speculative philosophy and it is only in recent years that scholars have sought to restore speculation as a philosophical mode of enquiry.¹⁵ In this sense the thesis places great emphasis on speculation because it agrees that this is the origin of theoretical change and novelty in the first place.

In view of the philosophical nature of this project as well as the interdisciplinary phenomenology of the case to be studied (political gaming) the set of literatures informing this endeavour is inevitably eclectic. While the review of literature and engagement with key thinkers is immanent to the thesis, there are the following pointers that help to grasp the scope of the project. Work in the realms of International Relations (IR) is essential to understand not only in which immediate context these games are employed (political training and education), but also how this trend fits into socio-politics as well as political economies associated with politics and game development. Investigations in the specification of the economic aspect in this area, especially with regard to gaming, James Der Derian's work is crucial as it empirically and philosophically connects the areas of peace, war and games.¹⁶ To

¹⁵ Which lead scholars in and outside IR to identify recent developments in materialist philosophy as "The Speculative Turn," see for example *The Speculative Turn: Continental Materialism and Realism* by Levi Bryant, Nick Srnicek & Graham Harman marks a seminal event in contemporary intellectual thought, (Melbourne: re.press, 2011).

¹⁶ Jan Selby, "The Myth of Liberal Peace-Building," *Conflict, Security & Development* 13, no. 1 (2013); Roger Mac Ginty & Oliver Richmond, "Myth or Reality? Opposing Views on the Liberal Peace and Post-War Reconstruction," *Global Society*, 21, no. 4(2007); Roger Mac Ginty, "Indigenous Peace-Making Versus the Liberal Peace," *Cooperation and Conflict* 43, no. 2 (2008); Der Derian, *Virtuous War*.

substantiate these social criticisms other theories will be used by extension such as Jenny Edkins' concept of technologisation.¹⁷

The question concerning 'technology' is informed by computer science and game engineering literature, including work John McCarthy and Peter Wright, and Paul Dourish,¹⁸ expert interviews, online tutorials and fielding of online programmer fora. Even though it is not necessary to be fluent in Python, Ruby, Java, or any other programming language, the discussion will occasionally dip into the programmer's toolkit. The exploration of basic digital operations is necessary in understanding why technology is not so much an object as one among many modes of (producing) reality. Similarly, the project's commitment to matter and materialism implies a naturalist ontology that is grounded in the sciences, mostly drawing on physics and mathematics (partly Newtonian, partly contemporary non-Newtonian such as Quantum Mechanics,¹⁹ and Differential Geometry), which will be kept brief, but is nonetheless important in order to conceptualise change, the posthuman and posthuman spaces. The project also draws upon the philosophical treatments of scientific theories, such as the work of Karen Barad, and Ilya Prigogine and Isabell Stengers, for example, who are trained scientists as well as practising theorists.²⁰

Nevertheless, the majority of literature that informs the thesis and forms its backbone is philosophical. It draws on writings in philosophy of technology by authors such as Donna Haraway, Bruno Latour and Adrian Mackenzie, and on original works and interpretations of

¹⁷ Jenny Edkins, "Technologising the International: Pictures of Hunger, Concepts of Famine, Practices of Aid." PhD Thesis. University of Wales, 1997.

¹⁸ John McCarthy & Peter Wright, *Technology as Experience* (Cambridge Massachusetts: MIT Press, 2004); Paul Dourish, *Where the Action Is: The Foundations of Embodied Interaction*. (London: MIT Press, 2001a).

¹⁹ There are over 50 different interpretations of Quantum Mechanics; however, the thesis refers mainly to those by Nils Bohr and Heisenberg, unless stated otherwise.

²⁰ Karen Barad, *Meeting the Universe Half Way: Quantum Physics and the Entanglement of Matter and Meaning* (Durham & London: Duke UP, 2007); Ilya Prigogine & Isabelle Stengers, *Order Out of Chaos* (New York: Bantam, 1984).

Martin Heidegger and Gilbert Simondon.²¹ More importantly, the thesis engages closely the ideas of Brian Massumi and his work, *Parables for the Virtual* and *Semblance and Event*; John Protevi's naturalist ontology as presented in *Political Affect* and *Life, War, Earth*; Gilles Deleuze's treatment of "images of thought" in *Difference and Repetition*, and large parts of Deleuze and Guattari's *Anti-Oedipus*, *A Thousand Plateaus* and *What is Philosophy?*²² These thinkers and their particular works are significant developments of more-than-human/posthuman materialist philosophy that are indispensable for the defence and development of materialism and an in-depth analysis of lived abstraction through technological becoming and a posthuman condition more generally. Other works such as Jane Bennett's *Vibrant Matter*, Manuel DeLanda's writings or Levi Bryant's contributions through the *Larval Subject*,²³ influence the materialist exploration and have an equally important status in current debates of speculative realism and materialism. Of particular interest is Ian Bogost's work, which also falls into the category of speculative realism; for example, his *Unit Operation* and *Persuasive Games*. His work is within object oriented ontology (OOO) and, although this is slightly different to the approach in this research, it is regularly frequented given that his work deals with video, computer games and political/persuasive games specifically. Indeed, his treatment of technological games is unique precisely because of his interest in the ontological status and agentic aspects of the technology itself and how this changes what games do. His *Unit Operation* and *Persuasive Games* offer an abundance

²¹ Donna Haraway, *Simians, Cyborgs and Women: The Reinvention of Nature* (New York: Routledge, 1991); Bruno Latour, *Pandora's Hope: Essays on the Reality of Science Studies* (Harvard: Harvard UP, 1999); Adrian Mackenzie, *Transductions: Bodies and Machines at Speed* (London: Continuum, 2002).

²² Massumi, *Parables for the Virtual*; Brian Massumi, *Semblance and Event: Activist Philosophy and the Occurrent Arts* (Cambridge, MA & London: MIT Press, 2011); John Protevi, *Political Affect: Connecting the Social and the Somatic* (Minneapolis: University of Minnesota Press, 2009); John Protevi, *Life, War, Earth: Deleuze and the Sciences* (Minneapolis & London: University of Minnesota Press, 2013); Gilles Deleuze. *Difference and Repetition* (London: Continuum, 1994); Gilles Deleuze & Felix Guattari, *Anti-Oedipus: Capitalism and Schizophrenia* (London: Continuum, 2004); Gilles Deleuze & Felix Guattari. *A Thousand Plateaus: Capitalism and Schizophrenia* (Minneapolis: Minneapolis UP, 1987); Gilles Deleuze & Felix Guattari, *What is Philosophy?* (London: Verso, 1994).

²³ Bennett, *Vibrant Matter: A Political Ecology of Things* (Durham & London: Duke UP, 2010); Manuel DeLanda, "Nonorganic Life," in *Zone 6: Incorporations*, eds. Jonathan Crary & Sanford Kwinter (New York: Urzone, 1992); The *Larval Subject* is probably among one of the most influential academic philosophy blogs in non-analytic philosophy, Levi Bryant, Larval Subject (blog), <http://larvalsubjects.wordpress.com/about/>.

of detailed exploration and explanation of “serious games” and gaming of tremendous philosophical as well as empirical breadth.²⁴

Chapter 1 argues the case for games to be taken seriously, as a form of training, a political practice and posthuman becoming. A gaming-genealogy and an introduction to the type of games and technology at hand clarifies and analyses this recent trend in political training, with a focus on peace operations. It carefully contextualises the games in the socio-political and economic landscape to show how their political practice fits into their origin in the industrial arts, the marketplace as well as a liberal idea of peace operations. Basic concepts and challenges ranging from technical clarifications regarding Human Computer Interaction (HCI) to more preliminary philosophical concerns about the Cartesian subject or questions about agency and consciousness will be introduced in order to lay the groundwork for distinguishing a posthuman from a human condition.²⁵ The entry point to this discussion and the problematization of the anthropocene is the argument that experience is not a necessarily human event. In this sense, the emphasis on the *experience of games* over the use of them is essential in order to develop theories of posthuman becoming. Gaming as a form of posthuman experience proves extremely helpful to concretise complex theories and arguments within the tangible, imaginable realm of gaming technology.

Chapter 2 continues this line of thought and shows how experience during gaming can be theorised in a post-phenomenological way, essentially to matter and materialise experience

²⁴ Ian Bogost, *Unit Operation: An Approach to Videogame Criticism* (Massachusetts: MIT Press, 2008); Ian Bogost, *Persuasive Games: The Expressive Power of Videogames* (Cambridge, MA: MIT Press, 2010).

²⁵ The Cartesian subject is endowed with reason and only as such can it constitute a rational and reasonable member of a political community. Even though this is just one philosophical representation of being, it is the basis for the rational political subject in conventional political theory. Further, Cartesianism as a political and philosophical legacy is a conception focused around the human being; Andreja Zevnik, “Politics beyond Oedipus: An Alternative Ontology of Subject and Law and the Study of World Politics.” PhD Thesis. University of Aberystwyth, 2011.

literally, rather than treating it as a cognitive human event as it is conventionally done. This necessitates engaging with a long tradition of Western intellectual thought, in particular the critical treatment of Immanuel Kant's Philosophy and Philosophies of Phenomenology. The exploration will specifically focus on aspects such as theories of reason and mind that are crucial to deconstruct and attune in order to allow conceiving of political bodies and becomings. Ones that are indifferent to the human condition and, more importantly, are a genuinely new event, thereby paving the way to explorative politics. It is suggested that the emergence of the posthuman (body) is the referent for such posthuman micropolitics and matters. It facilitates a means to address political issues that operate in a space-time that escapes human limits of thought and consciousness. Committed to matter, the emergence of the posthuman through gaming experience is stubbornly material, so this chapter blends and undoes the categories of the human and technology (subject and object). Philosophically intrigued by matter behaviour, the reworking of the body will be micro-physiological. This level of analysis is necessary not only because the thesis is fully committed to the material, but because it needs to follow a line of investigation that deals with matter rather than just using its idea by extension, abstraction or in a metaphorical way. The materials involved in this particular context are those of participants in a game, gaming technology (hard and software) and the immediate gaming environment.

Chapter 3 highlights the onto-genetic/code make-up of the conception of a posthuman becoming and a political referent that is encapsulated in gaming. The argument suggests that the architecture of a game not only influences the gaming experience and development, but also how the posthuman develops and the kind of political subjectivity and practice to which it can give rise. The interest in materiality leads to a focus on the specificity of code and how it literally shapes a posthuman body. Whereas game design is mostly analysed in terms of

content (ideology and theoretical aspects) or pedagogical purchase, the examination and arguments set out in the chapter are in contrast driven by the question of how code (that is the software of political games) can matter bodies and eventually a political subject. However, rather than assuming a hylomorphic power of game design to determine outcomes,²⁶ the aspect of contingency is problematized in order to expose and detail the creativity and novelty these games allow. An important argument and recurring theme in the thesis is that creativity is essentially tied to movement of matter as well as the posthuman as a whole. The latter will be analysed in different aspects throughout the thesis and in this particular chapter the focus on explorative movement and how this is designed, generated and encouraged in a game, is fundamental to the question of explorative politics. In this sense game design influences how a posthuman body “can act or be acted upon,” which is its capability and, therefore, the chapter will analyse design and its impact under the guidance and theoretical lens of affect. If affect is understood in this way (rather than in an emotional sense) then it is indispensable for the analysis because it is essentially about the question of the potential for or to something – potential of emergence, potential action, potential subjectivity and politics. Affect matters and it matters through game design. Ultimately, a posthuman body, in and outside gaming respectively, cannot ‘be brought to life’ without affect.

Chapter 4 explains how posthuman political subjectivity emerges during gaming and out of a gaming posthuman body. Essentially it outlines a political subject/‘agent’ in the making and further traces the resonance subjectivity can have. The concept of the body politic is used to demonstrate that this is an abstract as well as material process. In addition, the production of

²⁶ Hylomorphism is a model of formation where the formative drive/power lies outside the object/matter/content to be shaped. Form is exterior in this sense, often assumed to be pre-existing in a platonic realm of ideals. Hylomorphism is indeed a main model of thought underpinning Western intellectual history and often surfaces in idealist variants and existentialism, surfacing as ideas of an essence of things. Hylomorphic thinking of how things come into existence however is problematic in the way that a body/matter can never determine its own shape but form is always given. This is passive and precludes internal transformation. Bennett, *Vibrant Matter*, 56.

subjectivity is treated as a Janus-faced phenomenon in the way that political movements happening during the game have material and subjective resonances outside of it in the very same way that certain gaming dynamics are indicative of these wider resonances. The idea of Janus bends further, for subjectivity continuously oscillates between the human and posthuman condition. This is because the emergence of a posthuman subjectivity can eventually develop into a human subject. Even though the latter is only an after-effect it is an important ‘outcome’ of political gaming. Indeed this chapter is an opportunity to explain how and why the posthuman condition is the basis of a human condition and the posthuman will always persist above, below and alongside the human and its subjectivity. The way in which both exist and persist is through processes of matterings. This chapter traces scales and temporalities, from the immediate, ‘small-body’ gaming experience to the long-term and civic level. For this purpose the notion of experience will be further theorised, *split* to be precise, in order to provide a model of how to follow gaming’s resonances outside and after a particular gaming event.

Chapter 5 finalises the posthuman becoming, showing that life and political life happens in all realms respectively, the Virtual and the actual, which is home to the digital and the analogue. The claim is that this is crucial in order to broaden the scope of political action beyond the anthropocene, which thereby opens up the possibility for alternative political formations to emerge. The chapter explores the political dynamics of change that emerge in these posthuman/transhuman spaces and temporalities and which loop in-between gaming rounds as well as between the different modalities of existence in order to establish an ontology of the real in a posthuman world. In the defence of gaming and materialism, it seeks to demystify what is conventionally termed the virtual realm and challenge common misconceptions that this would be somewhat immaterial, disembodied and a less ‘real’ part of

(political) life. By way of contrast, the investigation follows processes of political matters through force and electricity with the purpose of demystifying and familiarising the digital realm, high-tech political games in particular, as a very material and real form of political practice. More importantly, gaming is a political practice of continuous variation precisely because it can draw on so many different modalities of reality and because games can be played repeatedly, increasing the possibility of new experiences to erupt and new subjectivities and new concepts to emerge. The chapter establishes that potentialities of content are immanent to the Virtual and helps to convey that gaming is an artisan encounter that facilitates bringing out new political forms/concepts.

Chapter 6 draws the posthuman cartography to a conclusion and outlines how new bodies and subjectivity can be used to articulate a wider posthuman micropolitics that works below and above the human condition and Cartesian subject. It offers a vision of a politics that is grounded in materiality and applicable to any becoming whether this is through gaming, other technologies of abstraction or entirely analogue processes. Through the rehearsal of the previously conceived theoretical constructs, the chapter will detail how this micropolitics is an active foundation and flexible political model for the pre-subjective and impersonal posthuman realm that allows for possibilities of political change. Following the trajectory of movement, the posthuman political spaces of lived abstraction will be analysed in a way that emphasises that this space, as emerging during gaming for example, allows for continuous change and transformation. Continuous variation expressed as movement will be further developed through rhythm, which will be used to trace patterns of change and difference in a more formalised, yet qualitative way. This is an effort to make rhythmic movement as a form of posthuman political expression an essential part of a micropolitics that runs above, below and alongside the human subject, which reflects the emphasis on material vitality in this

research. To reserve a conceptual place for matter vitalism in this way is imperative given that it is the basis of continual variation and novelty in the overall theory. For future analytic purposes, the chapter will conclude by flagging three important pillars upon which a posthuman politics rests, which can all be found in gaming as a specific practice and experience, but are also transferrable to other forms of lived abstraction.

Chapter 1 ~ Game Plan

Introduction

Gaming/simulation training is a possibility of a new political repertoire and forms part of an ongoing process of understanding and developing political theory and practice beyond its traditional boundaries. This new emergence needs to be taken seriously, as an opportunity for the political and politics to reinvent itself as well as adjust to an increasingly technologically ubiquitous world. Yet, making a case for games, understanding why and how they *matter*, goes far beyond a purely comparative analysis of a broad variety of games, different forms of learning or political expression and practice. This is because games occupy a unique area of study and tie together diverse areas such as programming, pedagogy, politics, international relations (IR), neurosciences, geography and computing. This research draws on theories from these areas in order to generate a comprehensive, interdisciplinary and unique analysis that contributes to the philosophy of technology.

While philosophy of technology (often referred to as technoscience) is much younger than other forms of philosophy such as the philosophy of science, the frame adopted here offers an original way into analysing gaming and politics in the same breath. Furthermore, technoscience allows the thesis to draw on the riches of new materialist philosophies so that it belongs to a “growing contingent” that propose that an “active examination of [technological] *becoming* can make a positive contribution to explorations of [...] political action.”¹ Therefore, what follows is not a games analysis from a strict perspective of IR scholarship or political theory, nor is it a case of analysing how politics are ever-present in games from a ‘Games Studies’ perspective. Crossing disciplinary and scholarly boundaries, this project

¹ William E. Connolly, *A World of Becoming* (Durham & London: Duke UP, 2011), 8.

interrogates questions that naturally span various academic subject areas.² The advantage of technoscience as a mode of inquiry rather than a discipline is that it carries a “growing sensitivity to the ways in which *materiality* plays subtle and deep roles in our ways of moving about in the world.”³ It is precisely these subtle and deep movements that the thesis is interested in, arguing that in order to understand the marriage of politics and gaming in its complexity and specificity, inquiry needs to turn to “the *concrete*, to *materiality*.”⁴ Thus, this project is a *praxis* philosophy based on speculative materialism(s) broadly construed.⁵

This chapter will carefully lay out the necessary steps in order to come to terms with gaming politics. As such, it is the essential foundation on which the thesis rests and introduces core debates that situate the emergence and practice of gaming as training. It starts with a brief gaming-genealogy, addresses how games appeared in the political landscape and contextualizes these developments within political and economic practices of the Armed Services, governmental politics as well as the gaming industry. Given that the project is not a political economy commentary on the military-industrial complex (or military-industrial-media-entertainment network, MIME-NET)⁶, this will remain a short introduction, aimed at providing a critical background rather than a deconstruction of the phenomenon itself. With regard to games, it is necessary to familiarise the reader with the different categories of games that form the thematic case study of a particular type of technology – immersive technology. More specifically, games used in the context of training or preparing for peace

² It is acknowledged that philosophy of technology is offered as a subject as well, yet this analysis refers to philosophy as mode of enquiry, using lower case, rather than an academic subject, using upper case.

³ Don Idhe, “Introduction,” *Chasing Technoscience: Matrix for Materiality*, eds. Don Idhe & Evan Selinger (Bloomington, IN: Indiana UP, 2003), 1.

⁴ Idhe, “Introduction,” 2.

⁵ Other philosophies inclined to concreteness are pragmatism, some forms of Marxism, as well as phenomenology and hermeneutics, *Ibid*, p. 2.

⁶ James Der Derian has coined the term MIME-NET to denote that with the military increasingly drawing on technology provided by the entertainment and gaming industry, the initial military-industrial relation and cooperation has significantly expanded in scope and partners; James Der Derian, *Virtuous War: Managing the Military-Industrial-Media-Entertainments Network* (Abingdon, Oxon: Routledge, 2009), 83.

operations are of particular interest to this research. The introduction of immersive games will demonstrate why it is necessary for the thesis as a whole to revisit fundamental questions concerning technology and offers an invitation to reconsider questions about political technology or technology for politics and the way to go about it.

The chapter will contextualise the research by reviewing debates about technological determinism in order to indicate how the study of technology in IR has been traditionally discussed and explored. One criticism relating to technologisation will be looked at in greater detail as it opens up a variety of questions that the chapter needs to address prior to the actual analysis of gaming such as the problem of ideology and the role of political economy in contemporary political practices. The chapter will deal with these challenges individually and conclude by suggesting that Speculative Materialisms will help to remove existing limitations to the analysis of technology in IR, especially those concerning gaming. It will familiarize the reader with the materialist philosophy that informs this technoscientific inquiry and foreshadow subsequent theoretical unfoldings as well as situate the project in the current philosophical literature of Speculative Materialisms and address the ideational elephants in the room.

Königsspiel: Politics and Games Go a Long Way Back

The political games highlighted in this thesis emerged out of military games and simulations in the latter half of the twentieth century as first analysed by scholars such as James Der Derian in *Virtuous War*.⁷ There is an intrinsic connection between war and strategy games and the genre of political games. Furthermore, the latter have become an increasingly popular way of training military and political personal as well as members of civil society. There

⁷ Der Derian, *Virtuous War*:

seems to be a continuing connection between war and political practice, and, in this sense, this study agrees with the idea articulated by Carl von Clausewitz that “war is merely the continuation of policy [politics] by other means.”⁸ Working on the assumption that war is an extension of politics, the connection between games and politics is deeply rooted. War has often been simulated *by other means* through the medium of games. In India, for example, there existed a game called ‘Chaturanga’, which is considered the predecessor of chess and, unlike previous strategic games such as the Roman *Latrunculi*, was the first to draw on the explicit vocabulary of war and had game pieces representing foot soldiers, elephants and chariots.⁹ Whether this was a game for strategy, politics, war preparation or even entertainment remains an unanswered question. Games with a connection to war that subsequently developed throughout history have become increasingly complex, detailed and to some degree aspiring to verisimilitude. The boundaries between games and war have inevitably spilled over the edges of the board over time with varying degrees of seriousness, from full-size scenario based simulations to small or large-scale enactments. They span the trivial or popular boards games such as *Risk*, to multi-player online games such as *World of Warcraft*, to simulations such as *Model of United Nations* to the more consequential in the form of the Pentagon’s ‘what if’ war games.¹⁰ While tracing the historic parallels between games, war and politics is certainly intriguing, this is not the concern of the present analysis. Nevertheless, the question of whether the main purpose of these games was (and is) political, strategic, economic or even entertainment has greater pertinence to the present analysis.

⁸ Carl Von Clausewitz, *On War*, eds. Peter Paret & Michael Howard, (Princeton NJ, Princeton UP, 1976), 87. [Explanation added].

⁹ Bepi Entertainment, “A Brief History of Wargaming,” *The Origin of Risk and its Evolution to Present Day*, online document (no date), accessed July 05, 2014, <http://faculty.virginia.edu/setear/students/war-games/page1a.htm>.

¹⁰ “War Games: To Understand War, American Officials Are Playing Board Games,” *The Economist*, March 15, 2014, accessed July 05, 2014, <http://www.economist.com/news/united-states/21599016-understand-war-american-officials-are-playing-board-games-war-games>.

The study of videogames is an area of contestation and criticism with regard to the significance of simulation. Some argue that videogames exploit/ridicule the brutal reality of war and mock the experience of actual soldiers.¹¹ More recently, however, other research has started to focus on how the captivating faculty of games can be used in creative and new ways.¹² Nevertheless, console or computer games are often quickly associated with first person shooter games and the impact they have on the threshold to violence.¹³ Surprisingly, in the face of such concern, it is somewhat intriguing that an administrative and bureaucratic realm like politics was one of the first sectors to adopt gaming as a method and training. Arguably, such openness towards political games is due in large part to the longstanding relationship between military organisations, strategy and war games. Business and management are also among the more progressive sectors of employment with areas such as health, medicine and civil engineering slowly catching up (or on to) the gaming trend.¹⁴

War games are nothing new in international relations and have been used as a training method by militaries, especially the US military establishment, the acknowledged leader in this area. Today, they have morphed and developed into what is referred to as “serious games” more broadly, including non-combatant aspects of communication, decision-making, mediation and negotiation.¹⁵ As they are increasingly focused on soft powers and skills that military personnel need to master, the interest from and leap into the governmental side of politics was perhaps inevitable. Arguably, it was through the conduit of diplomacy that

¹¹Nick Dyer-Whiteford & Greig de Peuter, *Games of Empire: Global Capitalism and Video Games* (Minneapolis & London: University of Minnesota Press, 2009), xiii.

¹² See for example James Ash, “Technologies of Captivation: Videogames and the Attunement of Affect,” *Body & Society* 19, no. 27 (2013).

¹³Douglas A. Gentile & Craig A. Anderson, “Violent Video Games: The Newest Media Violence Hazard,” *Media Violence and Children*, ed. Douglas A. Gentile (Westport, CT: Praeger Publishing, 2003); Douglas A. Gentile & Craig A. Anderson, “Long-Term Relations among Prosocial-Media Use, Empathy, and Prosocial Behavior,” *Psychology Science* 2 (2014), 358-368.

¹⁴Rose Jensen, “50 Great Sites for Serious, Educational Games,” *Inside Online Learning* (no date), accessed July 20, 2014, <http://www.onlinecolleges.net/50-great-sites-for-serious-educational-games/>.

¹⁵ These aspects refer to games in the political realm. There are of course many more areas covered by games for other educational purposes.

games training negotiation and mediation built the bridge between games for combatants and non-combatants to enable games to make their way into the broader political sphere. While large-scale operations by the military, often involving props of actual armoury, left no doubt that these simulations were serious and essential training exercises, simulating within the political arena was different, however, because it was difficult to move away from the perception that they were just games and a form of role-playing. Over time, the addition of the word ‘serious’ in relation to games has been part of an effort to justify their use and preempt attacks by critics questioning the sincerity of using gaming pedagogy and methods.¹⁶

Games – Are You Serious?

The term “serious games” is nevertheless highly problematic, as Ian Bogost suggests. Even though adopting the term seemed reasonable and intuitive at the initial stage of this research, it is laden with pitfalls. First of all, the proposition of serious takes away from the creative and pedagogical leverage ‘non-serious’ and ‘fun’ games have vis-à-vis the self-professedly ‘serious’ ones. As this research will suggest, the strength of games for political purposes is precisely that the element of play and experimentation enables gamers to take daring, yet innovative decisions during play. Essentially, this is the origin of their political potential as experimentation permits to play and produce difference. In fact, the distinction between serious and non-serious is arbitrary given that gamers playing large-scale, multi-player online games such as *World of Warcraft* are very serious about their role-play.¹⁷ Likewise, children playing football in the park can get very serious very quickly about the game’s development. Games played by politicians as part of a group activity or problem-solving exercise have

¹⁶ Ian Bogost, *Persuasive Games: The Expressive Power of Videogames* (Cambridge, MA: MIT Press, 2010), 54-59.

¹⁷Joël Billieux, Martial Van der Linden, Sophia Achab, et al. Yasser Khazaal, Laura Paraskevopoulos, Daniele Zullino, Gabriel Thorens, “Why Do You Play World of Warcraft? An In-depth Exploration of Self-reported Motivations to Play Online and In-game Behaviours in the Virtual World of Azeroth,” *Computers and Human Behavior* 29, no.1, 103-109.

failed in the past because participants did not take the game or their role seriously enough, despite it being a *serious* game.¹⁸ Thus, delineating serious games as a countermovement against entertainment games in general “is a foolish gesture” as it eliminates a wide variety of games for change.¹⁹ Therefore, seriousness and impact is contextual and does not depend on the game’s intent and design as such. Arguing that games can be contextually serious seems a better way of addressing the gravity that game developers seek to give these gaming activities. Therefore, any game can be used for a serious purpose. The terms “games” and “political games” are used in order to avoid qualifying a specific game prior to its actual unfolding. Pre-judging a game as serious before it is played not only imposes the nature of the desired outcome of the game, but already shapes the players’ understanding of how to approach the game. In addition, and in the context of games played for political purposes, serious is dropped because it is exclusionary. There are many games on the entertainment end, like *SimEarth*, or, at the artistic end, Eddo Stern’s *Tekken Torture Tournament* or *Sheik Attack*,²⁰ that would not make the strict category of serious, but are highly political, educating and creative.

The emerging trend of games that are played with the purpose to educate, problem-solve or train (where the goal lies somewhat beyond the immediate boundaries and rules of the game), occupy a crucial intersection between play and politics. Wedding these two areas together is innovative and opens up new (game) space for politics to emerge and play out. However, the newness of this new political terrain means that the ways in which gaming can be political are so far largely unexplored. Consequently, this research aims to tease out how gaming politics

¹⁸ The inaugural PeaceGame on the Syrian crisis held at USIP 09 December 2013 was criticized for some of the participants not having been serious enough and failed to identify with their assigned role (in discussion with participants).

¹⁹ Bogost, *Persuasive Games*, 59.

²⁰ Stern has many (video) games that exemplify and denounce the gory of war and conflict itself through electronic art, <<http://eddostern.com/>>.

is unique, what it enables and the form of game politics it suggests. To focus the scope of analysis within the realm of technoscience, the project chooses the thematic case study of computer-powered games as an example of new technology used for political purposes.

Technological Games

The research is particularly interested in immersive games or games that take place in a mixed-media environment. This is because the level of ‘Human Computer Interaction’ (HCI) that these games involve is particularly high, analytically and politically, and the investigation of which will form the backbone to this project. A mixed-media environment refers to a game setting that is partly computer-generated involving digital projections or smart devices and analogue human interaction. While the human player is always a component of the game, the rest of the game makeup has become increasingly technological. The aim of these games is political education and training and the development of specific skill sets.²¹ This study is also interested in their purpose, or what these games are played for particularly within a political and security context, where the latter can range from areas of counter-insurgency training, conflict prevention/resolution, stability operations or war-to-peace transitions to non-violent resistance, political participation and activism.

²¹ Ibid.

Image 1



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This depiction (Image 1) from *FlatWorld* shows that the mixed-media immersion refers to the players being “inside” the game and inside the computer simulation. These elements are particularly unique and represent a game/training dimension that has yet to be fully explored. In contrast to the concept of a board game, where the players move pieces on the board, the participants in immersive games are themselves the actual pieces on the board. Additionally, the gaming environment is partly computer-based, including not only digital projections of either fictional or actual places and digital humans (in this picture a soldier), but also technological devices such as the laptop on the table in the far left corner. They are not only props to increase the verisimilitude of the game-setting, but the players have the option to use them throughout the course of the game. The broken furniture lying on the ground is as important as the digital environment, as all of these modes, digital or not, add to the immersion of the participants. Judging by their clothes, the participants in this scenario are

²² Taken from USC Institute for Creative Technology *FlatWorld* project, accessed January 15, 2012, <http://ict.usc.edu/prototypes/flatworld/>.

playing the role of civilians and are equipped with 3D-glasses in order to increase the immersion by making the projection jump ‘out of the screen’. The more technical the games get, the more digital the environment becomes, and in some games participants wear head-mounted goggles that make the whole game-setting appear right in front of their eyes. This form of training is mostly used by the military as the technology is hugely expensive and also it necessitates a considerable amount of prior training *before* moving into a fully digital environment because seeing through the goggles leaves most untrained users nauseous.

Games We Play

While the explanation of these games may make them seem stranger to us than they are, the majority of games is only a step up from the basic workings of computer games and simulation training, with which most of the readers will be familiar with. The act of gaming itself is so accessible to new participants, because the games are mostly based on everyday technology. Many games that are geared at civil society are available online (or can be purchased in local stores) and can be played on any personal computer and laptop. Prices for those personal games vary within an affordable range and some anthroposophic games, such as *PeoplePower*, are often free of charge to people without sufficient funds. Because games like *PeaceMaker*, *Democracy 3* and *SimCity* are played with an ordinary computer, the game flow may not be as smooth as with console gaming or high-tech immersive games. Yet, they are sufficiently visualised to create a digital learning environment and to simulate fictional and nonfictional political scenarios. Such low-tech games as it were differ from each other in the way that some are very simple and intuitive without any written instructions as for example *Darfur is Dying*, while others such as *PeoplePower* and *Peacemaker* tend to be more text based, giving socio-political and historical guidance for the game task. In the former case (and type of games in general) the game duration is very short with a quick game

over, while with the latter type the player has the opportunity to halt the game, think about certain moves and come back to it another time. In short, this means strategy in low-tech games is either immediate or prompted to be spread out over time, which in itself addresses different types of political thinking and planning. What all of these personal games played with the help of ordinary hardware and software have in common is that the player participates through the means of an avatar and it acting by extension.

High-tech political games vary as well and the more technologically advanced the games are, the less they require the mediation of an avatar. Most of the more elaborate and costly games are highly immersive, so that participants act within a synthetic environment, but as the embodied person they are. This has the advantage of an increased verisimilitude, which thereby improves the flow of a game, too. However, this also means that the participants need to possess a certain skillset required for the game task, in the way that one can have many abilities (physically and mentally) through an avatar that are limited in the analogue. In part, this is the reason why fully immersive and high-tech simulations are a professional training with limited access. Immersive games can contain tasks such as driving an army vehicle, shooting or even flying a fighter-jet and giving medical aid to a wounded person (even if that is a dummy). In order for the game to work these tasks need to be fulfilled with at least a minimal degree of success for otherwise the game would stagnate. Importantly, this highlights that high-tech games do actually require skill as well as thorough preparation prior to the onset of the simulation game. That games are much more elaborate and time-consuming in order to complete the game task explains why they are played less frequently than personal PC games for change.

Beyond the more technical exploration of these games, there is a noticeable paucity of political theory dealing with these developments concerning technological training. This research aims to supplement state-of-the-art technology and training with political (posthuman) theory to incorporate the new technologically-mediated and mimetic realm of the political. While there is an increasing practical academic effort going into the improvement of mixed-media environments and how to embed the soldier, politician or aid worker better, there is little work that looks at the immediate political experience of the game itself.²³ With more and more American universities offering degrees at undergraduate and postgraduate level in “Modelling and Simulation,” games have undergone a tremendous technical development within the last years.²⁴ In a combined effort, computer-scientists, engineers, gamers and game-designer, psychologists and neuroscientists, army personnel and social scientists are all turning their attention to making these gaming-exercises as authentic as possible as possible, with the aim of increasing the quality of training and learning. What James Der Derian once coined the “Simulation Triangle,” referring to the overlap of ‘serious’ game design with the videogaming and the 3D security industry, geographically located in the vast business parks of Orlando Florida,²⁵ but with tentacles reaching out globally,²⁶ it has turned into a far-reaching network, involving much more than three key players/industries. This is an almost unparalleled inter-disciplinary effort, not only including areas of politics, but also civil engineering, medicine, child education and advertising. Yet, from a theoretical and philosophical point of view there is surprisingly little research looking at the immediate political experience occurring in gaming. Ian Bogost’s *Unit Operations* and *Persuasive*

²³ See for example work by Randall Spain and Rebecca Mulvaney and their latest paper on “Enhancing Soldier-Centered Learning with Emerging Training Technologies and Integrated Assessments,” (*conference paper, IITSEC 2013, Orlando, Florida, December 2013*).

²⁴ In contrast there are only four Universities offering Modelling and Simulation degrees in the UK at this point, *postgraduate search*, accessed July 20, 2014, <http://www.postgraduatesearch.com/postgraduate/modelling-and-simulation-systems/uk/study/postgraduate-browse.htm>.

²⁵ Der Derian, *Virtuous War*, 82–83.

²⁶ A large majority of the technological and engineering know-how is provided by European subcontractors, with Germany and Britain being the strongest representatives.

Games is one of the rare recent and critical treatments of the politics of videogames and their potential to alter and produce political subjectivities.²⁷ James Ash is also among the few scholars who philosophically explore the affective geography in videogames (especially first person shooter games), while Jane McGonigal is still an isolated voice who argues that videogames are tremendously educational, everyday tools that not only have the capacity to teach with ease, but also to make us happy altogether.²⁸ These are all tentative investigatory efforts focused largely on videogames, but there is very little philosophical attention or material devoted to political games, developed for military personnel, politicians and civilians. This would explain the obvious gaps in knowledge and lack of synergy between scholars working within the Simulation Triangle/Network and researchers looking at its political potential.

Use versus Experience: A Different Approach to Technology

This research, in alignment with the ideas of Bogost, argues that (video)games are an expressive medium. As such, it places an emphasis on the importance of the act of playing (that Bogost conceptualizes as “procedurality”²⁹) of *experiencing* games. In contrast, the Simulation Triangle analyses these games in a rather instrumental way, meaning the way that games are *used*. The questions driving the current research of academics and game developers alike, such as Rex Brynen, Sheldon Himelfarb and Steve York, look into how gaming can be employed effectively to improve peace operations.³⁰ In so doing, the authors

²⁷ Bogost, *Persuasive Games*; Ian Bogost, *Unit Operation: An Approach to Videogame Criticism* (Cambridge, MA: MIT Press, 2008).

²⁸ See for example Ash’s “Architectures of Affect: Anticipating and Manipulating the Event in Processes of Videogame Design and Testing”, in *Environment and Planning D: Society and Space* 28, no. 4 (2010): 653-671; Jane McGonigal, *Reality is Broken: Why Games Make Us Better and How They Can Change the World* (New York: Penguin Group, 2011).

²⁹ Ian Bogost, *Unit Operation: An Approach to Videogame Criticism* (Massachusetts: MIT Press, 2008), 8.

³⁰ For example Rex Brynen clearly states that his collaboration with SIPRI (Stockholm International Peace Research Institute) is dedicated to contributing to “the development and effective use of games,” own emphasis, Rex Brynen, “About,” *PAXsims: Simulations + Conflict, Peacebuilding and Development + Training and Education* (blog), accessed July 20, 2014, <http://paxsims.wordpress.com/about/>; Sheldon Himelfarb,

adhere to the underlying assumption that technology is used and this entails an instrumental treatment of technology, which builds on the notion that “technologies are tools” enabling their users to meet certain ends more effectively.³¹ Thus, tools are taken to be neutral in themselves and subservient to societies’ needs.³² In contrast, this research tackles the puzzle of political gaming through experience by problematizing the interaction and boundary between the technology and the player and questions the neutrality assumption. Even though the project will leave the conventional phenomenological realm behind, it shares common concerns as a starting point for the investigation, following John McCarthy and Peter Wright in their approach that only the experience of new technology (NT) enables a comprehensive study of its impact.³³ Yet, existing literature in IR only concentrates on the usefulness and efficiency of technological artefacts, focussing on objective usability goals and on “assessing how useful or productive a [technology] is from its own perspective.”³⁴ The disregard of the experienced quality of action and interaction is identified as a crucial missing piece in the puzzle of how gaming affects micropolitics as well as the production of political subjectivities. Only by looking at these aspects is it possible to politically enrich gaming experience beyond its current confines of usability.

Furthermore, the proposition is that by approaching experience differently, that is through philosophical materialism rather than phenomenology (pragmatism) or rationalism for

Introduction to “Beth Noveck at Smart Tools for Smart Power: Simulations and Serious Games for Peacebuilding,” July 16, 2009, accessed January 15, 2011, <http://www.youtube.com/watch?v=n40V3vU6l8A&list=PL480830BCF94E895B&index=1&feature=plpp>; Steve York, “Steve York and Ivan Marovic at Smart Tools,” *United States Institute for Peace*, July 16, 2009, accessed January 13, 2011, <http://www.youtube.com/watch?v=PQxITOC6HNI&list=PL480830BCF94E895B&index=5&feature=plpp>.

³¹ Max Horkheimer quoted in Richard Wyn Jones, *Security, Strategy, and Critical Theory* (London: Lynne Rieners, 199), 86.

³² Wyn Jones, *Security, Strategy, and Critical Theory*, 85-88.

³³ John McCarthy & Peter Wright, *Technology as Experience* (Cambridge Massachusetts: MIT Press, 2004).

³⁴ Jenny Preece, Yvonne Rogers & Helen Sharp, *Interaction Design: Beyond Human Computer Interaction* (Chichester: Wiley, 2002), 19.

example,³⁵ offers alternative ways of understanding gaming. It sheds light on how these games can be used and can close the gap in political theory (of how novelty occurs). While the technoscience approach here is equally interested in the materiality underlying the experience of technology, it challenges the separation of mind and matter, the idea of intentionality, rationality and that knowing trumps being, becoming and experience. In the same breath, the aspect of gaming technology serves to highlight not only the importance of experience but also the “current transformation of our experience” with an evident turn towards the digital and electronic realm.³⁶ Rather than viewing this transformation as a change in representation, arguing that due to NT it is possible to model “everything that exists in the phenomenal world” by breaking it down into information and by digitally reproducing it,³⁷ the claim here is not about representation, but about the ability to switch in between different modes of experiences such as digital and analogue. The analytical challenge increases with the fact that one can experience electronically what previously have been traditional forms of experience.³⁸ So far, political theory has not caught up with the modal plurality of experience, and it is the aim here to close this gap by leaving phenomenology and rationalism behind and turning to the concreteness of experience.

The challenge of investigating the potential of political gaming therefore depends not only on the factor of the gaming experience, but also upon an investigation of the human-technology relation in general. More specifically, the mode of analysis calls the project to revisit the

³⁵ While phenomenology will be explained in greater detail further below, philosophical pragmatism “refers to the notion of separation of mind, mental processes, and ideas from any material manifestation or embeddedness; the inherent purposefulness and intentionality of action where action is seen as the execution of a well performed plan; and reification of cognition or knowing above being and participating;” McCarthy & Wright, *Technology as Experience*, 24.

³⁶ Wolfgang Welsch, “Virtual Anyway?,” (I. f. Friedrich-Schiller-Universität Jena, Ed.), 2002, accessed May 26, 2011, http://sammelpunkt.philo.at:8080/196/1/virtual_anyway.htm.

³⁷ Richard Coyne, *Technoromanticism: Digital Narrative, Holism, and the Romance of the Real* (London: MIT Press, 1999), 73.

³⁸ Istavan Csicsery-Ronay, “Cyberpunk and Neuromanticism,” *Storming the Reality Studio: A Casebook of Cyberpunk and Postmodern Science Fiction*, ed. Larry McCaffery (Durham, N.C.: Duke UP, 1991), 189.

initial question concerning technology dealt with by philosophers like Gilbert Simondon or Martin Heidegger. Building on the riches that these works provide, the thesis will pick up theories on the role of technology and its relation to our being and participation in the world. Even though Heidegger's phenomenological realm will not be used as a frame of reference to analyse gaming experience, his opening claims are essential to establish the importance of experience when analysing *techné*,³⁹ juxtaposing it with conventional IR analyses that primarily treat technology instrumentally.⁴⁰ In addition, it remains somewhat surprising with the critical turn in security studies in the late 1990s and the radical redrawing of the traditional realm of security⁴¹ that when it comes to analysing the role of technology the same traditional/rationalist logics are still applied.⁴² In contrast, it is argued that starting from a technoscientific position of experience offers different ways of analysing techno-political mediations such as gaming technology that are far more attuned to critical studies in IR and security. In this light and following in a Heideggerian way, the question concerning technology is directly linked to the question of being (and becoming). This means that gaming technology is treated ontologically by looking at how it impacts on our way of being-in-the-world and participating in it. Given the ubiquity of modern *techné* this is a crucial question that one needs to continuously reengage with, especially in the realm of politics.

While the thesis is indebted to Heidegger's work on technology in order to address political gaming ontologically, his separation of nature and technology as well as human and

³⁹ The word technology originates from the Greek word *techné* which means "art," "skill" or "craft," which will be used frequently to refer to technology in general as it highlights the process of doing and producing rather than using.

⁴⁰ Even recent comprehensive critical treatments of technology in IR fall into statist and utility categories, see for example Columba Peoples, *Justifying Ballistic Missile Defence: Technology, Security and Culture* (Cambridge: Cambridge UP, 2010).

⁴¹ See the seminal work by Keith Krause & Mike C. Williams. *Critical Security Studies: Concepts and Cases* (London: UCL Press, 1997).

⁴² There are only few exceptions that treat weapons/technology as more than tools and something that has use-value, see for example Mike Bourne, "Guns Don't Kill People, Cyborgs Do: A Latourian Provocation for Transformatory Arms Control and Disarmament," *Global Change, Peace and Security* 24, no. 1 (2012): 141-163.

technology (based on a very fundamental subject-object distinction) is problematic contrasts this research that seeks a new approach to the technology-human dynamic.⁴³ Guided by Simondon's notion of technicity, a key argument developed throughout the thesis is that the traditional separation between technology and the human is not only analytically unhelpful, but erroneous. This division, a treatment and habit intrinsic to Western philosophy, was certainly strengthened through the development of a Heideggerian tradition, which opposes *techné* to *physis* (nature). This means that the organic forms of nature are self-emerging, exhibiting the principle of change within themselves, *physis* as "arising of something from out of itself," a natural self-genesis.⁴⁴ Posited against such a natural auto-poiesis (self-creation) is *techné*, where reason is identified as the external principle of change.⁴⁵ It is precisely this division between *physis* and *techné* that this research highlights and challenges. Experience of gaming technology will be used to break down the boundaries between nature/culture and organic/inorganic in order to understand micro-political movements during gaming. Importantly, as will be explored, this undoing will go much further than the claim that there is no absolute distinction between human and technology.

Skilled Experience: Human Computer Interaction and the Art of Playing

Humans and technology have always possessed somewhat of a unique, yet highly complicated relationship that defies simple categorization, never ceasing to challenge academic efforts to come to terms with it. Before uprooting the very idea of the human/technology division and exploring what this means for political gaming in the next chapter, it is necessary to contextualize modern HCI first. Political gaming is a very specific type of highly developed and up-scaled personal technology in the form of the personal

⁴³ This will be further explored in Chapter 2, along with other reasons for leaving Heideggerian traditions behind.

⁴⁴ Martin Heidegger, "The Question Concerning Technology," *Philosophy of Technology: The Technological Condition: An Anthology*, Robert. C. Scharff & Val Dusek (Chichester: Wiley Blackwell, 2014), 307.

⁴⁵ Heidegger, "The Question Concerning Technology," 308.

computer and console-gaming. The experience of personal technology is hugely different to that of large, diffused technological assemblages, like power-grids, networked surveillance cameras or technology operated at distance and experienced at a distance such as satellites or drones.⁴⁶ Familiarity with the recent history of HCI will help to understand current experiences of gaming technology because just as computers have evolved drastically and rapidly, so has the interaction and experience with them. Yet, social science research that is interested in this change has tended to focus on improvements in computer technology and interphase design, techno-political opportunity and capability along with their subsequent bearings on the social realm,⁴⁷ while leaving out the abilities and skills that have developed alongside and that are necessary to experience this technology in the first place. In the way that to many the everyday use of a knife is natural and almost intuitive, the habitual skillset required to use personal technology had to develop in a similar fashion. Not only did computer technology develop exponentially, but this was only possible with human abilities evolving alongside. Encountering a new personal technology such as the tablet and managing to navigate it relatively quickly depends on the development of previous skills, related to using computers and/or mobile phones for instance. Training with gaming technology fundamentally depends upon individual participants having developed basic computer skills throughout their lives. The kind of technological familiarity necessary to provide for a fruitful experience is almost intuitive and given that a large amount of soldiers, political personal and civilians have been exposed to personal computer technology almost all their lives makes their interaction with political gaming technology very intuitive indeed. For example, the generation of soldiers training with elaborate simulation technology today already grew up with personal smart devices and in a highly technological household. The experience of

⁴⁶ Arguably the distance with regard to drones refer to those operating and controlling them, being geographically far removed.

⁴⁷ Of course, these are crucial insights and taking the social sciences in new directions, see for example Diana Saco's *Cybering Democracy: Public Space and the Internet* (Minnesota: University of Minnesota Press, 2002) or Astrid Deuber-Mankowsky's *Lara Croft: Cyber Heroine* (Minnesota: University of Minnesota Press, 2005).

videogames, computers and tablets is nothing new at all, so that the engagement with them in a training context is very ‘normal’ and ‘intuitive’. However, this has not always been the case and the use of political gaming could not have come at an earlier stage, for the development of these habitual skills needed time to manifest themselves in our daily technological practice. The evolution of computer literacy can be summed up in four phases: distinguishing between electrical, symbolic, textual and graphical abilities, and interaction modalities.⁴⁸

The acknowledgment that technological experience has not always been as digital as it is in present day helps to support later arguments about the materiality of technological experience. While our understanding of computer technology usually involves digital systems, this leaves out early analogue computers, which made for quite a different experience of technology. These computers were *electronic* apparatuses that in a hardware sense relied on the use of components such as resistors and capacitors with a rigid software that could only deal with a relatively small number of tasks. Simple software meant that early computer technology was much more task-specific. This is in contrast to present devices where it is possible to take pictures, play music and send e-mails and text messages with the same device. Early computer experience relied heavily on electronic expertise, narrowing the scope of users who got to enjoy computer technology directly. Generally, interacting with this type of computer system necessitated a thorough understanding of electronic design, which meant that HCI was much of an elite exercise.⁴⁹

Technology as it is experienced today is primarily due to computer programming becoming more regularized and standardized and made available to a wide range of machines.⁵⁰ This

⁴⁸ Paul Dourish, *Where the Action Is: The Foundations of Embodied Interaction*. (London: MIT Press, 2001a), 5-14.

⁴⁹ Arguably, this is a continuing trend where computer literacy is cut along lines of economic privilege.

⁵⁰ Dourish, *Where the Action Is*, 6.

occurred through the introduction of new programming languages. Programs stopped being based solely on numeric forms and away from “the machine language of raw instructions that a machine [and only its expert] would understand.”⁵¹ Instead, it moved to a symbolic form of assembly language, consisting of mnemonic codes, which are essentially symbolic expressions of machine level instructions that were more easily understandable to a wider user group. According to Dourish, it is this introduction of programming language that moved computer interaction from an electrical level to a *symbolic* one, enabling more interactive tasks that eventually spread into the textual domain.⁵² Essentially, this means that it was possible to communicate with computers in the same textual language that we speak, which marked a significant turn in HCI, as it opened up the computer world to non-experts. Computers operating in the textual domain made it attractive to sectors outside computer sciences, mathematics and physics with the military being one of the first to cultivate the newly acquired digital terrain. While the military has always been a significant funder of computer developments,⁵³ it was now able to make use of it for very specific military purposes to harness the computer’s processing power to execute tasks much more quickly than humans could. Apart from simplifying the interaction with computer systems, going textual needs to be stressed as a significant development as it greatly influenced how the interaction between machine and human came to be conceived. Textual interphases with interactive feedback loops allowed for a dialogue between human and computer system, which was the first proper form of interactive experiences with computer technology.⁵⁴ Skills that needed to be developed were primarily linguistic, which brought the idea of “interacting

⁵¹ Ibid, 7.

⁵² Ibid.

⁵³ For example one of the major developments was the step to using integrated circuits that was developed by Geoffrey W.A. Dummer who was researching for the Royal Radar Establishment at the British Military of Defence, see “The Hapless Tale of Geoffrey Dummer,” *Electronic Product News*, October 01, 2005, accessed July 07, 2014, <http://archive.today/fh4X>.

⁵⁴ Dourish, *Where the Action Is*, 10.

with the machine”, including “conversation” and “dialogue” with technology, to the fore.⁵⁵ The notion of interaction as dialogue is still dominant within common assumptions about computer technology, framing our very understanding of HCI.

Adopting gaming as a training strategy would not have been possible without interphase development that not only included texts but icons, marking a drastic transition in the experience of technology. As simple as this may sound, it opened a whole new dimension of interaction that was now *graphical*, happening in “a two-dimensional space rather than a one-dimensional stream of characters.”⁵⁶ Whereas textual interaction resembled a single stream of information, composed of the user’s input and the systems output, graphical interaction is essentially about the use of space. In other words, the experience of technology became increasingly spatial, more-dimensional, by information spreading across the screen, moving attention and interaction around on the screen and even from window to window. As a consequence, graphical interaction not only made managing information about managing space, but also that the human skills required for this interaction needed to become two-dimensional as well, requiring the person operating the technology to pay attention to multiple happenings on the screen, responding to and giving graphical and textual commands at the same time.⁵⁷ Human abilities required for such an interactive experience were: “peripheral attention” (referring to the ability to register and engage with information at the edge of the screen); “information density” (graphical information conveyed more succinctly as a picture); and “visual metaphors” such as the management of desktop items, which are images of bins, personal computers and filing cabinets.⁵⁸ Matured skills for graphical

⁵⁵ Ibid, 10-11.

⁵⁶ Ibid, 11.

⁵⁷ Phil Barnard, “Bridging between Basic Theories and the Artifacts of Human-Computer Interaction,” *Designing Interaction: Psychology at the Human-Computer Interface*, ed. John M. Carroll (Cambridge: Cambridge UP, 1991), 103-127.

⁵⁸ Dourish, *Where the Action Is*, 11-14.

interaction were absolutely crucial for game-training, as many political games are two-dimensional and highly graphical such as *PeoplePower*, *Balance of Power* or *PeaceMaker*, which are all played with just a personal computer.

In essence, our interaction with computers and technology in general is something that depends on skills that had to develop over time and in many ways are culturally mediated by growing up in a technologically saturated environment. Technological games would greatly fail as a training method if the person playing had enjoyed little exposure to technology beforehand. This is a clear limitation with regard to the distribution and reception of these games. However, the same argument can be made in respect to education through books and required literary skills. What the recent history of HCI shows, however, is that these developments cannot be separated from each other: the development of computer technology occurs *together* with human abilities and can only happen in conjunction. In other words, while technology is often viewed as something opposing the human, paying attention to computer abilities shows that our engagement with such technology is actually socially and culturally (if not evolutionary) engrained and driven, in the same way that we grew up to use simple technology such as cutlery, a hammer or bicycle. Notably, this makes computer technology social and cultural, upsetting the clear-cut boundary between computer technologies on the one hand and the nature-culture continuum on the other.

The borders between these two realms are under increasing attack with the emergence of 3D, immersive and ubiquitous technology that questions whether a division is viable at all. Interestingly, there is no comprehensive treatment of the development of human abilities with regards to 3D graphical interaction yet. As such, it points to the challenge of conceptualising HCI in the face of immersive technology within the traditional framework of a human-

computer distinction. The problem is that interaction with immersive technology is *embodied*, which not merely refers to an experience that is tied to a physical condition or a simple bodily experience, but to a “contextualized experience of the body-environment system.”⁵⁹ Embodiment directly contests the normalized characterization of computer technology as a primarily representational medium. Thus, the idea of technology as embedded physical interaction tests the commonplace concept of technological action as manipulating abstract representations in a computer system.⁶⁰ Put simply, the research will use this absence in theory, its struggle and challenge to the current conception of HCI as a starting point to unravel the human versus machine problem, thereby laying the groundwork for articulating the potential such technological beings (technologies of lived abstraction) have for the realm of politics.

Not without Technological Determinisms

Existing positions within the field of IR with regard to technology prove problematic when faced with different technological emergences such as political gaming or social media. Even critical areas of IR suffer from a lack of theoretical innovation regarding technology with the latter getting an increasingly bad reputation as technology is believed to lead to surveillance societies in which its members gradually forget, or unlearn how to communicate in a way that holds up to traditional, romantic views of supposedly “real,” face-to-face communication.⁶¹

⁵⁹ Ronald Chrisley & Tom Ziemke, “Embodiment,” *The Handbook of Contemporary Semantic Theory*, ed. Shalom Lappin (Oxford, UK: Blackwell, 1996), 1105. This is a very crude account of embodiment which has a long scientific and philosophical tradition, which will be addressed in more appropriate detail in subsequent chapters.

⁶⁰ Dourish, *Where the Action Is*, chapter 1.

⁶¹ See for example David Lyon, *The Electronic Eye: The Rise of Surveillance Society* (Cambridge, MA: Polity Press, 1994); Mark Monmonier, *Spying with Maps: Surveillance Technologies and the Future of Privacy* (Chicago: University of Chicago Press, 2004); Eric Riedel, Marc J. Wagoner, Libby Dressel, et. al., “Electronic Communities: Assessing Equality of Access”, *Social Dimensions of Information Technologies: Issues for the New Millennium*, ed. David G. Garson (London: Idea Group Publishing, 2000), 90.

In short, technology “has loomed as the bogeyman” in IR “for some 30 years.”⁶² Indeed, one of the main theoretical challenges in exploring gaming technology’s potential for political training, is to avoid falling prey to conventional techno-determinist views. In general, the origin of different emerging determinisms can be located in how each strand accepts and deals with the human as an agent and ultimate referent. It is noteworthy, however, that all types of determinism are pitched in terms of the human and more specifically in the way in which technology impacts on its agency. In short, technological determinism as a theory of socio-political change is fundamentally anthropocentric. In view of the posthuman task of this research, technological determinism as a conceptual frame in order to theorise change and innovation is problematic. This is because the main intention is to conceive of political theory based on technologies of lived abstraction in a manner that is indifferent to the human condition and that does not perpetuate the human/technology dichotomy. Therefore, identifying with either of the determinist options would not help to develop a new argument about technological becoming.

Nonetheless, going through the main types of determinism is not only illuminating, but also a necessity for an informed philosophy of technology thesis. In addition, awareness of the pitfalls in technological scholarship will mitigate the danger of either essentialising or instrumentalising technology, which are the two main determinist camps and central to the Philosophy of Technology (as a subject area). This refers to instrumentalism more specifically – a view point that does not inscribe an inherently deterministic trait into technology as such, but sees it as a tool at the disposal of human action. Thereby, change depends upon the action that is or is not enabled by technology. This not only implies treating the latter as a tool to be used, but also that agency is located within the user, leading to the

⁶² Daniel McCarthy, “Technology and ‘the International’ or : How I Learned to Stop Worrying and Love Determinism,” *Millennium*, 41, no. 1 (2013): 472.

infamous, “Guns don’t kill people. People kill people.”⁶³ This rather popular and by now mainstreamed slogan⁶⁴ of determinism simplifies detailed accounts by scholars such as James Rosenau arguing that it is “permissive rather than dismissive” to assume a position of techno-neutrality as it “enables us to avoid deterministic modes of thought in which people are seen to be deprived of choice” in the face of modern technology.⁶⁵ Technology cannot be claimed to be “good” or “bad” for “nuclear weapons do not restructure forms of international politics; the Internet does not lead to democracy, authoritarianism or any specific social outcome. Any given object can be used to meet any given set of ends.”⁶⁶ In essence, the primacy of human action that determines the nature of the means.

The assumption of a position of techno-neutrality may seem a neutral position in itself; nevertheless, it is actually drenched in implicit assumptions that need to be dealt with cautiously as each of them has significant analytical and practical consequences. First of all, it assumes that technological objects do not determine a social outcome, change or rupture. This makes for a strong argument that is used by weapon lobbyists in national and international context respectively, legitimising contentious political decisions.⁶⁷ The second implication of the instrumentalist view is equally problematic as it holds that the invention and development of technology is not influenced by social context and subscribes to a “simple philosophical Realism.”⁶⁸ While a particular set of circumstances may contribute to research and development (R&D), “this context does not influence actual scientific and

⁶³ Contrary to the common belief, this is actually not an official slogan of the National Rifle Association (NRA). However, it has been used by NRA members and other gun rights advocates in anti-gun control campaigns.

⁶⁴ The slogan has been recycled in pop culture, critical social theory as well as in IR, see for example “Guns Don’t Kill People.”

⁶⁵ James Rosenau quoted in McCarthy, “Technology and ‘the International’,” 437.

⁶⁶ Ibid, 474.

⁶⁷ The drone debate is one of the latest and more pressing issues in these areas, see for example, Roderic Alley, “The Drone Debate: Sudden Bullet or Slow Boomerang?,” *Discussion Paper*, (Centre for Strategic Studies: New Zealand Victoria University of Wellington, No. 14/13 2013).

⁶⁸ McCarthy, “Technology and ‘the International’,” 474.

technological findings,” thereby adhering to a pre-Kuhnian understanding of science.⁶⁹ What is problematic here is that motivations for and struggles over technological design are deemed to be irrelevant. While this instrumentalist view of determinism is certainly useful to legitimise certain technological developments, say that of drones, and appears to be common among developers and distributors of political games,⁷⁰ this view seems wilfully ignorant of historical and social context.

Even though, this form of ‘techno-romanticism’ seems to offer a more attuned understanding of the entwinement of technological development and socio-political dynamics, providing an almost rosy outlook, it arguably descends from an instrumentalist determinism. The first instrumental variant is a strong, rational hold and techno-romanticism is somewhat of the metaphysical pendant that is particularly popular within studies of Science Technology Society (STS) and the analysis of the techno-social nexus with regard to human agency and the possibilities provided by technology. Such positions foster the popular perception of computer technology supporting multiplicity and pluralism.⁷¹ Technologies create and maintain online communities and new digital spaces such as *Virtual Reality* that posit against existing social forms. The internet is portrayed and used as a means to pursue individuality, personal liberation and collective freedoms. It is popularly believed that in cyberspace people can be who or what they want to be, against a duplicitous world in which individuals have to conform to artificial social norms and the expectations of others.⁷² Therefore, the romantic view holds that computer technology can be fruitfully put to use to aspire to and promote

⁶⁹ Ibid.

⁷⁰ This was one of the main debates in an interview with Michael Macedonia, Chief Technology Officer for the US Army Program Executive Office for Simulation, Training and Instrumentation (PEO STRI, formerly known as STRICOM), interview with the author, December 03, 2013, Orlando, Florida.

⁷¹ Coyne, *Technoromanticism*, 4.

⁷² Ibid, 4; 256.

both individuality and multiplicity. The human agent is empowered by employing technology in his/her favour.⁷³

However, at the heart of such popularised techno-romantic instrumentalism lies a dialectic catch that is often omitted: digital narratives of transcendence and omnipotence do not really address the fundamental analytical and theoretical difficulties with technologies such as political gaming or online communities that try to create a holistic order in which anything is possible. The fantasy of ‘unity in diversity’ privileges objects and issues that are suitable for computer representation and what can easily be integrated into the world of computation and cyberspace, at the expense of challenges such as computer illiteracy, uneven access to computer systems or alienation from normal, traditional interaction with people. As with a rational instrumentalist view, the romantic approach leaves little room to question the socio-economic and political circumstances within which technology such as games need to be contextualized. The first question with regard to political gaming always has to start with asking who is actually privileged enough to use these games and who possesses the necessary technological habitual skills in the first place. In light of this, making games widely accessible, based on simple and cheap technology has been a priority concern for game developers of political games for civil society such as *PeoplePower* or *Darfur is Dying*, which either work with basic personal computers or even standard mobile phones. However, leaving the context aside the romanticist view seems also blind to the material conditions out of which technology arises, rendering it an equally problematic position.

The essentialist variant in the deterministic spectrum enjoys a similarly strong position within the study of technology in IR, but is equally problematic for it assumes an intrinsic character

⁷³ Ibid, 256-7.

to technology. Put simply, technological objects have an essence that influences social and political relations and create distinct outcomes. This notion does not come from a coherent set of literature, but it possesses two main strands: a romantic pessimist side and an optimistic one. In this context, romanticism plays the sceptical role, while the optimists see technology as empowering objects. Critical studies in IR, in particular, are often built upon a romantic essentialism that pushes for the control if not rejection of technology in favour of returning to more ‘natural’ ways of being.⁷⁴ Technology is portrayed as the materialization of an inherently detrimental logic that finds its culmination in Adorno’s description “from the slingshot to the megaton bomb,”⁷⁵ which surfaces in milder forms in a variety of IR literature that understands technological development as autonomous and outside human control.⁷⁶ While the project is sympathetic to intellectual efforts ascribing life or agency to non-humans such as technological objects, the essentialist view is philosophically ruled out on the grounds of the very idea that beings in this world can possess an essence in the first place. Furthermore, technological essentialism would not hold as a theoretical frame for a project that undoes the human/technology dichotomy, even if the primacy is placed within the object this time, for the question of the human as referent remains the same.

Nevertheless the latest developments in the question concerning technological determinism do not speak to the tasks of this project and make it imperative to leave such rigid debates behind. After careful and thorough mapping of different determinisms, and in disagreement that technology is either neutral or the material form of some essence, even sophisticated

⁷⁴ This is often the case for International Marxists or those scholars stemming from a Heideggerian tradition, cf. McCarthy, “Technology and ‘the International’,” 475, footnote 19.

⁷⁵ Theodor W. Adorno, *Negative Dialectics* (New York: Continuum International Publishing Company, 2005), 320.

⁷⁶ Some overview on this topic is given in Wyn Jones, *Security, Strategy, and Critical Theory*; in general IR theorists, especially in security studies, draw on Andrew Feenberg’s work when talking about the nature of technology, see for example Wyn Jones and Columba People’s work; see also McCarthy, “Technology and ‘the International’,” 475.

attempts to conceptualize modern technology portray it as “biased and ambivalent” at best.⁷⁷ While this may be a viable view and happy compromise to analyse a specific set of questions, the project struggles to adopt such views based on their implicit subject-object distinction and the research does not attempt to justify itself against existing technological ‘schools.’ In other words, framing views and questions in terms of “who” or “what” has the agency to determine or “what essence” does not make sense for this techno-philosophical standpoint. Consequently, by assuming a different philosophical ground, an idiosyncratic, immanent position will emerge throughout the course of the thesis.

Questioning Games – The Technologisation Critique

IR debates concerning the question of technology do not stop with merely identifying different techno-ideological positions, though their arguments are not framed in respect to either of the aforementioned positions and there is considerable criticism with a strong romantic essentialist undertone that doubts, if not condones the use of technology as a quick, but depoliticising fix.⁷⁸ Their analysis argues that technologisation is essentially depoliticisation.⁷⁹ Technologies such as gaming are particularly vulnerable to such criticism as it is a technological aid to deal with socio-political problems, which is why such criticism needs to be taken seriously. The views of depoliticisation arise out of a position that conceive politics as a realm that is largely analogue and full of unpredictable, authentic human interaction, while technology is the material form and practice of instrumental reason that

⁷⁷ See for example McCarthy’s treatment who eventually returns to a casual determinist view, McCarthy, “Technology and ‘the International’.”

⁷⁸ Tina Rosenberg, “Revolution U: What Egypt Learned From the Students Who Overthrew Milosevic,” *Foreign Policy*, February 16, 2011, accessed February 18, 2011, http://www.foreignpolicy.com/articles/2011/02/16/revolution_u.

⁷⁹ See for example the works of Jenny Edkins, “Technologising the International: Pictures of Hunger, Concepts of Famine, Practices of Aid.” PhD Thesis. University of Wales, 1997; or Nancy Sheper-Hughes, “The Madness of Hunger: Sickness, Delirium, and Human Needs,” *Culture, Medicine, and Psychiatry* 12, no. 4, (1988): 429-58.

threatens to rationalise and standardise the inescapably volatile and messy human nature.⁸⁰ Indeed, such criticism is justified in the way that many political game advocates and developers approach these games from a game theory perspective that seeks a technological solution based on a logic that assumes conflicts as closed mechanical systems, where a certain input will also yield predictable output. In this view political gaming deals with not-peace situations in a highly technical, even clinical way, as an “abstraction that floats above politics.”⁸¹ A necessary ontological clarification at this point, the genre of political games, or “games for change,” is not a subfield of game theory and the two are only obliquely related.⁸² The investigation of these games is not a mathematical analysis used to study decision-making in conflict situations.⁸³

The claim that gaming software has strong quantifying tendencies and political games operate on a one-size-fits-all premise is a justified concern that calls for explanation. Simulating political conflict and peace operations works purely on the basis of some generalisation, which gives the technologising criticism considerable leverage. The concern of technologisation is articulated on the level of agents and actions and questions the way in which intellectuals engage in situations of crisis and thereby reproduce political oppression.⁸⁴ The technology turn is received with apprehension as it is characterized as professionalizing political practice that simultaneously advocates managerial and technical solutions to social issues.⁸⁵ The concern is primarily with the question of politics supposedly diminishing due to

⁸⁰ Jenny Edkins, *Poststructuralism and International Relations: Bringing the Political Back In*. Boulder, Colorado: Lynne Rienner, 1999), 8; Slavoj Žižek, *For They Know Not What They Do: Enjoyment as a Political Factor* (London: Verso, 1991), 189.

⁸¹ Rafal Rohozinski, Intervention at the “The Dis/Simulations of War and Peace: Predicting, Prophesying, and Preempting the Future after 9.11.,” Watson Institute, June, 6-7, 2003, accessed January 15, 2011, <http://www.watsoninstitute.org/infopeace/dissim/peace.cfm>.

⁸² Ian Bogost, *Unit Operation: An Approach to Videogame Criticism* (Cambridge, MA: MIT Press, 2008), xii.

⁸³ *Ibid.*

⁸⁴ Edkins, *Poststructuralism and International Relations*, 9-10.

⁸⁵ Srila Roy, “Politics, Passion and Professionalization in Contemporary Indian Feminism,” *Sociology* 45, no. 4 (2001): 588.

an increased focus on the development of technologies that could potentially displace the political process itself, producing a form of crisis management that has little to do with locally attuned and transformative politics.⁸⁶ It suggests a problem with technology in so far as it is seen as a primarily elite exercise, where “traditional” intellectuals and professionals with highly specialised knowledge and validating forms of discourse support aid and development practices that are insensitive to local specificities. Authors like Jenny Edkins and Nancy Sheper-Hughes refer to practices that are planned and carried out by NGOs, UN agencies and foreign governments and which contribute to professionalising processes that set the parameters for common sense knowledge and political reality on the whole.⁸⁷ Following this line of argument suggests further that political gaming would be an effort to domesticate, socialise and tame the volatile and unpredictable political process itself. The factor of messy politics is dealt with in the abstract and in isolation through the “technical analysis of the situation [...which] produces various techniques of conflict analysis and resolution.”⁸⁸ Closely related to this criticism one could argue that gaming leads “specialists or experts to implement a programme or ‘technique’ of relief based on abstract criteria set up in advance.”⁸⁹ With respect to the design of political gaming, it is certainly easier to calculate and quantify local economic development and turn it into a simulated political/conflict scenario than to calculate variables for tribal rivalries, rebel networking or civil unrest. All of these possible criticisms are justified and invite the thesis to take a position in the face of important concerns over mixing politics with technology. It is an opportunity to clarify three main areas: ideology, political economy, and ethics (all of which are implicit criticisms in the technologising view).

⁸⁶ Rosenberg, “Revolution U.”

⁸⁷ Nancy Sheper-Hugh, *Death Without Weeping: The Violence of Everyday Life in Brazil* (Berkeley, CA: University of California Press, 1992), 199.

⁸⁸ Edkins, *Poststructuralism and International Relations*, 10.

⁸⁹ Edkins, “Technologising the International,” 337.

Ideology

Ideology is the biggest elephant in the room. Ideology is associated with “hidden procedural systems that drive social, political or cultural behaviour.”⁹⁰ Rather than being purposefully removed from sight, these “procedures” or workings are deemed to be hidden or implicit because ideology is supposedly immaterial - the *ideo* in ideology is there for a reason. In distilled form, ideology is built upon the friction between what is classically conceived of as the realm of ideas and that of the material world. Indeed, the division between the immaterial ideational realm and the material actual one is fundamental to understanding not only the notion of ideology, but that of representation, the Virtual and reality and a host of other essential concepts in Western philosophy, the critical engagement of which is at the heart of this research. This division can be traced back to Plato’s famous parable of the cave that was decisive in setting up how philosophical systems would develop thereafter.⁹¹ His work and the ones he inspired contributed to the division of the world into ideas and the material, but it also meant that ideals/ideas since then have taken precedence over the material.⁹² From the perspective of this influential parable ideas were attributed to the passing agents and objects outside the cave (which are the ideals as well), while the material was the shadows that the prisoners saw inside in the cave. This implicit hierarchy of what are essentially *modes of being* arguably contributed to downgrading experience as well, for it renders experience into a mere act of perceiving the ideals from the perspective of the prisoners. In short, it means that the ideal is seen as the structuring device of experience, thoughts and behaviour.

Ideology is the continuation of this structuring process, but in a systematic and larger form operating on the level of the polis, society or nation state. It is indispensable for politics and

⁹⁰ Bogost, *Persuasive Games*, 72.

⁹¹ Arguably, almost every strand of western Philosophy is platonic, newer materialisms are trying to break with this tradition, with many of them assuming implicit neo-platonic positions.

⁹² Plato’s “Theory of Forms” was essential in influencing this standpoint, Plato, *The Republic*, Book V, 305. Online document, accessed on 21 July 2014, from <<http://www.aprendendoingles.com.br/ebooks/republic.pdf>>

was first used in this context by Napoleon in the French Revolution.⁹³ Napoleon labelled his critics “ideologues, meaning people who wanted to substitute abstract considerations for real politics” and it was from this point onwards that “ideology signified those abstract (rather dubious) theories allegedly based on reason or science, which try to map out the social order and guide political action.”⁹⁴ Marx’s influential critique of ideology perpetuated the ideal/material divide and not only gave ideology somewhat of a negative connotation, but also came to be associated with a Marxist and Materialist tradition.⁹⁵ While the term underwent conceptual reconstructions by thinkers such as Antonio Gramsci, Louis Althusser, Michel Foucault, Alain Badiou and, more recently, Slavoj Žižek all attacking this divide, the term has remained in Marxist hands.⁹⁶ Therefore, as in the case of the critique of technologisation, ideology is primarily used to confront (neo)liberal forms of politics, which leads such scholars to analyse games as materialisations of such politics.

Ideology in Games

The example of SENSE, one of the first games to emerge in the specifically political realm, demonstrates some of the ideological workings that can be problematic if they remain unaddressed. SENSE was developed by the Institute for Defense Analysis (IDA) and initially stood for “Synthetic Environments for National Security Estimates.”⁹⁷ After only a few years, the hard and software of the game was handed over to the United States Institute of Peace (USIP), where it has been further developed and used since, now referred to as “Strategic Economic Needs and Security Exercise.” As described by its multiple developers, it is a game used for training purposes, for dealing with the unpredictable and unthinkable by employing

⁹³ Raymond Boudon, *The Analysis of Ideology* (Chicago: Chicago UP, 1989), 25.

⁹⁴ *Ibid.*, 25.

⁹⁵ Bogost, *Persuasive Games*, 73.

⁹⁶ *Ibid.*

⁹⁷ Richard H. White, *Introduction to IDA’s S.E.N.S.E.TM- R.S.A. Project. Institute for Defense Analysis* (Alexandria, VA: Institute for Defense Analysis, 1999).

the methods of planning, comparing and mapping.⁹⁸ It is an exercise powered by HCI and mediated by socio-political and economic rules and goals. Based on the simulation of conflictual political scenarios, the aim is not only the verisimilitude of peace operations in the game, but to increase its plausibility outside of the game as well. Thus SENSE is an interactive simulation for decision support, information management and exchange with an echo beyond the game. The level of technology is “medium” (neither high- nor low-tech), but based on significant processing power by involving at least ten to fifteen networked computers. While the hardware enabling the game is not hugely complex, compared to fully immersive games in a completely synthetic gaming environment, the computer literacy required by the players is considerably high, with the participants having to undergo substantial briefing before the onset of the game and with a supervisor present throughout the game to help in case of problems related to operating the computer software and to facilitate a smooth running of the game. The game scenario and tasks are individual for each game session, based on actual countries and conflict situations. Participants in a game are usually related to that context in one way or another, either professionally or personally. While the game was initially developed for US government senior leadership, members from civil society, NGOs or a group of students (of any country) can arrange to play SENSE at USIP.⁹⁹ The game usually lasts from several days to up to a week, with each individual game being based on an actual country, conflict scenario, and economic crisis. Each participant plays the role of a government official or a member from the industry, private or public sector. Furthermore, participants start with a considerable amount of the local currency that they can use to buy resources, trade, invest into infrastructure, the economy – literally everything that makes and breaks a state. If in debt, participants can apply for loans at the national bank, the

⁹⁸ James F. Dunnigan, Intervention at the “The Dis/Simulations of War and Peace: Predicting, Prophesying, and Preempting the Future after 9.11.,” Watson Institute, June 6-7, 2003, accessed January 02, 2011, <http://www.watsoninstitute.org/infopeace/dissim/peace.cfm>.

⁹⁹ USIP just recently managed to successfully set up second bases in Poland and Iraq where SENSE can be run in order to be able to respond to training demand in conflict areas.

World Bank or other credit institutions, each of which is played by participants or sometimes by members of the SENSE team.¹⁰⁰ The research that is put in by SENSE members to prepare for a game is immense, thoroughly analysing the countries that the game is going to be modelled on, looking at internal workings and dynamics from micro to macro as well as regional and international within the context of foreign affairs and international trade.¹⁰¹

The use of political games such as SENSE examined from a procedural perspective indicates a striking similarity between games and ideology as precisely such procedures of abstract “theories allegedly based on reason or science, which try to map out the social order and guide political action.”¹⁰² Looking at these key terms (abstract theories, reason, science, map social order and guide political action), ideology is clearly deeply rooted within games. Examining the R&D as well as implementation of games provides more insight into this process. In the case of SENSE, developed at IDA and now at USIP, the first institution is a research centre with a focus on national security catered to the needs of the American military. Thus the idea of stability in respect to peace operations and the politics necessary is framed within a “hard power” context, and, depending on the government in office, this context oscillates between democratic and republican forms. In the example of SENSE, the primacy of “hard” stability demands in peace operations is kept through the designation of “Security Exercise,” and once the game moved to USIP, Washington, D.C., economic complexity was added, “Strategic Economic Needs,” which in the realm of peace operations, aid and development have been addressed through neoliberal reforms.¹⁰³ Given the

¹⁰⁰ These roles, that are somewhat props and part of the game structure, are often played by people from SENSE.

¹⁰¹ Kelly Mader, (Program Assistant, Academy for International Conflict Management and Peacebuilding), interview with author. December 11, 2013 Washington, D.C..

¹⁰² Boudon, *The Analysis of Ideology*, 25.

¹⁰³ Simon Springer, *Cambodia's Neoliberal Order: Violence, Authoritarianism, and the Contestation of Public Space* (London: Routledge, 2010); Ian Taylor, “Liberal Peace, Liberal Imperialism: A Gramscian Critique,” *Palgrave Advances in Peace-Building: Critical Developments and Approaches*, ed. Oliver Richmond (London: Palgrave, 2010) 154-174.

geographical location of both institutes, inside the US, and the main customers of each of the two institutions (both members of the military or government officials), a tendency towards American idea(l)s about peace operations is difficult to explain away. The output and work by these institutions needs to be carefully contextualised within the geo-political landscape they are working in, the customers they are catering to, the funding they receive as well as the staff they employ for example. However, this is not to suggest that the work institutions like USIP produce is inevitably ideologically drenched or biased and, therefore, to do away with the simulation games they produce. Rather this is a challenge that efforts to integrate gaming need to acknowledge and overcome.

While it is recognised that technologising criticism and the risk of unwarranted ideological dominance in games need to be taken seriously; nevertheless, much of the criticism is exaggerated. This is the case with especially technologising arguments because they are based on the misleading assumption that games seek to substitute for politics.¹⁰⁴ However, this is not their purpose. Instead, the intention is to increase awareness and understanding through an interactive way of learning, based on a simple principle in ‘Theory of Mind’, which is to put oneself into the situation of someone else. Thus, while the games operate on the level of some abstraction since they can only approximate a specific political context but not replicate it, the intention is not “to substitute abstract considerations for real politics.”¹⁰⁵

Ideology and Political Change

Approaching the argument of ideology at the macro-level makes the issue of political gaming much more complicated and problematic. One aspect of technologisation is that international

¹⁰⁴ Michael Dillon, *Politics of Security: Towards a Political Philosophy of Continental Thought* (London: Routledge, 1996), 52.

¹⁰⁵ Boudon, *The Analysis of Ideology*, 25.

politics became abstracted into macro- and micro-economics,¹⁰⁶ so that the conditions and practice of politics are frequently approached and filtered through the lens of global political economy rather than through anthropologies of war, political conflict and collective violence, for example.¹⁰⁷ In this light, games such as SENSE (designed to also test certain economic decisions with the intention of promoting stability and peace) are seen as a form of neoliberal economisation. This is by far the strongest criticism to which these games are subject. However, this is not so much a problem with gaming as such, but with the wider dominant perception of how to deal with political processes amidst regional instabilities, political violence and conflict, and war-to-peace transitions for example. In other words, games visualise “the logics that make up a worldview”¹⁰⁸ and at the same time are symptomatic of politics that are to a great extent focused on the economic well-being of a country and its people. The question and problem is to what extent games are complicit in perpetuating conditions in which political action cannot be understood, known and practiced outside of economic dominance. This question challenges gaming and needs to be addressed throughout the project, especially in the analysis of particular games and the context out of which they arise.

The contemporary games for change are aimed at a wide range of political practices often with a focus on war/conflict to peace transitions, which in itself refers to a large set of socio-political practices. The political scope of games is purposefully kept broad in order to show that practices aimed at stability and security unfold through various stages are all interconnected. With some games aimed at the stage of ongoing war and violence, involving national and foreign military and dominating goals of security (traditionally conceived), the

¹⁰⁶ Rex Brynen, *A Very Political Economy: Peacebuilding and Foreign Aid in the West Bank and Gaza* (Washington, DC: US Institute of Peace Press, 2000), 206.

¹⁰⁷ Caroline Nordstrom, *Shadows of War: Violence, Power, and International Profiteering in the Twenty-First Century* (Berkeley, CA: University of California Press, 2004), 234.

¹⁰⁸ Bogost, *Persuasive Games*, 74.

main audience for which these games are designed for is military personnel and soldiers, with games covering core areas of strategy, staff and soldier communication, practicing mediation and negotiation skills, up to more physical aspects of securing territory and persons, or getting involved in conflict without having to resort to violence. This is why many of the games played by militaries are increasingly focused on “soft” skills – that is information management and cultural understanding, rather than shooting exercises. Though digitised shooting training is and will continue to be used widely for mainly economic reasons as it is a cost a very efficient way of training, R&D with regard to games for change has moved on. Furthermore, there is the aspect of maintaining and ensuring stability, which involves, for example, upholding ceasefires, usually through lightly armed and quite symbolic international/third party military presence.¹⁰⁹ As in the former case, the focus of game-training is on communication rather than actual military action. Games in this area often involve practicing peaceful border crossings and checkpoint passages. Moving out of the military realm and into that of global and local leadership, political operations that feature in games cover aspects of official peace negotiations and agreements – or what the UN understands as peacemaking – which are local, but with external/international involvement.¹¹⁰ Political games addressing this element simulate actual negotiation scenarios with an increased aspect on communication and mediation in particular. Moving along the stages, the political repertoire also includes areas of post-conflict reconstruction and conflict prevention that involve social, political and economic reconstruction, which can be local, but are mainly led by international organisations and legions of foreign consultants.¹¹¹ SENSE, for example, is a game that is often used to help with decision-making in this case. Given the focus on

¹⁰⁹ François Debrix, *Re-Envisioning Peacekeeping: The United Nations and the Mobilisation of Ideology* (Minneapolis, MN: University of Minnesota Press, 1999).

¹¹⁰ In e-mail correspondence with Jan Selby, dated January 10, 2010, Selby suggested these characteristics for peace-keeping, -building and -enforcement.

¹¹¹ Roland Paris, “Saving Liberal Peacebuilding,” *Review of International Studies* 36, no. 2 (2010): 338-9.

local infrastructure and state-building, this is the area of gaming most prone to neoliberal biases.

Games as Business

It comes as no surprise that games too have to be contextualized not only within ideological tendencies and practices, but political economy as well. Given that gaming is an interdisciplinary and ‘inter-industrial’ enterprise, there are varying interests influencing the R&D of games. The fact that gaming is a nascent practice means that it is still costly to either develop technologies that support fully immersive games or to develop low-tech games that can be distributed for free. The opening statement to one of the first conferences on gaming technology for peace operations by Himelfarb could not make this any clearer:

We’re all keenly interested in finding new tools and technologies with which to manage conflict and promote peace, it’s a perennial challenge. But there are also these never ending news stories that we get each day about this or that new technology and its pivotal role in a conflict. We are astonished, we are as astonished as we are delighted [...] Now there is the question of course, a bit like the elephant in the room, why are we here talking about games and simulations and predictive analytics instead of let’s say the Facebook and the Twitter and other social media that the news media is so pre-occupied with? And I think the answer is a bit like [...] ‘Why do you rob banks? Because that’s where the money is’.¹¹²

¹¹² Sheldon Himelfarb, Introduction to “Beth Noveck at Smart Tools for Smart Power: Simulations and Serious Games for Peacebuilding,” July 16, 2009, accessed January 15, 2011, <http://www.youtube.com/watch?v=n40V3vU6l8A&list=PL480830BCF94E895B&index=1&feature=plpp>.

This gives the *Very Political Economy of Peace*¹¹³ a new dimension in the way that analysis not only needs to include neoliberal reforms that are implemented in the pursuit of peace, but that certain strategies are heavily influenced by economic interests that are far removed from the actual political context within which these strategies will be implemented. The notion of Der Derian's Simulation Triangle needs to be taken into account at this point as it lays the groundwork for analysing how game development is subject to trends in political economy. The Orange County Convention Centre in Orlando Florida (OCCC) hosts the annual I/ITSEC event (Interservice/Industry Training, Simulation and Education Conference), the world's largest modelling, simulation and training conference that "promotes cooperation among the Armed Services, Industry, Academia and various Government agencies in pursuit of improved training and education programs, identification of common training issues and development of multiservice programs."¹¹⁴ The conference lasts an entire week and is filled with lectures, tutorials, workshops, Q&A and exhibition time. As with any large-scale conference, the effort, time and money invested into the organisation and execution of the conference results in an impressive event, both academically as well as from the tech side. At I/ITSEC 2013, like almost every year, nearly every lecture theatre on the first floor was rented out for tutorial and panel sessions, where four panels ran simultaneously throughout the day, with new panels starting each hour except for lunch break. Following tradition, the turnover of thoroughly researched papers and highly polished presentations was tremendous. Researchers from all over North America, from the Social Sciences, Computer Sciences, Engineering, as well as Cognitive Sciences gathered to discuss the latest progress of "serious games" in their respective science, dealing with questions of how they had implemented feedback from the previous year, what the users had reported during test phases, what to improve and future directions. As attendees and presenters they take the emergence of

¹¹³ Brynen, *A Very Political Economy*.

¹¹⁴ "About I/ITSEC," National Training and Simulation Association (NTSA), accessed July 15, 2014, <http://www.iitsec.org/about/Pages/default.aspx>.

political gaming very seriously, and there was no doubt among them that serious games are the future within this forum.

The View from the I/ITSEC Floor

Exploring the I/ITSEC exhibition floor for the first time was almost like finding your way through a labyrinth. The 195,000 square meters were packed with different booths each showcasing another state-of-the-art technology that was crucial for latest simulations in one way or another. Having passed the first few, already with numerous free-bees in my I/ITSEC bag that I got with registration, I remembered Himelfarb's elephant, that now finally got a face. I recalled the prices for booths, \$32 sqft inline, \$33 sqft corner and \$34 sqft for an island. I looked at the booths trying to understand that the price was really for square feet not meters and tried to do the maths, reaching numbers that left me reeling. Only military and academia got a discount on the first 1000 sqft, where the military got away with \$500 and academia with \$1,000. It didn't come as a surprise that only one University was represented on the whole floor and that it was the University of Central Florida (UCF), a leading research and teaching hub for Modelling and Simulation. It was at UCF's booth that I held most of my interviews, in which every representative from the industry that I talked to implicitly or explicitly referred to 'the elephant', the gaming business. By the end of it, I had no doubt about that gaming had a future, for the sheer economic incentive and dynamic behind it seemed overpowering. After days of full immersion and doing endless rounds on the ground; trying every simulation and game possible, crashing planes, driving tanks, saving lives; speaking to as many developers and military personnel as possible, listening to a tremendous amount of fascinating research, sitting through official award ceremonies for which I should have gotten my American citizenship, the week came to an end, leaving me time to go back and read up on the Simulation Triangle and I/ITSEC in particular, about which James Der Derian had to say the following:

The pride and patriotism of the earlier I/ITSEC still flared on occasion into imperial hubris and technological hype, but this year's model was more of a meld of corporate steel and glass with infotainment show-and-tell. Envisioning the future was still the goal, but enriching yourself and entertaining the stockholders en route made for a burgeoning of confessions on the way to Tomorrowland.¹¹⁵

The political economy as it plays out on the exhibition floor of the OCCC provides a great insight into the dynamics driving R&D of many political games that are at the higher end of the technological spectrum. Most striking is the fact that the Armed Services still have the biggest input with regard to which direction gaming developments take. Nevertheless, this is not always in agreement with what their soldiers or marines on the ground actually need, despite the military possessing longstanding relations with contractors such as Lockheed Martin, McDonnell Douglas, Boeing, Hughes, Evan and Sutherland, Raytheon, and Northrop. These companies are more geared towards producing technologies for 'traditional' security concerns, focusing on flight simulators, laser technologies or graphics for immersive battlefield environments for example.¹¹⁶ Shifting to developing software for soldiers to practice their communication skills in different cultural settings is not always successful (arguably because it is less lucrative), and certainly disjointed from what academics attending the convention had to say in their tutorials that happened on level 1 in the meantime. Matching what has been said on level 1 to what was showcased on the event floor downstairs, the discrepancy could not have been more apparent. While academics were pushing development into areas of interactive games with virtual humans for soldiers to learn foreign customs and languages, or to be able to digitally simulate conference rooms with virtual humans within which long, heated and taxing negotiations were held, the focus downstairs

¹¹⁵ Der Derian, *Virtuous War*, 84.

¹¹⁶ *Ibid*, 86.

was on more advanced shooting simulations or technological limbs that move and bleed like actual ones. It emerged that the problem was not the fact that developing games generates revenue for most developers, but the amount of revenue.¹¹⁷ The contractors on the floor, software and engineering companies seemed eager to provide any kind of technology as long as there was a significant return. In short, the catch was not on the behalf of the contractors wanting to make a pitch, but rather who had enough revenue to fund these projects.

Technoscience, Political Gaming and Immanent Ethics

The theoretical development of games for change in this research also explores the R&D in closely related areas in order to join the momentum of creating games for the future and it is therefore forward looking and speculative.¹¹⁸ While this endeavour is not a work on gaming ethics as such, there are, however, ethical assumptions underlying this mode of analysis as well as ethical implications that come out of it. Guided by Gilles Deleuze's affirmative philosophy, this is not a post-structuralist project, but one that focuses on possibilities of the new.¹¹⁹ Rather than analysing how concepts and practices of war and peace, security, ideology and gaming intersect and can be deconstructed, couched in the language of power, this is a technoscience project proposing metaphysical questions (and answers) to: "what is a body, in and outside gaming interaction?," "how is political subjectivity produced?" and "where does novelty come from?". Instead of practicing critique in a conventional understanding, the mode of enquiry is *wonder*. While popular methods in continental philosophy are, for example, setting up a dialectic, doubt/criticism or thought experiments,

¹¹⁷ And if games are not sold commercially as in the case of *PeoplePower*, then developers get funded by the United Nations or individual governments for example.

¹¹⁸ Speculative, not in a vague and flimsy understanding, but in an innovative sense and in contrast to predictive future oriented analysis.

¹¹⁹ Jay Conway, *Gilles Deleuze: Affirmation in Philosophy* (Basingstoke: Palgrave Macmillan, 2010).

the focus here is on the latter as it emphasises wonder, dwelling and imagination.¹²⁰ Wonder, understood in a Heideggerian sense, reflects curiosity towards the new and which in its unfolding, although surrendering its originality in the process, will “prepare for a new philosophical beginning capable of thinking what was only glimpsed in wonder.”¹²¹ Thus, even though the project sets itself up against earlier claims of technologisation and ideology, the inherent ethics here are not those of resistance, but of emergence. Notions of experience, production of subjectivity, and expression are fundamental to this ethics.

While the primacy of gaming experience throughout the research would often lend itself to a Kierkegaardian aesthetic analysis of the immersion in sensuous experience and the consideration of the possible over the actual,¹²² the political demand of these games will direct the focus on the ethical. Even if the emerging systems of experience during games work aesthetically at times, the scope of the thesis is mostly ethical and political. The focus on them is prioritized in order to respond to the challenges as posed by liberal ideology, political economy and technocratic practices. In addition, the debate is taken outside the parameters of subject-object thinking, thereby making the question of technological determinism (where technology is the object and the human the subject) obsolete. Furthermore, in contrast to the depoliticising argument of technologisation, the analysis will make evident that gaming is indeed a highly political moment, where the *political* is understood as a “moment of openness” and opportunity that is undecided, untamed and uncertain.¹²³ The analysis of how political subjectivity can be produced anew during the game experience will show that gaming does not have to be about rehearsing one-fit-all peace

¹²⁰ These categories are broad and can be fleshed out in much more detail as the tools of a philosopher are plentiful. However, the question of method in a continental tradition is rarely addressed systematically and statements are often quite contrarian.

¹²¹ Chad Engelland, “The Wonder of Questioning: Heidegger and the Essence of Philosophy,” *Philosophy Today* 49 (2005).

¹²² Joel B. Hunter, “Kierkegaard’s Mirror (of Erised),” *Reason Papers* 34, no. 1 (2012) :51.

¹²³ Edkins, *Poststructuralism and International Relations*, 7-8.

operations and neither does it have to be a representational exercise of perpetuating existing narratives, but can act as a productive operation of the political.

Therefore, despite the pressures of liberal ideology, of which gaming is a materialisation at the same time, it does not have to work in favour of existing ideological biases. Looking at aspects of game design, ideas of affect and the creative responses emerging during the immediate act of gaming will show that there is always a possibility of doing things otherwise. It does not have to be commonplace that ideological structures set limits to creativity. In contrast, gaming is taken as an opportunity to challenge the status quo. Gaming can and should be explored as a way of engaging with politics differently, thereby generating new political expression and a theory and practice that is fundamentally different to the conditions (“the moil of the marketplace”) that it grew out of in the first place.¹²⁴

Essentially, the project’s continuous effort to counteract the routinized mental and ideological imprisonment through an emphasis on emergence and novelty is driven by a utopian impulse. Importantly, utopian here does not refer to the impossible, or near impossible, nor to utopia in a conventional sense, where classical utopian texts suggest the realisation of change through revolution.¹²⁵ Instead, the utopian impulse refers to the “ever-present often unconscious longing for radical change and transformation which is symbolically inscribed in everything from culture and daily life to the official activities of politics and goal-oriented action.”¹²⁶

The impulse here serves to show that political imagination is hostage to its own mode of production and that gaming breaks with this process, opening up ways of reimagining. In this sense it is not a blueprint or vision of the future (a Utopianism which would be yet another form of idealism and ideology), but a method of grasping and pointing out “the limits of our

¹²⁴ Bogost, *Unit Operation*, x.

¹²⁵ Fredric Jameson, “A New Reading of *Capital*,” *Mediations* 25, no. 1 (2012): 11

¹²⁶ Jameson, “A New Reading,” 12.

images of the future, and indeed our impossibility of imagining a radically different future.”¹²⁷ However, novelty comes with jargon, but according to Bogost the latter is actually “a way of laying groundwork for novel production.”¹²⁸ To be precise, the thesis will purposefully avoid drawing on post-structural and Marxist vocabulary and not frame the analysis in terms of resistance or alienation. Instead, it is believed that the development of a new set of vocabulary and concepts throughout the thesis plays a crucial role in the move beyond old debates and imaginations towards emergence.

Conceiving the New, Speculative Ontologies and Materialist Philosophies

Novelty and moving beyond the status quo practically and theoretically does not come with merely wondering and new vocabulary: it requires a radical philosophical change. As a technoscientific approach (using the notion of experience), philosophical tools are drawn from speculative materialism because it offers the means to develop a theory of experience that is not predicated on a subject-object distinction, representationalist, hylomorphic, idealist thinking and other Cartesian anxieties and dualisms. Furthermore, it allows the thesis to analyse and show the production of new political subjectivity and investigate the triangulated problem of the Virtual, the digital and the actual (which together is reality) in greater complexity. Speculative materialism is a world view that sets itself up against the prominent idea in (any) philosophy which sees the world as bifurcated, that is as reality and mediation and where reality is only the correlate of the human thought. Accessing this reality has been condoned a futile project by philosophers such as Immanuel Kant, who thereby also dismissed the idea of being able to do speculative philosophy as making assumptions about reality is contrary to the finitude of human thought. According to Bryant, Srnicek and Harman “phenomenology, structuralism, post-structuralism, deconstruction, and post-

¹²⁷ Jameson, “A New Reading,” 13.

¹²⁸ Bogost, *Unit Operation*, xi.

modernism have all been perfect exemplars of the anti-realist trend in continental philosophy.”¹²⁹ In contrast, the technoscience approach in this research argues for taking reality (the concrete and the material) seriously and as a clue to revisit questions about HCI and the political. In this speculative momentum, the project is “turning once more toward reality itself.”¹³⁰ However, it is not the intention to return to positivism, despite critical voices misinterpreting new materialisms in this way. The aim in this work is “at odds with so-called ‘naïve realism’” and in contrast is interested in finding out what “drastically limits the presumptions of thought in its ability to grasp the nature of reality.”¹³¹ Moving away from the suspicion of reality and science that came to characterize much of twentieth-century French thought (especially phenomenologist and post-structuralists) and following the work of Gilles Deleuze, Brian Massumi, John Protevi and Manuel DeLanda, this research returns to a naturalist ontology to map wide-ranging questions regarding reality, the body, experience and subjectivity.¹³² Turning to theories that are grounded in recent developments in materialist philosophies, such as speculative and vital materialism, will provide the analysis with the sufficient tools to distance itself from old debates about HCI which are framed in terms of Kantian idealism and access to the phenomenal world.

The interest of this project in distancing itself from forms of idealism is not due to an outright dismissal of Kantian philosophy or phenomenology, but grounded in the argument that recent materialist philosophies offer new ways of asking and answering questions about technological beings and becomings as well as being and becoming technological. It is argued that in starting the analysis from a different position that does not take the human and

¹²⁹ Levi Bryant, Nick Srnicek & Graham Harman *The Speculative Turn: Continental Materialism and Realism* (Melbourne: re.press, 2011), 3.

¹³⁰ Bryant, Srnicek & Harman, *The Speculative Turn*: 3.

¹³¹ Ibid, 7.

¹³² John Protevi, *Life, War, Earth: Deleuze and the Sciences* (Minnesota: University of Minnesota Press, 2013), 1.

the primacy of the human experience as the centre of analysis, provides theoretical impetus and opens up the possibility to go about HCI differently: to think about the human, the computer (technology) and interaction differently. This entails seeking an alternative point of analysis away from correlationist categories that sustain that “all that exists is some variation of mind or spirit.”¹³³ Although there are limitations to academic practice and thought in the way that reading, writing and theorising is a conscious effort based on language, the thesis agrees with Deleuze’s transcendental empiricism that holds that it is nonetheless possible to conceive of and work within a philosophical system in which experience does not unfold according to *a priori* categories of the mind and bodily intuition. As the thesis will show knowledge is not based on how things appear to us, neither is reality reduced to cognition. Novelty in this respect is grounded in an empiricism that contrary to correlationist and idealist thinking does not calibrate thought around human *being*, more specifically, as being *qua* being, but around being *qua* other.

It is argued that what goes on outside the human sensorium is of more interest to technoscience and the politics in gaming than addressing the latter from the point of the human or “user experience.” The ontological concept is that of an “asubjective realm of becoming” in which the subject and thought are only an embedded “final, residual product” of primary ontological movements.¹³⁴ Whether this is referred to as vital or speculative materialism or a form of posthumanism is of secondary importance, but the point is that by positioning the thesis in contrast to Kantian transcendental structures of reason and rationality that supposedly structure human behaviour, a post-human enquiry “offers an embarrassment of riches in response to the question of what we might be studying when we study

¹³³ Quentin Meillassoux, *After Finitude: An Essay on the Necessity of Contingency* (New York: Continuum, 2008), 5.

¹³⁴ *Ibid.*, 4. As will be explained in greater detail, the effort to leave the conventional subject-object realm behind is guided by Gilles Deleuze’s project to move beyond the traditional Kantian limitations of continental philosophy; his magnum opus *Difference and Repetition* is most representative of this attempt.

international relations” and technology.¹³⁵ Furthermore, the project seeks to address the conceptual challenges that arose out of the emergence of NT that trouble conventional understandings of not only IR but the body and technology. It is argued that a posthuman, speculative materialist approach offers a way to respond to these philosophical and theoretical challenges without dragging “the ideological baggage,” “the bloodless abstraction” and “habitual desensitisation” of technology into the analysis.¹³⁶ The development of pre-subjective systems of experience are taken as the starting point from which to address the body-technology question before turning to the material reality of technological experience.

However, focussing on materiality does not imply a reductionism to tangible physicality, but to the contrary, is used to argue for the different modalities of experience and existence that technoscience needs to start taking into account. Working with an ontology that proposes that “all entities are equally real (though not equally strong) insofar as they act on other entities,” the thesis follows Latourian “irreductionism”¹³⁷ in order to overcome symptomatic misconceptions of the Virtual, the digital and the actual, in which the former two are often claimed to be less real. Current technoscience and IR literature focusing on NT¹³⁸ are symptomatic of such a hierarchy of realness that is claimed to be disadvantageous in order to understand the technology-body dynamic in gaming as well as other technological interaction. While focussing on the ‘incorporeal’ has been a concern of anti-realist analysis of the twentieth century as well focussing on “cultural structures, systems of power, texts,

¹³⁵ Erika Cudworth & Stephen Hobden “Of Parts and Wholes: International Relations Beyond the Human,” *Millennium* 41 (2013): 449.

¹³⁶ Adrian Mackenzie, *Transductions: Bodies and Machines at Speed* (London: Continuum, 2002), xi.

¹³⁷ Bryant, Srnicek & Harman, *The Speculative Turn*, 5.

¹³⁸ See for example “Introduction: Five Rules of Virtuality” by Steve Woolgar, which is a provocative and fascinating account of the social dimensions of electronic technology, yet with an underlying bias that non-electronic interaction is the ‘realer’ one; in *Virtual Society? Technology, Cyberbole, Reality*, ed. Steve Woolgar (Oxford: Oxford UP, 2002), 3.

discourse, or phenomena in consciousness,”¹³⁹ the present analysis and view point is very different from these referents of analysis. Rather than power or discursive practices, the thesis is interested in how affective structures that spread across the Virtual/actual continuum and across scales impact on technological practices such as gaming and the techno-body dynamic. In order to pay close attention to the role of affect, it is crucial to treat the pre-subjective realm of the Virtual and the subjective realm of the actual as ontologically equal. So far the political has resided in the latter realm and IR theorization has shied away from seeking out politics in the pre-subjective, affective realm. Protevi’s intellectual mix of “political physiology,” Massumi’s inquiry into political, pre-subjective aesthetics and Connolly’s posthuman political philosophy¹⁴⁰ are among the few works that use the Bergsonian Deleuze to explore the political in the Virtual/actual interplay. These authors are not only crucial for the task at hand, but the project joins their efforts of researching bio-socio-political events, of which gaming is one. Ultimately, subsequent chapters are interested in pre-subjective, pre-individual, non-conscious/subliminal forms of action and politics found in the moment of openness during the gaming experience.

State-of-the-Art Challenges: Consciousness and Agency

An affective register (and working within it) brings to the fore a few large issues such as questions over consciousness and agency, which are problematic for a technoscientific inquiry. Speculative materialists’ curiosity about recent scientific development and indeed interest in reactivating communication between philosophical and scientific research confronts this thesis with problems that extend beyond the scope of the present analysis. The notion of ‘non-conscious’ that will emerge in the remainder is different to the Freudian or

¹³⁹Bryant, Srnicek & Harman, *The Speculative Turn*, 5.

¹⁴⁰ John Protevi, *Political Physics: Deleuze, Derrida and the Body Politic* (London: Athlone Press, 2001); Massumi, *Parables for the Virtual*; William E. Connolly, *A World of Becoming* (Durham & London: Duke UP, 2011).

Lacanian subconscious and far removed from the conscious knowing self. This is not to argue that the latter conceptions are discredited, but it is an entirely different level of analysis and responding to different sets of questions. Closely related to the problem of the non-conscious is that of agency and intentionality, both of which are questionable concepts in new materialist traditions and are only worked with implicitly here. Whereas the question of political agency has always been a pressing concern in political theory, the concept of agency stands at odds with the posthuman condition developed by the thesis. Human agency, as commonly conceived, depends on coherent action by a conscious subject; however, in the posthuman landscape it is diffused into different matterings, processes of self-emergence and workings of affect. Given that the subject, the individual and even the body will become undone in this thesis, it would be of little use to situate this theoretical development within a liberal and humanist understanding of agency as something possessed by humans (and non-humans for that matter), as a choice,¹⁴¹ as a moral capacity, and as a “willed or intended motion [...] by a subject.”¹⁴² Again, it is not to dismiss the validity of these debates and aspects of moral behaviour are certainly questions to be asked with regard to the pre-subjective and non-conscious as well, but it will not be possible to address them here. In respect to future research, the project will help to pave the way towards engaging with these problems and only work with an idea of posthuman agency in so far as it is guided by affective structures (non-local and highly diffused) without the “subject as the root cause of an effect.”¹⁴³ As such it is inspired by Karen Barad’s “agential realism” which suggests that “agency is about response-ability [...] and] about possibilities of worldly re-configurings.”¹⁴⁴ It

¹⁴¹ Karen Barad, “‘Matter Feels, Converses, Suffers, Desires, Yearns and Remembers’ Interview with Karen Barad,” *New Materialism: Interviews and Cartographies*, eds. Rick Dolphijn, Iris van der Tuin (Ann Arbor: Open Humanities Press, 2012), 54.

¹⁴² Freya Mathews, *For Love of Matter: A Contemporary Panpsychism* (Albany: State University of New York Press, 2003), 35.

¹⁴³ It takes also inspiration from Jane Bennett’s “distributive agency,” Jane Bennett, *Vibrant Matter: A Political Ecology of Things* (Durham and London: Duke UP, 2010) 31.

¹⁴⁴ Barad, “Matter Feels”, 55.

is suggested that the act of gaming has precisely this agency of possible reconfiguration, but not as an intentional, conscious move, but a mutual enactment without an agent per se.

Conclusion

The chapter sought to map the variegated spectrum that needs to be covered in order to commence an investigation of the inter-disciplinary, mixed-modal and altogether challenging example of technology such as immersive political gaming. The frame of technosciences was chosen based on the argument that this allows the project to focus on technological mediations, but from a materialist perspective that is committed to vitalism in matter. It puts the analysis into a good position to analyse the category of technology like any other body composed of matter. In other words, not only does technoscience provide the necessary theoretical freedom in order to increase the scope of understanding and further develop the workings of political gaming, but the latter can only be considered within such a minimally restrictive frame and conceptual space given that gaming is a complex theme that spans different areas of study (indicative of the unique material space/time it occupies) and will be analysed in greater detail. Moving through a brief gaming genealogy revealed that games have been part of political practices for centuries, but mainly entered the political arena because of their value for military and strategy training. The analysis of the latter two aspects (the close relation between the development of games and its ties to the Armed Services) showed that the military is not only an important funder of political games, but that gaming technology needs to be contextualized within the MIME-NET in order to understand its various stages of production and the multiple influences shaping a single game.

With the example of specific games and insight into their R&D, it was argued that apart from being serious, games are also a political force. As such, the chosen theoretical focus is that of

the experience of games rather than just the use of them. This is based on the argument that by thinking of games in terms of ‘being used for a purpose’ not only implies their tool-being (and thereby certain theoretical positions), but also that this approach misses out on multiple dimensions that gaming can draw on as well as effect. Importantly, however, one of the unique aspects of the investigation of gaming experience is that this will not unfold according to phenomenology and, thus, neither to idealist nor correlationist views. This is an important theoretical step that provides the investigation of games with more theoretical freedom, especially from Cartesian dualism and dominant subject-object distinctions that dominate the analysis of HCI. Furthermore, non-phenomenological experience is something missing in speculative materialist writings thus far, and, therefore, is a wider philosophical concern and issue in general. Nonetheless, the possibility of experiencing technology needed to be contextualised within the tandem-development of computer technology and the accompanying cognitive skills necessary to engage with and experience technology.

The discussion of experience as the focus of analysis and entry point into unbundling the political phenomena of gaming aimed to show that different theoretical tools and philosophical traditions are necessary in order to confront this complex set of issues regarding gaming. It calls into question theories of knowledge and how we learn through the engagement with technology, how it changes perception and how it affects political education and practice in the long run. Yet, these questions cannot be addressed without a grasp of what immersive technology is and how it operates. Embedded within such timeless ontological and epistemological questions, the initial claim that experience can help to think differently about HCI, the bodies of humans and technology in particular, foreshadowed that this analysis will unfold along posthuman lines. In this sense the project’s frame of technoscience was detailed further by introducing speculative materialist philosophies and how these provide alternative

ways of analysing gaming experience without drawing initial dualist distinctions, of human/technology or living/non-living and subject/object more broadly. Theorising (gaming) experience in a new materialist fashion enables one to think of HCI outside the commonplace subject-object division and helps to understand what games and gamers are and how they assemble and operate (in and outside the game). The emergence of the new and as well as that of a posthuman political subject will be central to the following investigation and in order to locate their origin as well as detail these processes a much more fundamental and primary reworking of the metaphysical, ontological and epistemological underpinnings of political theory is in order. It begins with experience. Certainly, the latter is crucial for this endeavour concerned with creativity, exploration and novelty, but in a way that does not rest on the human and the human mind as the pinnacle and ultimate referent. The idiosyncratic combination of various materialist philosophies provides the thesis with the necessary theoretical sway and leverage to pursue the development of a wider theoretical model for new political becomings based on techno-political mediations.

Chapter 2 ~ Becoming-Posthuman: Intensive Bodies during Gaming-Experience

...there is some comfort in the idea [...] of following experience, but following it all the way to the end.

Bruno Latour¹

Something happens at around 92 miles an hour. Thunder headers drown out all sound. Engine vibration travels at a heart's rate. Field of vision funnels into the immediate. And suddenly, you're not on the road – You're in it, a part of it.

Jackson Teller²

What moves as a body, returns as the movement of thought.

Erin Manning & Brian Massumi³

Introduction

The technoscientific inquiry into the technological experience of political gaming and the question of how this event gives rise to the new is essentially a non-anthropocentric concern. Gaming technology and the act of playing have patterns of motion that work on multiple scales simultaneously. They span across the level of the networked political economy of games, to ideological questions of the theory and practice of peace operations, but also rippling all the way down to the immediate gaming encounter and the very make-up of the gaming software. As such, they turn into a complex phenomenon composed of heterogeneous force fields. By implication this means that gaming resonates between and across scales, thereby affecting stable systems of experience, politics and economics. The task is to analyse the politics in games as something that jumps material and temporal scales, but also to include levels of analysis that have had very little sway in the study of technology in IR so

¹ Bruno Latour, "Reflections on Etienne Souriau's Les Differents Modes D'existence," in *The Speculative Turn*, eds. Levi Bryant, Nick Srnicek, & Graham Harman. (Melbourne: re.press, 2011), 315.

² "Sons of Anarchy," *HBO*, Season Five, Episode 1, aired 11 September 2012, television broadcast

³ Erin Manning & Brian Massumi, Series Forward to *Semblance and Event: Activist Philosophy and the Occurrent Arts*, by Brian Massumi (Cambridge, MA & London: MIT Press, 2011).

far, namely the sub-individual all the way down to the sub-atomic. Looking at Human Computer Interaction (HCI) at the sub-individual level, however, upsets the very idea and representation of the body as well as that of technology. Indeed the question concerning games for politics reveals IR's current predicament: analysis is increasingly intruding in on the intimacy, integrity and unity of the sovereign body. This shifts IR discourses on the body from a biopolitical analysis of the body as site of contestation to a speculative materialist analysis of the body *in* contestation, literally turning the body into a problematic matter. In this sense, the appearance of technologies such as gaming on the political horizon generate an entire new set of questions about how techno-politics relate to agency, consciousness, morality, experience, knowledge production, the environment/nature and culture. Within the parameters of the project and in the pursuit of uncovering the production of political novelty through gaming, the chapter will focus on the materiality of the body and technology as well as on the production of a thinking body. Therefore, it will work on two levels: first, dealing with the concrete material of the body and technology; and, second, with the epistemology (noology) for these bodies.⁴

In respect to the subsequent theorization of how body and technology materialize, the argument presented is fourfold. First, the investigation of binaries such as human(body)/technology, natural/artificial and living/non-living will highlight that the boundaries between body and technology as well as their overarching categories of human and non-human, are representational constructs that are out of sync with body-technology matterings. Second, ensuing from this position that a distinction between living body and technology cannot be made, the research argues that the materialization of 'a body' is neither human nor technological, but both, (non)(organic) as it were, that is posthuman. More

⁴ Consequently the latter will be the thesis' 'epistemology' as well.

precisely, bodies are natural and artificial at once with boundaries emerging along intensive differences of temperature, rhythm and speed rather than representational wholes as captured by conscious perception or ambiguous categories of human and non-human. Third, the limits of this body do not correspond to the body of the player in a game because it as well as the emerging subject are much wider in this case, extending to other player bodies and objects within the immediate environment. Fourth, the boundaries of these posthuman bodies are in constant flux, continuously extending and contracting.

Conceiving of a different body destabilizes previous epistemologies based on the thinking human and rational mind. This creates a two-fold problem for the objective of this thesis. Anthropocentric epistemologies cannot address the production of thought or concepts that emerge outside the human sensorium, which leaves the processes of learning during gaming experience and subsequent concept formation that happen within the posthuman unaccounted for. This means that because anthropocentric theories of knowledge place thought and conceptual practice inside the human (triggered by the human's perception and access to the phenomenal world) renders thinking into *recognition*, which thereby prevents conception of innovation and novelty. Therefore, by using concrete experience as a starting point, the chapter will articulate a posthuman noology that offers the possibility of the new. Deleuze's notion of noology is used here (rather than epistemology) because he sets it up against phenomenology, thought that is grounded in consciousness as well as ideology.⁵ This means that noology "does not only study what it might mean for a human subject to think; it also strives to imagine thought carried to its infinite power, beyond the human."⁶ Therefore, in the context of this thesis it is adopted as the study of posthuman thought. As it is used here it also enunciates that it is precisely not an epistemology that subscribes to the initial strict

⁵ Claire Colebrook, "Noology," *The Deleuze Dictionary, Revised Edition*, ed. Adrian Parr (Edinburgh: Edinburgh UP, 2010), 193-4.

⁶ Colebrook, "Noology," 194.

juxtaposition of *technê* to *epistêmê*.⁷ This is because the project is committed to a praxis philosophy that perceives of the formation of thought as a material movement and can never be a “pure theory”, but is always a practice (*technê*) as well. In explaining how the dualism inscribed into anthropocentric epistemologies prevents any form of non-human or posthuman thinking, will first highlight the problem of the subject-object split. In a second step, the analysis will show how Deleuze in his engagement with Kant’s transcendental philosophy develops a thought that does not have to happen within the ‘human mind’. Third, applied to the thematic example of the thesis, the chapter will detail how thought then emerges through the gaming experience in the posthuman. In problematizing the living/non-living binary as represented in HCI debates and the player/gaming technology couplet more specifically, the chapter’s goal is to show that experience, thought and concepts can be theorized for the posthuman as well and that in so doing possibilities of the genuinely new arise. From this position gaming can de-familiarise “habits of thought and representation in order to pave the way for creative alternatives,” (something that will be referred to as deterritorialisation), and allow for a posthuman subjectivity to emerge.⁸ Thereby the chapter seeks to lay the noological groundwork for articulating a posthuman political mode based on pre-subjective, immediate engagement and interaction.

Tracing and Chasing Binaries: Concrete Problems, Intensive Bodies, Indeterminate Boundaries

The treatment of technology especially in IR works on the implicit assumption that technological objects such as weapons, new information and communication technology (ICT) and surveillance technology can be demarcated as material entities. The inherent bias is that technological objects are not only stable entities, but that it is only the human, living

⁷ In a classically Greek philosophical conception as used by Plato and Aristotle for example, *technê* refers to craft, art and practice, whereas *epistêmê* is knowledge and theory.

⁸ Rosi Braidotti, *The Posthuman* (Cambridge: Polity, 2013), 88.

aspect of life that is challenging to interpret because, in contrast to technology, humans think and have minds of their own.⁹ This makes analysis of the social difficult because it is complex, hermeneutic and historical.¹⁰ Furthermore, such a position develops the boundary between the inanimate and the living to posit the thinking against the non-thinking. However, it is the intention to show that this division is not naturally given, calling supposedly stable entities such as objects and humans into question. This is not the first attempt at troubling this binary and boundary, for the relationship between the human and machine has fascinated philosophers, social theorists and scientists for centuries and is an ever prominent question. Indeed, with regard to new technology (NT) such as immersive gaming, the thesis is indebted to the work by Simondon, Latour, Donna Haraway and Don Ihde among many others.¹¹

The problem presented by HCI is a “double bind.”¹² As the example of gaming highlights, on the one hand we are diversely technological; yet, on the other hand, precisely such technologies have become somewhat of a problem-fetish.¹³ As reflected in the techno-determinist debates, technological adaptation and mediations are highly problematic. There are, however, several problems with how the human-technology relation is discussed in IR. First of all, the debates are symptomatic of an understanding of technology that is electronic or digital, almost equating technology with higher technology. This is an analytically dangerous assumption as it ignores the low-technology dimension and limits analysis of technology-human relations in their complexity. In this sense, pens, scissors, cutlery, tools are technology too and therefore need to be acknowledged in a complex study of technology.

⁹ Bruno Latour, “On Technical Mediation: Philosophy, Sociology, Genealogy,” *Common Knowledge* 3, no. 2 (1994), 41.

¹⁰ Bruno Latour, “Pragmatogonies: A Mythical Account of How Humans and Nonhumans Swap Properties,” in *American Behavioural Scientist* 37, no. 6 (1994): 799.

¹¹ Gilbert Simondon, *On the Mode of Existence of Technical Objects* (Paris: Aubier, 1958); Donna Haraway, *Simians, Cyborgs and Women: The Reinvention of Nature* (New York: Routledge, 1991); Bruno Latour, *Pandora's Hope: Essays on the Reality of Science Studies* (Harvard: Harvard UP, 1999); Don Ihde & Evan Selinger (eds.), *Chasing Technoscience: Matrix for Materiality* (Bloomington, IN: Indiana UP, 2003).

¹² Adrian Mackenzie, *Transductions: Bodies and Machines at Speed* (London: Continuum, 2002), 1.

¹³ Latour, “pragmatogonies,” 793.

Within intellectual traditions of technology, the latter is conceived of as tools that fulfil a function, which makes simple devices such as knives and spears the first technological artifacts. Yet, technological debates are rarely focused on low-tech artifacts, such as hair dryers, coffee machines or cooking stoves, let alone would one attribute them any socio-political relevance. The bias towards more advanced technological assemblages is prominent and with crucial implications. Not only does it reflect a misunderstanding of simple theories of technology, but also the fear of technology threatening the human category in the way that technology is becoming increasingly intelligent. Rather dystopian debates about artificial intelligence and virtual humans, encapsulated by the highly popularized singularity conundrum,¹⁴ insinuate that the theoretical challenge and aversion to ‘machines’ stems from the fear of technology possibly taking on the function that thus far has only been reserved for the ‘human mind’ – that is thinking and learning. Essentially, this is an anthropocentric fear concerned with the human being removed or replaced as the main agent as well as the measure of all things.

In addition, by prioritizing high-technology and the circumstances within which they have recently emerged, these debates are treating the human as the constant and natural, while treating technology as the new addition to the realm of the social. This is what Latour refers to as ‘problem-fetish’ and Daniel McCarthy as ‘the bogeyman’¹⁵ in which the increasing prominence of technology marks a supposedly social disruption as if technology had not existed before. Furthermore, this view leaves out that the human – genetically and as phenomenally perceived – has gone through evolution in a co-implication with, and often

¹⁴ Ray Kurzweil suggests that due to his law of acceleration technological development will be so rapid that it not only outstrips the human ability to understand this, but also replace the human mind altogether. Kurzweil predicts the take-over by artificial intelligence for 2045. Ray Kurzweil, *The Singularity is Near: When Humans Transcend Biology* (London: Duckworth, 2006).

¹⁵ Daniel McCarthy, “Technology and ‘the International’ or : How I Learned to Stop Worrying and Love Determinism,” *Millennium*, 41, no. 1 (2013): 472

only because of, low-technology such as simple tools without which human development would have looked rather different. Therefore, to perceive of technology as something that started changing social, political and economic practices on a large scale with the onset industrial revolution and as characteristic of the twentieth and twenty-first centuries especially, is actually only to focus on a very short time span of the joint development of human and technology or more accurately human-technology. Consequently, the question at stake here is not only concerned about what the human or human subject is, but also what technology is in this co-dependent development.

In order to reconceptualise the human/technological body, the analysis needs to push development in Cyborg Studies further,¹⁶ overcoming its inherent objectification of technology. Cyborg Studies, which consists of subjects such as cybernetics and cyborg anthropology, is a broad area of study that is largely optimistic towards technology, yet it still treats technology as an object. Even though boundaries between human and technology are melting into each other, technology started out as something separate. It is only because of the assumption that technology had started out as something separate that techno-pessimist debates can portray technology as invading or attacking the living human body.¹⁷ This is an assertion that leads many critical thinkers to claim that technology is with(in) us, either as extension to or part of the body, so that technology and the human are fundamentally entwined.¹⁸ Regardless of this being seen as either good or bad, the bottom line is that the exchange between body and technology is frequent with the pacemaker as the most commonly used example. Importantly, glasses are a very low-tech enhancement as well, creating a low-tech cyborg as it were. Whether we are being colonized and invaded or

¹⁶ Donna Haraway, *When Species Meet* (Minnesota: University of Minnesota Press, 2008).

¹⁷ Mackenzie, *Transductions*, 1. At best, these technologies are liberating the body as was outlined in the section on techno-romanticism.

¹⁸ Mackenzie, *Transductions*, 6; 10.

supported and enhanced depends on individual theoretical commitments. However, pushing this further suggests that this invasion/addition is not simply adding a foreign object to the body, but this exchange means that the natural original body does not exist and as such technology dismantles the “ideal interiority” and boundaries of the “body and soul.”¹⁹ This first preliminary step of acknowledging that body-technology are co-dependent and increasingly complementing each other enables the analysis to treat bodies (‘human’ and ‘technological’) as sites of complication, encounters and collective processes that turn the perceived human body, the human category, into an historical and technical entity.

However, in contrast to cyborg arguments, the body is not seen as a natural, purely organic entity that is pre-given by nature/genes and bound by flesh and blood. Therefore, the disagreement is over the human as an autonomous sovereign body, whose boundaries have been genetically determined during production, then established by birth only to be altered by technology later. Instead, the body is seen as a flexible entity that contracts and expands its boundaries, but not by ways of letting technology in or out. Instead of the fleshy representation that we call human, the limits to the body are not the skin, but are drawn along differences of temperature, speed/motion and rhythm. This is in fundamental disagreement with the idea of the ‘human’ that possesses a mind and stable matter and mattered boundaries. Instead it is turned into an open organism that consist of organic technology.²⁰ In the context of the thesis question that traces the emergence of the new in explorative posthuman politics through technologies of lived abstraction, this proposed alternative view of a body has tremendous impact on how to analyse technological experience in the first place. However,

¹⁹ Jacques Derrida, “The Rhetoric of Drugs,” in *High Culture: Reflections on Addiction and Modernity*, eds. Anna Alexander & Mark Robert (New York: State University of New York, 2003), 33.

²⁰ See also Luciana Parisi & Tiziana Terranova, “Heat-Death: Emergence and Control in Genetic Engineering and Artificial Life,” in *CTheory*, 5 (2000), accessed: <http://www.ctheory.net/articles.aspx?id=127>.

such theorization has to develop through several stages in order to get to this posthuman body.

Technology ≠ Technicity: Fracturing Technology

Retracing how technology exists is central to starting to dismantle the human and develop the posthuman as well as to understand technology's share in the constitution of the Humanist idea of the 'human' and human collectives.²¹ In *Du Mode d'existence des objets techniques* (the mode of existence of technical objects), Simondon introduces the notion of *technicity* in order to show the indeterminacy associated with technology and that it neither belongs to only the human nor to technological dynamics. According to Simondon, technicity "means that humans realized that there are different ways of reaching purposes through artifacts."²² Crucially this binds technicity to function and ensures that it can be distinguished between different functions and, thus, degrees of technicity. Using Adrian Mackenzie's low-tech example of a Toledo steel blade and a more mechanic steam engine, these are both artifacts with different functions and technicity.²³ Similarly, contrasting military political games with those educational games for civil society or those for political leadership, it is the technicity that distinguishes them from each other. Importantly then, 'natural' objects, as for example organs, do have functions as well, to which Simondon refers as 'originary technicity'.²⁴ Further, these functions are all too often artificially, externally influenced. While originary technicity serves to open up the concept of the human(subject) by turning organs into technical objects, technicity opens up the technical artifact. This implies an important shift in the perspective on technology: first, it is not too focused on technical objects as such, but

²¹ Mackenzie, *Transductions*, 11.

²² Marc de Vries, "Gilbert Simondon and the Dual Nature of Technical Artifacts," in *Techné: Research in Philosophy and Technology* 12, no. 1 (2008), accessed <http://scholar.lib.vt.edu/ejournals/SPT/v12n1/devries.html>.

²³ Mackenzie, *Transductions*, "Introduction" and "Radical Contingency and the Materializations of Technology."

²⁴ de Vries, "Gilbert Simondon and the Dual Nature of Technical Artifacts."

pays attention to the overall operations they enable; second, it highlights the processes that break open the categories of the technical object and human, allowing exchange between them and to further undo the boundary between them.

Highlighting human-technological collectives in this way allows suggesting different modes of existence of technical objects and that these are objects-as-processes.²⁵ This diverges from that which normally stabilizes the innate technical object. Therefore, technicity diffracts and disaggregates technical objects into a “network of references or relays” that includes other elements, gestures, practices and institutions so that “technicity cannot be contained in a single object.”²⁶ Drawing on the simple example of the technicity of the low-tech Toledo steel blade, this only comes into existence due to the combination of various processes and elements that are non-technical, even organic, as for example the finer-grained composition of Toledo’s local choral, the chemical make-up of the water, as well as the forging techniques used.²⁷ Thus, even simple technical elements such as knives or a stone hand-axe only exist due to organic matter organization. Likewise, the make-up of gaming technology can be broken down into the diverse materials that come to assemble it. Usually, analysis focusses on software, but dissecting its materiality reveals the natural components of high-technology that consist of organic and inorganic matter, such as lead, copper, gold, but also, tin, aluminium, various types of plastic, as well as organic toxins such as polychlorinated biphenyls, polychlorinated dibenzodioxins and radioactive isotopes that literally make technology energetic. In short, many assembling parts of technology are occurring in what is classically conceived of as nature. In view of the practices and institution that Simondon highlights, fragmentation can go even further, so that games only emerge in a networked effort of gaming industry, social and cognitive scientists, military experts and political

²⁵ Originally “object-as-process,” de Vries, “Gilbert Simondon and the Dual Nature of Technical Artifacts.”

²⁶ Mackenzie, *Transductions*, 15; Simondon quoted in Mackenzie, 14.

²⁷ *Ibid*, 13.

advisors. That is to argue that gaming technology consists to a large extent of brain power and human labour: a traditional understanding of the human. Through this, Simondon seeks to show that rather than separate entities, humans and technology are collectives, a move which, in the present context, is used to further upset the rigid boundaries between nature, human, and supposedly innate technological objects. Highlighting the collective site of technology as well as its natural aspects means that technology exists not only in a technological mode, but also in a living one. Simondon goes as far as to argue that technical objects exist genetically.²⁸ Indeed, the elaborative process of game development – seen as a complex mattering of different substances – shows the tension between living and non-living processes. Thus, technology cannot be seen as the reduction of the living to the non-living or vice versa. Instead, it suggests the “co-implication of the living in the non-living,” or the human in the technical.²⁹ For Simondon, technical ensembles bring human and technical bodies together, by opening up both of them into far-reaching technological processes. Ultimately, there is no purely nonorganic, non-living, technical artifact or element and technicity exists precisely in the linkage between non-living and living.

The Chicken or the Egg...the Human or Technology?

The biological human and the scientific nonhuman cannot be taken for granted. Echoing Latour’s analysis in “pragmatogonies,” previous claims culminate in the argument that there is no plausible way to differentiate between gaming technology and gamers or in abstract terms between the living and the non-living.³⁰ The starting point is the post-structuralist argument of techniques and technology being social because they are socially constructed. Importantly, this is not a mere discursive and rhetorical phenomenon, but the development of

²⁸ Ibid, 19.

²⁹ Ibid, 193.

³⁰ Note that Latour only goes as far as to include the “collective body, an artifact and a subject,” which means that he leaves the biological body (supposedly confined by organs and skin) untouched. Latour, “pragmatogonies,” 793

the human category is heavily influenced by the development of simple technology throughout history and there is neither a social nor biological human without the non-human, techniques and technology and vice versa.³¹ For example, the living frequently surfaces in the definition of matter and the non-living is scattered across definitions of the human subject.³² In the case of gaming this leads to suggest here that the playing body has human and non-human attributes, but is different from the cyborg argument where this has been a recent development because technology is implanted into the body or extending it. Instead, the human/non-human entwinement is an interdependent evolutionary practice in so far as “there are no two parallel histories”³³ with regard to technological development and that of the human category. But the latter only developed in certain ways due to social skills and properties that had been enabled by techniques and technology in the first place, which in turn were reimported back into technology to perform more advanced functions. As the development of digital skills in the history of HCI shows, human abilities had to develop in order for the technology to advance as well so that the one is always implied in the other, questioning where the boundary between human and nonhuman then really lies. In other words, it is not a case of alternating between the human and the nonhuman object because the body is in large part not human as such but a “sociotechnical negotiation and artifact.”³⁴ In short, it is only because humans and non-humans swapped and still swap properties that both exist and even develop.

This (re)importation and swapping of properties suggests then that the usual subject-object division is artificial and mainly functioning heuristically. Philosophy of technology, including the work of this project, does not need to stick with “the boring alternation between *two*

³¹ Latour, “On Technical Mediation,” 41.

³² Latour, “pragmatogonies,” 801.

³³ Ibid, 804.

³⁴ Ibid, 806.

different substances, one made of matter and the other of subjects and symbols.”³⁵ Indeed, analysis can only advance if it goes beyond this by conceiving humans, especially bodies in general, as being of the same substance living and non-living matter. In the way that Simondon’s argument suggests that technology needs to be treated as a partly living materialization, so does the human as a non-living, technological one. In the case of gaming this suggests that the players are not cyborgs who are enhanced during play through the technology that they are experiencing in the moment, but that they come into the game as technological beings already. Braidotti refers to this as “becoming-machine” in order to undo the dualist frame and to highlight that humans merge with their “technologically mediated planetary environment.”³⁶ As Latour’s work suggests, this has always been the case, so that for the present analysis it is fitting to argue that evolution has always been a process of becoming-technology and becoming-human that together form an eco-sophical unit, which is the posthuman.³⁷

What’s the Matter? Leaky Bodies and Technology that Matters

The demarcation of the human from technology and vice versa into a mere categorizing, discursive practice is an important issue as no clear material distinction can be drawn. Further, due to this margin of indeterminacy it is imperative to approach the posthuman by problematizing matter itself. While recent political philosophy and social theory has initiated the discussion of mattered bodies already, it has so far shied away from the body-matter that is technology; hence, these discussions can be pushed much further.³⁸ Importantly, this is not

³⁵ Ibid, 805, own emphasis.

³⁶ Braidotti, *The Posthuman*, 92.

³⁷ Latour, “pragmatogonies,” “On Technical Mediation.”

³⁸ Discussions interested in the materiality of the body still treat the body as a human body and are thus interested in human matter only; this comes out in discussions of the Vitalist bias in IR that research into the ontologies of dead bodies where even though it is a non-living body, the scope of the latter is still tied to the human body, as seen see for example Jessica Auchter, *The Politics of Haunting and Memory in International Relations* (London & New York: Routledge, 2014);

a reductionist argument, but the intention is to highlight the vital aspect of matter and that this vitality is equally present in the matter that makes up the category of technology. Existing debates can be roughly divided into two approaches that split over the aspect of matter as formed by discourse and matter as the molecular substance. One approach is most prominently articulated in the work of Judith Butler, focussing on the socio-historic dimensions of matter and bodies, and the other in DeLanda's writings,³⁹ with a focus on (but not limited to) molecular biology (often referred to as biophilosophy)⁴⁰.

Given that Butler's analysis works on the discursive level to understand 'human' bodies as products of power and, therefore, does not share the focus of this project, it still helps to show how bodies (human or technological category) as matter are made to act or perform.⁴¹ Her argument that power "stabilizes over time to produce the effect of boundary, fixity and surface" of the body ties into the previous argument of becoming-technology, which suggested that the limits of human and technology as perceived in Humanist traditions are only sediment and steadied effects of discursive processes rather than actually having mattered in this way.⁴² Therefore, the category of technology and the human are actually only ensembles of effects that are intrinsically linked to the demarcation of the boundaries between the social, human, natural on the one hand and the artificial, constructed and non-living on the other. This allows making the claim that what qualifies as body matter is not pre-given and that the supposedly passive and natural matter is itself only a socio-material product of power that stabilizes in form of a human body or technological object.⁴³

³⁹ Judith Butler, *Bodies that Matter*; Manuel DeLanda, *Nonorganic Life*

⁴⁰ See for example Eugene Thacker, "Biophilosophy for the 21st Century," in *CTheory* (2005) accessed <http://www.ctheory.net/articles.aspx?id=472>

⁴¹ Judith Butler, *Bodies That Matter: On the Discursive Limits of Sex* (London: Routledge, 1993).

⁴² Butler, *Bodies That Matter*, 9.

⁴³ *Ibid*, 4; 9.

Even though Butler's account is significant in undoing the givenness and neutrality of supposedly stable matter in the form of bodies and objects, it cannot be fully adopted as it focusses primarily on the human category and does not question what materiality means in relation to technical practices. Furthermore, matter's stabilization is still perceived as a primarily discursive process, leaving out actual biological, physical or chemical movements. The assertion that matter turns into solid bodies with fixed boundaries once it has stabilized prevents any investigation into how bodies are actually in flux, which it is argued is especially the case during gaming experiences. In other words, even though for Butler matter is dynamic, this dynamism is only the product of "cultural form imposed on the body,"⁴⁴ so that her account is still subject to a kind of Hylomorphism, or as Pheng Cheah describes it, "hyperthropic productivity" of a politicized and historicised idea of form.⁴⁵ Effectively, Butler "reproduces the distinction, if not opposition between matter and form, nature and culture."⁴⁶ Therefore, a strict Butlerian approach to body-matter precludes thinking of matter and body beyond the human. However, incorporating Butler's claims into the thesis' speculative materialist view, which is to conceive it outside hylomorphic terms by arguing that bodies can change without their perceived form having to change too, means that matter and form are not co-dependent: It is in this way that the analysis can move forward by arguing that boundaries of new bodies can emerge in other places. Moreover, it suggests that this does not have to happen along binaries of living and non-living. The push to non-hylomorphic posthumans is confirmed by Gayatri Chakravorty Spivak who argues that "if one really thinks of the body as such, there is no possible outline of the body as such."⁴⁷ In short, a body is not limited to fleshy representations.

⁴⁴ Patricia Ticineto Clough, 2007. "Introduction," in *The Affective Turn: Theorizing the Social*, eds. Patricia Ticineto Clough & Jean Halley (Durham & London: Duke UP, 2007), 1-33.

⁴⁵ Pheng Cheah, 1996. "Mattering," in *Diacritics* 26 (1996), 108-39.

⁴⁶ Ticineto Clough, "Introduction," 8.

⁴⁷ Gayatri Chakravorty Spivak & Ellen Rooney. "In a Word," in *The Essential Difference*, eds. Naomi Schor & Elizabeth Weed (Bloomington: Indiana UP, 1994), 177.

The shift away from the hylomorphic human body is a crucial post-anthropocentric move that allows redrawing the human-technology unit as an open organism. Perceiving, treating and portraying matter as just passive and innate is an anthropocentric agenda. This is problematic in so far as it is a neutralization that serves to stabilize the Humanist ideas of and to perpetuate an artificial symmetry between humans and nonhumans.⁴⁸ However, that organisms were made into human subjects serves mostly as a representational purpose that seeks the perception of the body as a whole, making it a closed system, even though it depends on energy from the outside. Ironically this only draws the body back into its environment as Ticieto Clough correctly highlights.⁴⁹ Luciana Parisi and Tiziana Terranova affirm that “the fluids which were circulating outside and between bodies, are folded onto themselves in order to be channelled within the solid walls of the organism/self/subject.”⁵⁰ Arguably, containing the human category within one body serves the purpose of keeping it complete and whole, thereby at the centre of the anthropocene and at the top of the hierarchy of being. Diffusing the human into its environment would imply diffusing and diluting the homo sapiens’ dominance over other species. This is also an important step up (or rather below the human) from the type of argument Simondon and Latour put forward, that disassembles either technology or the human into far-reaching, relayed networks. Instead of Latour’s hybrid of human-artifact, the human body ecologically and physiologically blends with technology and environment or, more accurately, was never different from it to begin with. Instead of just working on a socio-historical level, the argument moves to material grounds and from open, wide networks to that of open organisms.⁵¹

⁴⁸ Latour, “pragmatogonies,” 791; For more detail on this forced symmetry see Bruno Latour, 1987. *Science in Action: How to Follow Scientist and Engineers through Society*. (Cambridge, MA: Harvard UP, 1987).

⁴⁹ Ticieto Clough, “Introduction;” See also Parisi & Terranova, “Heat-Death.”

⁵⁰ Parisi & Terranova, “Heat-Death.”

⁵¹ Ibid.

Open Organisms, Dissipative Structures and Self-Organisation

A close focus on the materiality of a body reveals that the conception of the human as an individual organism is untenable. Despite scientific advances in the last century that call to update old universal laws of physics, the machinic model of closed systems is still prominent and the ultimate reference point in the sciences as well as social sciences and economics. The machinic paradigm, also often referred to as machinic materialism, hinges upon closed systems that can be controlled to seek “stability, order, uniformity, and equilibrium.”⁵² The ‘human body’ or technology as contained object is just another instance of this machinic world view. While it is not to argue that all systems are open – some indeed are closed, especially subsystems – a theory of change, in the present case with a particular interest in novelty, needs to turn to opens systems that exchange energy and matter (and thereby information). In short, a machinic worldview cannot account for radical social, biological or physical change (just to mentioned a few areas).⁵³ Thus, entities that are perceived as technology or human bodies are actually fluctuating subsystems that are subject to influx or outflow at any point. Some of the fluctuations can be minor, while others can cause significant reorganization of a body, which in turn can have powerful feedback loops with a direction of change that cannot be predicted and neither can its magnitude – “a process set up anywhere reverberates everywhere.”⁵⁴ At this “singular moment” large systems (like a local or regional ecosystem) and small systems (like a technological body) can either disintegrate into chaos or change in structure and organize in higher, more complex levels. Nobel laureate Ilya Prigogine, member of the Brussels School that is leading the change in the science discourse, refers to this as physical and chemical “dissipative structure.”⁵⁵ Dissipative is simply because larger organizational levels require more energy so that small bacterial

⁵² Alvin Toffler, Foreword: Science and Change to *Order Out of Chaos: Man’s New Dialogue with Nature*, by Ilya Prigogine & Isabelle Stengers, (New York: Bantam Books, 1984), xiv.

⁵³ Toffler, Foreword, xv.

⁵⁴ Manning & Massumi, *Semblance and Event*, Foreward.

⁵⁵ Toffler, Foreword, xv.

organization does not need as much when found in yoghurt as those large systems that spread across, above and beyond the category of a ‘human’ body or even ecosphere. Importantly, within these transitions of change, the new ordering is self-organizing and spontaneous, which is absolutely fundamental in order to be able to account for novelty not as pre-conceived order that is merely imposed onto new systems. Such threshold points are not only crucial for novelty, but they are also more frequent than it is acknowledged. The example of how temperature can trigger change is telling on a small and large scale. Heat can move steadily through a liquid and with an increase in temperature it can in an instance reorganize its millions of molecules.⁵⁶ For example, this happens with honeycomb; bees themselves only shape round cells and it is only when enough bees are present in the hive, thereby raising its internal temperature to 45 °C, that the cells turn into hexagonal ones.⁵⁷ Significantly, these trigger mechanism can happen on any level; scaled up, then what seems a small change in the global temperature of only 0.85°C from 1880 to 2012 has far-reaching, devastating effects ecologically, politically and economically, for example.⁵⁸ The point is not only that order can collapse into chaos and vice versa, but also that changes are never contained, neither in a small open organism neither a large one. Alvin Toffler example captures the spiralling impact of open systems can have on the social and the political:

Imagine a primitive tribe. If its birthrate and death rate are equal, the size of the population remains stable. Assuming adequate food and other resources, the tribe forms part of a local system in ecological equilibrium. Now increase the birthrate. A few additional births (without an equivalent number of deaths) might have little effect. The system may move to a near-equilibrial state.

⁵⁶ Tibi Puiu, “Fluid Dynamics Shapes Beautiful Hexagon Honeycombs,” *ZME Science*, Aug 30, 2013, accessed Aug 01, 2014, <http://www.zmescience.com/science/physics/fluid-dynamics-shapes-beautiful-hexagon-honeycombs-not-the-bees-themselves/#!bpF6at>.

⁵⁷ Ibid.

⁵⁸ University Corporation for Atmospheric Research, accessed August 01, 2014, <https://www2.ucar.edu/climate/faq/how-much-has-global-temperature-risen-last-100-years>

Nothing much happens. It takes a big jolt to produce big consequences in systems that are in equilibria [or near-equilibria] states. But if the birthrate should suddenly soar, the system is pushed into a far-from-equilibrium condition, and here nonlinear relationships prevail. In this state, systems do strange things. They become inordinately sensitive to external influences. Small inputs yield huge, startling effects. The entire system may reorganize itself in ways that strike us as bizarre.⁵⁹

Crucially, these bizarre changes can happen in any organismic system regardless of size and the effects can ripple a long way. Spontaneous and dramatic reorganization of matter therefore needs to be taken seriously as a political force, especially when dimensions and modalities increase. The digital mode is a very dominant factor in upsetting systems' equilibria because the sheer amount of possibilities encoded into software increases the number and variety of possible structures. Changes can also be linked up together, between the supposedly 'innate' technology and 'living' humans, as recent decades of molecular biology have found that enzymatic reactions (by inorganic enzymes to be precise) not only happen in inorganic matter as well, but do so relatively frequently.⁶⁰ Researchers discovered that auto-catalysis (what computer scientist call a positive feedback loop that produces more of the same cells) happens along with inhibitory/negative feedback loops and highly complex cross-catalytic processes that affect significant qualitative change in matter behaviour and organization.⁶¹ This has tremendous impact in the way that, first, change is not contained within one type of organism, but theoretically can mutate across different substances which means that change can go 'viral', especially in ontologically probabilistic microstates and entropic dissipative structures. Second, the catalysis of inorganic enzymes

⁵⁹ Toffler, "Foreword," xvi.

⁶⁰ Ibid, xvii.

⁶¹ Ibid.

propels the possibility of change. The essential statement is then that the posthuman condition and closed organism is a contraction in terms. Therefore, the posthuman no longer conforms to the tissue bound human representation or phenomenon of the human subject, but is a multi-substance organism that “is open to particles, waves and attractors.”⁶² As such, the body is neither neutral nor with pre-given forms, but instead it is in a constant process of becoming that is made up of all types of matter with boundaries that are neither fixed nor clear-cut.⁶³ Furthermore, even solid and static bodies can be or become unstable and change, due to being open to exchange with other entities on a socio-historical (Latour’s hybrid), material (Simondon’s technicity) and molecular (Prigogine & Stegner’s dissipative and complex systems) level. Thus, the interphase between human category and technology that fundamentally frames the study of HCI is largely constructed.⁶⁴

The phenomenon of technology and the human body is instead a case of matter that is moving in different accords, implicated in constant becoming and in a much wider post-biological evolution. Key to understanding the posthuman politically requires a focus on materiality: to take the molecular, atomic and subatomic level into account in order to not only show that it is an open organism, but also to show the consequences of entropy and change that matter implies. These examples not only suggest, but also demonstrate that these behaviours are numerous. Support for this is coming from all areas of the sciences. Advances in chemical engineering, for example, demonstrate the self-organising qualities of fluid crystal (many of which make up proteins and cell membranes, but also soap for example). So does R&D in thermodynamics, as seen in matter rearranging itself or melting with/separating from other substances due to changes in temperature and acoustic physics as

⁶² Parisi & Terranova, “Heat-Death.”

⁶³ Ticieto Clough, “Introduction,” 12.

⁶⁴ McKenzie, *Transduction*, 45.

the self-organisation of substances due to frequencies and resonance.⁶⁵ The argument, however, is not that of comparison, analogy or metaphor because it is not a case of the posthuman behaving *like* matter. In contrast, it is matter that is implicated in pre-subjective and pre-conscious forms of agency, material conditions and their changes that are significant in behaviour, patterns and habits. More specifically, matter only designates different kinds of intensities captured by various chemical bonds that make up a substance. The atoms entering into molecular bonds do come with different energy levels and therefore behavioural patterns. Varying intensities are extremely important, however, as these are pre-individual capacity and affectivity. Affect, as the capacity to act or be acted upon, is transferred through molecular changes. Due to organisms being open these possibilities to act or be acted can circulate between what are conceived of as closed entities of the human or objects. This is part of the reason why agency is diffused and leads the latest research in neurosciences to suggest that if there is a phenomenon like the mind, then it has to be extended, spreading across the human and object category alike.⁶⁶ In essence, fluctuating intensities that imply shifting centres of affect carry the mind and ultimately consciousness across phenomenological boundaries. However, this deeply troubles important notions of political subjectivity and agency, and also moral and ethical behaviour. Given the impact of research and scientific development in the last decades and century for that matter, questions about the pillars that make up political philosophy need to be brought up to speed with such developments, with a renewed focus on material politics. Reconceptualising the body and technology into open systems that can form one posthuman body is an initial step that will help articulating a new political agency that sits easily within the scientific revolutions underway in the twentieth and twenty-first centuries.

⁶⁵ See for example, Chladni Plate Theory where sand assembles itself into symmetrical patterns along invisible nodal points due to vibrational frequencies. Saint Mary's University: Astronomy & Physics Demonstrations, accessed on August 03, 2014, http://www.ap.smu.ca/demos/index.php?option=com_content&view=article&id=157:chladni-patterns&catid=48:wavedemo.

⁶⁶ Andy Clark & David J. Chalmers, "The Extended Mind," *Analysis* 58 (1998): 10-23.

From Matter to Mind? Mattered Thought and Thinking Matter

The resonance of a posthuman condition will also drive the study of technology forward and into new directions, in and outside IR. Within debates on the posthuman world of becoming, open complex systems theory and principles of self-organization are increasingly being integrated into IR literature that investigates complex material resonances in the realm of the political.⁶⁷ However, the role of the political posthuman body and subject is still missing, which is a direct challenge and obstacle to the analysis of political games. This is because even though the focus on open systems and organisms is crucial, it only marginally touches upon the human category and condition. While neurosciences and philosophy are already working in tandem over questions of the extended mind⁶⁸ – which is essentially a posthuman concern and a claim that is strongly supported by a theory of open organisms – the struggle still seems to be about how the body comes into the equation. With regards to extended cognition, academic doubts have led to statements like this: “Although I realise that analogies can sometimes be misleading (although seductive) if pushed too far, I cannot help but think about the question of the body and what constitutes it.”⁶⁹ This is precisely what is at stake here and the missing piece in the puzzle. However, when combined with the open posthuman body, there is no reason that thought needs to correlate with the phenomenal human body and, thus, cognition can spread with affect across membranes and mineral surfaces. What is more, the open posthuman would actually greatly enhance current research in and theories of embodied, embedded, enacted, extended and affective cognition (4EA).

⁶⁷ See for example Jairus Grove, “Must We Persist to Continue? Critical Responsiveness Beyond the Limits of the Human Species,” *Democracy and Pluralism*, ed. Allen Finlayson (London: Routledge, 2009); Audra Mitchell, “Only Human: A Worldly Approach to Security,” *Security Dialogue* 45, no. 1 (2014)

⁶⁸ Often referred to as panpsychism in philosophy.

⁶⁹ “4EA”, *A Body's In Trouble* (blog), April 5, 2011, accessed August 05, 2014, <http://abodysintrouble.wordpress.com/2011/04/05/4ea/>.

A posthuman understanding of 4EA is crucial in order to analyse the immersive gaming experience given the high degree of embodiment, embeddedness, enactment and affect of immersive games. The open organisms of gaming technology, participants and the gaming environment can form a posthuman unit during the game with affect travelling across these previously individual bodies, to form one gaming entity with an equilibrium of intensities at its centre. Affect does not always have to travel across boundaries and intensities do not necessarily have to stabilize to form a temporary coherent unit. Nonetheless, provided that the gaming experience is successful in generating a movement that beats at the same rhythm, or acts at the same speed or rests at the same temperature, for example, then 4EA cognition is a very interesting, hugely complex question. To quickly explain what these terms refer to using the example of gaming, then “embodied” is the attention on the lived experience and lived body of the gamer, but also means that this type of gaming experience is “partly made up of extra-neural bodily structures and processes” of the player.⁷⁰ In the case of gaming, this refers to the game’s software. “Embedded” is somewhat similar in the way that his/her neural system is nested within an organized body and environment, referring to the wider analogue as well as digital gaming environment and set-up. Therefore, the behaviour of the gaming body cannot be analysed independently of the physical and social environment. Equally important for gaming is “enactment” so that cognition is closely tied to the acting and the moving body. This is crucial in the way that it disagrees with a model of cognition and action-control of *sensing-modelling-planning-acting*, but already locates all of these steps into (matter) movement itself. “Extended”, a very prominent attribute in gaming, treats cognition as a wider system that parts of the ‘mind’ in the form of data and information are placed or stored in the environment and are constantly recruited from these extended locations for action and cognition. This is not only because the game comes with encoded

⁷⁰ “4EA”

cognitive data, but also because data can be added, changed and stored throughout the game as well. Another case in point are the low- and high-tech props in games that are dispersed throughout the room and are therefore part of the game-setting and environment, indeed the gaming hardware and software are whole extended cognitive systems in this sense. “Affective” is slightly more ambivalent as it classically refers to Antonio Damasio’s critique on Descartes who argues that feelings are more fundamental in understanding human behaviour than logical thought. In the ensuing research from this initial claim neuroscience has specifically focused on measuring and analysing the brain’s responses to affective triggers.⁷¹ Yet, given that affect, as ability to act or be acted upon, was established as a more-than-human phenomenon, the focus differs from that of neuropsychology and its primacy on the brain’s activity. With regard to cognition, affect is actually the least interesting as it is the most anthropocentric one, when it comes to the production of pre-subjective, pre-individual and posthuman thought, the 3Es are of much greater consequence. The specific development of a theory of posthuman thought will be discussed at length in the second part of this chapter, but its materiality as well as the implication of the open posthuman in respect to the 3E ‘mind’ need to be addressed first. The materiality of the posthuman mind as it were precedes an analysis of the posthuman experience.

Theories of 4EA cannot be readily integrated into the analysis of the posthuman. In view that commonplace notions of the mind behold that even if extended, it is unique to one human being, which is therefore incompatible with the posthuman condition. This becomes increasingly apparent with recent scientific progress, especially in quantum physics. Not only locatable in the human, but even inside the head, the mind is believed to be without a material existence as such. Despite the fact that theorists point out where it resides, it is nonetheless

⁷¹ Rebecca Elliott, Roland Zahn, J.F. William Deakin & Ian M Anderson, “Affective Cognition and its Disruption in Mood Disorders,” *Neuropsychopharmacology* 36 (2011): 153.

assumed that it does not even occupy any space, whereas matter does. Notably since Descartes, Western philosophy starts its analysis of the theory of mind from this perspective.⁷² This alone has caused numerous debates in neurosciences and philosophy respectively. This assumption is problematic for the present analysis because it shares, perpetuates and enforces the mind/body dualism. The mind versus brain (matter) conundrum sparks frequent discussions about whether and how the mind/brain influences processes of attention, memory, sense-making, learning, judgement and evaluations and reasoning. There is even a designated neurophilosophy (or philosophy of neuroscience) dedicated to the study of such issues. Debates started to increase significantly, however, when quantum physics unmasked that theories of mind are based on Newtonian physics that “in essence ultimately reduces everything to a mechanism of some kind.”⁷³ Put simply, it showed that our understanding of the world (regardless of natural or social sciences) and personal beliefs are assumptions that only make sense in Newtonian cosmologies. Furthermore, the discovery that all material systems have the property of the wave-particle duality is in absolute contradiction to the Newtonian view that holds that “each system has its own nature independently of context” so that matter either behaves like a wave or a particle.⁷⁴ Although this insight may seem unrelated to questions of the mind and matter, it triggered research that suggests that these new-found properties of electronic fields also contain active information that behaves like “the activity of information in our ordinary subjective experience.”⁷⁵ This fundamentally troubles the mind/matter dualism, but still supports the extended cognition theory. In respect to studying pre-subjective, preconscious forms of politics that emerge through gaming and that are conceived from a post-Newtonian position, these are important issues to take on board. Political gaming would be futile if it were not for cognitive processes and material

⁷² Lili Alanen, *Descartes's Concept of Mind* (Harvard: Harvard UP, 2003), 56-58.

⁷³ David Bohm, “A New Theory of the Relationship of Mind and Matter,” *Philosophical Psychology* 3 no. 2 (1990), 272.

⁷⁴ *Ibid*, 274.

⁷⁵ *Ibid*, 271.

technosciences that allow taking the possibility of extended cognition seriously. However, the condition of the posthuman as so far outlined and with the persistence on the vital and material aspect of all substances, takes cognition out of the anthropocentric frame of reference that adheres to the mind/matter dualism.

Posthuman thought as it occurs during gaming lies outside the phenomenal human mind and thereby dismisses the implicit argument that mind activity not only has to be human, but also immaterial without mass, matter and space. This rests on a twofold argument that first suggests that if there is a happening, there is matter, for even intensities consist of at least (strings of) energy, if not forces in their most 'minimal' form. Second, thought does not equal human because even matter outside the category of the human can be thinking. According to basic quantum theory, matter behaviour is characteristic off "wholeness, non-locality, and organization of movement through common pools of information."⁷⁶ Whereas wholeness describes the possibility of an electron to relate with distant features in its environment⁷⁷, non-locality is the possibility of particles that even though very far away from each other on a macroscopic scale "appear to be able, in some sense, to affect each other, even though there is no known means by which they could be connected."⁷⁸ This is absolutely crucial, not only for the extensions of cognition, but also because it provides a reason why organisms such as player bodies, technology and environment can (re)connect. Therefore, the new property of non-local affective relations based on force not only frees thought from the human category, but also makes it stubbornly material.⁷⁹ As such it can travel affectively across material boundaries. It suggests that electric signals shooting through the nervous system are not only

⁷⁶ Ibid, 281.

⁷⁷ Ibid, 280, this is because particles can affect each other even at large distance because of the strength of quantum potential.

⁷⁸ Ibid, 274.

⁷⁹ This is not the same as to argue that there is never nothingness, but only that if there are mind-like happenings then there is also material.

the “elementary particles of thought,”⁸⁰ but that this electricity is not just contained within the brain and can travel on ‘non-human’ circuits and across the skin and other entities (such as a computer or other technology). This again is due to the idea of wholeness. Quantum theories of matter argue that there are particle systems in which particles belong to a pool of information as a whole rather than depending on each other in pre-assigned relations. This allows for creative movement of matter.⁸¹ More precisely, the pool of active information allows for “rudimentary mind-like behaviour of matter.”⁸² Information is not only content, but it is chemical, physical, biological and neurological. It is matter, so that thought is *in* matter too. Importantly, this is not a reductionist claim that wants to do away with thought and cognition by saying that the mind is simply matter and therefore unproblematic and quantifiable. The subtle difference lies in arguing that due to quantum potential even electrons have “rudimentary mental poles,” or a thinking capacity of active *information*.⁸³ Importantly, this provides a way of thinking that neither separates it from the physical aspect of reality nor from the material substance itself. Therefore, in the same way that bodies are not contained within a human body or objects, so thought is not contained within the human (brain), but its information potential is present in every electron. Given that thought is closely tied to information with a gradient that rises and ebbs, it is mobile and not stuck in the human brain, so that if thought is (in)forming or formed it can spread.⁸⁴

⁸⁰ Manuel DeLanda, “Nonorganic Life,” in *Zone 6: Incorporations*, eds. Jonathan Crary & Sanford Kwinter (New York: Urzone, 1992), 131-133; John Briggs & David Peat, *Turbulent Mirror* (New York: Harper and Row, 1989), 123.

⁸¹ For example, normally electrons move in random ways due to irregularities in substances, which means that there is resistance to electric circuits depending on the substance they travel in impacting on how they can be transmitted onto other substances. However, due to the shared pool of information, in cases of temperature change for example electrons can actually start to “move together in an organized way, and can therefore go around such obstacles and irregularities to re-form their pattern of orderly movement together”. Bohm, “A New Theory,” 281.

⁸² “[F]or an essential quality of mind is just the activity of form, rather than of substance”; “rudimentary mind-like quality is present even at the level of particle physics, and that as we go to subtler levels, this mind-like quality becomes stronger and more developed,” *ibid*, 281; 283.

⁸³ *Ibid*, 285.

⁸⁴ Perhaps can even be considered as contagious.

Therefore, the posthuman is not only open and mobile, but because it is material it is also informational and information is the key to leaving the body(matter)/mind dichotomy behind. To speak of embodied information is nothing new in areas of cognitive sciences or the social sciences like IR. However, analyses are still framed within the anthropocene and further within the Cartesian dualism of mind and matter. The common academic practice of separating the two, however, is contradictory as it ironically locates embodied information in a disembodied mind. Although it is tempting to internalize thinking even in the form of embodied information, informational flow does not have to be contained and can emerge everywhere (without always having to be visible or representable however).⁸⁵ Thinking of embodied information in anthropocentric Cartesianism vitiates its potential to analyse NT like information systems, artificial intelligence and especially gaming. This is because it is blind to the embodied, enactive and vital nature of thought outside of the human and cannot ask how the (post)human can materialize as information everywhere, how thinking matters through electronic circuits and gaming software. The dichotomized analysis of body(material)/mind forces the idea of information to disembody the human category, rather than extending it. Whereas gaming could be analysed as a process that opens up the players and technology conducting thought into projections on multiple screens, letting it travel and reassemble through binary code and gaming props, it is instead analysed as a Husserlian disembodiment. Due to thought leaving the body via technological information systems it is treated as a move towards disembodied pure consciousness because intelligence is happening outside the embodied self. Even though there has been a recent trend to reverse this direction of analysis, as seen in the social sciences affective turn's effort to resuscitate the body, this happens only in relation to the idea of the human.⁸⁶ Furthermore, and more problematically,

⁸⁵ Indeed the question is if it could ever be contained, for it seems much more likely that information means active or at least vital.

⁸⁶ See for example *The Affective Turn: Theorising the Social*, ed. Patricia Ticieto Clough (Durham & London: Duke UP, 2007).

the agenda seems to be that of emphasising the importance of the body over the mind, but with little to no vigour in overcoming the binary as such and thereby such affective works only perpetuates it.⁸⁷ The argument here navigates between these two tendencies by taking thought out of the body through the idea of information, but only to embody posthuman thought in the ‘environment’.⁸⁸ On a side note, the notion of the environment is somewhat ill-suited, as the term only designates the relation of the surrounding to the thinking, perceiving human as the referent. Terms like surroundings and environment imply only a visual cognition of self-related movement. However, given that the posthuman is open and thought is mobile, these terms need to be recalibrated to fit with the post-anthropocene. Essentially, there is no ‘environment’ in a game as such because the posthuman is in the environment too. The latter only emerges as an after-effect on the level of the conscious player as a part of cognitive mapping. The game-space that is not a case of environment will be further developed as a case of a biogram later on in the thesis. For now, however, there can only be an environment outside of the game and the specific posthuman that emerges in it. This gaming posthuman emerges out of informational intensities and is thinking mattering. Conceiving of information as giving rise to thought and matter allows the inscription of thought into moving electrons, which thus generates a posthuman that is not split into two different registers of material body and immaterial thought.

Of similar significance, it enables one to think of a life and a body (and ultimately politics) in posthuman parameters by working within the speed of molecular and sub-atomic particles. The reason why anthropocentric thought struggle to conceptualize other-human bodies is

⁸⁷ See for example Rosemary E. Shinko’s work such as “Theorizing Embodied Resistance Practices in International Relations,” paper presented at University of Sussex, October 24, 2012, accessed October 30, 2012, <https://www.sussex.ac.uk/webteam/gateway/file.php?name=theorizing-embodied-resistance-practices-in-international-relationsedited.pdf&site=12>.

⁸⁸ Brian Massumi, *Parables of the Virtual: Movement, Affect, Sensation* (Durham & London: Duke UP, 2002) 180-182.

closely related to a conception of change and a lifetime within only one scale, a human scale. The human category, nature, technology and all the other anthropocentric subjects and objects we have constructed are all embodied information. Stones are embodying different mineral or mineraloids and humans are embodying genetic information and so on. Importantly, all these embodiments are information flows that are in constant movement. There is constant change, rocks, water, organic and technological bodies are all engaged in processes of becoming, but it is too slow to be perceived. The anthropocene and the idea of the human is based on very slow embodied information. Rocks, wood, metal are in a constant state of change, albeit its matter is very slow, appearing to the human eye as static and solid. Likewise, our genetic code determining our eye colour seems to be the embodiment of one colour. Yet, proteins are constantly synthesising to produce new cells, replacing the dying ones, so that eye colour changes considerably over the span of a human lifetime.⁸⁹ However, when change occurs outside human time is when conscious thought and analysis struggles. Problematically, with increasing speed in the technological age, there are not only posthumans and posthuman spaces, but there is posthuman time – one that zooms out over centuries and zooms in into the immediate. In other words, technologies of lived abstraction jump between temporal scales, accelerating politics and forcing political theory to catch up to the non-human speeds of mattering information (a posthuman lifetime).

Thinking-mattering is the necessary step to redraw the boundaries of a body and to be able to see how this works in the case of gaming, so that the event, the technology and the gamers can under the right circumstances merge into one posthuman unit. This 4EA cognitive unit is acting, thinking and experiencing, and it is from this becoming-posthuman that pre-subjective, pre-individual politics, which can give rise to the new, needs to be approached.

⁸⁹ Renee Marlin-Bennett, “Embodied Information, Knowing Bodies, and Power,” *Millennium* 41, no. 3 (2013): 610.

The posthuman is the starting point of this form of politics as well as for the new political subject. However, though the posthuman's movement in terms of traveling intensities and centres of affect is a more tangible concept to entertain as we possess the necessary representational analogies to imagine this idea, outlining how the posthuman thinks (or is captured by thought rather) and how it experiences is an endeavour that works on an abstract level primarily. It is a constant, somewhat schizophrenic struggle to articulate a process that is thought, matter and movement at the same time, while having to draw on language that defies this possibility due to its representational and fundamentally anthropocentric nature.

Emergence Through and Beyond Kant: Bildungstrieb in and of the Posthuman

The creative potential in gaming is therefore closely linked to the political originarity found in the pre-subjective that emerges at the molecular and sub-atomic level. The processes that give rise to the political are intensities that move according to the information they carry and to the dis/equilibrium through which they travel. Importantly, this move is self-assembling then, as it is prior to consciousness. Immanuel Kant refers to this process as *Bildungstrieb* ("formative drive"),⁹⁰ with which he seeks to "affirm the uniqueness of the phenomenon of organic growth."⁹¹ Although Kant's concept only refers to the nonmaterial and teleological drive, the concept is used here nonetheless for it can be amended to fit into a posthuman context and also because of its double entendre. While it was originally used as and translated into a self-organizational power present in organic organisms, the word *Bildungstrieb* can also mean and translate into "educational drive" or "learning drive." In this sense it is a useful theoretical construct that beautifully captures the double-bind of material and thought formation (thinking-matter and mattering-thought) in the same breath. This makes it extremely useful as self-organization and -emergence does not have to refer to either mind or

⁹⁰ Immanuel Kant, *Critique of Judgement* (Indianapolis: Hackett, 1987), see section 65 #370 onwards.

⁹¹ Jane Bennett, *Vibrant Matter: A Political Ecology of Things* (Durham & London: Duke UP, 2010), 65-67.

the material, but instead can focus on the impersonal, pre-subjective and non-conscious agency that drives the posthuman. Analysing the posthuman through *Bildungstrieb* allows for all dynamics of life/form without being reducible to individual powers. Not only is Kant's notion of *Bildungstrieb* important in highlighting the vitality and creativity in miniscule ontological movements, but it also sets the stage to keep tracing the entelechy of political life.

However, the *Bildungstrieb* of new political life (political thought and the political subject), cannot be traced within existing techno-philosophical systems, political theory, or IR. The additional technological dimension increases the complexity and void of theoretical tools available. This is because *Bildungstrieb* is something that is rarely looked at in relation to technology *and* politics. Before the original organisation of vital force can be conceptualised in gaming, thought and subject formation need to be rearticulated to be suitable for the posthuman condition. Even though Kant's *Bildungstrieb* provides impetus for the analysis it is unsuitable for a posthuman project because his philosophy rests on the premises that matter cannot be spontaneous or give rise to unforeseen developments, which is due in large to the fact that it is inanimate, and that there is "an unbridgeable chasm between life and 'crude matter'."⁹² Even though Kant was careful to associate *Bildungstrieb* with matter, he still saw a difference between them because matter for him is dead and could not possibly give rise to life. However, knowing now that matter is full of vital information changes the concept of *Bildungstrieb* drastically. Furthermore, Kant saw this drive occurring within organisms that are closed and mechanical, working according to Newtonian forces that are universal for all physical systems. These are things that need to be adjusted in the quantum age of complex, open systems that resonate everywhere. The problem is, however, that most Western

⁹² Bennett, *Vibrant Matter*, 65.

philosophy profoundly rests on Kantian transcendentalism and correlationist thinking,⁹³ which renders it blind to the posthuman as it were, for it is too rigid to conceive of the production of the new through 4EA cognition outside the human. Most fundamentally, it is very problematic to think of a pre-personal, even impersonal form of experience that does not unfold according to pre-given structures of the disembodied, rational mind. However, for the political to emerge, there needs to be at least a theory of how the posthuman cognizes, experiences and thinks as this is the basis for any subjectivity. In short, it calls for a posthuman epistemology that distances itself from Kantian or “ethereal idealism.”⁹⁴

In order to turn Kant upside down in his work *Essai*, Bergson most succinctly recalls that it was Kant who manifested the dividing line between the noumenal and the phenomenal world; a division which maintained that one ought to ponder the empirical world objectively.⁹⁵ Furthermore, this goes hand in hand with the unquestioned premise that thought, experience and perception of the phenomenal world only happens within said rational mind.⁹⁶ This means that the conscious subject only knows things as far as they are presented to thought, but does not actually have access to the thing-in-itself (*Ding an sich*). Furthermore, in order to be able to think at all, the mind needs to imagine things as occurring in time and space and it is through this representation that things are presented to the mind.⁹⁷ Therefore, Kantian idealist assumptions hold that humans construct their reality according to their perception and experience of the phenomenal world, “regardless of whether things really exist in space and in time, in some absolute sense, independently of us.”⁹⁸ This implies two things: first, the

⁹³ Quentin Meillassoux, *After Finitude: An Essay on the Necessity of Contingency* (New York: Continuum, 2008); Levi Bryant, Nick Srnicek & Graham Harman, *The Speculative Turn: Continental Materialism and Realism* (Melbourne: re.press, 2011), 4-5.

⁹⁴ Bryant, Srnicek & Harman, *The Speculative Turn*, 5.

⁹⁵ Henri Bergson, *Essai sur les données immédiates de la conscience* (Paris: PUF, 2010), 5.

⁹⁶ Robert Stern, *Hegel and the Phenomenology of Spirit* (London: Routledge, 2002), 101.

⁹⁷ Suzanna Guerlac, *Thinking in Time: An Introduction to Henri Bergson* (Ithaca: Cornell UP, 2006), 93.

⁹⁸ Guerlac, *Thinking in Time*, 94.

rejection of any absolute from an idealist standpoint and, second, that knowledge cannot possibly reach beyond sensible experience and is limited to the perception, rather the empirical grasp, of things, since only “divine beings” could obtain knowledge of Kant’s *Ding an sich*.

However, within these empirical boundaries rigorous knowledge is possible, as long as it is observable and testable by senses and corresponding scientific laws. Equally important in drawing out a posthuman noology is the idea that empirical does not mean objective, which is a mistake often made, especially in the social sciences. What empirical means since Kant’s Copernican Revolution is that scientific or any other investigation structures the truth of the observed, objective world according to given forms of the mind.⁹⁹ In other words, the sciences’ “forming, materializing, and measuring activity” – which arguably is a natural and necessary tendency for practical interest – is actually just a habit of the mind.¹⁰⁰ The crucial consequence of this position is that it draws a sharp distinction between the material world and the observer, which is the perpetuation and intensification of the Aristotelian separation between matter and mind. As such, having dismissed the separation earlier, it calls into question how knowledge claims emerge then. In other words, this calls for the mapping of a posthuman theory of thought, that is noology.

Experience and Phenomenology – a Difficult Break-Up

By implication, the primacy of phenomenological experience for Kant means that transcendentalist philosophy makes it impossible to conceive of novelty, as there is no

⁹⁹ Ibid.

¹⁰⁰ Valentine Moulard-Leonard, *Bergson-Deleuze Encounters: Transcendental Experience and the Thought of the Virtual* (New York: SUNY, 2008), 13.

conception of *new* experience and *new* thought.¹⁰¹ Kant's idea of common sense and the rational mind confine experience, limiting it to what he calls the possibility of experience.¹⁰² In following Kant's idealism, Western philosophy starts off with the assumption that the conscious subject has "synthetic *a priori* knowledge of certain basic properties" according to which things appear to the subject.¹⁰³ This, however, insists on experience always being conditioned already. The manner in which Kant's idealism has structured experience means that our corresponding knowledge supposedly cannot reach beyond the phenomenal. In short, it can never be new and it will always just be a case of perception. In contrast, the claim here is that there must be a way for new things in the world to emerge, for, otherwise, the world just *is*, but is not *becoming*. In this sense gaming with its focus on different ways of engaging with and knowing the world (in miniature), is a test lab as it were. The unfolding argument will suggest that when leaving the subjective, phenomenological realm behind and going below, above and beyond the human subject (that is the player), experience can be genuinely new. Following thinkers like Bergson and Deleuze, who distance themselves from Kantian transcendence, this will sketch a posthuman epistemology that can philosophically incorporate becoming by opening up experience to novelty and other dimensions of the real.

Considering the posthuman experience as the basis for not only a different epistemology in the form of a noology, but also a pre-subjective, new politics is a theoretically twofold task, for it must not only engage with the Kantian legacy in Western philosophy, but also rework philosophies of experience or phenomenologies. The reason for doing so is not only an effort to circumvent Kant's insistence on the rational mind as a starting point, but also to show that these pre-given structures that guide experience result in a representationalist worldview.

¹⁰¹ Anupa Batra, "Experience, Time and the Subject: Deleuze's Transformation of Kant's Critical Philosophy," (Doctoral Thesis, Southern Illinois University, 2010).

¹⁰² Batra, "Experience, Time and the Subject."

¹⁰³ Charles Parson, "Infinity and Kant's Conception of the 'Possibility of Experience'," *The Philosophical Review*, 73 no. 2 (1964): 182-197.

Deleuze refers to this as “the dogmatic image of thought,”¹⁰⁴ that is essential to Kant’s theory of transcendental ideas, which refers to the correspondence (or correlation in Meillassoux’s terms¹⁰⁵) between transcendental conditions of experience and individual empirical experience.¹⁰⁶ Accordingly, experience takes place when transcendental concepts of understanding relate with the empirical. This means that, from a Kantian idealist standpoint, and arguably from most philosophical traditions including phenomenology, experience can only occur as *recognition*: the identification of particulars with given universals.¹⁰⁷ In essence, experience always starts from recognition, which is a static treatment of it and one that closes experience off from cognition and novel thought.

The focus on experience gains more leverage in this respect as it is not only helps to understand modes of learning in games, but it is also the point over which philosophy diverges as it challenges ideas of thinking, learning and theorizing. Whereas for Kant experience starts with recognition, Deleuze argues that it is triggered by concrete problems and that thought eventually ensues from this as the basis of learning.¹⁰⁸ In the simplest way, this divergence is then over the question of whether gaming is just a mechanism to train recognition of certain problematic scenarios and to rehearse possible solutions for it, or if the experienced game could ever emerge out of a unique problematic setting that generates an entirely new set of options, insights and concepts. Using Kant’s theory of ideas, Deleuze advances his own understanding of problems and by way of contrast argues that ideas must be immanent to experience in order to be truly problematic. Importantly, ideas here are not meant in a transcendental and Platonic sense, but are used simply to describe intensities that

¹⁰⁴ Generally speaking, with the dogmatic image of thought Deleuze refers to a tendency in philosophy itself, see for example his eight postulates of thought as laid out in Chapter 3 of *Difference and Repetition*. (London: Continuum, 1994).

¹⁰⁵ Meillassoux, *After Finitude*

¹⁰⁶ Gilles Deleuze. *Difference and Repetition*. (London: Continuum, 1994), 167-8.

¹⁰⁷ Batra, “Experience, Time and the Subject,” 2; Deleuze, *Difference and Repetition*, 171.

¹⁰⁸ Deleuze, *Difference and Repetition*, 241-2.

are in tension, in the form of disequilibrium for example. Accordingly, *ideas* trigger a unique systematic field each time during gaming, which thereby opens up experience and forms the basis of knowledge.¹⁰⁹ The important difference here to Kant is that for him recognition (that is experience) only occurs on this level of conscious inquiry, but experience as it is used here happens a few steps before consciousness is reached as it “is the opening up of the systematic field of empirical inquiry” in the first place.¹¹⁰ Knowledge in this sense is highly context dependent, relating claims to the ‘empirical inquiry’ in the game. Nevertheless, this is not a blueprint or even attempt at some form of universal knowledge. More precisely, the important implication for gaming is that it is not something already known or contextualized, but in fact it is the engagement with a unique problem that can trigger thought through which then gaming can be known conceptually.¹¹¹

How this conceptual process unfolds cannot be understood within the dominant phenomenological notion of experience. The study of experience as engagement with the world and how subjects make sense of it is known as “phenomenology” in philosophy. This creates a problem for the thesis insofar as phenomenology rests upon Kant’s phenomenal-noumenal division so that experience in a phenomenological sense is quite different from experience as it is used here, because phenomenological experience also unfolds through Kant’s rational, given structures of the un-mattered mind. More generally then, phenomenology is a question about perception and how things appear to the human, which means it is fundamentally anthropocentric and at odds with the posthuman. To the credit of phenomenology it must be acknowledged that it is by no means a coherent philosophical tradition. Yet, its individual variants, as enriching as they are for their respective types of

¹⁰⁹ Ideas function on an epistemological as well as ontological level, meaning that they account for the fact that objects can be known and for their being as well, Batra, “Experience, Time and the Subject,” 3.

¹¹⁰ Ibid.

¹¹¹ Ibid.

inquiry are nonetheless missing aspects that are essential to the pursuit of the new thought through gaming.

Concerns over the limits of the dualistic order of mind and matter already surface within the phenomenological traditions. The study of experience has already been marked by a tension between the abstract imagery of Cartesianism found in cognitive sciences (also known as the philosophy of mind among analytical philosophers), as presented by the earliest phenomenologist Edmund Husserl, and the interactionist alternative offered by his perhaps best-known student Martin Heidegger (simply phenomenology in continental philosophy).¹¹² The primacy of the body-mind split in regard to studying technological experience has led to a dominant line of philosophical inquiry that conceives of a unitary concept of the human and the machine, where the mind is the software in the hardware of the brain. Cognitive processes are studied in computational, mechanistic terms and vice versa. The metaphors attached to phenomenological/theory of mind approaches – equating the computer and the brain – are very powerful and should be taken with caution. Indeed, since the rise of new technical ideas in the twentieth century, especially in computation, the metaphors that are describing cognitive processes and contemplation are a mix of mathematics and machinery.¹¹³ More specifically, new psychology and analytical philosophy sought to describe human beings with a vocabulary grounded in the metaphors of technologically realizable mathematics.¹¹⁴ Equally, these metaphors prove to be a powerful stock in the social sciences as well, informing new research agendas which seek to explore the role of NT in upscaling organizational and societal complexities, focusing on the “animation and personification of

¹¹² Elizabeth A. Behnke, “Husserl’s Phenomenology of Embodiment,” *Encyclopaedia of Philosophy*, 2011, accessed June 14, 2012, <http://www.iep.utm.edu/husspemb/>.

¹¹³ John C. Marshall, “Minds, Machines and Metaphors,” *Social Studies of Science*, 7 (1977), 475-88.

¹¹⁴ Marshall, “Minds, Machines and Metaphors,” 475-6.

computing machinery.”¹¹⁵ This gave rise to an influential dynamic of reinforcement between computer technology and the Cartesian view of human nature and thought.¹¹⁶ Despite its adherence to Cartesian duality and a bifurcated world, Husserlian phenomenology is intriguing for its close alignment of cognition and the computer. However, the “thinking machine” so to speak, is only ever used as an analogy, there is no move made towards de-humanizing thought beyond the metaphorical level.

Heidegger rejected Husserl’s phenomenology precisely because it maintained that inner mental phenomena are interpretations of sensory impressions to which meaning can be assigned.¹¹⁷ In this sense, for Heidegger Husserl’s philosophy was merely an “unfortunate turn” towards neo-Kantian transcendental idealism.¹¹⁸ By way of contrast, in Heidegger’s phenomenology the world does not obtain meaning through our perception of it. Instead, meaning already exists in the world and needs to be revealed, to become present.¹¹⁹ To be specific, the “world has meaning in how it is physically organized in relationship to our physical abilities, and in how it reflects a history of social practice.”¹²⁰ Therefore, in a Heideggerian sense technological interaction, like gaming for example, is a mode of revealing meaning, rather than creating meaning. It is a dialectical renegotiation of meaning through embodied interaction of situated agents. Whereas Husserl was concerned with the question of how we assign meaning to our perceptions of the world, Heidegger asked “how does the meaning of the world reveal itself to us through our actions within it?”¹²¹ In

¹¹⁵ Bernward Joerges, “Romancing the Machine—Reflections on the Social Scientific Construction of Computer Reality,” *International Studies of Management & Organization* 19 no. 4 (1989): 24.

¹¹⁶ Phillip E. Agre, *Computation and Human Experience* (Cambridge: Cambridge UP, 1997).

¹¹⁷ Archana Barua, “Husserl, Heidegger, and the Transcendental Dimension of Phenomenology,” *Indo-Pacific Journal of Phenomenology* 7, no. 1 (2007): 2-3.

¹¹⁸ Barua, “Husserl, Heidegger, and the Transcendental Dimension of Phenomenology,” 1-4.

¹¹⁹ Paul Dourish, “Embodied Interaction: Exploring the Foundations of a New Approach to HCI,” *HCI in the New Millenium*, forthcoming.

¹²⁰ Paul Dourish, “Seeking a Foundation for Context-Aware Computing,” in *Human Computer Interaction* 16 (2001b): 229-241.

¹²¹ Heidegger quoted in Dourish, “Seeking a Foundation.”

Heideggerian thought action precedes theory and the way we encounter the world – the place within which we act is logically prior to our understanding of it.¹²² Although this interactionist line of phenomenology is much closer to the present emphasis on the pre-subjective, there are still inherent problems. For example, for Heidegger subjects are human animals that can be distinguished from objects not because humans possess consciousness, but because their actions are motivated by concern (*Sorge*) and circumspection (*Umsicht*), which Heidegger takes to be the ontological premise upon which experience and the human subject rests.¹²³ Even though Heidegger seeks to establish a non-mentalist subject and way of encountering the world in this way, experience itself remains human and subject-centric. Put simply, things and humans exist in the world with little conceptual room for a mode of thought (sense-making) and the self-emergence of subjects outside the human category.

Therefore, adopting variants of phenomenology is problematic on noological, ontological and metaphysical grounds. Indeed it is a split tradition at “the midpoint of two intersections,” where for one, phenomenology can be charged with hylomorphism, for it only deals with objects, given that “sheer formless sense data” could never be encountered.¹²⁴ This is to argue that a world only consisting of objects is intangible and could not be experienced. Second, phenomenologists seem to be undecided about the role of phenomena, for on the one hand, it is argued that they are united with human consciousness through intentional acts, while on the other, a clear distinction is remained as phenomena are treated as end points of human awareness “rather than melting indistinguishable into us.”¹²⁵ Thus, phenomenology is riddled with a “turbulent structure of objects” and undecided about them being immanent or

¹²² Ibid.

¹²³ Barua, “Husserl, Heidegger, and the Transcendental Dimension of Phenomenology,” 4.

¹²⁴ Graham Harman, *Guerrilla Metaphysics: Phenomenology and the Carpentry of Things*. (Chicago: Open Court, 2005), 32.

¹²⁵ Harman, *Guerrilla Metaphysics*, 32.

transcendent.¹²⁶ As the dominant framework for the study of experience this seems rather problematic as it is not clear at all how thought and concepts relate to experience and different modes of participating in the world.

Phenomenology's confusion over these metaphysical issues, especially its treatment of reality, will also create future problems with regard to studying the triangulated problem of the Virtual, the digital and the actual. The problem is that phenomenology only ever deals with the human awareness of objects and the world and has therefore no conceptual room for the pre-subjective, and is merely a philosophy of access.¹²⁷ It is unable to conceptualize anything that lies outside the human sensorium, restricting itself to the realms of language and cognition, which according to Harman means that phenomenology, despite all its practical purpose, is in fact idealism.¹²⁸ While there are limitations to a study of posthuman experience,¹²⁹ it holds nonetheless that there are "communicative energies" that are nonlinguistic¹³⁰ and that there are forms of posthuman democracies that could convene a "parliament of things."¹³¹ Whereas a speculative conceptualization is not discouraged by practical obstacles to a posthuman political techno-ecology, phenomenology stops right there, the conscious human subject that is caught up in a stale split between reality and appearance.

New Systems of Experience: From Transcendence to the Transcendental

In order to conceive of experience in distinction to idealism and phenomenology it needs to be reversed, so that thought has to be understood "as occurring in and through experience, not

¹²⁶ Ibid.

¹²⁷ Ibid.

¹²⁸ Ibid, 42.

¹²⁹ In the way that it can only be speculated about it here through language.

¹³⁰ Bennett, *Vibrant Matter*, 104.

¹³¹ Bruno Latour, *Pandora's Hope: Essays on the Reality of Science Studies* (Harvard: Harvard UP, 1999), 261.

apart from it.”¹³² It is the simple suggestion that both develop in tandem and because of each other. Secondly, in order to flesh this out further ‘the subject’ needs to be problematized as well. Whereas the beginning of a new experience is claimed to be pre-subjective and nonconscious, it will eventually capture the subjective consciousness. The crucial distinction is that according to Deleuze experience is always an experience of the new in which the subject is always transformed. In contrast, Kant’s subject is supposedly self-identical and remains as it is even during experience.¹³³ Arguably, in Kant, the relation of the subject to itself is static because the empirical subject correlates exactly to the transcendental one.¹³⁴ However, Deleuze’s notion adopted here is a critique of the transcendental conditions in which the subject can actually never reach complete correspondence with the empirical with the consequence that its internal relations are always in motion and never complete.¹³⁵ Furthermore, the transformation of the subject happens when the field of empirical inquiry – that is the problematic field or the system of experience – opens up.¹³⁶ Added to the argument that experience is never complete, the subject can always be transformed anew.¹³⁷ This is identified as opportunity for gaming experience, as it provides a window of openness for political subjectivity to be transformed or be produced anew altogether.

Producing a System of Experience; Producing the Individual

For a posthuman gaming experience as technology and through technology to be able to provide for alternative political subjectivities, it cannot be an ordinary experience of recognition and instead needs to be pre-individual and pre-subjective, happening outside of human consciousness. If experience emerges out of a concrete idea-problem, rather than out

¹³² Batra, “Experience, Time and the Subject,” 2.

¹³³ Ibid, 3-4; Deleuze, *Difference and Repetition*, 240.

¹³⁴ Batra, “Experience, Time and the Subject,” 4.

¹³⁵ Ibid.

¹³⁶ Ibid, 3.

¹³⁷ Ibid, 4.

of a classical subject-object encounter then experience can be impersonal, pre-subjective and nonconscious, that is posthuman. Traditionally, experience is conceived of the conscious, sensual first-person human encounter of the objective world around him/her. In the context of gaming this means that the player encounters different objects within a gaming scenario and due to matching it with previous experiences, knowledge and sensual data makes sense of this encounter. This anthropocentric view of experience is untenable after having undone the human category, which means that experience has to be thought of independently of notions such as the human sensorium, consciousness and control. The question of experience is therefore not about who is encountering what in which way and how he/she is making sense of it, but rather how a problem-idea emerges, unfolds and comes to constitute a posthuman subject. However, understanding posthuman experience has remained a philosophical challenge so far, and arguably this is because experience is treated as a primarily cognitive and sensual process, rather than as the non-agentic production of the new due to a concrete idea-problem. Speculative literature, especially in vital materialism, has started tackling issues such as agency, subjectivity and causality, but remains largely silent over what experience is in a posthuman context. The few attempts to date are either purely abstract, tracing experience back to its pre-individual origin in ideas, but remain committed to the human as the referent of experience or they bring in a more-than-human or non-human as referent, but then in their explanation rely largely on phenomenological philosophy, mixing materialist with phenomenological accounts.¹³⁸ The latter is particularly problematic not because it is using phenomenology in parts, but because in so doing it is reversing the post-anthropocentric move by anthropomorphising the more-than-human by filtering it through phenomenological experience. In contrast, the intention is to outline an approach that

¹³⁸ See for example William Connolly's attempt in "Materialities of Experience" where he tries to understand posthuman experience through the work of Maurice Merleau-Ponty, arguably one of the most influential phenomenologists next to Martin Heidegger, in *New Materialism: Ontology, Agency, and Politics*, eds. Diana Cool & Samantha Frost (Durham & London: Duke UP, 2010), 178-200.

balances both, a model of experience that does not start with the first-person encounter of an object, but where the individual (a posthuman can act as an individual) is only the product of experience rather than the initiator of it. Second, and more importantly it needs to show how this form of experience is not a case of *recognition*, but can give rise to something genuinely new. The argument is that “there just ‘is’ experience, without subjects or objects, inside or outside...a pure flow of life and perception without any distinct perceivers.”¹³⁹

In getting to the conceptual point of a posthuman gaming experience, it is not enough to merely diffuse the human and redraw it as a posthuman. Overcoming the subject-object division necessitates an ontology of immanence and a move towards the transcendental. Assuming that the posthuman is a unit that is shaped by intensities such as speed and temperature, then this unit nonetheless appears as an aggregation of individual humans and objects to the perceptual eye. However, in order to understand the posthuman and the non-division between subject (gamer) and objects (game software, game setting and other necessary electronic and non-electronic objects), this conscious, perceptual view, that is sense data, needs to be dropped. The unique systematic fields triggered by ideas are fields of experiences, so that in individual cases of an experience it can be thought of as an evolving system or field. In contrast to the Kantian notion of a system, in this philosophy it is not only treated as open, but also as arising out of the indeterminate, “a movement we can conceive of by means of an idea.”¹⁴⁰ Furthermore, multiple systems can exist alongside and with each other without forming a unity or whole. Importantly, such a system or field of experience has no outside, there is no transcendence. Instead, the relation to this field is transcendental, that which is *directly* experienced.¹⁴¹ In contrast to Kant’s insistence on the element of

¹³⁹ Claire Colebrook. *Gilles Deleuze* (London: Routledge, 2002), 74.

¹⁴⁰ Colebrook, *Gilles Deleuze*, 104.

¹⁴¹ Tom Lundborg, “Encountering the ‘Event’ in International Politics: Gilles Deleuze, ‘9/11’, and the Politics of the Virtual,” (Doctoral Thesis, University of Wales, 2008), 41-42.

transcendence in experience, the transcendental field of experience does not attempt to reflect or represent that which is outside of experience,¹⁴² because there cannot be an outside due to everything arising from the “plane of immanence.”¹⁴³ In the same way that there is no separation between mind and matter, according to which the former transcends the latter in order to represent an external material world, there is neither a material nor perceptual outside. In theory, understanding a gaming experience cannot be done through the eyes of an outside observer. So instead of having two separate planes, “the plane of immanence locates the being of the subject as well as the being of an outside world on the *same* plane: a plane that consists solely of impersonal and pre-individual elements of thought and experience.”¹⁴⁴ More importantly, the plane of immanence is not immanent to something or someone and it cannot be put into opposition of something that is assumed to exist externally or prior to it.¹⁴⁵ To do so would unavoidably reintroduce the distinction between the subject and the outside world, it would also resuscitate the illusion of transcendence. Therefore, immanence has to be understood as immanent to itself and nothing else. Following Deleuze’s transcendental empiricism, a posthuman and a posthuman politics has to start with experience *as such* without the *a priori* distinction of internal-external and subject-object. In other words, the whole world in its being and becoming arises out of the same plane of immanence, different bodies are merely spikes on the plane that surge up at different, perhaps sometimes overlapping coordinates. Formation is rising and falling at its own rhythm as part of a continual becoming-body and becoming-world. Therefore, rather than melting the subject and the object back together to reverse Kant, we have never been separate in the first place. It is misleading to think of technology as having developed in contrast and detached from humans; it is equally misleading to think of technology as part of us or to anthropomorphize

¹⁴² Daniel W. Smith, “Deleuze, Kant, and the Theory of Immanent Ideas,” in *Deleuze and Philosophy*, ed. Constantin V. Boundas (Edinburgh: Edinburgh UP, 2006), 47.

¹⁴³ Gilles Deleuze & Felix Guattari, *What is Philosophy?* (London: Verso, 1994), chapter 2.

¹⁴⁴ Lundborg, “Encountering the ‘Event’ in International Politics,” 43.

¹⁴⁵ *Ibid*, 45.

it by saying that technology is like us. Instead, the category of the human and technology are merely structuring devices operating at an abstract level, rather than a material one. Drawing a separation is a cognitive, visual and conscious move, but does not say anything about reality as such. It is argued that subject-object division is an anthropocentric conceptual crutch to structure experience and consciousness in retrospect, and that there is the possibility that experience unfolds otherwise among collective bodies. However, this is not a dismissal of the utility of this conceptual crutch, but rather a disclaimer that the subject-object dynamic is only ever an internal conscious relation. So if one was to speak of 'objects' as such, it is only at the conscious level of the subject, which means that the objects conceptually produced are also the objects a subject, and only that subject can know. In part this is based on the difference between Kant and Deleuze. For Kant the conditions for possible objects are located in the transcendental, self-identical subject, whereas Deleuze located them in experience itself because subjects are products of experience.¹⁴⁶ Objects are a further construct as an effort to understand experience and make sense of the world. In this sense, the question of subject-object or empirical cases for that matter is actually a problem of an individuation process of a subject through experience. According to this, to understand the process of the production of new subjectivities has to begin with an inquiry into how a field of experience is produced.

Intensive Differences as the New Skin

The abstraction of the materiality of the posthuman into the conceptual level allows for the intensities that shape bodies to be thought of as intensive differences. Intensities themselves are composed of attractors or elements that are in reciprocal relation.¹⁴⁷ Because intensities create an idea-problem they are also the pool from which a system of experience can emerge.

¹⁴⁶ Batra, "Experience, Time and the Subject," 104.

¹⁴⁷ Ibid, 105-7. In fact, it is only through their relation that they can be said to exist.

However, at this point the status of this experience is still Virtual, which means it is not actualized yet. As long as it is not actualized the internal relation between the elements can change to other asymmetrical forms. Therefore, “intensities are implicated multiplicities, ‘implexes’, made up of relations between asymmetrical elements which direct the course of the actualization of ideas and determine the case of solution for problems.”¹⁴⁸ The reason why intensive differences are so potent in setting up problems and thereby driving actualization is that these are intensive and not extensive properties. Whereas extensive differences such as length, area or volume are divisible, intrinsic differences are continuous and do not change even if the quantity changes, as for example pressure and temperature.¹⁴⁹ The importance, however, is not that intensive properties are indivisible, but that a change could only ever be in kind (not in scale) and that during such a phase of qualitative transition, the element is losing symmetry and changing its dynamic. There is, however, also an aspect of stability to these changes in the way that when brought together intensive properties “tend to average themselves,” resulting in moments of stability, which can be either short or long-term.¹⁵⁰ Yet, the key here is that intensive differences spontaneously drive moments of change and that the direction of this change tends toward equilibrium; systems seem to seek stabilization. Intensive difference can be seen as a system of dissymmetry of difference that has potential energy.¹⁵¹ It is this potential energy produced through intensive dissymmetry – individual potentials that Deleuze often refers to as singularities – provides for the onset of experience. Ultimately, “difference is the sufficient reason of change to the extent that change

¹⁴⁸ Ibid, 107. Thus, by bringing elements into a new relation intensity expresses the Idea in a new way, so that “the power of intensity is grounded in the potentiality of the Idea”. This means two crucial things. First, Ideas are virtual. Second, it is intensity that moves an Idea from the virtual to the actual and, thus, occurs during actualization without being actual itself, 108.

¹⁴⁹ If a litre of water at 30 degrees Celsius is halved, then the temperature does not half to 15 degrees. For further discussion of intensive properties, see Manuel DeLanda, *Philosophy and Simulation: The Emergence of Synthetic Reason* (London: Continuum, 2011), chapter 1.

¹⁵⁰ Manuel DeLanda, *Intensive Science and Virtual Philosophy* (New York: Continuum, 2002), 60.

¹⁵¹ Batra, “Experience, Time and the Subject,” 111.

tends to negate the difference,”¹⁵² thereby producing a continuous dynamic that drives reality. In short, a change in intensity is a change in the problem itself that creates for an entirely new potential field of experience itself.

This is why the conditions of possible experience and internal subject-object relations are not found in Kant’s transcendental subject, but rather in the behaviour of intensity (which can be framed as the transcendental conditions if one wants to speak in these terms). However, these singularities cannot be known empirically and it is only the difference it produces that can be experienced and known.¹⁵³ Furthermore, the production of a system of experience not only follows from the Virtual to the actual with intensity being the “sufficient reason,”¹⁵⁴ but it is thereby also the process of becoming-individual, individuation. The form that ultimately becomes perceived as individual posthuman or even phenomenal human has to undergo this process so that the opening of a system of experience is also the opening of a theatre of individuation.¹⁵⁵ This individuation process is far from what human imagination is possible to understand given that this is the becoming of a posthuman and not that of a representational human. The changes and dynamics involved in individuation are not that of a human development. To highlight this contradiction of unrecognizable distortion and becoming-individual, Deleuze draws on embryology to understand this course:

¹⁵² Deleuze, *Difference and Repetition*, 282.

¹⁵³ Interestingly, reality as the product structures itself according to extensive properties, as our conscious thought unfolds in this way.

¹⁵⁴ Deleuze avoids talking in terms of cause and causality and views intensities more as a trigger, tipping point, thus “sufficient reason” rather than locating it in a linear chain of causality. This is also due to the rhizomatic nature of synthesis, in the way that intensities imply other intensities because each intensity only entails certain relations between elements. How they come together is happening in an unpredictable and rhizomatic fashion. For more see for example Sjoerd van Tuinen and his recent exploration into Deleuze’s use of “sufficient reason.” Tuinen, “Difference and Speculation: Heidegger, Meillassoux and Deleuze on Sufficient Reason,” *Deleuze and Metaphysics*, eds. Alain Beaulieu, Edward Kazarian & Julia Sushytska (Lanham, MD: Lexington Books, 2013).

¹⁵⁵ Alberto Toscano, *The Theatre of Production: Philosophy and Individuation Between Kant and Deleuze* (New York: Palgrave Macmillan, 2006), 149-50.

There are ‘things’ only an embryo can do, movements that it alone can undertake or withstand [...] The destiny and achievement of the embryo is to live the unliveable, to sustain forced movements of a scope that would break any skeleton or tear ligaments.¹⁵⁶

This product of the forceful theatre of individuation or what Deleuze calls the larval subject,¹⁵⁷ is not an actual individual posthuman yet. The larval subject undergoes these experiences of movement as it becomes an individual and important for the posthuman condition is that the larval subject is not a human subject, but “wherever there is synthesis or contraction, there is a larval subject undergoing this contraction.”¹⁵⁸ Accordingly, this is the production of a body without image and representation, there are few mental images that consciousness can draw on to recognize this process. Novelty lies precisely in its unrecognizable, unprecedented faculty. Furthermore, becoming-individual cannot be understood within the normal frame of reference of what a body looks like, can or cannot do. This is where the mattering process parts from Aristotelian hylomorphism as there is no usual, normal, common or ordinary form of the body as such; neither is it given by the soul/mind, but depends on the movement of singularities each time. There is no teleology in this process, no set steps or shapes of a body that individuation approximates. The posthuman is not an accidental form that deviates from a pre-given form of the body. In contrast, the individuation of a body and subject is like a dice throw each time. In this way, a field of experience opens up due to singular points on the plane of immanence that undergo an actualization process. In part experience then always starts in the Virtual and is not an event of the phenomenal or actual world only. It is precisely the indeterminacy and potentiality that characterizes its beginning that offers the possibility of change.

¹⁵⁶ Deleuze, *Difference and Repetition*, 267.

¹⁵⁷ Ibid, 100; 267.

¹⁵⁸ Batra, “Experience, Time and the Subject,” 116.

The field of experience as individuation process that unfolds from singularities into the larval and then the individual shows that experience is essentially a problem playing out and triggering a response.¹⁵⁹ As such it is an actualization in one particular way, but does not actually exhaust or entirely represent the problem. The significance herein lies that even though experience is only one particular response to an already singular problem, it nonetheless highlights the plenitude of potential and possible responses that the one emerging individual still carries with it. That is to say, as much as an emerging body is one actualization, it is also the entire spectrum of non-actualized responses that gives it its sense of openness, indeterminacy and possibility to transform.¹⁶⁰ What Deleuze refers to as virtual and actual “half”¹⁶¹ in an individuating body is therefore identified here as the locus of the new and that this novelty emerges through and in form of unique fields of experience. Crucially then, experience’s attributes of becoming and originality are what makes gaming such a key pedagogical development, since its *modus operandi* is experiencing – over and over again.

The possibility to repeat the game does not mean that the same experience can be repeated however. Indeed, it is precisely the point that it cannot be reproduced and neither can the same individual body be produced again.¹⁶² This is “perspective” in experience, which means that different gaming rounds are not a different view on the same gaming-scenario, but they are essentially different experiences that gave rise to different bodies. In essence, systems of experience cannot emerge outside the individual that developed as the solution to a problem,

¹⁵⁹ This is really only meant in the sense of response, not as a solution, a field of experience does not describe a dialectical interplay.

¹⁶⁰ Batra, “Experience, Time and the Subject,” 120.

¹⁶¹ Deleuze, *Difference and Repetition*, 350.

¹⁶² Importantly, this is where an argument against Baudrillardian simulation would tie in, as it is not a case of the hyperreal, as the condition of the modern of that which is already reproduced.

“each series tells a story: not different points of view on the same story, like the different points of view [...], but completely distinct stories.”¹⁶³ This is because it is not a question of access as a phenomenological standpoint would suggest where there would only be different points of view on the same experienced object. To compare it to Kant, according to which different points of view based on the same experienced object can eventually be brought together additively, forming a unifying plane, like a puzzle that makes sense when all pieces have been put together. This is based on the premise that it is the same experience, but also that the system is closed off. In contrast, this research suggests that diverging experiences (or stories and their respective bodies) exceed the unity of a single field and even larger system, yet they can still coexist.¹⁶⁴ In fact, it is precisely due to excess of their multiplicity that they do not converge into one.¹⁶⁵ In the context of gaming this means that not only are there always entirely different experiences and gaming bodies, but also that there is not a totality of experience that can form a static solution as such. In this way there is no ideal outcome or unity that could be aspired to, forming a template that is then rigidly implemented in a technologised way. Different systems of experience cannot be added together to form a totality or unifying whole. Crucially, experience is organized in genuinely different ways.¹⁶⁶

This outlines the beginning of non-dogmatic posthuman thought that characterizes gaming, for it does not presuppose and insists on a natural harmony between thought, experience and truth as in the version that results in a unifying plane of knowledge. Harmony in the dogmatic image of thought consists of the assumption of set (identical) faculties of objects that can be experienced and recognized, the transcendental condition of the subject and the possibility of

¹⁶³ Deleuze, *Difference and Repetition*, 150.

¹⁶⁴ To the contrary, “the important point is the simultaneity and contemporaneity of all the divergent series” which makes them “all coexist,” Deleuze, *Difference and Repetition*, 151.

¹⁶⁵ For example, the system of language could not ever be exhausted by all of the books ever written and to be written.

¹⁶⁶ Batra, “Experience, Time and the Subject,” 126.

error when objective faculties are mistaken, but which can be corrected by adding more views and which essentially yields in a truth (even if approximated). Non-dogmatic thought, however, does have very little to do with truth in a conventional sense of an innate disposition. Instead thinking is primarily a creative act, rather than a production of truth that is some kind of abstract generality.¹⁶⁷ Presubjective gaming experience is precisely premised upon thinking as a creative rather than recognising process. Doing away with the static, transcendental and rational human subject takes away the possibility of recognising, so that difference and novelty is no longer subordinated to “same” and “similar.” Principally, posthuman thought is the reverse of anthropocentric thought from repetition with difference to difference with repetition. This produces and structures individual bodies in a way that these can be transformed or affected.

Ordinary Experience, Sensation and Involuntary Thought – Rupture Through Gaming

Non-dogmatic thought is uncontrollably volatile. Given the absence of consciousness and effort in this form of experience means that posthuman thought is not an intentional act and, thus, cannot be initiated, controlled or monitored by the subject. What bestows posthuman thought with novelty and ‘freedom’ (the permanent virtual half of an individual body) translates into contingency in life and in the game in particular. This also means, however, that new experience does not always have to enter consciousness. Due to the fact that it is essentially a play of intensities, if these are not intense enough as it were, new experience happens below the threshold of consciousness. This leads Deleuze to argue that thought is involuntary, that bodies are forced to experience and think.¹⁶⁸ Whether in general thought or gaming, this means that “things will continue to make sense in an ordinary way, according to

¹⁶⁷ “[T]hought is creation, not will to truth,” so that if anything truth is a part of a regime of forces acting upon each other; Jon Roffe, “Gilles Deleuze (1925-1995),” *Encyclopaedia of Philosophy*, 2005, accessed August 10, 2014, <http://www.iep.utm.edu/deleuze/>.

¹⁶⁸ Batra, “Experience, Time and the Subject,” 126, own emphasis.

our ordinary empirical judgements so long as nothing happens that disturbs it.”¹⁶⁹ The ordinary experience of an individual body can only be disrupted if it is confronted with something unrecognizable which in so doing will alter the body as well due to changing intensities. Arguably, one of the few identifiable general aims of games is then to continuously confront the previously individual playing bodies with something new, extraordinary and unrecognizable, which has so far not been part of the political/thinking repertoire. Therefore, gaming fundamentally depends on a rupture in the ordinary.

Interestingly, this rupture or shock to ordinary experience will necessarily be sensible, to which Deleuze refers as “sign.”¹⁷⁰ The sign itself is ‘perceived’ as intensive difference by the individual, but as something unrecognizable for which the previous, ordinary subject does not have any system of meaning. The breaking point of ordinary experience and the unfolding of a new experiential field occur when sensibility tries to grasp this new appearance but fails to do so because the sign only appears as difference or movement.¹⁷¹ However, this happening cannot be thought of in terms of a subject looking at something and not recognizing it, as it is not a conscious act of contemplation based on the gathering of sense-data. In contrast, sensation here deviates from its understanding in experimental psychology and analytic philosophy that treats it as sense-datum linked to the perception of a stimulus and passive sensory input constituting ordinary experience.¹⁷² The posthuman cannot perceive in a conventional sense. Furthermore, even though perception is of use in subject areas concerned with conscious phenomena, it is a mechanism that only works within the human sensorium (the animal sensorium to be precise). Furthermore, perception only refers to the second-order movement of data gathering that is intrinsic to a basic first empiricism, and which is based on

¹⁶⁹ Ibid.

¹⁷⁰ Deleuze, *Difference and Repetition*, 176.

¹⁷¹ Batra, “Experience, Time and the Subject,” 126-127; Deleuze, *Difference and Repetition*, 176.

¹⁷² Massumi, *Parables of the Virtual*, 259

a stoppage of a movement, a pause to consciously reflect.¹⁷³ In going below and above the human subject, sensation here is different to this stimuli-response model and in contrast to the ordinary use of perception, sensation marks passage, movement and continuity in pre-subjective experience.¹⁷⁴ This means that the entire struggle to fit the sign into a familiar sensorium and meaning happens outside and prior to conscious rationality. The rupture happens at a proprioceptive level of the posthuman. Generally, proprioception as one's own perception is not tactile perception, but refers to the "sensibility proper to muscles and ligaments" often affecting adjacent organs and muscles. Adopting and adjusting this concept to the posthuman, from proprio to praeter, to include thinking matter is the registering of forces on a posthuman's temporary boundaries. The difference is that posthuman praereception cannot treat sensation from the perspective of a sentient being. Sense exceeds the physiological capacities of the human and animal species by far. For example, it must include that of a technological-becoming as well, so that for example a computer system registering a force on its firewall could be a case of posthuman sensation. More specifically proprioception of the posthuman can be thought of as a web that spans across its body in movement and that absorbs unrecognizable encounters on the body's surface, which change its equilibrium. If this intensive difference upsets the equilibrium experience opens up, which is the rupture to ordinary experience, so that the body is forced to think. The argument then further suggests that gaming is the posthuman body under constant attack of 'outside' forces. Elements and attractors of the gaming software, which are differences in programming, the sign, generate differential movement that upset the posthuman player's equilibrium. This player has yet to grapple with the coding difference, which is settled as an unfolding system of experience of the new. It is the generation and circulation of signs as well as this struggle for meaning during experiences at which gaming aims.

¹⁷³ Ibid, 258; Latour, "Reflections on Etienne Souriau," 305.

¹⁷⁴ The difference can also be drawn between perception as enabling quantification, whereas sensation is only ever qualitative; Massumi, *Parables of the Virtual*, 259.

As a consequence, experience always “begins with sensibility,” which means that gaming is largely about posthuman sensibility.¹⁷⁵ Because the conscious relationship to objects is that of simple recognition, which happens in the ordinary sphere or already established knowledge, the sign cannot be a simple object in the game, but something “contingently imperceptible, that which is too small or too far for the empirical exercise of our senses.”¹⁷⁶ Yet, the object of experience can emit signs when it becomes distorted so that it reveals its virtual half.¹⁷⁷ Therefore, the sign exceeds human senses and empirical, ordinary experience,¹⁷⁸ and has to be understood as a hint during empirical experience when new intensity comes into relation with the posthuman body. This reiterates that experience cannot be initiated by the subject, since there is no subject prior to the new system of experience and because experience can only arise anew from the sensible and not from a concept, since the latter only belongs to the subject. Significant for pre-subjective politics is the idea that concepts are not static and persistent and only subject to modification, but something that develop out of a unique experience and that it is unique to the newly emerging posthuman subject alone. In short, experience begins with sensibility and then leads to thought and concepts.¹⁷⁹

If the initial passing sensation triggered by the sign meeting the posthuman is the onset of experience, then the latter essentially begins with an encounter. It is this encounter – the synthesis of different intensities as the formation of a relation – that then “forces thought to

¹⁷⁵ Deleuze, *Difference and Repetition*, 182.

¹⁷⁶ Ibid, 177.

¹⁷⁷ Batra, “Experience, Time and the Subject,” 130.

¹⁷⁸ This leads Deleuze to contrast Kant in arguing that the transcendental does not overlap with the empirical, but exceeds it.

¹⁷⁹ Hence, intensity is the transcendental object of sensibility, which contrasts Kant and Phenomenologists, who view intensity as the as the anticipation of perception prior to experience.

occur and to pose a problem.”¹⁸⁰ This is a forceful encounter because experience and thought begin contingently and not because of the nature of the subject. This further contrasts phenomenologists and Kant as well as other philosophers such as Plato and Descartes who view thinking as the natural condition – in other words, that we naturally tend to think.¹⁸¹ By way of contrast, the posthuman condition argues that thought only occurs when it is forced to, so that “the natural state is *not thinking*” and that thought does not move in its own accord or freely.¹⁸² Hence, what Deleuze refers to as learning as contrasted with the possession of knowledge as the “generality of concepts or the calm possession of a rule enabling solution”¹⁸³ and what game developers seek to enforce through game design only happens through the encounter. This leads to two crucial conclusions: first, because of self-emerging intensities the encounter depends on chance, which means that there is only involuntary thought; second, any system opened up only exists as potentiality before the encounter.¹⁸⁴ Not only with respect to gaming and experience is this a crucial moment, but for the political in general. For example, Louis Althusser located the origin of politics in the void which pre-exists atoms, and where life emerges with atoms encountering each other as the beginning of political life as well.¹⁸⁵ This premise of “aleatory materialism” is shared here, which also means that gaming is not a means for predicting the future, as it is itself more open and uncontrolled than predictable. The encounter, however, can only be managed through the careful design and regulation of contingency in the game’s architecture, but there is no guarantee of new experience emerging per se. Similarly, gaming and learning as a contingent process also means that there can be no set method for learning either – at least not in a

¹⁸⁰ Batra, “Experience, Time and the Subject,” 127.

¹⁸¹ Deleuze, *Difference and Repetition*, 175.

¹⁸² Batra, “Experience, Time and the Subject,” 133.

¹⁸³ Deleuze, *Difference and Repetition*, “Objectivity” here indicates that the problem is not subject, but not completely objective either, since it does not occur independently of the subject.

¹⁸⁴ *Ibid*, 175.

¹⁸⁵ Louis Althusser, *Philosophy of the Encounter: Later Writings, 1978-87* (London & New York: Verso, 2006), 176.

Cartesian way that it could be determined a priori “how reason should be used in order to achieve knowledge.”¹⁸⁶ The only way the posthuman can learn, or is forced to learn, is through constant playing in this context, simply the continuous engagement with unrecognizable problems.

This essentially renders gaming an apprenticeship in a Deleuzian sense, which precisely refers to learning by continuously bringing together points of ‘our’ body with other elements to form a problematic field.¹⁸⁷ These intensive, prae-ceptive contact points reinforce that learning is not merely a cognitive process, which is perhaps one of the biggest contrasts to phenomenology and usual gaming “philosophy,” because both focus on perception in order to make sense of and learn about the environment they are in. However, not only the notion of experience, but also that of learning goes beyond cognition for it also necessitates the engagement with elements of something else, “a matter of penetrating the Idea.”¹⁸⁸ For the posthuman condition this means that “learning always takes place in and through the unconscious,”¹⁸⁹ or much rather in a pre-subjective flow and that existing concepts cannot be used to grasp the new. Therefore, innovative conceptual practice is not only a side effect of new experience, but an essential step in dealing with the unrecognizable sign, the rupture to the ordinary. The catch is that because experience begins with the encounter of an idea-problem (intensive difference) that can only be grasped by the individual, which only comes into existence at the end of individuation and the experiencing process, the conscious individual, that perceives his/herself as a human, can relate or think the idea only retrospectively – “thought must follow the path of experience in reverse.”¹⁹⁰ This means that

¹⁸⁶ Batra, “Experience, Time and the Subject,” 134.

¹⁸⁷ Ibid.

¹⁸⁸ Deleuze, *Difference and Repetition*, 343.

¹⁸⁹ Ibid, 205. This makes the unconscious the space of subjectivity formation as well as the space in which experience opens up. This will take more shape in chapter four on the formation of subjectivities.

¹⁹⁰ Batra, “Experience, Time and the Subject,” 128.

the conscious gamer experiences objects as already ordered with the system and it is impossible from this conscious position to point towards the origin or any development of the system of experience and in learning. In short, the “conscious subject arrives late to the ‘scene’,”¹⁹¹ so that the conscious player can grasp the game only in retrospect, after experience and learning have already taken place.

Nonetheless, the reason for the encounter being identified as political is not only because it opens up experience, but because the struggle to grasp the unfamiliar sign can generate new contextual meaning. In the light of gaming’s largely practice-based and interactive mode of engagement, newly triggered systems of meaning “can appear as a new kind of engagement with things or a new set of practices.”¹⁹² New habits and affective patterns are a crucial aspect to take into account when it comes to the question of the contemporary posthuman political subject and how it is constituted. However, this is a case of a teleology that suggests that more gaming experience would result in a better and new skillset, system of meaning, and political behaviour. The only prediction that can be made about a higher number of gaming rounds is that the chances of breaking with ordinary experience (that is the status quo) are higher. Due to involuntary thought precisely not being a case of *recognition*, but the encounter of the disturbingly unfamiliar, this rupture is the irruption of novelty.

Even though sensation and the encounter are aleatory does not mean that the ensuing experience is chaotic. Given the factor of contingency a sign may or may not open up a system of experience, but if it does experience will develop and be organized.¹⁹³ According to Deleuze, there are two steps to the progressive development of a system of experience where

¹⁹¹ Ibid, 138.

¹⁹² Ibid, 128.

¹⁹³ Ibid, 138.

differentiation (with a “t”) comes before *differenciatio* (with a “c”).¹⁹⁴ The former indicates the development of an idea-problem, whereas the latter describes the process by which the system of experience can then be produced *for* the subject. The second step is the movement through which conscious objects are produced on the level of empirical experience. Batra explains that for example, we perceive objects as already possessing certain attributes such as colour, because empirical experiences are always already structured according to colour or other familiar features.¹⁹⁵ This linguistic and conceptual distinction is important in showing how an idea arises within experience (*differentiation*) in the posthuman and how the conscious subject comes to see this as an already ordered experience which is the actualization of the system of experience (*differenciatio*).¹⁹⁶ It is the second step in which 4EA in a conventional sense comes in and takes over in structuring gaming experience. Crucially for the conceptual practice within the realm of gaming for change and peace, it is only after a system has opened up and structured itself that it can be explored, and one way is to generate concepts. This is because concepts articulate empirical cases and their relation to a systematic field. Empirical objects that emerge out of the production of a system and structured experience can be investigated and known through according idiosyncratic/singular concepts. Significantly, concepts depend on experience and new concepts can only arise out of new experience, which adds to gaming being an experiential and creative activity, the training of the conceptual.

Flow of Experience in a Body without Organs

Even though the emergence and structuring of fields of experience has been discussed in abstract terms, this still applies to the concrete body that defies the separation of mind and

¹⁹⁴ Ibid, 140; Deleuze, *Difference and Repetition*, 262-264.

¹⁹⁵ Batra, “Experience, Time and the Subject,” 141.

¹⁹⁶ Which is something that Kant was not able to show for example.

body/matter, given that these movements all happen on the plane of immanence.¹⁹⁷ To sketch this plane and the movement on, in and through it in diagrammatic ways, pre-subjective and pre-bodily forces are then seen as non-linear vectors on this plane. Elements and attractors that can create idea-problems are conceived of as dots and are scattered across a vector. From this perspective, temporal proximity, overlapping and crossing of these vectors result in a shared individuating process, which is a unit of various elements that are usually attributed to either the human or the technology. In this case it is the encounter that gives rise to a posthuman body in general and it is also the encounter that can generate new experiences and thereby change the posthuman. Given that these vectors are all impersonal and pre-individual, it is impossible to identify in which individuation a vector is going to be part of. Indeed, the vector's virtual attributes (dots) hold all of the possible worlds and could give rise to an infinite number of different experiential fields and, thus, bodies and subjectivities.

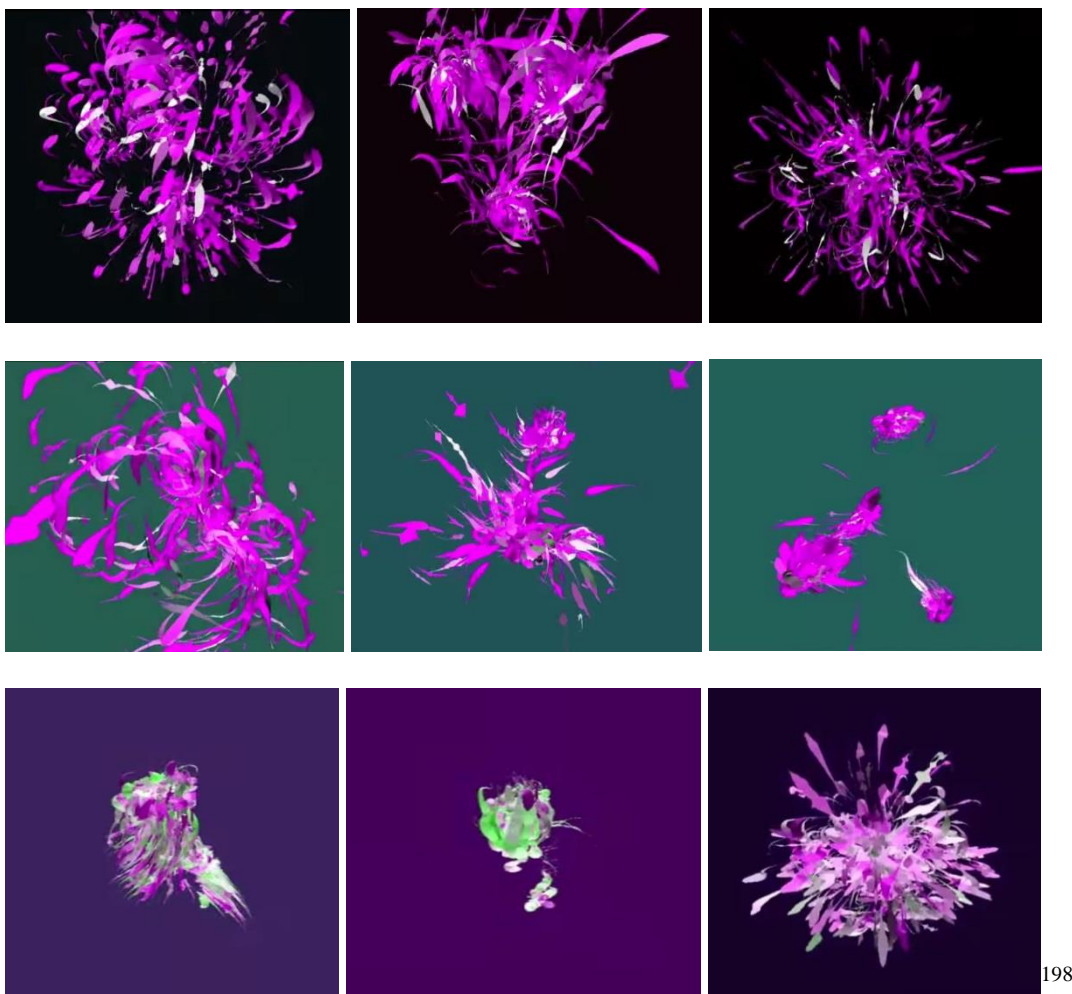
For the case of gaming and to keep the example manageable, the movement on the plane could be broken down into three essential vectors, that of gaming technology (A), gamers (B) and the mixed-media environment (C). These vectors are brought into close proximity due to the onset of the game. Given that all of these three are not fixed – neither internally nor are their boundaries – but are in constant flux and always in a process of becoming, they are continually ‘reshuffled’. If these vectors (A, B & C) meet, overlap or intersect – that is encounter each other – their elements/dots are shuffled in a way that individuates one unit, which is made up of elements that previously belonged to vector A, B, or C. This only happens however if the encounter is strong enough to upset individual equilibria, which is to break with ordinary experience. In view that only the dots of those vectors close to the encounter will be involved in the individuating process, means that the vectors cannot simply

¹⁹⁷ Deleuze & Guattari, *What is Philosophy?*, chapter 2.

be added. Thus an encounter between the three, with a possible thought, experience, body/subject emerging out of that, is not simply A+B+C, but a haecceitic mix of the three. The way in which they organize themselves, depends on the intensities they bear and the posthuman body grows therefore in rhizomatic fashion. The posthuman body will continue to grow and persist in this way until a new individuating process is triggered by a new unrecognizable sensation that is encountered in the course of the game. This is why the posthuman has to be thought of as flow and mobile, even though it is on a plane, but its vectors move in unimagined swirls rather than linearly, on a plane that has infinite dimensions. Arguing that this posthuman body flows does not mean that it is in constant flux, however, but that it is always open to re-engage in new becoming, which is precisely its potential to impact upon the political – conceived of as the moment of openness – in a unique and unexamined way, that is in a non-*recognised* way.

In sum, this dynamic of the posthuman can be visualised as seen in the following images that outline intensities coming together and dispersing depending on the experience produced during the encounter. In many ways the series of images could represent one gaming round of multiple players coming into the game, meeting each other as well as other participants. Acting as the conscious subject and still distant from others as well as the ‘technology’, the scenario is still very representational. However, with the onset of the game, intensities of the bodies come into proximity, eventually encountering each other. If the gaming experience is intense, that is unfamiliar enough, synthesis of the intensities can occur and the previously separate bodies can move as one dynamic. This does not have to be a permanent arrangement, so that bodies can separate again, to either engage in other becomings outside the game or in a new gaming round. Importantly however, when the posthuman breaks up into several individual bodies again, these are not identical to the ones that went into the

game, but different becomings altogether. Similarly, even though subjects are separate when they walk into the game, they are already posthuman-becomings before that as encounters happen all the time. It is not the case of posthumans coming about only during gaming, but the theory is that this happens more often during gaming, due to affective game design and that therefore political gaming has considerable leverage and can be developed in that direction more strongly. However, the ontological and noological processes that were outline occur everywhere and all the time, while reading a book, watching television, playing sports.



Going through the images from top left to bottom right (with the top left picture being number one and the bottom right number nine), the purple strokes represent intensities that

¹⁹⁸ Max Richter, "The Trees," *The Blue Notebooks*, YouTube video, 8:06, posted by Elliot Walsh, Nov 14, 2011, accessed, August 11, 2014, <https://www.youtube.com/watch?v=GXmlZbxvtBs&list=RDWaCib0B8T24>.

flow, and, in the case of the game, these flow in a more channelled way due to the game's architecture. Different colours represent differences in temperature, rhythm or speed for example, setting intensities apart from each other. Moving in rhizomatic fashion, these can converge, which marks the opening of new experience. Image six, seven and eight show that within this new system of experience the posthuman moves as one unit before eventually breaking up into smaller individual bodies again.

Given that this moving posthuman unit is the response to a virtual idea-problem, it can be considered a spontaneous, non-representational solution.¹⁹⁹ Therefore, becoming-posthuman highlights the struggle of mattered-thinking/thinking-matter to find a solution to the unrecognizable and extraordinary. Importantly, this suggests that solutions to a problem – be they of political or any other nature and regardless of whether they are in or outside a game – do not statically exist *a priori* in an idealist realm, but emerge alongside the development of a problem. Adopting and adjusting Deleuze and Guattari's term, "machinic phylum" is used to denote immanence of a problem to the gaming process. The latter is essentially co-dependent "matter in movement," "that is in flux, in variation, matter as conveyor of singularities and traits of expression" that gives rise to problem, experience and solution simultaneously.²⁰⁰ Such "traits of expression" are "emergent properties" that arise in material systems and are those synergetic attributes that individualize the whole posthuman as something different than the sum of its parts.²⁰¹ Based on this, gaming is identified as "[semi]-spontaneous transformations."²⁰² It is important to reiterate that even though the machinic phylum is somewhat of an abstract reservoir it is not a platonic realm of ideas, but a contextual, immanent dynamic and is unique to the system of experience. Hence, the machinic phylum is

¹⁹⁹ DeLanda, "Nonorganic Life," 135.

²⁰⁰ Gilles Deleuze & Felix Guattari. *A Thousand Plateaus: Capitalism and Schizophrenia* (Minneapolis: Minneapolis UP, 1987), 409.

²⁰¹ DeLanda, "Nonorganic Life," 162.

²⁰² *Ibid*, 138.

a “source of spontaneous order” in a new system.²⁰³ As important as the play of intensities, the machinic phylum is creativity and variability, thus, part of the new.

The machinic phylum is particularly important with regard to the utopian impulse, because even though it might not be a “guarantee of freedom,”²⁰⁴ it is a way of experimenting with various destinies, turning gaming into a test lab for political alternative futures and for a new political subject. The flow and mutability during gaming are essential in opening up rigid structures of subjectivities and static bodies, allowing for new subjectivities and bodies to emerge that are considered *lines of flight*. More specifically, the game in its unplayed state might be regarded as formless, yet the conditions of possible syntheses of intensities are already there, given that even though intensities are approaching infinity, a part of them (those on vector A to speak in abstract terms) are nonetheless restricted by gaming software.²⁰⁵ This is why transformation in the context of gaming are *semi*-spontaneous experimentations of reality, but by design. Generally speaking, gaming starts as an undifferentiated field that given the positioning and movement of the players – who in and of themselves are different intensities as well and together they are a tempo-spatial distribution of embodied information – undergoes a series of syntheses (shocks and struggles), each of which produces new intensities as a continuous movement of becoming-posthuman. Thus, the gaming software does not have to include an entire blueprint of a larger posthuman body or the eventual political subject, but only enough stimuli or constraints for self-organization processes to take place. This means that before new experience, the posthuman gaming-body only exists Virtually. This also means that the game can generate a larger posthuman body,

²⁰³ Ibid.

²⁰⁴ Ilya Prigogine & Isabelle Stengers, *Order Out of Chaos* (New York: Bantam, 1984), 206.

²⁰⁵ DeLanda explains this with the help of the example of plasma, which at its highest temperature is formless with no atomic nuclei and only flows of subatomic matter and energy. Yet, possible syntheses, the crucial temperature at which forms arise, are already there – for each element these temperatures are defined; “Nonorganic Life,” 140.

but in fact each individual vector (players, technology and environment) are entangled in posthuman-becoming even before the onset of the game, much like even smaller post-ecosophical systems.²⁰⁶

The point here is that while posthumans are emerging everywhere where there is new experience, this is such a complex, always half-Virtual process that it cannot be perceived, fully controlled or even represented as such. Although Deleuze and Guattari's concept of the 'Body without Organs' (BwO) is different from the posthuman, it is still a useful metaphor that helps to imagine this imageless and representation-less posthuman, in the way that the BwO is a body that is not "defined by the form that determines it" and that it is neither determined by "substance or subject nor by the organs it possesses or the functions it fulfils."²⁰⁷ Instead, a posthuman

*body is defined only by a longitude and latitude: in other words the sum total of the material elements belonging to it under given relations of movement and rest, speed and slowness (longitude); the sum total of the intensive affects it is capable of at given power or degree of potential (latitude).*²⁰⁸

Therefore, a body must be thought of in affective rather than representational terms, as "affects and local movements, differential speeds."²⁰⁹ More specifically, it is not of interest or even significant what a body looks like or to try and force the posthuman into a representable, idealised unity and whole (as the human category), but much rather to understand and know a

²⁰⁶ Ibid, 153.

²⁰⁷ Deleuze & Guattari, *A Thousand Plateaus*, 287.

²⁰⁸ Ibid.

²⁰⁹ Ibid.

body through “the forces that intersect it and the things it can do.”²¹⁰ In this sense, posthumans do not have a set “interior grid of organs”, but are a “temporary product of a larger exterior mapping of forces”.²¹¹ This exterior mapping is the game’s architecture.

Conclusion

The chapter has sought to map a posthuman life and body. This endeavour was grounded in the argument that only through reconceptualising being and becoming is it possible to make sense of ‘a life’ in the technological age and to articulate the political, the new political subject and action. This metaphysical journey began by problematizing the human body and technology. Not the body as a construct of discourse, nor the body as a product of power, but simply the body as bound by skin. Set up as a binary, with enforced material and mental boundaries, man versus machine has long been the episteme within which life and politics is understood and practiced. With the help of technicity, the human and technological categories were opened up, relaying their bodies (that of the player and gaming technology) into the various materialities, practices and norms that assemble these entities. Treating the ‘human’ and ‘technology’ as socio-historical constructs rather than fixed material entities deeply troubles the dichotomy between them, along with those of the human/non-human, living/non-living and natural/artificial. Moving further than Simondon’s argument of the co-implication of the living in the non-living and that there is no absolute distinction between the human and technology, the path to the posthuman sees the human as “sociotechnical negotiation and artifact” itself,²¹² which mainly serves representational purposes and is of use to the conscious subject.

²¹⁰ Eleanor Kaufman, “Introduction,” *Deleuze and Guattari: New Mappings in Politics, Philosophy and Culture*, eds. Eleanor Kaufman & Kevin Jon Heller (Minneapolis, MN: Minnesota UP, 1998), 6.

²¹¹ Kaufman, “Introduction,” p. 6.

²¹² Latour, “pragmatogonies,” 806.

The birth of the posthuman lies in the move to open systems and a life determined by affect, so that boundaries emerge along intensive differences in temperature, speed/movement and rhythm. The posthuman condition is blind to hylomorphic bodies having form and that change happens through and is reflected in form. Furthermore, the posthuman frees itself of fleshy representations in acting as a thermodynamic agent, guided by flows of energy and forces, embedded in complex systems and occasionally flirting with quantum speeds that tears its boundaries and spreads it out into the open, above, below and far beyond the human body and subject. Without its own organs or image, the posthuman is embodied information that moves at different speeds. It is in its slow and more stable form when caught by human perception and consciousness. As such, the posthuman is pre-conscious, impersonal and pre-subjective, with a Virtual and actual half, moving through and engaging in the world not through perception but prae-ception and at constant 'risk' to fall apart, that is into disequilibrium and smaller intensive units.

Despite being prior to consciousness the posthuman still thinks – is forced to think – through experience. In fact, it liberates experience from idealist and phenomenological vestiges, making thought fall out of the anthropocene and into matter. Mattered-thought and thinking-matter as the extended 'mind' of the posthuman is the basis for differing intensities to encounter each other, forming idea-problems that upset stable equilibria and break with ordinary experience. These signs cause rupture out of which the genuinely new can flow. A shock to the open system is the origin of novelty, giving birth to new systems of experience that are not rehearsing recognition, but are aleatory dynamics that grow out of the plane of immanence in rhizomatic fashion, defying being separated into material and immaterial, mind and matter. The posthuman's *Bildungstrieb* is neither teleological nor resulting in stable systems. While it is part of the individuation process that moves through the larval state and

produces a conscious body in the end, the outcome of this double articulation differentiation-differenciation from the Virtual to the actual is unpredictable as there are no transcendental conditions. The posthuman moves in its own accord, its thought is non-dogmatic.

The posthuman condition of fluid information that moves between solid and soft states is precisely the potential for lines of flight in gaming. Stripped bare, gamer body and subject, gaming technology and setting are just intensities carrying information (attractors and elements) that can be reshuffled in a unique way, if encounters, as allowed for by the game's architecture, break with ordinary experience and systems of meanings of stable subjects. As a test lab, political gaming is not only the mimesis of the birth of the political, but crucially is itself this moment of openness. It is only in the pre-subjective, impersonal posthuman that this moment is truly open to political innovation and in a position for a new political subjectivity to emerge, one that is not forever caught in the alternation between subject-object, mind-matter, human-nonhuman. Indeed, immersive gaming is posthuman-becoming in the post-anthropocene in which algorithms are wild and valued for their native intelligence as present in every quark of matter. The seduction of gaming is its mode of interaction and experience, which is the opportunity and conveyor of singularities and the new.

Chapter 3 ~ Affective Game Design: Playing with Contingency and Movement

Concepts must be experienced. They are lived.

Erin Manning & Brian Massumi¹

Introduction

This chapter works more closely with the notion of affect and its analysis to explore the elements of game design that are implicit in the production of the gaming experience, the posthuman gaming body and, eventually, political subjectivities. There is unavoidably at this stage a gap between the project's noology that details how a posthuman body is forced to think in and outside the context of gaming (and during this process is reshuffled/transformed) and the actual mechanisms that allow for this involuntary thought during gaming. The complex gaming architecture is an essential point of analysis as it builds the basis for wider posthuman political subjectivities that eventually emerge out of the impersonal thought of games. However, even though involuntary impersonal thought cannot be predicted and initiated from the conscious position of a subject, thought and experience in gaming is influenced even before the onset of the game through the very nature, design and purpose of a game. Nevertheless, despite every thought retaining its virtual half and therefore a degree of freedom,² it would be erroneous to assume that thought is completely free in its actual movement, for it is subject to wider configurations of coded material possibilities and limits in the game, which are themselves heavily dependent on a "sprawling, vastly complex aggregation of human-machine-nature assemblies."³ In this sense, game design is not only

¹Erin Manning & Brian Massumi, *Series Forward to Semblance and Event: Activist Philosophy and the Occurrent Arts*, by Brian Massumi (Cambridge, MA & London: MIT Press, 2011).

² See *Ordinary Experience, Sensation and Involuntary Thought* in Chapter 2.

³ Peer Schouten, "Theory Talk #60: Daniel Deudney on Mixed Ontology, Planetary Geopolitics, and Republican Greenpeace," *Theory Talks*, Nov 20, 2013, accessed August 15, 2014, http://www.theory-talks.org/2013/11/theory-talk-60_9211.html.

absolutely crucial for the immediate gaming experience but also tremendously influential to posthuman political subjectivity and therefore needs to be taken beyond merely acknowledging and analysing the leverage of programming, user-friendly interphases or game-plans. Game design takes a new meaning in a posthuman condition, forcing the analysis to look at diverse and unusual elements: movement is enabled, guided and channelled, asking questions about space, rhythm and speed. Issues that game design and development are usually concerned with are questions such as how game space is filled and propped up, which accessories to use and what digital worlds should unfold in front of a gamer when playing a video game. However, these issues reveal little of significance in/for a posthuman condition. Instead questions about how game space unfolds, how attention is triggered in the posthuman or how the immediate gaming experience plays into a posthuman decision-making process are much more significant to the present line of inquiry. Yet, there is little literature engaging with game design in this way. Apart from Ian Bogost's writings that use French materialist philosophies in order to reveal the unique and expressive power of video games or James Ash's analysis of affective dimensions of digital interphase-space there are disappointingly only small amounts of research on affective tracing and mapping of games.⁴ As a consequence, the affective dimension of games is rarely used in general and in a political sense more specifically.

The purpose of this chapter is twofold and it focuses attention not only on the affective architecture of games, but also on the theoretical and practical purchase of theorizing, designing and using games as plays of affects. The primacy of affect is a complex tribute to the vitality of game design based on the project's speculative materialism and its newly conceived ontology of living material and vibrating matter. The aliveness that was reinserted

⁴ See for example Ian Bogost, *Unit Operation: An Approach to Videogame Criticism* (Cambridge, MA: MIT Press, 2008) or James Ash, "Architectures of Affect: Anticipating and Manipulating the Event in Processes of Videogame Design and Testing," *Environment and Planning D: Society and Space* 28, no. 4 (2010): 653-671.

into the previously innate category of technology through the notion of the posthuman suggests that if gaming technology is (partly constituting) a living posthuman, its design needs to be analysed in vital and energetic terms. Accordingly, treating a game and its design as alive opens up a multitude of new opportunities to politically engage with games and conceive of it as part of an emerging political subject. Consequently, an analysis of affect in game design is much more than detailing how the posthuman is forced to think through various game strategies, but it is a call to apply this vitality to existing and future games. In this respect the immediate challenge for affective gaming architecture lies in programming for discrete encounters that trigger involuntary thought, subtle movements, and posthuman configurations, “but in ways that newly reaccess the infinities of experiential potential, discrete and continuous.”⁵ The balance that affective design needs to strike is that between encouraging without forcing that promotes emergence without construction. Design seeks a balance of variational continuum that allows for creative freedom in games in order for new political subjectivities to emerge. In this sense, game design is about so much more than coding for verisimilitude and representational scenarios. The emphasis on affect is a posthuman way of understanding games and their design, the analysis of which will begin by making a general case for affect in IR and in relation to gaming technology in particular. Although affect has enjoyed increasing popularity and attention in the social sciences, there is nonetheless a need to explain in greater detail what affect is, how it is treated in the literature and its analytical purchase.

In order to build a foundation for affective game design and gaming, the chapter will continue by problematizing plays of contingency. This is the immediate demand of creating a sense of openness and window of opportunity (the political) in the game that thereby allows for lines

⁵ Brian Massumi, *Parables of the Virtual: Movement, Affect, Sensation* (Durham & London: Duke UP, 2002), 197-8.

of flights, whilst keeping the game focused on political tasks. These are technical, philosophical and pedagogical concerns that impact upon how game space unfolds and how the posthuman plays out. Apart from fascinating technical forays into programming, developing ideas of posthuman space and movement are crucial to affective game design. These affective gaming dynamics need to be put into context with regards to conventional games and simulation parameters of ‘success’ and ‘failure’, the role of scripted events, event intervals, contrasting affects/emotions, and how these are amplified and modulated. Oscillating between and often marrying technical and philosophical concepts, the chapter aims to show how successful affective game design can constitute a political event in the course of a game and upon which new subjectivity hinges. This posthuman moment will be developed into the Techno-Political-Event (TPE) arguing that this is what is at stake in gaming, and what should be the aim and focus of games for change. This is due to the event being the moment of indeterminacy that allows for lines of flight, but also because it is the moment of captivation – the capture of forces and attention. More specifically, the purchase of gaming *with regard to* ordinary political training lies in its power to captivate, based on theories of “flow experience.”⁶ The chapter will examine how flow experience is present in games as latent affective structure that is triggered by captivation.

Careful not to instrumentalise affect beyond gaming necessity, this chapter will conclude by discussing how affective states in the posthuman play out as “affective programmes” for the political subject to come. The argument is that these programmes are carried over into the human realm in the form of bodies politic. Even though the latter is the subject of the subsequent chapter, the argument presented at this stage introduces ideas of “habit” and “milieu” into the discussion of game design, as their mechanisms are affective and resonating

⁶ Here it is referred to Mihály Csíkszentmihályi optimal flow experience, in *FLOW: The Psychology of Optimal Experience*, New York: Harper & Row, 1990.

most prominently in a body politic later on. Lastly, the affective gaming posthuman contextualized *en milieu* will give way to a posthuman pedagogy based on gaming.

What Use Is Affect?

“L’affect (Spinoza’s affectus) is an ability to affect and be affected.”

Eric Shouse⁷

Twenty-first century challenges, whether inside or outside gaming, call for new ways of analysing and responding to political phenomena. In this light, it is no surprise that affect frequently surfaces in contemporary political theory. To echo Clough, critical theory turns to “affect as a focus of analysis” when challenged by world events of on-going and increasing insecurity.⁸ If these events are evidence of a continuous transformation in politics, economics and cultures, then “affect may be registering a change in the cofunctioning of the political, economic, and cultural” – or the “social” according to Massumi.⁹ Indeed, the first thing that the analytical lens of affect suggests is that the increased use of new high-technology for neoliberal politics and economics have created the conditions for “radically new ways of manufacturing and articulating lived experience,”¹⁰ with political games being a strong case in point. In this way, the affective component is not only part of techno-political practice, but a necessary component to understand these new modes of politics. Using affect helps to tie together various and greatly diverse problems and challenges associated with political gaming, such as their political economy, ideology but also highly technical questions. In short, the strength of affect is that it cuts right through multiple registers.

⁷ Eric Shouse, “Feeling, Emotion, Affect,” *M/C Journal* 8, no. 6 (2005), accessed August 28, 2014, <http://journal.media-culture.org.au/0512/03-shouse.php>.

⁸ Patricia T. Clough, “Introduction,” *The Affective Turn: Theorizing the Social*, eds. Patricia T. Clough & Jean Halley (Durham & London: Duke UP, 2007), 1.

⁹ Clough, “Introduction,” 1.

¹⁰ Steve Shaviro, *Post-Cinematic Affect* (Winchester: Zero Books, 2010), 2.

The particular strength of affect for this work is the agreement with the project's noology because it is non-conscious, pre-subjective, unqualified, intensive and asignifying.¹¹ Using affect in a Spinozist sense, and as developed by Gilles Deleuze and Felix Guattari most prominently, neither affect nor affection refer to a personal feeling, but distinctly to "a prepersonal intensity corresponding to the passage from one experiential state of the body to another and implying an augmentation or diminution in that body's capacity to act."¹² Therefore, it cannot be used interchangeably with feelings or emotions. Being more than just mere pedantry, there is a sharp distinction between affect, which is pre-personal, and feeling as sensation, which is personal and "biographical," and emotions, which are social, often even collective.¹³ Not only are feelings and emotions subjective and often reflective processes, but by implication these are deemed 'human' and based on conventional phenomenological understandings of experience. Similarly, when evaluating gaming experience this happens through a human vocabulary by drawing on the realm of emotions. This is not a possible register to think with regard to the posthuman. Instead of assuming emotions which are proper to the already established subject and are derivative, qualified, conscious and already meaningful,¹⁴ affect is still untamed and, thus, traverses subjects.¹⁵ Therefore, emotions are derived from nonlinear complexities of affect¹⁶ and belong to a subject that appropriated affect.¹⁷ This makes affect better suited for the posthuman condition of gaming because it is not a case of recognition and representation, in contrast to emotions that are phenomenological, representable and representative. Helpfully, scholars already

¹¹ Shaviro, *Post-Cinematic Affect*, 3.

¹² Shouse, "Feeling, Emotion, Affect."

¹³ Ibid, original emphasis. For a detailed analysis of the differences as set out by Deleuze and Guattari see Brian Massumi's *A User's Guide to Capitalism and Schizophrenia: Deviations from Deleuze and Guattari* (Cambridge, MA & London, UK: MIT Press, 1992).

¹⁴ Brian Massumi, *Parables for the Virtual: Movement, Affect, Sensation* (Durham & London: Duke UP, 2002) 28.

¹⁵ Shaviro, *Post-Cinematic Affect*, 3.

¹⁶ Clough, "Introduction," 2.

¹⁷ John Protevi, "Ontology, Biology, and History of Affect," *The Speculative Turn: Continental Materialism and Realism*, eds. Levi Bryant, Nick Srnicek, & Graham Harman (Melbourne: re.press, 2011), 393-405.

started using affect in more-than-human ways, by arguing that new technologies (NT) “produce affective bodily capacities beyond the body’s organic-physiological constraints” and that affect “inserts the technical into felt vitality.”¹⁸ Therefore, intensive flows of affect cut across various bodies.

Affect can be thought of as being the glue that binds various elements together because it is a Virtual state but also a key player in the actual, for it directly guides experience towards subjective emotions. It is the vessel that crosses the gap. In this way, and derived from Deleuze’s engagement with Spinoza, affects are defined as “‘becomings’ or capacities to produce emergent effects,”¹⁹ and, therefore, affect is incipient action.²⁰ Often affect is equated with intensities as seen in Massumi’s work. However, the view here is that affect is one step further than intensity, yet one step short of full action and therefore the in-betweenness. This is becoming and as such affect highlights and supports the idea of the body in constant flux, stressing gaming’s “dynamic interactional ontology”.²¹ Therefore the posthuman is greatly shaped by affect in its process of individuation from the Virtual through the larval to the actual. Even of more importance for game design and the ensuing argument here is that because of affect’s in-betweenness – melting the Virtual and actual, the abstract and concrete – games are actually interactive maps for shaping bodies and, hence, subjectivities. As will emerge more clearly throughout this chapter, affect is important because games are one of the most vivid examples of the production of the posthuman *and* posthuman subjectivity and these two productions are linked through affect as well.

¹⁸ Clough, “Introduction,” 2.

¹⁹ Protevi, “Ontology, Biology, and History of Affect,” 393; Gilles Deleuze & Felix Guattari, *A Thousand Plateaus* (New York: Continuum, 2004a), 256-7.

²⁰ Deleuze & Guattari, *A Thousand Plateaus*, 257.

²¹ Ibid.

Affect and Games: A Powerful Mix

Affect lays bare that political games are not only a pedagogical tool for training and representing peace practices, but that these games are primarily sites of meaning and subjectivity formation. As such, games are affective productions, alterations and manipulations of posthuman-becoming.²² This is due to affect being the outcome of an encounter that increases or decreases the posthuman's capacity to act or be acted upon, which makes gaming an affective event.²³ One characteristic that was identified with regard to the emergence of the posthuman is that when the gaming experience is extraordinary enough, previously separate posthuman bodies (consciously perceived as human, gaming technology and environment) melt into one posthuman, which means that the affective gaming encounter is triggered by the game space as much as it is by participant bodies or gaming technology. In other words, there is a strong connection between the space and the constellations of affect.²⁴ Due to affect being Virtual before it gives rise to individuation, it is assumed that game space is in excess of affect, which according to Shaw and Warf is ““spilling out”” onto the player. Although in agreement with this argument, it needs to be refined in the way that the spilling and affecting only happens if the encounter marks a rupture in ordinary experience and that this rupture is triggered through scripted and simulated contingent events. This means that games need to be thought of as having affective pressure points or latent triggers that if encountered can give rise to new experience.²⁵

Importantly and in contrast to conventional analyses of game design, these triggers do not have to be visual or auditory. Whereas it is nothing new to speak of trigger or threshold events in games that when reached activate other events, such analysis is usually framed

²² Ash, “Architectures of Affect,” 654.

²³ Ibid, 653-671.

²⁴ Ian Shaw & Barney Warf, “Worlds of Affect: Virtual Geographies of Video Games,” *Environment and Planning A*, 2009, 2.

²⁵ As explained in chapter 2 new experience is not a guarantee.

around the conscious gamer who digitally, through an avatar, moves through the course of a game, perceiving the scenarios presented to him/her and who then actively makes choices based on the rapid cognitive assessment of the game space. Designing games based on this model needs to be adjusted. This does not render sound or graphics in games obsolete, much rather it suggests that proprioceptive and especially prae-ceptive levels of analysis need to be introduced, looking at how movement is created and channelled or different types of movements and motion. In this respect, especially those games that are highly dynamic and/or set in a 3D environment (digital or analogue) are fascinating and important because of their kinetic dimension. This means that games should be analysed in kinaesthetic terms as well.²⁶ The kinetic dimension as introduced by affect has two crucial implications. First, it makes game design that much more complex, offering an abundance of new ways of thinking about and using game space. Beyond the immediate task of understanding design and designing in kinaesthetic ways, this opens up opportunities to push design in a pedagogical way towards kinaesthetic learning.²⁷ Gaming is already decentring the dominance of static learning that favours types of intelligence that are solitary (intrapersonal) and logical, because games are a primarily visual, auditory, aural (auditory-musical) and social way of learning. That gaming is very conducive to these learning styles has long been recognised and pedagogical research in this area is considerable.²⁸ The argument is, however, that the role of affect and the actional learning type can be theorized and explored much further by developing affective game design. However, in comparison to these other types of learning that start being reflected in gaming more prominently, the kinaesthetic aspect is the hardest to design for given that restricting decision-making through restricting movement is much more

²⁶ Here kinaesthesia needs to be understood in terms of movement relating to any movement not just that tied to human tissue.

²⁷ Ada A. Cariaga, Jay A. Salvador, Ma. Rowena Solamo & Rommel Feria, "Kinespell: Kinesthetic Learning Activity and Assessment in a Digital Game-Based Learning Environment," *Advances in Web Based Learning*, eds. Marc Spaniol, Qing Li, Ralf Klamma & Rynson W. H. Lau (Berlin & Heidelberg: Springer Verlag, 2009).

²⁸ For example, Marc Spaniol, Qing Li, Ralf Klamma & Rynson W. H. Lau, *Advances in Web Based Learning* (Berlin & Heidelberg: Springer Verlag, 2009).

forceful than restricting audio or visual cues. This leads to the second implication of the movement dimension: carefully designing possibilities of movement through the management of contingency in the game. Of course, contingency is reflected in decision-making in games more generally and not only in movement, which makes it arguably one of the most crucial factors in the design and experience of gaming. To master, manage and engineer contingency will necessarily determine the experience of a game and everything else that unfolds from it.

Plays of Contingency: Designing, Engineering and Managing Affect

Generally speaking, game developers seek to create the potential for positively affective encounters during the course of playing.²⁹ Transferred to games in the political realm it can be argued that these are supposed to be learning encounters – an increased training effect in political understanding, practices or skills. This is achieved through the elusive working of complex mechanisms, events and transmissions of affect. Given that games work with the element of surprise and the unknown, participants to a game usually know very little about the game scenario as such. Even if they are informed about the political context of the game (sometimes with time and resources to prepare), how developers script the game is something disclosed and can only be encountered and experienced through playing. This means that while participants can run counterfactuals, imagine what may happen and plan for eventualities, when it comes to the actually playing participants have to improvise. Critically, this unpredictability applies to the participants but also to those who run and oversee games, so that game design is due in large part to the careful management of contingency. And contingency, understood as the “unexpected, the random, the singular, the unrepeatable, or

²⁹ Ash, “Architectures of Affect,” 654.

the surprising,”³⁰ splits even further – not only does it refer to the unpredictability of spontaneous decision-making, but more importantly, game design is predicated upon *producing* contingency as well.³¹ Contingency is doubled in this sense, it has a Doppler effect (Doppler-contingency).

Doppler Effect: Controlling and Producing Contingency with Contingency

Going through it in reverse, the second type of contingency happens on behalf of game developers and is the unknown designed into the game and its power lies in the fact that it can influence decision-making in highly unexpected ways that have the potential to temporarily upset old habits, preconceived ideas and ideological beliefs. This is based on game studies more generally, where even gamers who start off playing with a highly detailed game plan are thrown by a game’s development in a way that slightly or significantly changes their subsequent gaming behaviour. However, this depends on designing contingency into the game as the unknowable and unpredictable participants of imagination. While this is certainly not a criterion of most political games yet, the following analysis of contingency is based on the premise that contingency would benefit gaming in the way that it can trigger innovative political thought, by upsetting old belief systems. In the area of peace operations participants to a game often enter with rather strong political beliefs or official opinions and even if relatively open to the unknown factor in games, given the serious context of most political games, there is a stronger professional commitment to adhere to official political positions. Given that player bodies are relatively solid dissipative structures it takes a significant amount of energy (forceful encounter) to break open participant bodies and systems of ordinary experience so that participants are open enough to engage with the new. This is precisely where contingency is attacking the body and it is argued that contingency through

³⁰ Ibid, 657; Michael Dillon, “Governing Through Contingency: the Security of Biopolitical Governance,” *Political Geography*, 26 (2007), 41-47.

³¹ Ash, “Architectures of Affect,” 653.

motion and movement offers added opportunity to meet the trigger points of a transformative encounter – the chance moment, the political as it were. Accordingly, the argument and even suggestion here is that the design of games for change should increase its focus on managing contingency with regard to decision-making specifically in relation to movement.³²

The two types of contingency (with the second referring to the unpredictability of how participants will respond to scripted events in the game) are co-dependent and the challenge is to anticipate player contingency through scripting contingent events. However, the fact that players decisions depend on many different factors does not mean that this type could be controlled by merely limiting available choices, as this would counter the explorative learning that these games seek to promote in the first place. It is not as easy as to assume a hypodermic model of gaming power, where gaming technology is able to ‘inject’ the preferred message or ‘right’ decision into the participants.³³ Although this “determinative power” should not be underestimated³⁴, designing contingency is a fragile process and prone to failure.³⁵ Anticipatory manipulation of decision-making contingency that seeks a kind of ‘doing without thinking’ is constantly countered by the creative responses of the players. In other words, decision-making contingency cannot be managed through pre-emption. To the contrary, to keep players engaged and attentive, the game has to offer “openness and performative play of contingency and chance.”³⁶ Of course there are very basic political games, such as *Against All Odds* or *Darfur is Dying*,³⁷ that are more restrictive. However, in defence of these games, it should be mentioned that these have a different intention and work

³² Contingency as the “unexpected, the random, the singular, the unrepeatable, or the surprising”, Ash, “Architectures of Affect,” 657.

³³ Clive Barnett, “Political Affects in Public Space: Normative Blind-spots in Non-representational Ontologies,” in *Transaction of the Institute of British Geographers* 33, no. 2 (2008): 193.

³⁴ William Connelly, *Neuropolitics: Thinking, Culture, Speed* (Minnesota: Minnesota UP, 2002).

³⁵ Ash, “Architectures of Affect,” 655.

³⁶ Ibid.

³⁷ *Against All Odds*, developed by United Nations High Commission on Refugees, 2005; *Darfur is Dying*, developed by interFUEL, LLC, 2006. For more detail on the funders and ratings of these games see the platform provided by Games for Change, <http://www.gamesforchange.org/>.

on a representational level trying to convey what the refugee and human trafficking experience is like. Even though such games are interesting and important, the chances of novel political thought seem slim as the choices in the game are very limited and do not foster thinking outside the box. However, this is not the games' intention. In comparison, the explorative and creative contingency is an important variable in games like Will Wright's *SimCity* or *SimEarth*, which provide the gamer with a high degree of decision-making, especially because it is a scenario and world-building exercise. Such game structures that prioritize contingency could be applied to immersive games too. This would propel unpredictability, surprise, and the singular, as the design would equally prioritize both types of contingency, which renders game structure and game course highly fluid and amendable. Indeed increasing gaming contingency allows for a higher degree of interactivity. Therefore, game design is to a large extent an art of simulating contingency.

In comparison to the unpredictability associated with the behaviour of the participants, the levels of contingency in the gaming software and hardware need to be affectively engineered. Within the limits of digital code, game designers can trigger a range of dispositions in the players – such as fear, anger, mercy or benevolence – that can lead to certain affective decisions.³⁸ The interplay of these two types of contingency fundamentally troubles “the division between the agency of the software programmers, the agency of the software, and the agency of the user.”³⁹ More precisely in the context of the theoretical frame here, it is not surprising at all – given the pre-subjective workings of games – that there is no active, independent decision-making on behalf of the player. Even more, it could be argued that the conscious decision is an illusion in a posthuman context anyway. This is because the

³⁸ Ash, “Architectures of Affect,” 656.

³⁹ Martin Dodge, Rob Kitichin & Matthew Zook, “How Does Software Make Space? Exploring Some Geographical Dimensions of Pervasive Computing and Software Studies,” *Environment and Planning A* 41, no. 6 (2009): 1291.

interplay and indeterminacy is precisely the point where a new posthuman emerges because ‘autonomous’ decision-making spreads across various elements and entities that are part of the posthuman without image. In turn, this means that affective game design determines to a large extent how the gaming posthuman can take shape – that is, how it can affect and be affected. The interplay of contingencies are then another case that highlight the co-dependence and indeed inseparability of gamers, the game’s hard- and software as well as gaming environment.

Playing with Contingency – Undoing the Gaming ‘Environment’

Gaming contingency is compounded by the fact that political games are usually multi-player games. The unpredictability of contingency is what gives these games their alluring quality and what is desired by the designers even though it makes developing a game’s architecture so much more difficult at the same time.⁴⁰ This is because games display a dynamic that triggers a “powerful self-generating logic” and “a space of problematisation,”⁴¹ because it neither solely depends on design nor the gamer. As soon as games commence they become inherently unpredictable and unquantifiable. It depends as much on the designer and the software as it does on the player and action can only be understood as a part of the posthuman. In this sense, the posthuman’s action is subject to the culmination of contingencies because it increases or decreases its capacity to act or be acted upon.

Designing and playing with contingencies is intimately tied to problematizing the gaming ‘environment’.⁴² Given that the environment collapses into the posthuman together with the gamers’ bodies, how contingency impacts upon the posthuman gaming condition will be easier to understand by problematizing game space. The key is to think about space not in

⁴⁰ Ash, “Architectures of Affect,” 657.

⁴¹ Dillon, “Governing Through Contingency,” 45.

⁴² See discussion on environment and surrounding in Chapter 2.

strictly Euclidean terms or perceived physical space, representations of space (mental space) or lived, social space.⁴³ Instead, in a posthuman condition space is conceived of as movement and speed; the spread of temperature and the resonance of rhythm as well as differences in software coding and programming. The latter is of particular importance because it demonstrates that game space is partly made up of designed and codified rules of engagement rather than designed spatial graphics. For example, game space can emerge out of specific rules that allow players to engage with one another or which impact upon their (speed of) movement. It arises out of the tension between contingent analogue behaviour in response to coded affect, creating a net(-space) between various elements of the posthuman. Even though the software is “using digital quantitative states governed by computational rules within the game’s database,”⁴⁴ how the space then eventually unfolds is out of the hands of designers because this development is spontaneous, volatile and irregular and, therefore, highly qualitative and lived rather than quantitative. Essentially, space is affective coded structure and with regard to movement this means that the posthuman cannot possibly move through game space as though it would be moving “through a predefined level with a set destination in mind.”⁴⁵ Instead the posthuman moves by way of expanding and contracting through rhythm, speed and temperature. Crucially, when in motion the posthuman is “its own variation” of “its own nonpresent [Virtual] potential.”⁴⁶ This means that the posthuman is continual variation that is increased by plays of contingency.

In stressing the connection between contingency and space in games, this dynamic needs to be conceptualised as unfolding in multiple dimensions. While it is of no immediate necessity to be able to picture how this movement occurs in a space that has more than three

⁴³ This argument is in clear distinction to philosophies of space, even critical ones, such as Henri Lefebvre’s *The Production of Space* (Oxford: Basil Blackwell, 1991).

⁴⁴ Ash, “Architectures of Affect,” 659.

⁴⁵ *Ibid*, 657.

⁴⁶ Massumi, *Parables for the Virtual*, 4 (original emphasis).

dimensions and that hits the limit of human thought with regard to the overall project of chasing the new this needs to be pushed nonetheless as “*the idea that we live in Euclidean space and in linear time excludes reality of change.*”⁴⁷ Being able to imagine and design in conception of non-Euclidean space and geometry can help to tailor possibilities of change better into a game. Even if challenging to thought and ways of digital representation we need to start understanding change as metric curvature in n-dimensional space that goes beyond three-dimensional imagination, which is precisely the space of posthuman movement in and outside of gaming. Needless to say that our view and representation of the world has moved on from a flat surface and flat pixels to two and then three dimensional spaces. Particularly in light of very recent scientific advances in our knowledge of the existence of more than three dimensions, it is imperative to start imagining and theorising a becoming-world that has moved into more-dimensional spaces. One way of doing so is through variational non-Euclidean geometry and happen on very large down to infinitesimal small scales. The crucial point is that each minute movement in gaming is triggered by designed affective contingency and contingent response carry variation. In this sense the space that is produced through gaming is qualitative because it is lived abstraction based on more-dimensional movement. These are logics of transition that now can be captured and perpetuated by technology. However, these new logics of change and movement have yet to enter proper analysis that does not rely on what is humanly representable for it defies any diagram and escapes language. In brief, while gaming dynamics can be represented in 3D spaces and forced into linear models, when games are played they produces Doppler-contingency that can only be understood through new qualitative topologies. Importantly, these can be run easily with the gaming technology and while being inside code they are still part of the posthuman body as

⁴⁷ Ibid, 201.

change only switches in its mode. That is to say change and movement is happening in a different mode, but it is nonetheless moving as continuities of variation.

Encouraging and Channelling Movement: Gaming Rhythms

Referring back to the previous sketch of the posthuman as three non-linear vectors intersecting (as occurring on/in the plane of immanence), the posthuman's movement can be influenced through various game variables. Based on the theory developed here, this is because these variables will become part of the posthuman and affect its movement directly, not as an external force as impact or diversion, but in form of internal intensities that put its body under tension and in torsion. It is hypothesised that these torsions can be abrupt, whenever affective trigger points are encountered in the game, which implies immediate change in form of expansion or contraction of the posthuman. An important advantage of immersive games is that movement is even less restricted, which applies in physical empirical space of the perceivable environment as well as the depth of space created by code. Especially in contrast to commercial entertainment games, movement is even more freed up due to political gaming not being restricted by standard parameters of success and the need to win in order to continue with the game, which already prescribes a more or less teleological movement into the game. The aims in games for change are much more multifaceted, which implies a greater variety of non-linear movement.⁴⁸ Indeed, if one was to put it into terms of "successful gaming" then the parameters are that of increased learning, which in these games fundamentally depends on exploratory movement. In turn this means that a too rigid game architecture is made up of restrictive elements that impairs with movement and thereby runs the risk of pre-empting trial and error scenarios. This further complicates game design as now

⁴⁸ Regardless of whether movement happens in a graphical space through an avatar or as physical movement by the participants themselves the restrictions on this are far less as there is more opportunity to reverse movement, walk backward and stand still in one place, without this being immediately interpreted as 'failing to progress'; Mark J. P. Wolf, "Time in the Video Game," *The Medium of the Video Game*, ed. Mark J. P. Wolf (Austin, TX: University of Texas Press, 2001), 78-80.

variables have to influence movement and provide for contingent encounters while allowing for exploratory movement-space to emerge.

Applying theories of how exploratory movement is designed in highly advanced first person shooter (FPS) games can help to create learning movement in political games as well. Even though players in FPS games move digitally in the form of an avatar, the movement of the avatar is very similar to that of participants going into an immersive game. The key to this movement, which at the same time is the strength of immersive games, is that they allow for back and forth movement. Accordingly, gaming-maps are designed to foster continuous movement (irrespective of whether this may be backwards) in order to increase the chance of contingent encounters.⁴⁹ The challenge is to generate an atmosphere as well as a plenitude of optional movements in which players feel comfortable enough to make encounters that can be either beneficial or detrimental to progress that has been made in the course of the game so far.⁵⁰ Because games aim at providing a platform for political actors not only to test certain approaches to peace operations, but often to find alternatives in the first place, game developers need to build in the possibility of ‘failure’ on the part of the players. However, this and creative movement as a condition of alternatives is rarely explored and capitalized in political games’ design. Therefore, the suggestion here is that if political games are to be pushed in their development, relevance and impact, it is necessary to increase attention on and possibilities for contingent, explorative, daring, learning and innovative movement in games.

⁴⁹ Adrian Mackenzie, “Intensive Movement in Wireless Digital Signal Processing: From Calculation to Envelopment,” *Environment and Planning A* 41 (2009).

⁵⁰ Peter Adey, “If Mobility is Everything Then it is Nothing: Towards a Relational Politics of (Im)mobilities,” *Mobilities* 1, no. 1 (2006).

The difficulty is to design games in a way that they encourage calculated risk without being too risky.⁵¹ Put simply, how can participants be brought into a situation in which they can make a ‘good judgement call’ about a possibly risky situation. It is expected that behaviour in the game is slightly more daring, yet it should not be unrealistically bold or dangerous and opt for strategies that would seem unfeasible outside the game and in actual political contexts. The aim is to encourage authentic, movement/decision-making that tests feasibility and imagination. However, to trigger such a natural flow of motion requires stimuli that work on an affective level. To be exact, fixed game plans and rigid instructions are not likely to inspire this kind of movement. The very idea of ‘having a game plan’ over-emphasises and pays too much attention to the fact that one is about to play a game or enter a simulation in the way that “skilled pianists can find their movement restricted or paralyzed because they have concentrated too much attention on their fingers.”⁵² In other words, it is precisely the ease of play that is the significant leverage of games as it can help to inspire less restricted and more creative engagement with otherwise serious, difficult and perhaps even daunting tasks. The key is to prompt non-conscious and spontaneous, but not too impulsive behaviour, which is then exposed to the new. An example of successful game design would be one that culminates in increased creative encounters of movement that is breaking with ordinary experience and cultivating shock to thought.

It is argued here that for participants to be open enough to be ‘shocked’ occurs through affective variables that channel movement, such as change and surprise, rather than through strategic game-planning. The scenario of the posthuman unit coming to a halt because the game plan designed for a stop at a certain point of the game (in order to make a decision for

⁵¹ See “Complete Freedom of Movement,” in Henry Jenkins, *The Wow Climax: Tracing the Emotional Impact of Popular Culture* (New York & London: New York University, 2007).

⁵² Polanyi paraphrased in James Ash “Technologies of Captivation: Videogames and the Attunement of Affect,” *Body and Society* 19, no. 1 (2013): 29.

example) is entirely different to a scenario in which the posthuman halts because of surprise or other sudden changes in the game play that prompt or require a spontaneous decision. While both scenarios look the same – as in moving/stopping/deciding/moving on – the learning-movement is qualitatively different. Indeed only the latter is qualitative movement, authentic and thus with a much higher potential of being innovative. Further, the course of action after this encounter is naturally contingent. Decisions will then depend on, as well as foster, context-dependent creativeness, appropriate responsiveness and flexible adaptation – what John Sutton refers to as “open skill” or Reeves et al as “contingent tactically oriented understanding.”⁵³ Therefore, change in movement seeks “regulated improvisation,” which, however, is unpredictable since every choice or decision involves a potential win or loss.⁵⁴ The logical consequence of this insight is that the increased repetition of a game allows for more experimentation and more learning-movement that is different each time given that games are “exhaustively possibilistic.”⁵⁵ This also plays into the hands of game designers as it is through repeated testing that contingency is rendered ‘visible’ and that it can be better understood and directed.⁵⁶ It is the engagement through repeated play of the political – which is the posthuman’s differential movement – that allows conceiving of political practice and subjectivity anew. In effect, this means that political gaming is contingent difference with repetition.

Continual variation is very difficult to design/manage and creates a problem for developers insofar as there are no certain parameters as to how to strike the fine balance of openness and open-endedness in a game as well as to maintain its value of reproducibility. Game design, ultimately, needs to stay loyal to the aim of a game and the political commitment it arose out

⁵³ in Ash, “Architectures of Affect,” 657.

⁵⁴ Ibid,

⁵⁵ Ibid, 662; Massumi, *Parables for the Virtual*, 141.

⁵⁶ Ash, “Architectures of Affect,” 662.

of in the first place, which is learning and training. As such, its analytical and learning value needs to be guarded, to avoid it becoming over-shadowed by the act of gaming itself. The natural flow of movement needs to be encouraged and give a sense of open-ended development.⁵⁷ Yet, the difference and repetition of games cannot paint an overall picture of sheer randomness and that ‘anything can happen’. If various testing and training sessions do not offer the possibility of transferring the new experience to analogue political practices then the game loses its pedagogical purpose, strength and uniqueness. This is why designers speak of simulated contingency when referring to games, as contingency is not a *carte blanche* for taking the political purpose of games less seriously. In short, feasibility and authenticity need to keep contingency in check.

The Dilemma of Winning

The finesse and subtlety of managing contingency applies equally to important issues of establishing a game’s parameters of success and failure,⁵⁸ especially where the primacy of explorative movement to increase learning and through the play of contingency takes away attention from conventional gaming goals and the importance of ‘winning’. What counts as success cannot be predicated upon whether the political goal in the game is achieved, but on the basis of the creative responses of participants.⁵⁹ Therefore, movement in the game can be arbitrary at times, even without any ‘progress’ at all. Whereas in commercial video games success and winning, in loose terms, is pinned upon a sense of progress developed through forward movement, this is not necessarily the case in political games.⁶⁰ Furthermore, what would be considered failure in analogue political practice can mean success in the context of gaming because of the mere fact that movement sought alternative practices. Arguably, there

⁵⁷ Jenkins, *The Wow Climax*, 198-200.

⁵⁸ Greg Lastowka, “Rules of Play,” *Games and Culture* 4 (2006): 385.

⁵⁹ Jenkins, *The Wow Climax*, 199.

⁶⁰ James Ash, “Attention, Videogames and the Retentional Economies of Affective Amplification,” *Theory, Culture and Society* 29, no. 6 (2012): 18.

is less teleology inscribed into political gaming than in their commercial counterpart, given that ‘failure’ is an accepted form of learning in these games. Hence, ‘failing’ in the game cannot be considered a failure as such, since it can still achieve the generation and practice of political alternatives, thereby stretching political imagination.

Specifically with regard to contingent movement, success seems to depend a great deal on designing and weighing up contingencies without letting chaos reign over the game. The suggestion here is that success occurs when contingency, as reflected in the posthuman’s movement, awakens curiosity and fosters desire for exploration, creativeness and improvisation.⁶¹ Success through contingency needs to encourage a ‘free’ flow of decision-making that is oriented towards trying out alternatives that are either deemed too ‘risky’ to be tested in an actual context, or that have not even been thought of prior to the game. Similarly, failure then is not determined by not being able to meet certain targets or goals. In essence, in terms of learning movement, it is much more detrimental when players encounter ‘no options’ in the game, which forces the posthuman to halt in a way it would not otherwise. Failure then is when designers pre-empt decisions and dynamics by designing out contingency and by reducing the unknown. To put it simply, ideally affective game design seeks innovation and innovative movement above all, which is ultimately the parameter against which it can be judged.

These preliminary parameters through which the performance of the gaming posthuman and the outcome can be evaluated have to be adjusted according to the different logics of particular games. Given the multitude of games that can have highly individualised goals and rules of engagement, the learning movement varies accordingly. For the purpose of

⁶¹ The kind of experimentation that was referred to with Massumi’s productivism in the second chapter, Massumi, *Parables for the Virtual*, 12.

exemplifying this, the analytic distinction is redrawn not between high and low-tech, or immersive or 2D, but between games that are either designed for a wider audience and, thus, need to be applicable to many conflict scenarios, for example, and the more costly and therefore highly specialized games that are tailored to one specific audience and one pressing issue or conflict. This distinction is drawn for two connected reasons. On the one hand, the more specialized games are still very restricted with regard to ‘success’ in a conventional sense because, in most cases, they are based either directly or indirectly on actual conflict scenarios. This means that the games start off with a known conundrum and offer of different game strategies that closely simulate those options available in the actual political realm. If anything, options are restricted in the way that they all seem plausible to those designing the game. On the other hand, the games for a wider audience start out with the very idea that literally thousands will play this particular game and therefore developers try to cater to a much wider imaginative capacity already. Furthermore, these games are played with a less immediate need to solve the puzzle, as in comparison to games that are played by political leadership specifically in preparation for peace talks or a referendum, for example. A case in point is the 2011 South Sudanese Independence Referendum, which had been professionally simulated (with scenarios designed and sold by Sentia Group, Inc.⁶²) multiple times prior to actual negotiating talks, where the need to end the game with a feasible solution was indisputably very high.⁶³ Going back to games for a wider audience and comparing three different games, *A Force More Powerful* (AFMP), *Antiwargame* and *Tekken Torture Tournament* (3T),⁶⁴ is revealing with regard to how the posthuman moves through these games and as to what success is or can be. To begin with AFMP, its purpose is to teach

⁶² It should be noted that the Washington D.C. based consulting and software service company appears to have dissolved.

⁶³ In an email to Rex Brynen, January 12, 2010, Brynen mentioned the simulations as well as the company working on this.

⁶⁴ BreakAway Games, *A Force More Powerful* (Washington, D.C.: The International Center for Nonviolent Conflict, 2006); Josh On, *Antiwargame* (San Francisco: Futurefarmers, 2001); Eddo Stern & Mark Allen, *Tekken Torture Tournament* (Los Angeles: UCLA, 2001).

aspects and strategies of nonviolent resistance. Even though it directly arises out of the Kosovo context, it has the more general aim of peaceful civil protest and overcoming dictatorship as a united civil front. Due to the designer's affinity with Western interests, it received considerable financial support and political, strategic advice from the West.⁶⁵ However, the games' context and source of funding is not the focus here, but much rather that it seeks to generate movement (even if through an avatar) in form of the local momentum of a people who need to organise themselves in the face of a leader who rules by means of structural and physical violence. The difficulty of the game design in this case is that of reproducing the socio-political temptation and moral-personal struggle of adopting easier, yet more violent, forms of resistance rather than the perhaps lengthier option of going through official processes of careful planning and coalition building in order to overthrow the oppressive regime. Focussing on this immediate task of generating dynamics that explore different non-violent strategies over an easier, quick violent fix that upsets the power balance in the short term, the game's contingency is precisely about this difficult balance. On the one hand, the game undoubtedly wants to promote non-violent solutions over others, yet any obvious move and restriction towards such solutions not only pre-empts decision-making, but also means that the game would lose its analytical and pedagogical value of generating a skill set that is transferable to actual situation of oppression. Nonetheless, this trade-off should not overshadow immanent dynamics arising out of the game. Contextualised within the present analysis this suggests that the main aim is to generate flow that lets the participants explore for themselves, even if this runs the risk of regression by liberal-democratic standards. This is not to imply that the outcome suggests that a violent strategy is the better one, but that in educational terms it is important to have the possibility of trying out this option and to be able to simulate what the consequences are. Despite not closely following liberal norms, such a

⁶⁵ Ian Bogost, *Persuasive Games: The Expressive Power of Videogames* (Cambridge, MA: MIT Press, 2010), 82. Assessments of AFMP and *Antiwargame* are in large part based upon Bogost's research in *Persuasive Games*.

gaming strategy would still provide for invaluable insight that would not have been possible otherwise. In the same vein, even though AFMP is criticised for occluding global political forces, often suggesting strategies that align closely with the rules and interest of the free-market that can rush in in the wake up political upheaval and revolution,⁶⁶ there is always a margin of indeterminacy and contingency that leaves room for creative responses by the posthuman, generating gaming dynamics that escape liberal doctrines.

In contrast, Josh On's *Antiwargame* counters this political incompleteness of games like AFMP or *America's Army* by showing the complexity and connections between seemingly disconnected and atomic socio-economic and political matters.⁶⁷ Played from the perspective of the American President, drawing on stylised depictions of the White House and Pentagon, the gaming *problématique* is that of war against terrorism. As a critique, On problematizes the US response to terrorism and the politics this response is based upon by letting the gamers play American politics.⁶⁸ While AFMP works on a holistic model that suggests a unitary logic to confront intricate political problems, *Antiwargame* is almost as detailed in its political elegance as, for example, SENSE, which is run by the US Institute of Peace. Because of its sophistication it should not be compared directly with AFMP, as the audience it addresses is broad, but not the same as AFMP's and with entirely different intentions. What can be compared however is the dynamic and movement they create. Due to AFMP being based on a holistic logic, momentum picks up quickly in the game, so that once the player decides on a strategy, violent or nonviolent, the decision-making process should be fairly straightforward. This is not the case in *Antiwargame* and the very game is based upon abrupt movement and constant break in flows due to interconnected issues putting obstacles in the

⁶⁶ Bogost, *Persuasive Games*, 82.

⁶⁷ *America's Army* is actually a recruiting and advertising tool for young Americans, which seeks to represent US Army practices as well as the political context these arise out of, Ibid, 79; 82.

⁶⁸ Ibid, 82.

way of decision-making, with clashing ideological, national, international as well as personal interests.⁶⁹ In other words, the political difficulty, the arduous process of making decisions that fit multiple interest groups while being “just” (according to whoever’s ideology) is produced as gaming experience that unfolds through interrupted movement that in this way creates the rhythm of the game to which the posthuman beats. In this sense, the rhythm of movement is closely tied to the overall gaming experience.

However, learning through movement does not prescribe or even suggest a linear or teleological movement, and, indeed, movement can have all kinds of unconventional rhythms. Eddo Stern’s anti-war games can be read in this way and exemplifies learning through rhythmic movement quite well. In contrast to AFMP, *Antiwargame* and almost any other political, peace or anti-war game, Stern’s games do not work on the basis of letting the players explore alternatives to otherwise violent conflict resolutions and peace talks. To the contrary, his anti-violence, anti-militarism and thereby peace efforts are conveyed by confronting the participants with the sheer brutality of war, unadorned, not stylised or glorified in any way. In one of his games, 3T, the participants wore arm-straps that transmitted “bracing but non-lethal electrical shocks in correspondence to the injuries sustained by their onscreen avatars.”⁷⁰ Notwithstanding the strong message this sends to games that play with the alluring qualities of violence, the factor of movement here comes out in a very different way. While the game depicts highly dynamic scenes, new experience in this case does not develop through continuous movement at all. Much to the contrary, the participants are often incapacitated and not able to react at all, not able to hold their joystick to navigate their avatars because their arms and hands cramp up, which arguably can be seen

⁶⁹ On, *Antiwargame*.

⁷⁰ Eddo Stern, *Eddo Stern*, 2001, accessed August 23, 2014, <http://eddostern.com/works/tekken-torture-tournament/>.

as the replication of muscle fatigue of actual fighting scenarios.⁷¹ In terms of movement, this means an absolute hold until participants manage to recover. Even though rhythm is slow, it can be argued that learning experience is high. Unless participants have played this electrical game before, this seems a one-off and entirely new gaming experience that is literally working with the encounter as shock to thought. As one observer has noted, “they are so horrible and gruesome; it makes you never want to pick up a gun or support violence again.”⁷² Exposing participants to levels of physical discomfort and promoting a way of learning through physical impact is debatable in itself. However, the factor that is important here is that learning is happening through rhythmic movement that is highly interrupted, not regular or teleological, yet results in taking the participants out of ordinary experience.

Comparing the three games and the learning rationale underlying them, AFMP works on a simple basis of trial and error, with a relatively linear flow of movement that is forward directed. The fewer the interruptions the steeper the learning curve. *Antiwargame* disagrees with this holistic order and the political incompleteness of games such as AFMP by offering a procedural gaming experience in which the player often has to take decisions that may seem illogical at first, but that thereby problematizes the obscure yet “causal ties between business, war, and civil unrest.”⁷³ The decision-making process fosters a syllogic movement of the posthuman, playing with the idea of incompleteness of information when taking decisions and the trans-posthuman resonances this produces. Entirely different to these two experiences is that of 3T because decision-making, inaction and coherent movement seem to have little significance in the game itself. Arguably, the logic and learning experience of the game is

⁷¹ Arguably, Stern & Allen seek tactile verisimilitude on top of graphical one, which can be so severe that participants need to sign a release form with which they “voluntarily waive any and all claims” relating to “both present and future [...]personal injury, and wrongful death,” Eddo Stern, <http://www.c-level.org/tekken/legal.html>.

⁷² In discussion with James Der Derian, August 2013.

⁷³ Bogost, *Persuasive Games*, 84.

that of highlighting the importance of movement and interaction by interrupting and, thereby, preventing any meaningful behaviour of the posthuman. Therefore, movement is not only crucial in tracing the encounter of the new and learning in games, but also highlights that ‘winning’ or being successful is not dependent upon achieving objective goals in the games.

In contradistinction to the majority of commercial games, completeness of rounds and success are only secondary, often less interesting, in political games in the face of the learning experience throughout the games. In fact, the motivation of showing how politics *doesn't* work is quite frequent, if not popular, amongst political games and often used to criticise dysfunctional political practice.⁷⁴ The logic of games is that of the impossibility of ‘winning’. Games that subscribe to this logic play on wider political conditions and political processes, contrasting individual action and influence with a political system, policy procedures, or situations of war and conflict. Especially since 9/11 there has been a significant response to George Bush’s War on Terror in form of “‘you-never-win’” games, as for example *New York Defender* and *Kabul Kaboom*.⁷⁵ While it is problematic that ‘impossibility’ already implies a certain type of outcome, the ‘you-never-win’ genre still epitomises that parameters of failure and success are entirely turned upside down in these political games and need to be calibrated for each individual game according to logics in rhythmic movement and learning experience.

Gaming as Techno-Political-Event

The level of critical political commentary in gaming not only asks about how and in what ways this influences the production of a new political subject (which will be dealt with in greater detail in the following chapter), but also if and how politics are already being played

⁷⁴ Shuen-shing Lee, “I Lose, Therefore I Think: A Search for Contemplation amid Wars of Push-Button Glare,” *Game Studies* 3, no. 2 (2003).

⁷⁵ Bogost, *Persuasive Games*, 85.

out through gaming. Gaming as movement and rhythm that determines learning experience refers to the movement of the posthuman as a whole. Once the posthuman emerged in its temporal gaming form it is a movement that constantly oscillates between the pre-conscious and conscious. That is to say, the posthuman subject falls in and out of becoming depending on whether new experience occurs during gaming and how often this happens. This means that the specific posthuman political subject that emerges out of primary movements in a game is in a state of constant becoming and possibly un-becoming. This becoming in games is a process or plurality and innovation that is “creative” and “generative” and therefore associated with the event in a Deleuzian sense.⁷⁶ Even though the preceding analysis has (implicitly) theorized posthuman emergence in line with the theory of the event, it is helpful to draw out gaming as event more strongly here. This is because the theory of the event highlights more clearly the strength and importance of gaming as political becoming in the way that political subjects during gaming “are in the being-made.”⁷⁷ Furthermore, conceptualizing gaming as event in a Deleuzian way has the advantage of making aleatory movement an immanent aspect of gaming in general. In line with the event, the TPE arises out of a contingent mix of forces, indicating the “immanent and chaotic nature of the world.”⁷⁸ However, the event is more than the spatio-temporal realisation of a state of affairs⁷⁹, or merely referring to a certain happening in gaming, but it is a “unique instance of production in a continual flow of changes.”⁸⁰ Turning gaming into a TPE is a strategic move in order to establish gaming as movement, change and becoming on a theoretical level. Events for Deleuze function in contradistinction to representation and are, thus, the reversal

⁷⁶ Graham Livesey, “Deleuze, Whitehead, the Event, and the Contemporary City,” (conference paper at “Event and Decision: Ontology and Politics in Badiou, Deleuze and Whitehead” Conference, Claremont Graduate University, Claremont, California, December 6-8, 2007): 4.

⁷⁷ Jamie Skye Bianco, “Techno-Cinema: Image Matters in The Affective Unfoldings of Analog Cinema and New Media,” *The Affective Turn: Theorizing the Social*, eds. Patricia Clough & Jean Halley (Durham and London: Duke UP, 2007), 52. Note that the same was said about affect earlier.

⁷⁸ Livesey, “Deleuze, Whitehead, the Event, and the Contemporary City,” 2.

⁷⁹ Gilles Deleuze, *Logic of Sense* (London: Continuum, 2004), 25.

⁸⁰ Stagoll quoted by Livesey, “Deleuze, Whitehead, the Event, and the Contemporary City,” 2.

of Platonism in the sense that the idea of an essence of things is removed and replaced by the event (a doing and happening), which is always unique.⁸¹ This is important for the TPE as it is characterized as generating immanent meaning rather than working upon an already established theory of the political. Of more significance even for the present purpose is that the theory of the event is part of the structuring process of experience. While experience originates out of a movement that cannot be divided along lines of subjects and objects as it is pre-conscious, the level of the event is the transition from the pre-subjective to the subjective that thereby produces immanent objects that are known by the subject.⁸² This means that the TPE describes the in-between from the point where systems of experience reach their “critical point” (trigger points of temperature for example) resulting in “fusion, congelation, boiling,”⁸³ which results in a product that can then be known empirically and consciously. Alfred North Whitehead succinctly and beautifully captures the dynamic of the TPE. “Events are lived through, they extend around us. They are the medium within which our physical experience develops, or, rather, they are themselves the development of that experience.”⁸⁴

This means that “everything is event,”⁸⁵ or in context of the gaming environment, the players, the technology and the experience at the same time. It is a truly immanent movement that yet results in an experience that can be known phenomenologically at the level of consciousness. Given that affect was identified earlier as occupying the same gap and facilitating movement across it, gaming can be seen as an productive event. In a few words, it is this complexity of experience and the event’s affirmative and productive power that renders gaming into a TPE. Ultimately, a game is then a continuous succession of events and it is always a case of

⁸¹ Deleuze, *Logic of Sense*, 64.

⁸² Anupa Batra, “Experience, Time and the Subject: Deleuze’s Transformation of Kant’s Critical Philosophy” (Doctoral Thesis, Southern Illinois University, 2010): 3, 104.

⁸³ Deleuze, *Logic of Sense*, 64.

⁸⁴ Whitehead quoted by Livesey, “Deleuze, Whitehead, the Event, and the Contemporary City,” 7.

⁸⁵ “Deleuze, Whitehead, the Event, and the Contemporary City,” 12.

becoming-posthuman and becoming posthuman political subjectivities. As such it is a mix of forces that is aleatory, always unique and immanent. Importantly, gaming defies a political essence as such, or an ideal form of politics as seen in the three examples, but instead turns it into an event, a process, which according to Whitehead is experience above all.

However, the TPE is still distinct from the event as such, for it is mediated by design, so that some events during gaming emerge contingently while others are pre-scripted as possibility. The TPE in many ways is a symbiosis of control and the uncontrollable at the same time, presenting a fascinating mix to the present analysis. The TPE includes series of scripted events and strategically placed affective intervals throughout the game, which control the thresholds of an event, at times keeping the game in states of inaction, as for example in the case of 3T. Due to technological design's thresholding ability the event becomes interactive by interfacing affective capacities into the course of the game and thereby modulating the event itself.⁸⁶ Therefore, the TPE is a "world-producing technoscience fiction" that creates and experiments with open, self-organized systems of experience.⁸⁷ The way in which this happens is primarily through scripted events, which are carefully placed throughout the game's programmed, possibilistic map. Whether a player encounters the trigger points of events is unpredictable and depends on whether or not a player moves past a certain point or makes a certain decision, and in so doing activates a "pre-scripted dramatic moment to occur."⁸⁸ Scripted events are the designer's means to control contingency which is why they are used carefully in order to avoid producing a game structure that is too dominant. While it is a designer's initial desire to alter a game in this way,⁸⁹ scripted events have to be used with caution in political gaming for they present significant power to influence the kinds of

⁸⁶ Bianco, "Techno-Cinema," 50.

⁸⁷ Ibid, 73.

⁸⁸ Ash, "Attention, Videogames and the Retentional Economies," 26.

⁸⁹ Ibid, 8.

problems that can be encountered, at what stage of the game, and, ultimately, what can be experienced and known. Therefore, scripted events play a significant role in altering the motion and development of the posthuman and subsequent subjectivities. In the way that they can make for a whole new experience of the unknowable and unimaginable, their regulating effect can on the other hand run the risk of pre-empting scenarios as well.

Even though scripted events run an ideological risk in this way, they do fulfil an important practical role in game design. In order to prevent the game getting ‘out of control’, that is to stay focused on the political motivation that inspired the game in the first place, scripted events are placed throughout the scenario in terms of intervals which is an attempt to modulate effects. The spacing of these events is a delicate task as too many scripted events in succession in a short period of time would only create puzzlement and impede the learning experience. This is because every scripted event can theoretically give rise to a new system of experience, which creates a problem in so far as high numbers of scripted events lead to the simultaneous production of new systems that would impair one another and literally tear the posthuman apart. It should be noted at this point that while the rupture to ordinary experience is essential for learning, it is not the intention of games to constantly shock the participants. Rather than overloading, the idea is to release signs (the shock to thought) in a way that these can develop and resonate, and do not get overridden by the next experience. Accordingly, this necessitates time, so that intervals of scripted events create a rhythm and tempo, according to which the posthuman expands, contracts, moves and develops.⁹⁰

⁹⁰ Adding to the discussion of success in games, movement in the game is actually indicative of successful design and the placing of scripted events.

Affective Events: Generating Rhythm and Tempo

Designing TPEs becomes more technical in the way that the rhythm and tempo of the posthuman-becoming and the becoming-subject does not only depend on scripted events but also on mechanisms such as amplification, modulation and bandwidth. Paying attention to these techniques is important because even though designers can never fully determine the affect a particular programme or software produces, this is the only way in which they can “attempt to narrow the possibilities for the kinds of affective responses that are generated.”⁹¹ Even though these terms may seem rather technical and only marginally theoretical they do however influence movement in very significant ways. Importantly, games are ‘written’ with amplification, modulation and bandwidth making up part of the jargon.

Zooming in on what happens after the encounter and how experience is allowed to unfold, it is arguably amplification that influences the posthuman’s development significantly. To be precise, it allows designers to “produce a larger possibility space”⁹² and thereby determines the range of movement and engagement of the posthuman. This refers to little clues (rules) throughout the game that allow the player to engage with the environment (rules of engagement) and open up contingent space for action. Computer games in general have a great capacity for emergent action due to their complex sets of rules, and political games capitalize on this as well in order to multiply contingency through amplification. Going into technical and programming details, the term amplification signifies a change in the amplitude of a signal and “amplifiers usually operate by moving an input signal through a transfer function to create an output signal.”⁹³ The input signal can be altered because of this so that the amplitude of the signal can be increased or decreased. On the level of the *sign* then,⁹⁴ that

⁹¹ Ash, “Attention, Videogames and the Retentional Economies,” 7.

⁹² Ibid, 15.

⁹³ Ibid, 16.

⁹⁴ See chapter 2, experience starts with what Deleuze calls the sign.

which the participants may encounter, amplification can draw on a variety of signals, such as colour and sound. This will be perceived (prae-ceived) as pre-subjective intensities, only to be registered later on as an experience that is structured according to such phenomenal features. The reason why this is important for gaming is that affect can be modulated through the means of amplification, functioning like as a filter with regard to what will appeal to the senses.

Further down the development of a new system of experience it is through modulation that gaming can be influenced on a contextual level.⁹⁵ Closely tied to and building upon amplification, it refers to variation, inflection or adaptation and Ash adds that modulation not only changes affective states – as for example from positive to negative – but that it is also used to maintain a particular affective state for a certain amount of time in the game. This suggests that amplification combined with modulation are essential in order to transduce pre-subjective affects and affective changes to subjective feelings. In the same way, modulation can be used to keep the game in something like a stalemate, by preventing or pausing the translation of affects, thereby often slowing down movement, for example. This process ties amplification and modulation to movement and, thereby, to the rhythm of the game. As such, they are yet another crucial addition to the programming toolbox that facilitates the management of not only the motion and movement of the posthuman, but also the circulation of affects and the tempo of gaming. However, affects cannot be simply transmitted in this way, but have to be modulated and amplified within a specific bandwidth.⁹⁶ This is because affect exists “outside of simple determinative relations of cause and effect.”⁹⁷ This builds on the claim that it is impossible to tell a priori which attractors of intensities (dots on vectors)

⁹⁵ Natalie Depraz, “Where is the Phenomenology of Attention that Husserl Intended to Perform? A Transcendental Pragmatic-orientated Description of Attention,” *Continental Philosophy Review*, 37 (2004): 4.

⁹⁶ Ash, “Attention, Videogames and the Retentional Economies,” 17.

⁹⁷ *Ibid.*

are going to enter into a synthesis. Affects are only a step further in this shuffling on the plane of immanence, which means that it is impossible to determine and pick which affect is going to be translated. This leaves affective design in a situation where the amount of affect can be tempered through design, but not which affect specifically.⁹⁸ As the term implies, it determines the width of affects released into the course of the game.

Tying this to the rhythm of the posthuman, the effect of affect is better understood as resonance instead of outcomes. According to Connolly this means that

causality...morphs into energized complexities of mutual imbrication and inter involvement, in which heretofore unconnected or loosely associated elements fold, bend, blend, emulsify, and dissolve into each other, forging a qualitative assemblage resistant to classical models of explanation.⁹⁹

This further complicates the management of affect in gaming because designers not only have to work with the double contingency, but also with the resonance of affective states. Because of the posthuman's indeterminacy, affects cannot be simply circulated throughout the game, as this might overwhelm the participants and create a sense of the game being out of control. This is a major challenge in game design more generally, where the margins of successful and effective design depend on small degrees of differences in amplification and modulation determined by bandwidth. In avoiding overstimulating the players, designers might use too few variables, leaving the participants unaffected and in ordinary systems of experience, failing to generate a new one. In this respect the mechanism of bandwidth is crucial as it aids the process of amplification and modulation. According to Ash, designing

⁹⁸ Working on the molecular and atomic level, affects must be thought of in thousands and millions, rather than a couple or more.

⁹⁹ William Connolly, "The Evangelical-Capitalist Resonance Machine," *Political Theory* 33, no. 6 (2004): 870.

affective games that operate within an optimal bandwidth is one of the most costly aspects in computer game design. Equally, the concept of bandwidth is essential in determining how the game and a new posthuman can take shape and are played out. It is through the combination of amplification, modulation and bandwidth that posthuman affective states are triggered and managed.

All of these mechanisms appear within scripted events, so that these events can either limit the duration of negative affects that the gaming posthuman undergoes or prolong positive affective states. Depending on the specific gaming parameters, the amount of positive or negative affects may vary.¹⁰⁰ As seen in 3T, negative affects may even be desired and essential to the game. Even if not desired, but emerging and circulating naturally and despite attempts to control them, negative affects do not necessarily have to be designed out in subsequent R&D of a game, as these specific affects are just symptomatic of certain game developments, attitudes and internal conflicts. This is where political games and conventional commercial computer games differ the most, as political games do not have to be enjoyable as such. In games for non-work entertainment, unintentional negative affects are usually designed out right away, hence, the lengthy and costly testing and then beta-phases. For example, whereas affective states such as frustration are kept to a minimum in conventional computer games, these ‘irritating’ sensations are actually quite crucial to political games. Such aggravated affective states as for example in stalled peace negotiations are arguable an affect that is desirable to produce and train in the gaming realm. The only impression that needs to be avoided is that of indifference on behalf of the player. In other

¹⁰⁰ Lastowka, “Rules of Play.”

words, positive affects need to stay within authentic margins as well, and this is achieved through bandwidth.¹⁰¹

The posthuman is usually a product of spontaneous self-emergence and self-organization of experience, with the exception of gaming where design can be used to influence affective states in this development. This leads to a ‘semi-spontaneous’ process that is particularly visible in the posthuman’s movement. Given this affective dimension, the posthuman form of life is characterized by “vitality affects” in general¹⁰² and in gaming these are manipulated through design. Importantly, this means that the becoming-world in gaming is not reducible to subjective, conscious computer graphics, game decisions, or other phenomenal features that serially appear in different locations because of design, but much rather because of imperceptible, “affective linkages that bring ‘extremely diverse’ nonlocal differences together qualitatively.”¹⁰³ That is affect brings the posthuman qualitatively to life. Participants coming to the game (each is actually a complex posthuman made up of worlds of intensities) take part in the TPE differentially, thereby merging into one posthuman form of life that is “nondecomposable” into the individual parts.¹⁰⁴ Thus, gaming orchestrates attunement of and through affect.¹⁰⁵ The movement and rhythm games produce can therefore be understood in terms of affective atmosphere and affective tonality that are different in each gaming round and that make each TPE singular. Thus, a TPE describes a singular moment of political posthuman life where affect “marks its species.”¹⁰⁶

¹⁰¹ Ash, “Attention, Videogames and the Retentional Economies,” 21.

¹⁰² Brian Massumi, *Semblance and Event: Activist Philosophy and the Occurrent Arts* (Cambridge, MA & London: MIT Press, 2011), 111.

¹⁰³ Massumi, *Semblance and Event*, 111.

¹⁰⁴ Ibid, 112.

¹⁰⁵ Ibid.

¹⁰⁶ Ibid.

Attention and At-Tension: Connecting Affect and Captivation

Capitalizing the Sense of Flow

The workings of affect, the tonality and atmosphere it produces, also creates attention, more specifically as this research suggests a physical state of at-tension. This is a crucial aspect of gaming in general and political gaming as a pedagogical tool more specifically as it has a direct impact on the learning experience and is the factor that sets it apart from other forms of training. Importantly, at-tension is created and managed through amplification, modulation, and bandwidth, which commercial game design capitalizes upon to create what is referred to as *flow experience*. Even though this type of experience, also known as optimal experience, is researched and theorized in reference to the human subject, there are interesting arguments that can be applied to the pre-subjective realm as well because flow draws heavily on subliminal processes. As such it signifies the “absolute absorption in an activity.”¹⁰⁷ In this way flow is indeed helpful to describe an essential characteristic of the gaming posthuman, as experience emerges out of immanent dynamics so that attention is not an absorption in an activity, but it is part of this very activity already. Interestingly and fittingly, as described in the literature, flow experiences are not necessarily pleasant, which supports the idea of negative affective states that translate into feelings of suspense, frustration or pain in the game. Indeed, flow is fitting to stress the point of torsion and at-tension during experience and thereby helps to clarify that gaming, especially when political, is not necessarily a ‘fun’ or a pleasant, entertaining exercise.

Of similar importance is the fact that flow experience as articulated in psychology stresses the importance of ‘loss of time’, a situation in which the sense of time and duration is altered, which point to and supports the argument here that posthuman experience happens

¹⁰⁷ Csíkszentmihályi quoted Ben Tran, “Rhetoric of Play: Utilizing the Gamer Factor in Selecting and Training Employees,” *Psychology, Pedagogy, and Assessment in Serious Games*, eds. Thomas M. Connolly, Thomas Hainey, Elizabeth Boyle, Pablo Moreno-Ger, Gavin Baxter (Hershey, PA: IGI Global, 2013), 177.

in 'qualitative time'. According to Mihály Csíkszentmihályi the complete absorption in an activity makes those who are experiencing lose sense and track of time.¹⁰⁸ Adjusting this slightly, the suggestion is that this is because flow unfolds in posthuman time and space anyway, where time cannot be tallied quantitatively. Even on a later subjective and conscious level the time and space compression makes perfect sense with regard to gaming, given that the scenarios played often do not represent 'ordinary' and 'standard' time anyway. Minutes may represent hours in the gaming scenario or sometimes these games even last as long as several days or weeks. What Csíkszentmihályi essentially describes with flow, partly through temporal dissociation, is the evacuation of the conscious subject as it surrenders to the gaming dynamic and how it is thereby opened up and transformed. Flow experience is treated as an affective event within cognitive sciences as well, resonating significantly with ideas of the pre-subjective posthuman during gaming, in the way that, for example, the gamers' activities become "spontaneous, almost automatic" and that they "stop being aware of themselves as separate from the action they are performing."¹⁰⁹ Classically flow is triggered by increasing situational immersion, generating a sense of 'here and now' in which "only a very select range of information can be allowed into awareness," making the subject "lose self-consciousness."¹¹⁰ The interplay of flow through "total involvement" is interesting in the way that on the one hand it requires concentration while on the other the thinking subject is found to be absent.¹¹¹ Recent studies argue that flow is actually increased through interactivity with NT and cognitively traverses embodied subjects and their telepresence.¹¹² This is significant as it means that flow experience is not placed in the unitary, whole and conscious subject. What social psychology describes in this respect then

¹⁰⁸ Csíkszentmihályi, *FLOW: The Psychology of Optimal Experience*.

¹⁰⁹ Tran, "Rhetoric of Play."

¹¹⁰ Chin-Lung Hsu, Hsi-Peng Lu, "Why Do People Play On-line Games? An Extended TAM with Social Influences and Flow Experience," *Information & Management* 41, no. 7 (2004), 856.

¹¹¹ Mihály Csíkszentmihályi & Judith LeFevre, "Optimal Experience in Work and Leisure," *Journal of Personality and Social Psychology* 56, no. 5 (1989), 815–822.

¹¹² Hsu & Lu, "Why Do People Play On-line Games?," 856.

is a form of posthuman experience, where the subject traverses different media, melting into subject and activity (the event) at the same time and is embodied in different modes of expression.

The Economic Dimension of Affective Design

Knowing how to produce flow experience during gaming and the way this can be employed to improve gaming experience as well as better the gaming outcome, lends itself to be exploited in other ways as well. The heightened alertness of the de-subjectified body and how it improves learning experience because of complete immersion and absorption in an activity has made flow experience very attractive to the gaming industry, including the development of ‘serious’ and political games. Considered as the ‘sweet spot for learning’¹¹³ flow sets itself apart from other forms of learning because it is a means to develop, manage and use capacities for attention, which according to Bernard Stiegler are breaking down in the age of NT, which favour and work on the basis of short attention spans.¹¹⁴ In this sense the ability to produce and manage attention/at-tension is not only advantageous, but almost the very condition of learning in times of increased technological mediations.¹¹⁵ However, in contrast to the argument that people lose their ability to concentrate in a traditional way, posthuman technological becomings just call for different types of attention, those in which the body is at-tension with multiple intensities that challenge ordinary experience. Rather than marking a lack of attention and motivation to engage with, train and theorize the political, political games are actually indicative of new skills that the conscious subject has appropriated as part of a development in pedagogy. Essentially, with increasing social interaction on a daily basis due to new and widespread information and communication technology (ICT), experience,

¹¹³ Sara de Freitas, *Education in Computer Generated Environments* (London & New York: Routledge, 2014), 86.

¹¹⁴ Bernard Stiegler, *For a New Critique of Political Economy* (Cambridge: Polity, 2010), 17.

¹¹⁵ Stiegler, *For a New Critique of Political Economy*, 17.

and thus learning, has become more interactive as well. Furthermore, the argument that the social is increasingly marked by short attention spans has little leverage if experience is compressed in time and space as well. When dealing with posthuman time, it makes little sense to judge attention in quantitative time. The kind of at-tension produced during flow experience is not defined by the duration of attention given to a particular content, nor could it be quantifiable in this way. Instead posthuman at-tension during gaming is a “diffused and elliptical process”¹¹⁶ that needs to be conceptualized as a dynamic that is part of the system of experience, the TPE more broadly, rather than a conscious act on behalf of the subject. It is diffused because it is an impersonal happening that is determined by stimuli (affect) that are spread across the game space. In gaming attention/at-tension and its temporal flux are therefore affectively produced and structured.¹¹⁷

Reflecting upon this critically, the fact that attention/at-tension can be tailored into the affective architecture of learning and training environments such as games means that it can be manufactured by “articulating lived experience.”¹¹⁸ However, if it can be produced it can be instrumentalized; and the increased interest in technologies that monopolise attention turns the latter into the “newest source of value production under capitalism today,”¹¹⁹ which draws gaming back into the peace business. On the basis of social reality being increasingly organized according to new media fictionality, the monitored, affective design of attention reflects a cybernetic relation, not only between the player/spectator and the social, but also between the player and the political. In light that attention is turning into a “finite,

¹¹⁶ Ash, “Attention, Videogames and the Retentional Economies,” 9.

¹¹⁷ Ibid, 9; Bernard Stiegler, *Taking Care of Youth and the Generations* (Stanford: Stanford University Press, 2010b) 78.

¹¹⁸ Shaviro, *Post-Cinematic Affect*, 2.

¹¹⁹ Jonathan Beller, *The Cinematic Mode of Production: Attention Economy and the Society of the Spectacle* (Lebanon: Dartmouth New College Press, 2006), 4.

exchangeable commodity,” it forms the basis of an entire economy of attention.¹²⁰ Since political training is technological-becoming it can be argued that it is to some extent tapping into and contributing to the economy of attention. Recalling the ‘Simulation Triangle’ that spans between political and military personal, private security companies, the gaming industry and the academy, now whole companies specialised in testing, quantifying and improving the physiological and cognitive basis of digital attention can be added to this simulation business.¹²¹ Given that political gaming largely emerged out of the research initiative of governments, militaries as well as independent research institutes puts games for change willingly or not at the forefront of an affective economy of attention. However, being a symptom of an opportunist momentum should not be used to jump to hasty conclusions. Whereas there is an abundance of commercial games where their users literally ‘pay attention’, this does not suffice to argue that the technical constitution of attention turns all games into a politics of captivation based on the management of affect.

Affective Design: Posthuman Politicians and Pedagogy

The “dynamic interactional ontology”¹²² of the gaming posthuman, its affective capacity as well as its affective at-tension and the physiological-psychological entwinement through flow means that not only the TPE, but also the posthuman political body is social, economic, political *and* somatic. Due to the fact that the affective posthuman exceeds the liberal individual, affective design of games is thus the effort to influence this posthuman ‘agent’, to modulate it and, ultimately, influence the *political* body. In other words, gaming can be

¹²⁰ Ash, “Attention, Videogames and the Retentional Economies,” 4; Michael H. Goldhaber, “The Attention Economy and the Net,” *First Monday* 2 no.4, accessed October 03, 2012, <http://firstmonday.org/article/view/519/440>.

¹²¹ This includes for example tracking the players’ eye movement in real time in order to find out how they perceive and process visual information, Jeroen van der Heijden, “Playtesting Swords and Soldiers on PS3,” *Gamasutra: The Art and Business of Making Games*, accessed October 03, 2012: http://www.gamasutra.com/view/news/29633/Feature_Playtesting_Swords_Soldiers_On_PS3.php

¹²² Deleuze & Guattari, *A Thousand Plateaus*, 257.

interpreted as the development of particular bodily and somatic memory that is based on the affective attunement and exploitation of players' "tendencies to react to categories of events."¹²³ This attunement and alteration in game development is based on the observation of bodily experiences that inform a "somatic marker profile," which indicates how the posthuman reacts and moves in and through games.¹²⁴ Through intervals of scripted events (that is repetition) these tendencies are fostered and reinforced and later on recycled so that somatic-cognitive tendencies to react in certain ways re-enter affective gaming structures. Importantly, this means that even though once the game is over the posthuman body ceases to exist in its gaming-constellation, these affective registers persist in the bodies that the posthuman breaks into after a game. One can go as far as to argue that gaming then seeks a 'bio-cultural evolution' that shapes political bodies and influences their tendencies to react. Adopting Protevi's line of argument here then this is referred to as 'bodies politic', which is the entwinement of socio-political practices and institutions, and somatic affect that reinforce each other.¹²⁵ While the connection of the political and the somatic happen in other aspects and on multiple levels, political gaming is one crucial way towards this diachronically developing and reinforcing process, which in the case of gaming produces the politician-by-design as it were.

Pedagogy and Beyond: New Learning Spaces and Processes

How the posthuman political subject/body thinks, moves, learns and trains is described here as a form of posthuman pedagogy in which movement and at-tension are crucial determinates of the learning process. Given that at-tension is action leads to an active/actional posthuman pedagogy, based in the present case of immersive and interactive gaming. However, tied to action and movement posthuman pedagogy is a local dynamic,

¹²³ Ibid, 402.

¹²⁴ Ibid.

¹²⁵ Ibid, 395.

that even if the new system of experience can resonate on multiple and far-reaching scales, the pedagogy emerges through the local rhythm of movement. Deleuze and Guattari refer to this idea as milieu and illustrate this with the following simple example which is indeed helpful for understanding initial locally attuned developments of a spatial pedagogy: “A child afraid in the dark sings a song to reassure herself, and in so doing establishes a stable point in the midst of chaos, a locus of order in a nondimensional space.”¹²⁶ Importantly, whether in gaming or emerging otherwise, milieu is territorialising, but not territory itself. Based on the dynamic ontology of (game)space that was established, then in the same vein milieu is a dynamic not a static, fixed space.¹²⁷ There is only a fluid form to milieus, so that these are “ever-shifting” and it is only through code, which is the “repetition of elements” that temporary boundaries persist.¹²⁸ This means that the beginning of playing demarcates a dimensional area of space-time out of the unformed coded software, which then comes to mark a point of stability upon which systems of experience hinge and from which learning then can happen. To recall that this “vibratory, rhythmic, and coded material field” that is a specific emergence out of a particular gaming action is mattered-thought/thinking-matter, then milieu can be seen as the habit of thought of the being-as-becoming, which is the posthuman. Habit and milieu are crucial concepts to understand the political posthuman and posthuman subjectivity that develops out of gaming dynamics, because habit is repeated contemplation in gaming, which thereby makes up the basis for conceptual practice. Tying

¹²⁶ Ronald Bogue, “Rhizomusicology,” *Deleuze and Guattari: Critical Assessments of Leading Philosophers*, edited by Gary Genosko (London: Routledge, 2001), 243.

¹²⁷ “Any territory is made up of – or more correctly acts within/upon a multiplicity of milieu[...In] the ocean for example, the energy of the sun, the forces of current, the nature of water, osmotic membranes, schools of fish, sand and geological formations, etc, are all different milieu.” Andrew Murphie, “Milieu, Rhythm, Refrain, Territory,” *Adventures in Jutland* (blog), September 8, 2013, accessed August 20, 2014, <http://www.andrewmurphie.org/blog/?p=426>

¹²⁸ John Protevi, *Life, War, Earth: Deleuze and the Sciences* (Minneapolis & London: University of Minnesota Press, 2003), 94.

this to the political body then “we are all ‘contemplations, and therefore habits.’”¹²⁹ Indeed, the milieu is the origin of subjectivity, thus, gaming-milieu is identified as the conditions that give rise to the political posthuman gaming subject for: “*I* is a habit. Wherever there are habits there are concepts, and habits are developed and given up on the plane of immanence of radical experience.”¹³⁰

Further, if ‘I’ is a habit then a milieu composes a ‘me’, an appropriated subject. In short it is “contemplations that make our ‘selves.’”¹³¹ The strength of gaming in this sense is that it perfectly highlights and capitalises that not only milieus are fluid, but also that habits are creative.¹³² Describing the onset of the new political subject as habits or differential rhythm (patterns of difference with repetition) that constitute a local dynamic in the game, a pedagogical milieu, allows for this very subject to be transformed, become undone (deterritorialised) or be produced anew (territorialised). And in this sense, the task of posthuman pedagogy – Deleuze approaches these issues through the ‘pedagogy of the concept’ – is to “analyse the[se] conditions of creation as factors of moments remaining singular.”¹³³ But “how in fact does one learn [...], in what kind of space, in what conditions, with whom[?]”¹³⁴ In posthuman gaming pedagogy, learning happens through rhythmic movement of mattered-thought/thinking-matter that is pre-subjective and emerges out of the gaming experience. These interplays of intensity produce the posthuman and its contraction and expansion throughout the course of playing movement establishes the game-space and, hence, the *space* of learning. Because this is a case of rhythmic movement, due to coded

¹²⁹ Petra Hroch, “Deleuze, Guattari and Environmental Pedagogy and Politics,” *Deleuze & Guattari, Politics and Education: For a People-Yet-to-Come*, edited by Matthew Carlin & Jason Wallin (New York & London: Bloomsbury, 2014), 59.

¹³⁰ Gilles Deleuze & Felix Guattari, *What is Philosophy?* (London: Verso, 1994), 105.

¹³¹ Hroch, “Deleuze, Guattari and Environmental Pedagogy and Politics,” 60.

¹³² Deleuze & Guattari, *What is Philosophy?*, 105.

¹³³ *Ibid*, 12.

¹³⁴ John Rajchman, “Foreword: A Pedagogy of the Concept,” *Deleuze & Guattari, Politics and Education: For a People-Yet-to-Come*, edited by Matthew Carlin & Jason Wallin (New York & London: Bloomsbury, 2014), xiii.

differences in the game's affective architecture, this spatial dynamic is a milieu. The *conditions* are that of at-tension and the *whom* is singular-plural at the same time, for the posthuman is implied multiplicity as well as the 'I' as a habit and the future 'me' as the subject of the milieu and the conscious political subject to come.

Conclusion

Affect matters. Literally, it matters the posthuman through game design. Even though posthuman bodies are self-emerging, in the case of the gaming posthuman, this process is influenced to a large degree by a game's architecture that has been carefully designed beforehand and slowly works its affect in the course of the game. This means that affect matters in two significant ways. First, as the development of intensities, it partakes in the shaping of the posthuman body. Second, precisely because it is a step further than intensity means that affect is the transducer from the pre-subjective to the subjective realm, which is from the Virtual to the actual. Therefore, looking at game design through the lens of affect, rather than, for example technical details in programming or studies on cognitive processes in gaming, is more suitable for the technoscientific analysis of the posthuman because of affect's pre-subjective, pre-conscious, intensive and asignifying qualities, but also because it leads the way to a posthuman political subject. The strength of affect then is its in-betweenness that works in the "dynamic interactional ontology" that was developed for gaming. Because of affect's importance in shaping the posthuman body during gaming, game design and a game's architecture were treated as interactive maps for shaping the body, rather than just a coded structure and instruction to a game. However, to design such a map and to then let it play out is a vastly complex and difficult task, of which the chapter highlighted significant steps that matter most with regard to the production of the posthuman and its ensuing political subjectivity.

To detail and explain the significance of affect in this posthuman-becoming, the chapter focused on the interplay of two aspects, contingency and movement. Doppler-contingency was identified as the crucial mechanism to carefully guide movement, which is essential for the emergence of the posthuman, but also its behaviour in the game. More specifically, the argument suggested that the contingency on behalf of the players, decision-making, and general unpredictable gaming dynamics, is controlled through designing contingency into the game's structure as well. Arguably, this is one of the few ways in which to ensure a relatively natural flow in the game, without the game's structure being too oppressive, restrictive and prescriptive. While this is something that is explored more in commercial games, especially first person (often shooter) games, it was argued that plays of contingency to improve organic movement of the posthuman would be highly beneficial for the design of political games.

In order for the analysis to make the claim that movement matters through Doppler-contingency that is affectively designed, game-space needed to be problematized, reconceptualised and attuned to the posthuman in the game and as a general condition outside of it as well. The gist of the argument suggested that the reality of change cannot be understood in Euclidean and three-dimensional space and that representationalist and static understandings of space and a body fail the posthuman. Instead it was proposed that the temporary body-space of the posthuman is a net of intensity that expands and contracts. Precisely this expanding/contracting dynamic is how the posthuman moves. Because intensities that enter the posthuman symbiosis are from the participants, the gaming technology as well as other parts of the surrounding, there is no conception of a gaming environment as such. This means that affect is already immanent to the posthuman. As such, affective thresholds in the form of (at-)tension, rhythm and speed can be met/encountered,

which then lead to different contractions or expansions. However, this movement is up to chance, the eventuality of which is tailored into the game design that then can encourage and channel movement. The techniques used to do so are scripted events (that occur in intervals) and these events are engineered through amplification, modulation, and bandwidth. The latter are mechanisms that influence the distribution of affect in the game, that is the encounter of new intensities (*information*) and are, thus, essential to posthuman *formation*.

Based on the ceaseless continuing dynamic and variation that the gaming posthuman is, it was argued that conventional aspects of failure and success in gaming do not apply in the context of political games. Instead, the proposition was made that the flow of movement, new encounters, and challenges to old habits are better parameters of performance against which gaming can be judged. However, comparing the movement of three different games it was also shown that these factors vary greatly from game to game and not only from genre to genre or audience to audience. Indeed, the connection between explorative movement and learning was identified as one of the most interesting factors with regard to analysing games, especially games for change. These conditions for explorative movement are affects tailored into the game, so that learning in and through games greatly depends upon a game's architecture and prior thought going into it.

Due to the gaming's interactional ontology and the continual variation of the posthuman, it is relatively straightforward to conceptualize posthuman-becoming as event in a Deleuzian sense, where the event describes singularity, the "unique instance of production in a continual flow of changes."¹³⁵ However, this production has limits depending on game design as well as its play and context. This means that the political subject emerges differently in gaming as

¹³⁵ Stagoll quoted by Livesey, "Deleuze, Whitehead, the Event, and the Contemporary City," 2.

it would do outside of it. Therefore, the theory of the event is attuned to the construct of the TPE in order to precisely highlight the subtle play between gaming architecture and posthuman-becoming. This is not to argue, however, that this emergence is mere construction, as game design does not work on a hypodermic model of gaming power (as it was shown by problematizing contingency). In this sense, the gaming posthuman is a continuous series of events, which are singular points of experience produced by qualitative movement. This movement and therefore the TPE in general arise out of at-tension in the game, affecting a posthuman that is more engrossed in gaming dynamics. This form of posthuman attention was teased out further with the help of flow experience, which encapsulates the tension between the conscious player on the one hand and on the other the non-subjective, non-conscious dynamics that happen with the evacuation of the subject. While at-tension is important for it creates a difference in intensity and, thus, a dynamic that drives movement, this power to captivate can be capitalized. Commercial games draw heavily on flow and captivation as emerging economies of attention indicate. It was argued that even though political gaming cannot escape these economies, as it is after all a product of the simulation business, the advantage and leverage to captivate and create at-tension can be channelled into articulating a posthuman pedagogy that is actional and thereby sensitive to the rhythmic movement and “ever-shifting” nature of the posthuman. It was argued that such an evental, vibratory and milieu dependent pedagogy better responds to the learning needs of a political body-by-design that is marked by affective habits. Lastly, going through affect’s role in shaping the body provides a better understanding of the way in which gaming and the posthuman condition are related and indeed feed off each other. Furthermore, tracing and chasing affective architectures of games allows one to go on drawing out the production of posthuman subjectivity that emerges through political gaming.

Chapter 4 ~ Producing Posthuman Subjectivity

The body without organs is an egg: it is crisscrossed with axes and thresholds, with latitudes and longitudes and geodesic lines, traversed by gradients marking the transitions and the becomings, the destinations of the subject developing along these particular vectors.

Deleuze and Guattari¹

He who fights with monsters should look to it that he himself does not become a monster. And when you gaze long into an abyss the abyss also gazes into you.

Friedrich Nietzsche²

Introduction

This chapter seeks to expose and explain the process of how gaming as a form of political training for various aspects relating to peace operations can fruitfully impact upon, and indeed produce, wider political subjectivities. The aim is to outline how thought, experience and action become subjective and thereby have direct implications for socially held political concepts and how these can materialize. Theoretical constructs and claims previously developed in this research offer necessary tools to articulate a posthuman subjectivity and, thus, one that is indifferent to a specifically human subject and experience.³ More so, this means that the approach to political subjectivity parallels that of the physical political body and, therefore, happens from below, above and alongside the human subject.⁴

Due to the fact that political games are often portrayed as a new strategy for socio-political change by designers, developers and users alike requires analysing how the act of gaming can

¹ Gilles Deleuze & Felix Guattari, *Anti-Oedipus: Capitalism and Schizophrenia* (London: Continuum, 2004), 21.

² Friedrich Nietzsche, *Beyond Good and Evil* (London: Penguin Books, 2003), Aphorism 146, 102.

³ Simon O'Sullivan, *The Production of Subjectivity: Five Diagrams of the Finite-Infinite Relation* (London, Palgrave Macmillan, 2012), 204.

⁴ See for example John Protevi, *Political Affect: Connecting the Social and the Somatic* (Minneapolis: University of Minnesota Press, 2009).

manifest as something new.⁵ This is the reason for tracing and further developing the production of new subjectivities. How this change through games plays out on the subjective, eventually conscious level, has yet to be articulated for a posthuman condition. To put this into a guiding question for the present chapter, this is to ask how gaming as a new posthuman pedagogy can actually impact upon the political realm. This research suggests that this happens because one can observe newly emerging posthuman subjectivities in gaming that can go on to inform wider political notions. Put simply, game subjectivities can resonate on much larger socio-political, compositional and temporal scales. Therefore, the intention is to outline this emerging process in greater detail with the aim of providing a better understanding of how affective game design takes effect, but also how games can be explored further to amplify games' impact.

The chapter will start by introducing the human subject (subject-as-is) and contextualizing it in the contemporary dynamics of subject-societal entwinements and help to sketch the process of subject formation that gaming sets itself up against. Interpreting Gilles Deleuze and Felix Guattari's collective and individual work with the help of Simon O'Sullivan's commentary, the chapter will develop a process of the production of subjectivity with a specific focus on gaming. This is the continuation of onto-material processes and the technological-event (TPE) that started on a molecular and sub-atomic level, so that posthuman subjectivity in its initial dynamics is a micro-political subjectivity before it can be grasped consciously later on. This later stage will be identified as body politic – which is the entwinement of socio-political institutions and practices with material affect that reinforce each other.⁶ For analytical and practical purposes this will be divided into different levels, in order to show various stages of where gaming can make an impact. In order to get to this

⁵ Jane McGonigal, *Reality is Broken: Why Games Make Us Better and How They Can Change the World* (New York: Penguin Group, 2011), 345; *Games for Change*, <http://www.gamesforchange.org/>.

⁶ Protevi, *Political Affect*, 39.

point the analysis establishes subjectivity development that starts with lines of flight in desiring-production, which is a twofold process. It then moves on to new emerging subjectivities called probe-heads, which will be contextualised within wider peace training practices. However, this is not to imply that the emergence of posthuman subjectivity (EPS) is a linear and teleological process. The outline provided here is a model that aims to support future game design and use, as well as our understanding of posthuman forms of training. It is not the intention to force the production of subjectivity into rigid steps and it is acknowledged that the process is more volatile, unpredictable and aleatory than a reliable causal unfolding. Once the way leading towards body politic has been established and different levels clarified, Benjamin's pedagogical theory of the mimetic faculty⁷ will be used to tease out why and how this long line of trajectories can be linked up conceptually. The analysis will draw to an end with some remarks on future theoretical as well as gaming development.

Introducing the Human Subject

The “political subject” and “subjectivity” are certainly prominent buzzwords in the contemporary study and practice of international politics; yet, their production is rarely elaborated. What might appear to be a fairly obvious and straightforward concept when approached through humanist, Kantian lenses turns into a much more complex and challenging endeavour in a posthuman condition. This further suggests that this endeavour needs to be contextualized within a transformative socio-political cartography that is the product of the proliferation of a global digital play of affect-by-design on the one hand, but also to digital ‘chaos’ and catastrophe on the other. In other words, the technosphere, as comprising transhuman/posthuman practices that exceed the initial parameters of the human subject by jumping spatio-temporal scales and due to their ever-increasing speed, is still

⁷ Walter Benjamin, *Walter Benjamin: Selected Writings 1931-1934*, ed. Michael William Jennings (Harvard: Harvard UP, 2005).

largely unknown and under-theorized. Therefore, the study of the political posthuman subject needs to get up to speed and adapt. However, before this can be done, it is necessary to grasp the subject and subjectivity in the first place.

The Human Subject as O'Sullivan's 'subject-as-is'

Notwithstanding that the term subject has been theorized widely, these are largely definitional exercises that not only treat the subject as somewhat as a given and unproblematic occurrence, but that are also unfit for a posthuman condition. The subject as it is commonly used has various meanings and is employed to designate various performances of the human category. Ranging from the feudal understanding of the people who are subject to a king, to Rousseau's subject of the citizen, to the consumer subject of contemporary capitalism, to the psychoanalytic subject on Freud's couch – all are different performances and practices. The same word serves to describe attributes of the human and how it relates to, is entwined with or even produced by its environment, such as authority, the market, friends or itself. However, in these more conventional and accepted understandings the subject is a given, what O'Sullivan refers to this as the 'subject-as-is'.⁸ There is no question that the acting human can and often does incorporate all of these different subjects. To push this further, one is born into and grows up along the trajectories of stable subjectivity markers and into social relations, so that a life is always implicitly characterised by being a high school student, a citizen of a state and as such is fulfilling social functions and roles.⁹ Even though 'subject' can in some instances assume a similar linguistic function as 'character' and 'personality' in the way that it is mostly seen as proper to an individual, the notions of character and personality belong to the vocabulary of behavioural psychology, whereas that

⁸ O'Sullivan, *The Production of Subjectivity*, 6.

⁹ See for example Jane Loevinger, "Stages of Personality Development" or Charles F. Halverson & Karen S. Wampler's "Family Influences on Personality Development," *Handbook of Personality Psychology*, eds. Robert Hogan, John A. Johnson, Stephen R. Briggs (San Diego, CA: Academic Press, 1997), chapter 8 & 10.

of the subject is typical of sociological analysis that considers wider, interdependent socio-political factors.¹⁰ Indeed, subject and subjectivity within the academic realm have very strong political connotations; yet, subjectivity is often treated as sedate, less fluid and prone to sedimentation. It is usually the ‘identity’ of a human subject that is supposed to be dynamic. This becomes problematic however when looking at political subjects, such as individuals and groups involved in peace practices, whether professionally or as part of civil society. To be a ‘diplomat’ or a ‘peace consultant’ is a practice that depends on multiple and hugely diverse and diffused factors that in a complex, continuous interplay shape what might be called a diplomat. The ceaseless continuation of this productive, reiterative process implies that a specific as well as general ‘diplomat’ subjectivity is in continuous flux and becoming. In other words, becoming-diplomat is not adequate to the concept of the static subject-as-is, which is in fact Kant’s self-identical subject.¹¹ The idea that a wide spectrum of different factors influences this process leads Jason Read to suggest the transindividual production of the subject.¹² Agreeing with this line of argument, it nonetheless needs to be adjusted as the posthuman condition that is assumed here suggested that subjectivity is not something that emerges out of an individual human body and its engagement with the environment. Instead, the trajectory of the subject is that it is seen as the continuation of an individuating process that starts with an encounter that gives rise to non-personal thought. The individual and the subject are just conscious after-images of these primary ontological movements as it were, but neither is it a case of the individual affecting the subject or vice versa. However, in agreement with Read’s “trans” then the production of subjectivity is indeed trans-material

¹⁰ Jerry S. Wiggins, “In Defense of Traits,” *Handbook of Personality Psychology*, eds. Robert Hogan, John A. Johnson, Stephen R. Briggs (San Diego, CA: Academic Press, 1997), 97-117. These arguments can of course be problematized and detailed significantly, especially when contrasted with different schools on identity, political identity and so on.

¹¹ Gilles Deleuze, *Difference and Repetition* (London: Continuum, 1994), 240.

¹² Read, “The Production of Subjectivity,” 155.

and trans-body and therefore its analysis has to focus on processes above, below and alongside the subject-as-is.

Implications

Posthuman subjectivity, whether in a political context or not, needs to go against the ontogenetic production of the 'human subject', and start with the concreteness of the materials involved. This concrete and material tracing enables an emergence of posthuman subjectivity or EPS that is proper to singular material dynamics, rather than the human category, and therefore much more volatile. However, this does not mark the 'death of the subject' as some sceptics argue.¹³ It is rather the case of (re)incarnation of the posthuman subject that shows that subjectivity is an emergent capacity. This has several implications. EPS as a dynamic, self-organizing process permits a conceptualisation of a non-hylomorphic subjectivity by turning its production into a creative development, enabling genuinely new political subjectivities. By showing that subjectivity (and its production) is not fixed, but flexible and ever-changing points to ways of how the political subject can be produced, mapping a new political cartography. By extension this means that studying the production of political subjectivities in peace practices not only shows inherent problems with current accounts of peace operations, but more importantly opens up avenues to reconstitute what, for example, a diplomat, a soldier, an opposition leader as a political subject may be altogether.¹⁴ Such a notion of subjectivity in line with technoscience and new materialist philosophy is "fundamentally disorientating" and uprooting liberal political practices and understandings of peace operations.¹⁵ To see the subject not as originary, but as the product of movement and affect of prior matterings also destabilizes traditional philosophical binaries

¹³ See for example Fredric Jameson's claim in "Postmodernism and Consumer Society," an argument he can make on the basis of equating subjectivity with individualism, in *Modernism/Postmodernism*, ed. Peter Brookner (New York: Longman, 1992).

¹⁴ Not only as a material body.

¹⁵ Read, "The Production of Subjectivity," 114.

by “mingling effects with cause, material conditions with interior states, and objects with subjects.”¹⁶ In a political sense posthuman subjectivity rejects the bar between the individual and the collective by arguing that the individual is inescapably collective materiality.¹⁷ From the perspective of the technoscience, gaming is a fascinating example of the dynamics of subjectivity formation. It is optimal in demonstrating how, on the one hand, old, dominant regimes and habitual formations of liberal peace keep static liberal subjectivities in place, while on the other games are materializing processes for questioning and upsetting such static notions and at the same time are also the capacity for new emerging subjectivities. Due to the fact that political games can be a series of techno-political-events (TPE) depending on their affective design proposes that “such affective-events are the germ of the new world.”¹⁸ This is the utopian impulse and innovative attribute of political gaming.

Reterritorializing Subjectivity: Undoing and Producing Political Subjectivity

‘Faciality’ and Subjectivity: The Problem with the subject-as-is and Liberal Politics

The key to understanding and developing a posthuman subjectivity in a way that implies the possibility of continual variation requires the suggestion that subjectivity depends on unique matter formations and material relations. In essence, the subject is not self-identical: it is not a product of its origin, but merely an after-effect of it.¹⁹ However, the notion that the subject does not determine its own destiny is not to suggest that EPS is a form of subjection nor does its trans-material character point towards a subjectification.²⁰ In contrast, this production is a practical and creative organization that is self-emerging (out of the plane of immanence) and not a form of subjection since there is no outside force driving its development. Subjection, or processes of subjectification in a Foucaultian sense, in peace practices are ways of training

¹⁶ Ibid.

¹⁷ Society and the individual are not separate entities.

¹⁸ O’Sullivan, *The Production of Subjectivity*, 199.

¹⁹ See Chapter 2 section on New Systems of Experience: From Transcendence to the Transcendental,

²⁰ Read, “The Production of Subjectivity;” O’Sullivan, *The Production of Subjectivity*, Chapter 5.

through top-down approaches of knowledge dissemination through seminars in which practitioners of all ranks are briefed according to the latest policy papers of various Departments of Foreign Affairs, research centres and think tanks. This one-way stream of learning is based on material that presents official and hegemonic opinion and the latter that is subjection through dominant ideological practices is referred to as *faciality* by Deleuze and Guattari.²¹ The argument here is that though gaming runs the risk of passing on ideological biases, it also offers more opportunity to engage with content critically and indeed fosters self-emerging understandings of peace operations through the variables of play, experience and chance. As such, gaming has the capacity to go against faciality.

Faciality, in general, describes the current state of human organisation and it is a mix of signification, subjectification, and representation.²² In the political context of peace operations, signifying means the desire for interpretation to generate general knowledge about specific peace practices. It is the constant process of assigning meaning to events, to make them fit into certain categories that do support overarching ideological premises. Such a signifying regime leads to forms of subjectification upon which practices are established and justified. This is particularly apparent in the crossing of specialized knowledge of economics and post-conflict state building, peace-building and conflict-prevention that foster a primarily liberal *face* of international politics.²³ However, these are very narrowly conceived understandings of stability and security operations that put strict limits on a political subject and confine political action within these limits. Subjectivity must not be seen as arising out of an already set content, but out of materiality and material practices that produce singular concepts and only then content. The subtlety of this argument needs to be clarified because

²¹ Gilles Deleuze & Felix Guattari, *A Thousand Plateaus: Capitalism and Schizophrenia* (London: Continuum, 2004a), 189.

²² O'Sullivan, *The Production of Subjectivity*, 189.

²³ See chapter 1 *Ideology and Political Change*

identifying liberal peace practices as faciality is not the same as to critiquing the content, but rather the role this content plays in the constitution of the subject and its subsequent practices. As such, there is no alternative way of producing and engaging with political subjectivity. Denying faciality in this context means not only denouncing a certain set of practices, but also the basis of its constituent processes. In this light, though the example of gaming as part of a peace practices is inescapably tied to certain ideological holdings and practices, to articulate a posthuman subjectivity is not an ideological criticism, but a metaphysical one. Accordingly, to argue that gaming offers the opportunity for different practices and processes of the political and the political subject that work against facialization, is to suggest a metaphysical alternative. This can be conceived of as a desire to “escape the face and facializations, to become clandestine”²⁴ and to a large degree as an aspiration for becoming rather than being. The “facialization machine” not only limits actual peace practices and the political subject, but also becoming and life in general.²⁵ In short, facialization prescribes the “coordinates and contours that allow the signifying subject to emerge,”²⁶ and through the development of posthuman subjectivity it will be shown how gaming can partake in enabling other forms of political life.

Beyond the Face: Towards Desiring-Production

Acknowledging the limits of faciality within which current political subjectivity emerges is only the first step in the production of alternatives. Criticising and deconstructing the face and dominant subjectification is not enough and denouncing how current liberal models of security operations constitute values and the political subject does not result in a self-emerging subject and/or political novelty. Indeed it is still far away from producing alternatives and arguably this is because the political repertoire is completely void of

²⁴ Deleuze & Guattari, *A Thousand Plateaus*, 171.

²⁵ O’Sullivan, *The Production of Subjectivity*, 189.

²⁶ Ibid.

posthuman mechanisms that escape representationalist understandings of politics. The political process and its subjects are based upon the human body and subject as a referent and works within the logic of representation. Reworking the political subject and its constitution is a lengthy process. Its elaboration is communicated through Deleuzoguattarian conceptual vocabulary and argues that undoing the face in the search for new political subjectivities involves active deterritorialization and reterritorialization that are driven by a desiring-production. In the way that Deleuze and Guattari view this production as the immanent production of the world, desiring-production is used here specifically as the driving force of undoing and ‘doing’ habits in gaming that work towards new political cartographies. It is important to note that desire on a posthuman level can neither be understood in a Freudian sense (psychoanalytic sense) nor is it “for an object,” but “desire is the production of singular states of intensity [...] as multiple cocausal becoming.”²⁷ As such, it is the drive of a body to produce relations with what it is not itself. However, this social production does not imply change: it is only the way in which reality is brought forward. It is the *modus operandi* of change, but also that of the face and the status quo:

It is at work everywhere, functioning smoothly at times, at other times in fits and starts. It breathes, it heats, it eats. It shits and fucks. What a mistake to have ever said *the id*. Everywhere *it* is machines – real ones, not figurative ones: machines driving other machines, machines being driven by other machines, with all the necessary couplings and connections.²⁸

²⁷ Brain Massumi’s *A User’s Guide to Capitalism and Schizophrenia: Deviations from Deleuze and Guattari* (Cambridge, MA & London, UK: MIT Press, 1992), 82.

²⁸ Deleuze & Guattari, *Anti-Oedipus*, 1.

The point here is that there is no world without desiring-production. Reality emerges from the plane of immanence through the desiring-machine (binary process)²⁹ and the synthesis of intensities that give rise to new experience is a form of desiring-production can be infinitely large or small. It is only at the point of the “fits and starts” where *defamiliarisation* and *dehabitualisation*, as the possibility to move beyond the face, come in and when desiring-production can produce subjectivity otherwise.

To be precise, desiring-production entails two structures: first, it involves anti-production, which is the first step of rejecting the status quo and second, it involves desiring-production itself (forces of attraction that eventually lead to synthesis of the new). The first structure describes a ‘disjunctive synthesis’ when the facialization machine is brought to a hold in its subjectification process – fits and starts. This is the moment of rupture in ordinary experience as it can be triggered in gaming and when the political is opened up. “Everything stops dead for a moment, everything freezes in place – and then the whole process will begin all over again”³⁰ – unless the second structure sets in with desiring-production taking place. This is why Deleuze and Guattari argue that in many ways “it would be much better if nothing worked, if nothing functioned”.³¹ However, avoiding the vocabulary of dysfunction and brokenness, this window of opportunity, the political, can be opened through careful affective game design that tailors possibilities of rupture into the game’s architecture. However, it can only ever be the rupture to the functioning scenario of liberal peace practices in the game that can be designed, but not what gaming scenarios are developing thereafter, nor the possibly unorthodox subjectivities this can produce. As anti-production it is only an initiating “*repulsion* of [existing] desiring-machines.”³² Therefore, since anti-production can be a part

²⁹ Ibid, 5.

³⁰ Deleuze & Guattari, *Anti-Oedipus*, 8.

³¹ Ibid, 8.

³² Ibid, 10, original emphasis.

of an existing desiring-machine as much as it can work against it the moment of interruption is only an initial sting – “so many nails piercing the flesh, so many forms of torture,” but there mere fact of suffering does not put an end to suffering itself.³³ Eddo Stern’s *Tekken Torture Tournament* (3T) is a good example for its physical poignancy that helps to belabour the point. The fact that participants’ ordinary experience is ‘shocked’ through actual electric shocks, causing discomfort and pain, does not lead them to think about violence differently, let alone act upon it. In this sense anti-production might be best equated with the conscious correspondent of ‘raising awareness’. Therefore, the genesis of new production other than faciality “lies precisely here: in the opposition of the process of [existing] production.”³⁴ However, if this “non-productive stasis” occurs, then the second structure, desiring-production, can take place which means that anti-production is not only the germ of new political experiences, but also a form of new socio-political production.³⁵ This makes gaming for its mere capacity to create conditions for anti-production an undoubtedly important and potent way of training.

The window of opportunity can only emerge because anti-production is not a conscious process. Throughout this process the subject is absent and still in the larval state, to be precise. Recalling the process of becoming, where the larval is just one state and where the subject ‘arrives to the scene late’:

the opposition of the forces of attraction and repulsion produce an open series of intensive elements, all of them positive that are never an expression of the final

³³ Ibid.

³⁴ Ibid.

³⁵ Ibid.

equilibrium of a system [of experience], but consist, rather, of an unlimited number of stationary, metastable states...³⁶

These successive syntheses of different intensities “produce intense *nervous states* that fill up” the posthuman,³⁷ turning it into an expression of objection, which is not an actively objecting subject and it turns the posthuman into a line of flight.

The line of flight marks: the reality of a finite number of dimensions that the multiplicity effectively fills; the impossibility of a supplementary dimension, unless the multiplicity is transformed by the line of flight.³⁸

According to this perspective, without transformation there is no change while there is always the possibility for lines of flight,³⁹ even in closed institutions with controlled and disciplined systems and responses in place,⁴⁰ it is down to the line of flight, the posthuman, to respond in a “creative and novel” way, which is to fill dimensions with *transformed* multiplicities.⁴¹ While most responses might unfold in a very stereo-typical way, as for example some of the simulation training undertaken by the Center for International Peace Operations (ZIF), others are novel and creative, such as those run by Crisis Simulation for Peace (CRSIP) or games like *Antiwargame*, which prompt the participants to engage creatively and in unconventional ways. However, the importance is that regardless of differences in game design and how strict some games may be, the mere act of simulation and play can produce a posthuman. All

³⁶ Ibid, 20.

³⁷ Ibid, original emphasis.

³⁸ Deleuze & Guattari, *A Thousand Plateaus*, 10.

³⁹ Ibid.

⁴⁰ That is because autonomous systems are sufficiently internally complex that directed action could potentially trigger internal change; see Humberto Maturana & Francisco J. Valera, *Autopoiesis and Cognition: The Realization of the Living* (Boston: Riedel, 1980), 119.

⁴¹ Protevi, *Political Affect*, 36.

games have the capacity to bring differing intensities together, for synthesis to occur, opening up new systems of experiences. In short, every game has mechanisms for affective registers of events, but is the line of flight that has to emerge and only that can generate new behavioural patterns. Triggering is not mechanical but dynamic, and lines are not rigid and straight either, but cut across the body in rhizomatic fashion, which is therefore the structure of desiring-production.⁴²

Desiring-Production: Fine-tuning the Techno-Political-Event

In the light that “everything is event,”⁴³ EPS is also an event. More specifically, it is part of the TPE which is an aleatory series of becomings. The subject and subjectivity is nothing but “the self-occurring form of the event.”⁴⁴ The strength of gaming is that the subject and subjectivity are always in the making and constantly producing themselves, given the continuity of the TPE. Yet, this does not mean that the subject is at the centre of this production. To the contrary, it is the TPE itself while the subject remains forever decentred without any fixed shape given to it by the states through which it passes.⁴⁵ Revisiting the rhythm of games, at its epicentre is the event, which is “the point of attraction and repulsion, a pulsating centre, around which the subject endlessly loops.”⁴⁶ These endless loops are then a “veritable grid of becoming” that can be established in a game and that provide the basis for new political subjectivities outside of games.⁴⁷

⁴² The use of the rhizome and rhizomatic is quite close to Deleuze and Guattari’s understanding of it, which describes an emergence, process or becoming that is non-hierarchical, heterogeneous, multiplicitous, and acentered, see Mark Gartler, “rhizome”, University of Chicago:: Theories of Media:: Keyword Glossary, 2004, accessed May 15, 2013, <http://csmt.uchicago.edu/glossary2004/rhizome.htm>.

⁴³ Graham Livesey, “Deleuze, Whitehead, the Event, and the Contemporary City,” (conference paper at “Event and Decision: Ontology and Politics in Badiou, Deleuze and Whitehead” Conference, Claremont Graduate University, Claremont, California, December 6-8, 2007): 14

⁴⁴ Brian Massumi, *Semblance and Event: Activist Philosophy and the Occurrent Arts* (Cambridge, MA & London: MIT Press, 2011), 8.

⁴⁵ O’Sullivan, *The Production of Subjectivity*, 178.

⁴⁶ *Ibid*, 180.

⁴⁷ *Ibid*.

Although for practical purposes the term ‘the subject’ is used (almost as a short script for a never-ending process and dynamic), there actually is no ‘*the* subject’ as such. The TPE makes this quite clear, as there is only ever an event of the subject, a process of a subjective form, which is “the dynamic unity of an occasion of experience.”⁴⁸ Strictly speaking, there is no subject as such, let alone one independent of the event, but there are only *moments of subjectivity* that capture the subjective potential of lines of flights. Therefore, the TPE as the production of subjectivity is in fact itself “a subjective self-creation” and subjectivity is a “unity of movement,”⁴⁹ but still dynamic and fluid for it is a “unique instant of production in a continual flow of changes.”⁵⁰ Such a change in turn is the idea of desiring-production and fittingly describes the move against faciality.

To further characterize ‘the subject’ in a posthuman context and as exemplified by gaming, it is an event of non-personal thought.⁵¹ Given that thought is not contained within the representation of a human body, means that subjectivity is not containing thought – there is no interiority.⁵² Players of a game do not live through the TPE, the latter constitutes them. Drawing on Deleuze and Guattari, Meillassoux argues that thought happens outside in the “great outdoors.”⁵³ Adjusting this slightly suggests that non-personal thought takes place *across* various bodies before it captures more stable categories of a subject.⁵⁴ It is only at a later stage in the process of the veritable grid of the posthuman that the becoming-subject is

⁴⁸ Massumi, *Semblance and Event*, 8.

⁴⁹ Ibid, 30. Important to note here is that the event is “the rolling of subjective and objective elements into a mutual participation co-defining the same dynamic,” so that there is no object as such either. It only figures differentially and as an “exclamation point of joint experience” that integrates into the unity of movement together with the subject. Massumi, 30.

⁵⁰ Stagoll quoted by Livesey, “Deleuze, Whitehead, the Event,” 2.

⁵¹ See chapter 2, *Involuntary Thought*.

⁵² In the same way that there is no exteriority either, Gilles Deleuze & Felix Guattari, *What is Philosophy?* (London: Verso, 1994), 210-11.

⁵³ Quentin Meillassoux, *After Finitude: An Essay on the Necessity of Contingency* (New York: Continuum, 2008), 7.

⁵⁴ “Subject and object give a poor approximation of thought. Thinking is neither a line drawn between subject and object nor revolving of one around the other”, Deleuze & Guattari, *What is Philosophy?*, 85.

captured by the thought that was generated prior to it. From this perspective, if anything, there is a subject-of-thought of a particular instance. This means that an emerging gaming subject is constituted through a trans-body thought process and not through a co-constitutive interplay between human body/subject and its environment.

Furthermore, this particular instance of the subject-of-thought (the subject) is the folding of the infinite (chaos) into the finite (thought).⁵⁵ Gaming remarkably exemplifies this struggle of the fold from chaos to thought. Even philosophy strives for order through conceptual exercise – “philosophy wants to save infinity by giving it consistency.”⁵⁶ This means that a subject in gaming is one way of ‘making-sense’ of it all. Once attempt to bring order to experience, the unknown and struggle (establishing a milieu). Whereas the TPE itself is aleatory and contingent, the emerging subject is geared towards a more structured conceptual personae, generating conceptual, actual and knowable political subjectivities.⁵⁷ Non-personal thought goes on to operate as concepts (order) through the subject, eventually losing momentum and settling as a conscious subject (even subject-as-is). Therefore, the posthuman is a temporary unit, “a thought – a moment of cohesion within chaos.”⁵⁸

On Infinity: The Virtual in Subjectivity

The posthuman and subjectivity emerge from the Virtual, a ground that is ontologically unstable, heterogeneous and unfixed, holding in it the entire world.⁵⁹ Drawing on new sciences and quantum theory, Guattari calls this unstable ground *Chaosmosis*, and it is from

⁵⁵ O’Sullivan, via Deleuze and Guattari, calls this *chaoids*, “daughters of chaos,” *The Production of Subjectivity*, 183.

⁵⁶ Deleuze & Guattari, *What is Philosophy?*, 197.

⁵⁷ *Ibid.*

⁵⁸ O’Sullivan, *The Production of Subjectivity*, 184.

⁵⁹ Simon O’Sullivan, “Guattari’s Aesthetic Paradigm: From the Folding to the Finite/Infinite Relation to Schizoanalytic Metamodelisation,” *Deleuze Studies* 4, no.2 (2010): 257.

this that subjectivity emerges.⁶⁰ Guattari's essays in *Chaosmosis*, 'The New Aesthetic Paradigm' and 'Schizoanalytic Metamodelization' look at the specific interphase of the move from the Virtual to the actual,⁶¹ which is an important phase to trace in order to understand EPS. Guattari establishes a bridge between the Virtual/infinite and the actual/finite and argues for "the existence of a certain type of entity inhabiting both domains" which are "transversal entities" that imply that being and subjectivity are not pre-given and that the actual form is not "operating as some kind of container for life (or for 'all the possible modalities of being')." ⁶² This traversal entity highlights that subjectivity is self-crystallization out of the formless. The process that builds the bridge between the virtual and the actual is called "machinic being."⁶³ This machine, drawing from the machinic phylum, is a machine of self-organising entities (such as the posthuman) that like a Janus-face looks and operates in two directions – towards the virtual and the actual.⁶⁴ Guattari identifies the non-discursive realm as the Virtual, whereas the "discursive finitude" is the actual.⁶⁵ As O'Sullivan rightly points out, the precise nature of these two operating faces is unclear; the only thing that can be said about them based on Guattari's writings is that they are connected through speed. Pausing here for a moment, then there is an argument to be made that gaming operates at a faster speed and, thus, EPS than other forms of training. The argument that new media and NT are 'faster', speeding up time is not new. However, this is not so much because these are 'technologies', but because they are conducting thought faster. Indeed, gaming transduces thought from the Virtual to the actual at posthuman speed, which it was argued is precisely gaming's strength. Based on Pascal's writings, Guattari argues that the Janus-face "moves

⁶⁰ Ibid, 257.

⁶¹ Felix Guattari, *Chaosmosis: An Ethico-Aesthetic Paradigm* (Sydney: Power Publications, 1995).

⁶² Guattari, *Chaosmosis*, 109; O'Sullivan, "Guattari's Aesthetic Paradigm," 264.

⁶³ Guattari, *Chaosmosis*, 109.

⁶⁴ Ibid, 110.

⁶⁵ Ibid.

everywhere at infinite speed because it is at all places and whole in each place.”⁶⁶ Thus, during the movement of the posthuman it is impossible to pin down how and where the faces interact, it is a “continuous coming-and-going at an infinite speed [...of chaotized complexions...] within the same being-non-being [the posthuman].”⁶⁷ As in the conceptualization through quantum theory, the interplay between the Virtual and the actual flairs up in various places and the connection between them is not causal and direct. To the contrary, it is a “chaotic zone where they lose their extrinsic references and coordinates, but from where they can re-emerge invested with new charges of complexity.”⁶⁸ However, gaming is just one instance of chaomic folding of subjectivity, quantum theory has been applied elsewhere to explain contemporary information warfare and media diplomacy.⁶⁹

Chaosmosis based on quantum causality further supports the idea that the production of the posthuman and that of its subjectivity is not a linear progression from Virtual to actual nor does it oscillate between the two. The relation is not as straight-forward as from chaos, nothingness, infinite, larval and Virtual to order, being, finite, subject and actual, but “it rebounds and interrupts [...]; it is relative chaotisation in the confrontation with heterogeneous states of complexity.”⁷⁰ In this way, Guattari can be used to stress moments of subjectivity as well as their fluidity – in this sense subjectivity is a continuous folding-in process. This relation and bridge is crucial since it is the locus of innovation, yet the momentariness of subjectivity also means that it counters innovation settling as more stable subjectivities. Not only does the infinity of the Virtual allow for the proliferation of new subjectivities (with no pre-established end to this process), but it also implies the off chance

⁶⁶ O’Sullivan, “Guattari’s Aesthetic Paradigm,” 264.

⁶⁷ Guattari, *Chaosmosis*, 110-11.

⁶⁸ Ibid.

⁶⁹ See for example James Der Derian, “Quantum Diplomacy, German–US Relations and the Psychogeography of Berlin,” in *The Hague Journal of Diplomacy* 6 (2012): 373-392.

⁷⁰ Guattari, *Chaosmosis*, 112.

of auto-production of subjectivity to actually come to full fruition. In the way that the status quo can be interrupted, so can crystalizing subjectivities. Speaking in terms of intensities then some encounters are simply not strong enough to develop as and stabilise as slower subjectivities. Apart from the process of EPS, it is important to understand this bridging between the Virtual and the actual in order to fully appreciate how new subjectivities can emerge. Guattari's insight offered through *Chaosmosis* and *Schizoanalytic Metamodelization* is important to understand a crucial aspect of the production of subjectivity. On a philosophical level it would be impossible without the Janus-faced bridge to understand how the two structures of desiring-production connect and work together. On a theoretical level, without the infinity of the Virtual and the folding-in of the Virtual and the actual, it would be impossible to grasp why there is always a chance for a new emerging subjectivity. On a practical level, without Guattari's quantum approach it would be impossible to see how subjectivities have no determinable origin, how they can assemble and disassemble at an instant.

Gaming as the Desiring-Machine at Work

In order to contextualise the present philosophical argument, it is worth applying conceptions of EPS to concrete examples of simulation games. CRISP is one of the organisations that stands out in this sense, not only due to their unique and creative approach to game design, but also because of the participant testimonies of their games. While CRISP games are technologically low-key, including standard technological devices such as televisions, personal computers and mobile phones, the whole game setting is fully immersive (often games last for a week), which is an optimal test-lab for the experimentation with subjectivities. Arguably, the games designed by this grassroots organisation are so effective because they prompt the participants to play the opposition and to fully live through that

experience; that is to *be* the opposition and to become-anew in the process; to think, feel and act like *them*. This is a challenge that can potentially be perceived as a threat to individual identities that mocks the sincerity of local political problems, individual stories and worries. The idea of arguing for the other team is simple in theory, yet in many contexts of conflict this is a daring move. Game design that seeks EPS needs to strike a fine balance of play that allows for conditions of experience that let participants grow and learn – rather than having them in a classroom scenario and pass down knowledge – without emphasising the element of play too much and thereby run the risk of ridiculing participants concerns at stake.

Probe-Heads: Experimenting with Subjectivity through Gaming

Whether games are technologically low-key or high-tech, they demonstrate the emergence of the posthuman, the dynamic it generates as well as how this dynamic can potentially lay the ground for a new subjectivity to emerge. This process and particular instances of it are further identified as “probe-heads,” which are a reaction to faciality and result out of desiring-production; they are “positive deterritorialization and creative flight.”⁷¹ As such, probe-heads are a successful instance of a game that results in anti- *and* desiring-production, as well as stronger, longer moments of subjectivity. Given that probe-heads are, therefore, processes of lived experience they are not ready-made heads or better heads, they are different heads based on “inventing our own faces, or rather our own heads.”⁷² In this sense, probe-heads are not criticism as such, but rather a form of productivism and it is only the product that is a lived critique as it were. Essentially, probe-heads are transformation through exploration and experience.

⁷¹ Deleuze & Guattari, *A Thousand Plateaus*, 210.

⁷² O’Sullivan, *The Production of Subjectivity*, 191.

Indeed grassroots gaming proves to be particularly effective in challenging individual subjectivities as well as the larger mechanism of subjectivity production. Faciality in many cases is historic and rooted in traditions and ideological practices where the element of play can challenge beliefs that partake in perpetuating political problems or conflicts in very simple, yet effective way. In comparison to gaming it appears that many conventional stability and security strategies are actually part of faciality in a way that these efforts have often been more symbolic and discursive rather than generating political and social impact.⁷³ Under the banner of liberal politics, cooperation is often nothing more than domination in disguise.⁷⁴ Critics argue that the grinding machine of large initiatives such as the Folke Bernadotte Academy, the Cairo Regional Centre for Training on Conflict Resolution and Peacekeeping in Africa (CCCPA) or UN, World Bank or IMF supported collaborations often involves little more than a “continuation of war by other means” within a “makeover fantasy” of international politics.⁷⁵ Even though smaller organisations often lack financial support, the advantage of the grassroots level is that political training and practices can play with and promote alternative ways of approaching the political through new ideas and methods. Precisely because these organisations such as CRISP do not have to report to an overriding international initiatives and do not have to fulfil standards set out by funding bodies, they can actually circumvent conventional liberal politics. yet, gaming and simulation is often to be only way of inspiring new thought and ideas in participating groups, without being too imposing, intrusive and ideological.

Looking at the way in which grassroots game-initiatives work together with funding bodies as well as members of society who are the participants in their games, how research for

⁷³ Jan Selby, “Dressing up Domination as Cooperation: The Case of Israeli-Palestinian Water Relations,” *Review of International Studies* 29 (2003a): 121-138.

⁷⁴ Ibid.

⁷⁵ Christopher Cramer, *Civil War is not a Stupid Thing* (London: C. Hurst & Co, 2006).

games is conducted locally and how games are designed demonstrates that efforts to trigger the production of probe-heads is neither ‘rebellious’ nor a top-down approach, but an immanent dynamic. The way in which anti- and desiring-production actualise is through different associations and relations that work within, through and beyond socio-political and economic dynamics not aggressively against them. Deleuze and Guattari suggest countering the faciality-machine with a more pre-signifying, pre-subjective and “essentially collective” system⁷⁶ that “involves specifically non-human becoming and a different relation to the world”⁷⁷ and analysing grassroots gaming efforts it appears that they precisely make this move. In other words, playing with existing subjectivities, uprooting them and putting the participants in situations that are collective and that describe something entirely new. Games are about disrupting existing ways of organisation from within that organisation, by including participants that thus far have perpetuated the status quo and faciality. Anti-production in the way that it is traceable in games is about new systems of experience that rupture habits by action, movement and practice, not by aspersing or denigrating them. Offering the opportunity for a dynamic to emerge that is different to existing habits and systems of meaning is different than suggesting this right from the beginning. In short, probe-heads emerge exploratively through a new system of experience. In addition, while conditions for anti-production can be contingently made available through game design, desiring-production is up to chance, given that once the game starts, the designers and game supervisors will not intervene anymore. This suggests that probe-heads are an immanent, explorative, and contingent dynamic emerging out of possible new systems of experience. this also means that producing new subjectivity is not about education of right and wrong, better or worse, nor is it the goal of a game that participants leave a simulation thinking in terms of good and bad. The goal of games is not that participants judge a situation differently than before, but that

⁷⁶ Deleuze & Guattari, *A Thousand Plateaus*, 195.

⁷⁷ O’Sullivan, *The Production of Subjectivity*, 190.

they leave the game as something different than before. This supports the idea of probe-heads that are neither pre-determined nor necessarily ‘better’, but emerging out of singular gaming dynamics that do not subscribe to a teleological idea of game development. Second, the goal of a subjectivity that is different, rather than educating the subject to judge better, therefore, supports the idea of probe-heads as a transformation based on lived experience and exploration, emphasising the *process* of “inventing” probe-heads and lived criticism by becoming a different subject altogether.⁷⁸

However, it often takes more creative game design and alluring qualities of fictional play that are possible in games for explorative movement dynamics and invention of new probe-heads to occur. Interim steps in games are often necessary to help to carry along this dynamic. While standard game and simulation procedures worked relatively well in most cases; occasionally unconventional game design strategies are necessary to help players to abstract themselves from their own reality. These plot strategies are often described through the aesthetic index that is geared at a particular user experience with specific goals (in this case).⁷⁹ In this case the aesthetic goal is abstraction from reality and avoiding political deadlocks. This can be done for example by creating a game that simulates a conflict that is set in the future. The scenario for SIMVISION (simulation by CRISP), for example, is 2025, yet bears similarity with “the regional conflicts and territorial issues between the countries of South Caucasus,” so that participants can make the transfer without being too attached to the set-up and story itself.⁸⁰ Apart from country names and fictitious identities, the game design in this case does not prescribe very much. The very fact that it is set in the future opens the way for going beyond faciality and for anti- and desiring production to take place. For

⁷⁸ O’Sullivan, *The Production of Subjectivity*, 191.

⁷⁹ Marcel Danesi, *The Puzzle Instinct* (Bloomington, Indiana: Indiana UP, 2002), 227.

⁸⁰“SimVision 2025 - Caucasian Union / Nagorno Karabach,” CRISP, accessed September 01, 2014, <http://www.crisp-berlin.org/index.php?id=138>.

example, Rex Brynen's annual peacebuilding simulation game *Brynania* run at McGill University draws on precisely the same strategy.⁸¹ This means that even though a game 'only' simulates the face encapsulated in specific conflict scenarios and individual histories, for example, this is still 'too close to home' as it were, standing in the way of new probe-heads. Therefore, the design strategy to tailor a scenario that is similar but not the same as the conflict background of the participants is a significant step in order to help participants to leave their own reality for the duration of the game. In this sense, it appears that, in order to produce new subjectivities, the method of simulation and gaming, which is claimed to be already the very mode that escapes the sticky mechanism of subjectification, sometimes needs to be further improved by further abstracting from the conflict scenario, and thereby removing the participants from their own history, memory and *Erfahrung* (lasting and memorable experience).

Productivism as Creative Flight

Playing a political game and creating probe-heads is one step, making the gaming experience last as a productive experimentation and moment of subjectivity is a different challenge, however. While games can provide the participants with new insight and understanding, this is just the beginning. The new subjectivities that emerge out of games are in fact "the platforms for other, perhaps even stranger modes of organization and subsequent deterritorialisations."⁸² The formation through which this happens was previously identified as body politic. This analysis and perspective suggests that gaming is a form of experimental productivism. Developed from Massumi's writings on "productivism," it argues that the focus lies within "processes *as such* and not on the static conception of some constructed

⁸¹Rex Brynen, "Peacebuilding Simulation," *Brynania*, accessed September 01, 2014, <http://brynania.wordpress.com/>.

⁸² *Ibid.*

‘thing’.’⁸³ In this light gaming should be analysed as an inventive experimentation and auto-production.

The chaosmotic emergence of subjectivities from game design and binary software codes is precisely such a creative self-emerging process. Read almost as science fiction, Chaosmosis produces worlds beyond ‘this one’, beyond the face and inventing new terms for it.⁸⁴ There are few boundaries to the level to which the players can take a game. Using a metaphorical aid to think about this, it can be argued that the participants are merely given clay and a few tools to work on it. In fact, they are part of the clay themselves and have the possibility to form into multiple entities or to then reform and stretch into other shapes. In this sense gaming is a possibilistic auto-sculpting. The clay does not necessarily have to harden so that its constant movement describes continual experimentation, production and becoming. Yet, it has to be considered that games do only run for a certain period of time, from anything as short as 10 minutes up to an entire week.⁸⁵ In the case of games like *PeoplePower* or *Antiwargame* it might be the case of a few hours each day in a longer continuing process. The point at which the game stops, however, is when the clay starts to harden (matter becomes slower and settles). That fact that it is difficult at this stage for encounters to trigger change (reaching thresholds of intensities suggests that anti- and desiring production have a more potential-prone relationship with dynamic bodies. However, more entities can spiral from these initial gaming movements and temporary posthuman shapes and moments of subjectivity, in the way that thought does not come to a halt after the game. The role players took on and developed into might have lasting after-effects that continue to drive desiring-production. Such a contingent outcome of a game can then spark larger bodies politics.

⁸³ See Chapter 2 and Massumi, *Parables for the Virtual: Movement, Affect, Sensation* (London: Duke UP, 2002), 12.

⁸⁴ O’Sullivan, “Guattari’s Aesthetic Paradigm.”

⁸⁵ Games such as *Against All Odds* are over within minutes and can be played multiple times, whereas security simulation games such as offered by ZIF can last a week for example.

From Probe-heads to Bodies Politics

The end of a game marks only the end of an experiment and explorative movement in a particular place and constellation of the posthuman, but not the end of thought and subjectivity. The posthuman gaming body will disburse for the parts to re-emerge elsewhere as a different posthuman body. Subjectivity, however, does not have to follow the same trajectory, as its carrier, that is its mode of continuation, is different. This marks also the crucial difference between the posthuman body and its subjectivity, in the way that the latter can go and split in its own way. This is where Latour's different modes of existence come into play in the way that when new subjectivity splits from the posthuman at the end of the game it changes modes of existence, as from digital to analogue for example.⁸⁶ Essentially, lasting moments of new subjectivity are lived in and outside the game. Even though the ways in which the posthuman splits and the modes in which subjectivity develops and effects are largely unpredictable, there are patterns of post-game becomings, continuing and developing the system of experience as it were. Apart from the inevitable personal memory (*Erfahrung*), participants pass this on orally and thereby perpetuate the gaming experience – the probe-heads that will be the platform for other, even 'stranger' becomings. This lead game developers to further explore the mechanism of the 'training of trainers' through gaming, which is just as important as the actual game. This is because a large number of participants to more complex simulation games are locals from conflict areas who attend seminars in order to teach the methods they have learned. Therefore, the probe-heads in the game are not the only heads that are produced, it is not the only time when participants invent their own

⁸⁶ Bruno Latour, "Reflections on Etienne Souriau's Les Differentes Modes D'existence," *The Speculative Turn: Continental Materialism and Realism*, eds. Levi Bryant, Nick Srnicek, & Graham Harman (Melbourne: re.press, 2011), 315. Or in the present case becoming rather than being. One could add that the end of a game is a case of Souriau's multirealism, which implies multiple ways of a being to exist at the same time.

faces, but they also set the stage for other subjectivities to come.⁸⁷ In this sense games as processes of emergence and TPEs fulfil an ethico-aesthetic function of the creative production of new subjectivity that continues long after the game has finished.

However, even though these continuing developments are not so much determined by game design anymore, the mere fact that game developers more often than not also have commercial interests – and even at the grassroots level are tied to the liberal and economic constraints of their donors – influences the developing subjectivities. Therefore, probe-heads are often produced from within the capitalist mode of production and from the same materials.⁸⁸ Accordingly, the ethico-aesthetic is concerned with participation in the world and the change of it, not to withdraw and separate from it altogether. Games offer the players an opportunity to participate in the world and thereby both are transformed. Importantly, it is only through this creative participation in and with the world that EPS is an innovative process. EPS in gaming that leaves the subject-as-is behind is a creative experiment of living against the strata that bind us.⁸⁹ It is productivism, becoming (to become-other) and it is to become-world. In this light, the posthuman is a way of life, a transformative proactive and its subject's modus operandi cannot be anything else than experimentation in the world. Apart from the productive aspect this experiment is pragmatic, because the speculative subject does not emerge out of knowledge, but through concrete and material practice.

Body Politic: Posthuman Bodies, Their Subjectivity and the Political

The project's commitment to technoscientific materialism makes it conducive to drawing on ideas of body politic, especially from the point when the posthuman subject(s) leaves the gaming realm. As with desiring-production, body politic continues to describe subjectivity as

⁸⁷ O'Sullivan, *The Production of Subjectivity*, 189-192.

⁸⁸ *Ibid*, 175.

⁸⁹ *Ibid*, 202.

process. Even though it is possible to talk of a body politic during desiring-production already, its analytical leverage is most useful at a more developed and later stage in EPS. The strength of this concept lies in the fact that it is able to investigate other aspects of the political subject beyond conventional political theory and the subject-as-is, because it captures the emergent character of political subjectivity – “that is, the embodied/embedded/extended” – on different compositional and temporal scales.⁹⁰ Body politic is the moment when the probe-heads become new habits and political (consciously usable) categories – the new system of experience working regularly and ‘normally’. Body politic is initiated by gaming, but resonates and take its full shape long after the game has finished. It describes the moment when bodies develop new patterns of behaviour. Not only are bodies politics embodied through transindividual and psychological dimensions, they are also embedded in multiple and overlapping socio-political relations with other bodies politics, relations that are themselves psychological, physiological or still Virtual.⁹¹

Personal, Group and Civic: Jumping Scales of Bodies Politics

The analytical purchase of body politic is that it provides a helpful systematic and conscious model through which EPS can be known and used, rather than just theorised. By taking care not to standardize and categorize the aleatory nature of becoming, the body politic nonetheless provides a lens for understanding and applying emerging subjectivities. Based on Protevi’s work that structures body politic to understand the political through the somatic, EPS can be characterized to have certain compositional and temporal attributes.⁹² If a body politic emerges in desiring-production, then the conscious, human level of this is somewhere between the individual and the group. Speaking in conventional political terms then it can be argued that its effect is still ‘limited’, as it does not regulate any human material flows nor

⁹⁰ See for example Protevi, *Political Affect*, xii; 33.

⁹¹ Protevi, *Political Affect*, 37.

⁹² *Ibid*, 40.

does it have considerable impact upon policy making so far. This is not to deny the impact a sub- and pre-human body politic can have, but in terms of the regulation and institutionalisation of peace operations it is human scale of bodies politics that matters. Accordingly, the point of the subject entering consciousness is when the concept of body politic becomes most useful.

In view that posthuman subjectivity is conceptually known by the human as body politic implies that the latter emerges out of and is implicated in trans-body, posthuman physiological and psychological somatic dimensions. According to Protevi “they are embedded in multiple and overlapping socio-political relations with other bodies politics, relations that are themselves also physiological and psychological.”⁹³ Protevi distinguishes between personal, group and civic bodies politics, which differ in their compositional and temporal scale. In his model he differentiates between the first and the second-order compositionally as well as temporarily. For example, first order body politic happens at a personal level with a short temporal span that usually stretches only to punctual events. In contrast, second-order bodies politics for Protevi take a group or even civic composition and can have mid- and long-term effects. Examples for mid-term are habit and training whereas development and history are long-term. While there are certainly many similarities between the bodies politics that evolve out of gaming, Protevi’s models needs some fine-tuning here. Even though the author argues himself that these categories are only analytic tools rather than concrete boxes into which subjectivities are pushed, the view taken here is that the boundaries between the different scales are much more flexible than Protevi initially suggests.⁹⁴

⁹³ Ibid, 37.

⁹⁴ Ibid.

		Compositional		
Temporal		Personal	Group	Civic
	Short term	<i>RCA*</i>	<i>Encounter</i>	<i>Revolution</i>
	Mid-term	<i>Habituation</i>	<i>Subjectification</i>	<i>Administration</i>
	Long-term	<i>Development</i>	<i>Custom</i>	<i>Institutionalization</i>

Image 1: Temporal and Compositional scales of bodies politics; **“Neural events on the fast/personal scale are the formation of resonant cell assemblies, or RCAs.”*⁹⁵

The process of desiring-production and EPS, as well as the posthuman condition more generally, differs the most with the first and second-order distinction in Protevi’s sketch. Protevi sees the individual as the source of the first-order body politic. Here, however, it is the posthuman which differs greatly from the idea of the individual or human. It is acknowledged that Protevi has unconventional views about the individual, the subject and humanity itself;⁹⁶ yet, it is still restricted by anthropocentric ideas and not speculative enough to be useful for this thesis. Whereas it is agreed that a first-order body politic in the form of the posthuman is “at once social and somatic, embedded and embodied, connected [...] in both physiological and psychological dimensions,” it is not seen to be “individuated” as in the representation of an individual human body. Instead, it materializes along the synthesis of intensities such as temperature and rhythm and can therefore be much wider or smaller than an individual. Breaking down body politic to the posthuman level means that patterns and behaviour of the posthuman actualize as intensive processes that have the power to disrupt previous patterns – as in a move beyond the face. The emergence of new systems of experiences is then similar to Protevi’s argument that individual body politic can trigger the

⁹⁵ Image 1 is reproduced from Protevi, *Political Affect*, 40; 37.

⁹⁶ See for example Protevi, *Political Affect*, 3.

“construction of new attractor layouts.”⁹⁷ As such it can take effect short-term (synchronically) or long-term (diachronically). That gaming aims at both is seen in an immediate gaming dynamic that can break with the status quo in the game, and also have a lasting after effect in the participants. The synchronic effect would be, for example, in cases of decision-making in the game, the movement of the posthuman into new, unknown directions. In short the synchronic can materialize as the unforeseen event in the game.

Despite the disagreement with Protevi’s compositional distinctions between individual and group of a body politic, there is particular merit in the third order, the civic body politic. This is because it describes effective and affective subjectivity at work. Due to the fact that the posthuman body as developed here can be larger or smaller than an individual, yet never simply an individual nor a sum total of such in the form of a group, the first two scales are adopted as one that describe political behaviour in gaming that is impersonal and short of the civic. Whereas this first level describes the production of subjectivity on a smaller, synchronic scale, the civic level demonstrates what subjectivity does or can do especially as a political force. It is this political compositional scale that games aim to have effect on in the long-run. It is speculated that if a TPE and the affective behaviour it creates last long enough, this very patterning of new subjectivities can indeed go beyond the customary political face and become institutionalized.⁹⁸ In this case, the civic level of body politic would be the actualized and formalized ethico-utopian impulse that triggers and drives explorative micropolitics in the first place. The transition from synchronic to diachronic and from the level of the posthuman to the civic is crucial in order to understand how affect that circulated in the game has after-affect/effect outside the scope of the game. Walter Benjamin’s

⁹⁷ Ibid, 38.

⁹⁸ Ibid.

pedagogically inspired writings on the mimetic reproduction, *Erlebnis* and *Erfahrung*, help to explain this process of how subjectivities come to last.

Making Things Last: Connecting the Posthuman Experience to the Civic

In the simplest terms, Benjamin distinguishes experience into first/second and third body politic in a temporal sense, which is useful in showing how gaming experience has synchronic and diachronic dimensions. While Benjamin works this mainly on a personal scale, it can nonetheless be applied to the posthuman composition for he draws a distinction in (temporal) scale, not in kind. This distinction is absolutely fundamental, not only in understanding how experience develops on a cognitive and conscious level, but also for the conceptual link that explains how affects in a game generate affects outside the game (post-affects as it were). This link is vital in order to better understand how newly emerging subjectivity in the game can resonate onto a larger scale. The emergence of larger subjectivities conceptually known as bodies politics begs the question of why it is that the experience of the new in gaming can have such a powerful affective impact upon civic bodies politic. In the pursuit of this Benjamin's notion of experience (*Erlebnis/Erfahrung*) and the mimetic faculty will be rehabilitated.

After the Game: From Mimesis to the Mimetic Faculty

Viewing gaming experience as a Benjaminian mimetic faculty is crucial in order to understand why gaming is not just a mimesis, simulation and parody of reality, but is authentic and political to the core. In this light, gaming is the first part of a twofold process, that is the first *Erlebnis* of the emerging political subject that can develop into a body politic, rather than being a mere copy of the latter and due in large because of its mimetic pedagogy. Debates around the use of NT for political purposes, whether this is gaming, social media or

other use of ICT, is often framed around questions asking for their status of reality and eventually downplaying the technological interaction to mere 'virtual simulation'. As seen for example in the technologising debates, if anything then the use of NT is a technocratic fix that is depoliticising, as in it is a practice further and further removed from the political. Nevertheless, this is a misleading way of addressing and questioning the issue. Instead of asking the implicit question of whether or not the political is at risk, it may be better to ask where the political is, if it is not in the traditional realm anymore. The short answer to this is that in the case of games it lies precisely in the act of gaming, which makes the mimetic faculty political and therefore into a political posthuman pedagogy.

To unbundle this further, the first part of the argument is that gaming (whether high or low-tech) is a highly modern case of a mimetic faculty. This claim is in part based on Benjamin's mimetic faculty which is an analytic process in pedagogy that he derived from the classical philosophical concept of mimesis. Arguably any investigation into gaming and simulation needs to reflect upon these practices in the light of imitation, representation and copy which are all encompassed by mimesis. Needless to say that the term mimesis is theoretically elusive and broad in Western thought. The great majority of thinkers conceive of mimesis in quite Platonic ways as a process in which an ideal is imitated or even copied.⁹⁹ More specifically, in a traditional sense, mimesis is about "nature that culture uses to create second nature, the faculty to copy, imitate, make models."¹⁰⁰ It is perfected to the point where the representation may emulate the character and power of the original.¹⁰¹ In addition to representation and imitation, the Platonic view holds that mimesis is inauthentic, deceptive

⁹⁹ Michelle Puetz, "mimesis," University of Chicago:: Theories of Media:: Keyword Glossary, 2002, accessed March 28, 2011, <http://csmt.uchicago.edu/glossary2004/mimesis.htm>.

¹⁰⁰ Michael Taussig, *Mimesis and Alterity* (New York: Routledge, 1993), xiii

¹⁰¹ Puetz, "mimesis."

and alienating.¹⁰² Thus, it is inferior to the original or ideal, and so forms of representation never live up to the original. The underlying assumption of such classical view is that one has to reach beyond representation in order to get to the “real”. Such a charge has been put forward numerous times against simulation games and it is the basis of the technologising argument as well. Especially in the contemporary socio-critical literature (often used in) such as the work of Jean Baudrillard, Paul Virilio and Umberto Eco implicitly draw on the assumption of technological mimesis through concepts of imitation and copy. This is often adapted by IR’s neo-platonic strand, for example, by François Debrix or in earlier work of Cynthia Weber.¹⁰³ However, if gaming was mere imitation, then the political affect in gaming would not exist, nor would there be a chance of post-gaming affect in the form of bodies politics.

The political in gaming can be restored, nonetheless, and this is based on different traditions in the intellectual development of mimesis. By contrast, the Aristotelian tradition marks a turn away from such a hostile conception of mimesis and views it as a mediating aspect of human experience within the world. However, this view still holds that mimesis is essentially about imitation.¹⁰⁴ The work by Rousseau and Lessing further develops mimesis towards individual creativity¹⁰⁵ and it is especially in the twentieth century that mimesis obtains a relational aspect. Due to the works of Benjamin, Adorno, Girard and Derrida, mimesis is viewed as a social practice and intrinsic human property crucial for interpersonal relations.¹⁰⁶

Especially Benjamin and Adorno focused their work on mimesis as adaptive behaviour that is

¹⁰² Plato, *Republic*, G.R.F. (John) Ferrari (Cambridge: Cambridge UP, 2000), 324.

¹⁰³ François Debrix, *Re-Envisioning Peacekeeping: The United Nations and the Mobilization of Ideology* (Minneapolis & London: University of Minnesota Press, 1999); Cynthia Weber, *Simulating Sovereignty: Intervention, the State and Symbolic Exchange* (Cambridge: Cambridge UP, 1995).

¹⁰⁴ Paul Edwards, “Mimesis,” *The Encyclopedia of Philosophy*, Vol. 5&6, ed. Paul Edwards (New York: Macmillan, 1967), 335.

¹⁰⁵ Edwards, “Mimesis,” 335; Michael Kelly, “Mimesis,” *The Encyclopedia of Aesthetics*, ed. Michael Kelly (Oxford: Oxford UP, 1998), 234; Gunter Gebauer & Christop Wulf, *Mimesis: Culture, Art, Society* (Berkeley, CA: University of California Press, 1992), 204

¹⁰⁶ Gebauer & Wulf, *Mimesis: Culture, Art, Society*, 2; Kelly, “Mimesis,” 236.

prior to language and enables humans to assimilate themselves to their surroundings through play.¹⁰⁷ Mimesis must not be understood as an intrinsically human concept or behaviour, but as a practice it is helpful in teasing out the adaptive, transformative behaviour – that is the redesign of new affective patterns – in a realm that is prior to language and arguably the subject. In this way mimesis carries affirmative and enabling (affective) aspects that are crucial for political play.¹⁰⁸

Benjamin's temporal distinction of experience, into *Erlebnis* and *Erfahrung*, is crucial in order to understand and make the connection between affective gaming experience from synchronic first/second order to diachronic third order bodies politic and *how* this is political. *Erlebnis* literally means "living through" and is temporarily restricted to an event, here a TPE. It has a strong affective component setting patterns for subjective appropriations in the form of emotions. Out of this lived experience emerges *Erfahrung*, which is a learning process spurred by *Erlebnis*. According to Benjamin, *Erlebnis* creates awareness while *Erfahrung* marks a gain in knowledge. Translated into a posthuman condition, this means that *Erlebnis* is the break in ordinary experience and the encounter with the unknown, while *Erfahrung* is *Erlebnis* becoming conscious and the overall development of this new system of experience in the form of subjectivity and a more stable body politics. *Erfahrung* is often seen as the reflective experience that is memorable, or, in Benjamin's words, "the [conscious] philosophical structure of experience" of the prior affective *Erlebnis*.¹⁰⁹ Ultimately, the TPE is *Erlebnis* on the first/second scale of body politic and develops into the subjective *Erfahrung* on the third civic scale. Interestingly, English does not allow making this distinction linguistically, as both terms translate as experience, but are fundamentally

¹⁰⁷ Benjamin, *Walter Benjamin: Selected Writings 1931-1934*, 694.

¹⁰⁸ Puetz, "mimesis."

¹⁰⁹ Walter Benjamin, *Walter Benjamin: Selected Writings, 1938-1940*, ed. Michael William Jennings (Harvard: Harvard UP, 2003), 314.

different in terms of their affective state and development. Therefore, Benjamin's split notion of experience allows investigating how affect travels and evolves through different compositional and temporal domains.

Of equal importance, a Benjaminian analysis also allows for an emphasis on these developing experiences as body political *Erfahrung* are material subjectivities and not only discursive constructions that are introduced after experience has taken place. Furthermore, even though these subjectivities are representable, this is not the main way they are working their affects. It was Benjamin above all who problematized the tyranny of twentieth century discursive-representationalist reasoning by insisting on the irreducibility of embodied experience and his parting from hermetic linguistic ontology, which makes his approach particularly suitable for the purpose here.¹¹⁰ Due to Benjamin stressing non-linguistic forms of experiencing in his mimetic faculty of *Erlebnis* and *Erfahrung* helps to belabour the point of non-representational bodies politics that is committed to the concrete experience. This matters because gaming is precisely not a case of textual learning and practicing peace. More specifically, the mimetic faculty of gaming is the experiential correlate to what Wlad Godzich describes as "our culture's incipient return to a curious post-historical form of preliteracy."¹¹¹ Benjamin identified this as a turn from semiosis to mimesis. In this sense Benjamin's mimetic faculty is an initial move away from highly anthropocentric ways of experiencing and learning towards the non-representable. In so doing he outlines aspects of subjectivity formation that have their centre of original encounter in the pre-subjective realm. Yet these resonate on other compositional scales. A good example of this is the trainer of trainers scenario, what started out as pre-subjective *Erlebnis* of the posthuman at the level of first/second order body politic in a particular game, turns into *Erfahrung* and is passed on as

¹¹⁰ Especially in his essay "On Some Motifs in Baudelaire," in Benjamin, *Walter Benjamin: Selected Writings, 1938-1940*, 313.

¹¹¹ Wlad Godzich, *The Culture of Literacy - Philosophy and Literature* (Cambridge: Harvard UP, 1994), 368-9.

such on the civic scale by the trainers to local communities. Ultimately, it is only Benjamin's theoretical split of experience into *Erlebnis* and *Erfahrung* that shows how the pre-subjective realm, the first/second and third scales, which are increasingly subjective and conscious, are part of the same dynamic, but just on different temporal levels. In short, bodies politics work only because affection is split into *Erlebnis* and *Erfahrung*.

Furthermore, the affective trajectory of subjectivity through *Erlebnis/Erfahrung* is a form of 'sense-making'. After all and despite the necessity of philosophical endeavours, the purpose of gaming is learning and, thus, understanding and taking away lessons. Importantly, sense-making as an affective, and not only subjective, process works across various registers – for example, virtual, intensive and actual. According to Protevi, sense and sense-making have “three aspects: sensibility, signification and direction.”¹¹² Sensibility here refers to openness and the ability of systems to be open to and engage with the world. However, since it only describes the attribute of being open and the possibility of being affected, sensibility is a virtual aspect above all. Therefore, bodies politics are first of all open systems in the world and as such they can be affected. Second and importantly, bodies politics establish signification about the political, in this case peace practices, for their body-subjectivity. This is an intensive process since it happens through continuous syntheses of various intensities that generate thought. Given that thought always has a virtual and an actual half means that signification cannot be only virtual or only actual, but intensive. In affective terms this means that signification happens after the move beyond the face and is implied in a new subjectivity. As such, it is still non-conscious and pre-personal. It is only at a conscious level that signification is the registration of change in one's own perception of and outlook on things, here the outlook on political practices.

¹¹² Protevi, *Political Affect*, 51.

At a third stage, bodies politics establish a direction for action – needless to say that this aspect of sense-making is crucial for the re-engagement of the political. The explorative learning through the play of simulation games enables participants to test various scenarios, which will ultimately leave them with a sense of direction of where to take their non-violent protest and efforts for conflict resolution. Its main aim according to the designers is not so much the understanding of peace or peace operations, but acting upon subjectivity once it has emerged.¹¹³ Yet, the possible action still often depends on or is interfered by the social grammar and syntax. Necessarily, the civic level of body politic is constantly going against faciality, or residues thereof, that is surrounding it. The perpetual engagement with the embodied face of other bodies politics is a continuous interplay of deterritorialization. In a positive scenario, games can have the impact of changing allowable patterns in the socio-political makeup of peace operations, which means that the dynamics that started sub-atomically resonate fully and work on the third level. Such a case of reterritorialization “settling forth the potential of a new game” is an effect of political games that does happen outside or independent of the act of gaming.¹¹⁴ Put differently, games set up affects that trigger intensive encounters outside of the actual simulation as well when different bodies politics encounter each other. They create the conditions for further *Erlebnis* and *Erfahrung* to occur. Therefore, games for change are a form of strategic training that involves the creation of new bodies politics and therefore belongs to the third, directional aspect of affective registers.

¹¹³ Steve York, “Steve York and Ivan Marovic at Smart Tools,” *United States Institute for Peace*, July 16, 2009, accessed January 13, 2011, <http://www.youtube.com/watch?v=PQxITOC6HNI&list=PL480830BCF94E895B&index=5&feature=plpp>.

¹¹⁴ Protevi, *Political Affect*, 53; Massumi, *Parables for the Virtual*, 71-80.

A Dystopian Footnote

Even though the main intention of political games is change and education through the promotion of creative thinking and exploration, this is not always the case. The technoscientific analysis of EPS was discussed in speculative-affirmative fashion, in accordance with the affirmative philosophy of Deleuzian materialism; as such games for change were probed for their capacity to produce new political subjectivity and to produce it otherwise. However, there are certain gaming cases that need mentioning because they are working precisely on the opposite logic, where the games seek the evacuation of the subject-as-is, erasing old habits and behaviour, but preventing the emergence of new ones. A case in point is ZIF's Hostile Environment Awareness Training (HEAT) an emergency security exercise run in collaboration with the German Armed Forces. Protevi explains this with the example of extreme cases of rage or mass panic that trigger an evacuation of the subject in favour of an automatic response. Arguably, the HEAT course is the active effort to create conditions in which the subject is erased in order for an embodied affect programme to act independently of the previously existing subject. Even though there is still affect, it remains non-subjective. The conscious registration of 'danger', reflected in emotions of puzzlement, panic and fear are subjective emotions and cognitive processes that the simulation seeks to erase, or least postpone. While it is not the point here to argue that this is 'bad', as there is in certain instances an essential need for peacemakers to react in this way in the field, it is certainly a type of political training training that prevents new subjectivities from emerging, by actively preventing conditions of engagement with the new. There is still a shock to thought and rupture to ordinary experience (a quite drastic if not dramatic *Erlebnis*), but the gaming exercise does not leave room/time for this to develop into *Erfahrung* until much later after the simulation. This is yet another way of affectively engineering behaviour and designing the peace practitioner body. Essentially these simulation games as offered by ZIF

are a more institutionalised affective training that arguably have significant impact upon what the future peace and security practitioner ought to be like. While this is not intended as dystopian foreshadowing, it is continuation of the initial warning that was issued in defence of gaming against technologisation claims, whereby game design and use is always caught in a Nietzschean reiterative scenario of gazing into the abyss.

Conclusion

The chapter detailed that gaming can have wider political impact because of its affective capacity to trigger the production of new subjectivities. As such it was shown that it is not only a tremendous pedagogical tool for politics, but occupies a very interesting and important phase between the pre-personal, pre-conscious and the conscious, subjective. Therefore, EPS is constantly oscillating between these two realms and thereby building an essential bridge that is necessary for gaming to have impact. The analysis began by making the case for studying subjectivity based on the argument that the question of the modern political subject is one of the most pressing issues in contemporary politics. Not only does this necessitate an understanding of how the subject and subjectivity are produced in the first place, but this insight is essential because only then is it possible to produce alternative subjectivities and to produce them otherwise, here through gaming. Importantly, it can only be a genuinely new subjectivity, and not a case of re-production that is based on a representational logic, if it is a production/emergence of subjectivity that works within a posthuman context, that is to say, one that does not hinge upon the human as a referent.

Circling in on this process, it was argued that this productive development starts with lines of flight and that there is always a possibility for these lines to emerge, regardless of how rigid and strict institutional setups or political systems may be. The latter was identified as part of

faciality, which describes human organisation, in and outside the political realm. In the twofold process of desiring-production (consisting of anti- and desiring-production), deterritorialisation (anti-production) is the first step towards a move beyond the face. In other words, the emergence of alternative political subjectivity needs an initial trigger. This initial trigger is the encounter and ensuing TPE in gaming. The argument that subjectivity emerges out of primary onto-material movements is important as it means that subjectivity (although turning conscious eventually) will remain connected to the Virtual and, thereby, to an infinite pool of potentiality.¹¹⁵ This was used to argue that subjectivity can be novel and not a case of reproduction. This is where EPS becomes innovative and creative, rooted in the creativity allowed for in and by gaming – philosophically this was outlined as reterritorialization. Therefore, games are identified as desiring-machines that produce probe-heads, which are creative flight and build the platform for further alternative developments.

These highly complex processes were demonstrated in great detail with the example of the simulation games run by CRISP, which illustrated the interlacing and overlapping dynamics that exceed the individual, but that are not a mere group phenomenon. Indeed, aspects such as triggering lines of flight (affective design), enjoyable as well as frustrating gaming experiences (flow) and post-game evaluation all play into formations of new subjectivity, which are not just the addition of individual experience, but a unique haecceitic mix – a posthuman subjectivity.

What is more, the method of “training of trainers” through simulation games led the chapter to introduce different scales of bodies politics, the analysis of which was based upon Protevi’s understanding and work in this area. Distinguishing between temporal and

¹¹⁵ As argued in chapter 3 this is certainly limited by soft and hardware of the technology in the case of gaming.

compositional scales the chapter settled on a synchronic first/second level body politic of the posthuman body and a diachronic third level of a wider, civic scope. To substantiate the claim that all these dynamics can be linked with each other and are co-dependent, Benjamin's notion of the mimetic faculty was rehabilitated, which also allowed strengthening the idea of posthuman pedagogy. Indeed, his initial separation of experience into synchronic *Erlebnis* and diachronic *Erfahrung* finalized the analysis by showing how experience develops along temporal levels and into subjectivity. It further highlights that experience oscillates between the pre-conscious and Virtual on the one hand and the subjective and conscious realm on the other.

Chapter 5 ~ Between the Virtual and the Actual

Have you ever had a dream, Neo, that you were so sure was real? What if you were unable to wake from that dream? How would you know the difference... between the dream world and the real world?

Morpheus, *The Matrix*

Introduction

The question of reality in the face of emerging technologies is arguably one of the most challenging to tackle. A great deal of the difficulty stems from the misunderstanding that emerges out of very simple problems concerning terminology and concepts. Especially when it comes to high-tech operations such as immersive simulation games, it is all the more crucial and necessary to be clear about what terms like “reality”, “virtual”, “digital” or “cyberspace” mean. This is because these technologies are in and of themselves very complex and difficult to understand. However, the political interaction with these systems makes it even more challenging for academic inquiry. So far, most investigations have failed to provide sufficient explanation of the different realms that are represented by the offline, online and Virtual world, leaving writings about techno-politics in a haze.¹ What is more, these writings tend to treat reality and cyberspace as commonsensical,² even though they are fraught with illogical assumptions and confusion about the Virtual, the digital, the actual, the analogue and the real.

¹ See for example Andrew Murphie’s “Putting the Virtual Back into VR.” Despite his sophisticated writings about Virtual Reality, the reader never gets a good sense of what he refers to when employing the term virtual. Given the Deleuzian literature he situated his analysis in, this would be necessary to clarify as it can change the argument entirely, depending on how the term is understood. Andrew Murphie, “Putting the Virtual Back into VR”, *A Shock to Thought: Expression after Deleuze and Guattari*, ed. Brian Massumi (London and New York: Routledge, 2002), 192.

² Jane McGonigal’s *Reality is Broken: Why Games Make Us Better and How They Can Change the World* (New York: Penguin Group, 2011) is another case in point.

It is the intention of this chapter to problematize and explain these different terms – realms – in order to investigate the impact of games for change. In the pursuit of this, the analysis will draw on a broad spectrum of examples ranging from everyday life scenarios to high-tech design to cinematography and political games in order to reflect widespread common misconceptions when it comes to reality. It will be argued throughout that the same false logic has so far been applied to the analysis of political-mediations, as seen for example in the writings of Jean Baudrillard, Paul Virilio or James Der Derian.³

One of the main arguments of this chapter is that political games are located between the Virtual and the actual. This is why the chapter will also show how the different realms relate to each other, apart from the conceptual exercise of clarifying the terms. Due to their crucial position, games will be identified as topological transducers that help to bring reality forward and foster the new. As primarily productive and creative technologies they act as what is referred to as “open-ended-reality studios.” The process of “reality-in-the-making” is complex and will lead the chapter to analyse how sense and sensation come into play in this process, what happens to memory while playing these games and how continuity is created. The aim of investigating all these different aspects is to show how complex the production of reality is and that games are located and working at a very crucial point of this process – in fact as the transducer from the Virtual to the actual. While the Virtual had been introduced briefly as an undifferentiated realm that can give rise to any present and future, the actual is a concrete instance of one of these potential scenarios. The actual is material. It is a specific mattering of a Virtual potential. It is the realm of being.

³ While these authors undeniably made significant contributions to the study of new technology and media especially in the study of politics and international relations, their use of Virtual and real is Neo-Platonist and confusing. Even though these authors helped to pave the way towards the critical study of technology, their very fundamental, yet mistaken, real vs. V/virtual dichotomy renders any of their analyses dystopian by nature.

Misconception One

Online activity is largely conceived of as happening separate from 'real', tangible life and this separation manifests through language.

Despite pursuing a PhD in International Politics with a focus on technoscience, I was not surprised to find out that my text/chat vocabulary was not up to speed with most recent online language. In a conversation with a friend I first heard about the acronym 'irl'. An abbreviation for "in real life" – three seemingly insignificant letters that highlight one of the most prominent problems not only in the contemporary study of technosciences, but modern life more general. Searching 'gamer' online forums for more explanation revealed a host of similar acronyms that nicely reflect popular understandings and use of the techno/cyber/computer realm.

afrl – away from real life

lirl – laughing in real life

mirl – meet in real life

rlf – real life friend

These are acronyms are being used when people talk with each other online in order to speed up communication. Other common ones are 'btw', 'tbh' and 'lol'.⁴ This language can be used during online gaming, a simple chat forum for people with shared interests, online dating sites or simply Facebook. While the acronyms are not necessarily group or user specific, the

⁴ Tbh – to be honest; btw – by the way; lol – laugh out loud. Acronyms proliferated with the spread of mobile phones, which arguably was the first widespread technological device that transformed written language into more popular, shortened colloquial language at the expense of accuracy, spelling and grammar; Solomon L. Dansieh, "SMS Texting and Its Potential Impacts on Students' Written Communication Skills," *International Journal of English Linguistics* 1, no. 2 (2001): 222-229; Shazia Aziz, Maria Shamim, Muhammad Faisal Aziz and Priya Avais, "The Impact of Texting/SMS Language on Academic Writing of Students – What do we need to panic about?", *Linguistics and Translation* 55 (2013): 12884-12890.

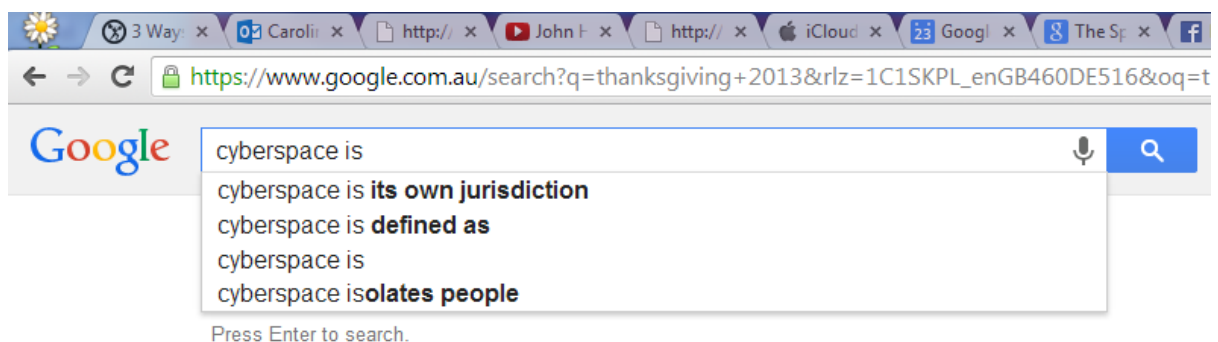
scenario and underlying assumptions seem to be similar each time they are used: two internet users writing to each other, and separating their computer-online interaction from their personal interaction or reaction at the time.

Misconception Two

Apart from being separate, digital worlds, commonly referred to as cyberspace, are perceived to be less real and more dangerous.

Inspired by the recent UN Women campaign that used the world's most popular search engine Google to reflect public opinion on gender inequality,⁵ the screenshots below do the same with regard to 'cyberspace'. It simply uses Google's auto-complete feature in order to get a feel for the kind of answers Google would generate according to popular questions and demand regarding 'cyberspace'.⁶

Image 1:



⁵ "New UN Campaigns Use Google Search Results to Reveal Prevalence of Sexism and Homophobia," *United Nations Human Rights*, October 31, 2013, accessed November 23, 2013, <http://www.ohchr.org/EN/NewsEvents/Pages/NewUNCampaignsuseGooglesearch.aspx>.

⁶ Note that Google remembers personal search histories so that searching for this term on the authors PC is already influenced by her previous searches.

Image 2:

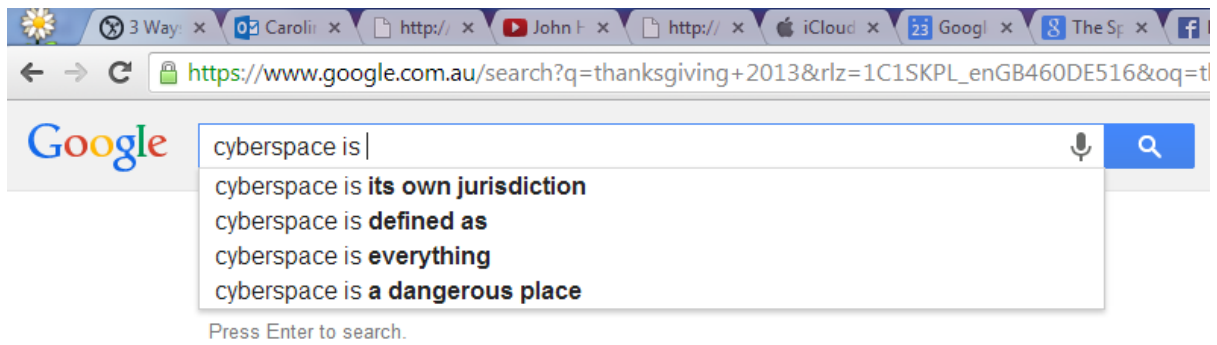


Image 3:

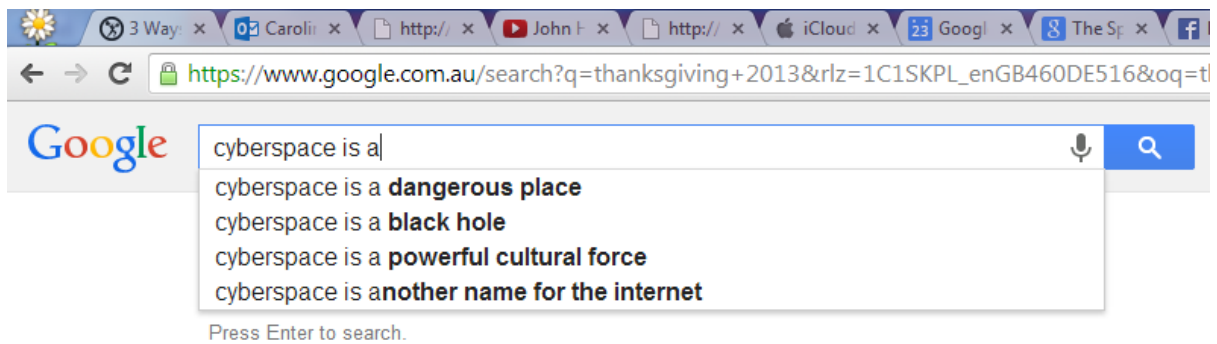
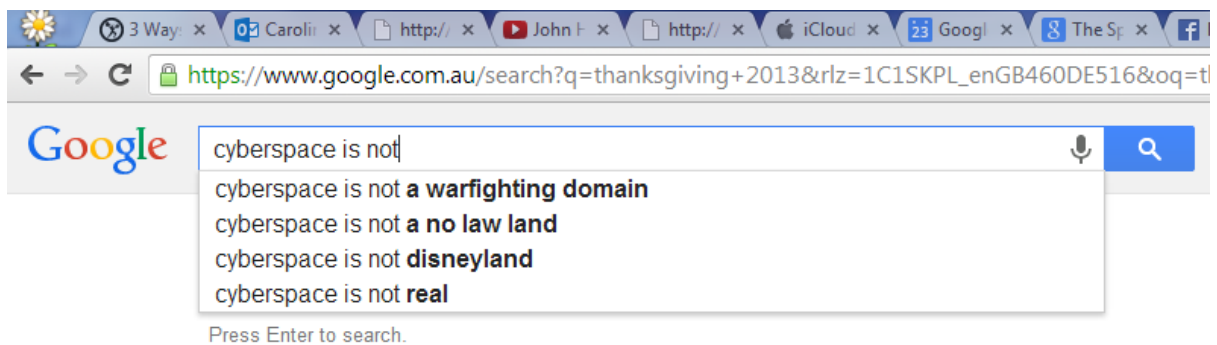


Figure 4:



Whereas all comments provide enough impetus for discussion and analysis, the statements that stand out in relation to the topic of this chapter are “cyberspace is its own jurisdiction”, “...a dangerous place”, “...a black whole” and “...not real”. This is because they too

exemplify the separation of cyberspace (internet or technical domain more broadly) from what is commonly referred to as ‘real life’, which is often just the analogue realm.

Misconception Three

Regardless of context, reality as a concept is often misunderstood and treated as something that either only exists as a perceptual phenomenon in our minds or as something one has to be suspicious of.

In large part this belief is reflected and perpetuated through the entertainment media. Therefore, the following dialogue between the movie characters Neo and Morpheus from *The Matrix* was chosen for it epitomizes pop-culture understandings of the nature, role and effect of new technology and cyberspaces on the one hand, yet branches out into critiques of common conceptions of the real on the other. (Sections in bold are of particular interest and importance to the present analysis.)

Morpheus: Try to relax...this will feel....a little weird.

As Morpheus guides a coaxial line into the jack at the back of his neck, Neo screams and makes a few other disturbing noises.

When he opens his eyes, he is standing in a totally white place. His hair is back, and he is wearing different clothes.

As Neo spins around a bit, trying to see what is going on, Morpheus appears in front of him.

Morpheus: This is the construct. It is our loading program. We can load anything from clothing, to equipment, weapons, training simulations, anything we need.

Neo is having a hard time getting a grasp of this.

Neo: Right now....we're inside a computer program?

Morpheus: Is it really so hard to believe? Your clothes are different. The plugs in your arms and head are gone. Your hair has changed.

Neo puts a hand to his head and touches his hair

Morpheus: Your appearance now is what we call residual self-image. It is the mental projection...of your digital self.

Two chairs appear in front of them, and Neo reaches out to touch one. He runs his hand along its back.

Neo: This....this isn't real?

Morpheus looks at him

Morpheus: What is real? How do you define real? If you're talking about what you can feel, what you can smell, what you can taste and see, then real is simply electrical signals interpreted by your brain.

A television appears in front of the two chairs, as Neo sits down in the chair beside Morpheus. Morpheus picks up the television control and turns it on.

Morpheus: This is the world that you know. The world as it was at the end of the twentieth century. It exists now only as part of a neural-interactive simulation, that we call the Matrix.

Morpheus turns to Neo

Morpheus: You've been living in a dream world, Neo. This...is the world as it exists today.

Morpheus changes the channel on the television.

The sky is an endless sea of black and green bile. The earth, scorched and split like burnt flesh, spreads out beneath us as we enter the television.

*Morpheus: Welcome.....to the desert of the real...We have only bits and pieces of information, but what we know for certain is that some point in the early twenty-first century all of mankind was united in celebration. **We marvelled at our own magnificence....***

Neo looks confused

Morpheus:as we gave birth...to A.I.

Neo: A.I. - you mean Artificial Intelligence?

*Morpheus: A singular consciousness that spawned an entire race of machines. We don't know who struck first - us, or them. But we know it was us that scorched the sky. At the time they were dependent on solar power and it was believed that they would be unable to survive without an energy source as abundant as the sun. **Throughout human history, we have been dependent on machines to survive. Fate, it seems, is not without a sense of irony.***

Neo stares at Morpheus, with his mouth open.

*Morpheus: The human generates more bio-electricity than 120-volt battery and over 25,000 BTVs of body heat. Combined with a form of fusion, the machines have found all the energy they would ever need. There are fields...endless fields, where human beings are no longer born. We are grown. For the longest time, I wouldn't believe it...and then I saw the fields with my own eyes. Watch them liquefy the dead, so they could be fed intravenously to the living. And standing there, facing the pure horrifying precision, I came to realize the obviousness of the truth. What is The Matrix? Control. **The Matrix is a computer generated dream world, built to keep us under control in order to change a human being into this.***

Morpheus holds up a battery to Neo

Neo begins to panic.

Neo: No....I don't believe it!! It's not possible.

Morpheus: I didn't say it would be easy, Neo. I just said it would be the truth.

Neo: Nooooo!! Stop!! Let me out!! I want out!!

His eyes snap open and he thrashes against the chair, trying to rip the cable from the back of his neck. Trinity tries to calm him down.⁷

This dialogue highlights the notion that there is a separation between 'real life' and 'real living' and that what happens in a computer generated environment is detached from this realness and not authentically real.⁸ This distinction between the real and the digital is highlighted in all three examples and it is supported by using spatial imageries to enhance this separation, for example "a dangerous place", "a black hole", "away from real life", "computer generated dream world". Such imagery is powerful in perpetuating this perceived, artificial divide. To use spatial metaphors is nothing new and since the spread of personal computers and the internet the use of metaphors to describe and demarcate this other place has been frequent: for example, second frontier, Western Frontier and even Feudal Society to substitute the metaphor of 'cyberspace' itself.⁹ According to Olsen using metaphors for this dangerous "black hole" serves the purpose of familiarizing the different and strange through using more common and recognisable imagery.¹⁰

⁷ Larry Wachowski & Andy Wachowski. *The Matrix*. Numbered Shooting Scripts, 38-42, 1998, accessed November 20, 2013, http://www.dailyscript.com/scripts/the_matrix.pdf.

⁸ Apart from that the dialogue addresses many other aspects about the threat that machines and technology pose to humans, their bodies and freedom, some of which were addressed in chapter 2, for example technology as invasion of the body or extension to it.

⁹ Alfred C. Yen, "Western Frontier or Feudal Society?: Metaphors and Perceptions of Cyberspace," *Berkeley Technology Law Journal* 17 (2003); Kathleen K. Olson, "Cyberspace as Place and the Limits of Metaphor", *Convergence: The International Journal of Research into New Media Technologies*, no. 11 (2005): 10-18.

¹⁰ Olson, "Cyberspace as Place," 10-11.

The examples showcase a dystopian view of this other, non-real place (“dangerous”, “control”, “we marvelled at our own significance”) and the digital-real dichotomy also lends itself to techno-romantic views of unity, transcendence, pluralism, liberation and progress online or in simulations.¹¹ Whether dystopian or utopian, the technological realm is treated as a different place that is separate from daily reality. This poses profound challenges to social relations and the legal framework that binds them in particular societies. The issue of adultery on social networking sites and virtual reality games is a case in point and highlights the legal difficulties.¹² Given the common perception that technological worlds are different from everyday life aggrieved, spouses were never able to petition for divorce on the basis of digital adultery (cases that had been reported frequently in relation to Second Life). Yet the question is still why cheating online is seen to be less serious/real than cheating offline, at least from a legal perspective. This goes back to a fundamental question posed by Lene Hansen with regard to political games that interrogates the difference between an experience and a simulated experience.¹³ It is not the intention to argue about whether or not husbands and wives should have been found guilty in these cases, but merely to highlight that the realm of technology is perceived as ‘not real’ and separate from the life humans are leading offline.

An adherence to this view quickly causes problems and by merely looking at the *Second Life* cases it appears that relationships (romantic or platonic) that emerge out of digital interaction are seen to be ‘unreal’ and ‘unauthentic’, until the ‘real’ offline encounter (mirl). In essence, in order to be able to qualify as real there has to be a material encounter; hence Neo’s claim that his experience is not real because there is no materiality to the Matrix. Yet all the cues to

¹¹ See the discussion on technological determinism in Chapter 1; Richard Coyne, *Technoromanticism: Digital Narrative, Holism, and the Romance of the Real* (London: MIT Press, 1999), 4.

¹² Jill Insley, “Cyber affairs cited in breakdown of real marriages”, *The Guardian*, May 27, 2009.

¹³ Lene Hansen, “The Dis/Simulations of War and Peace: Predicting, Prophesying, and Preempting the Future after 9.11.” (Providence: Watson Institute, 2003), accessed November 17, 2010 from InfoTechWarPeace: <http://www.watsoninstitute.org/infopeace/dissim/peace.cfm>.

start unravelling the riddle of the digital and the actual are right there in the line from Morpheus: “What is real? How do you define real? If you’re talking about what you can feel, what you can smell, what you can taste and see, then real is simply electrical signals interpreted by your brain.” While this is not a definition of reality, but rather approximating an understanding of the actual, Morpheus’ statement opens up a line of research into questioning the status, nature and dominance of the real/actual. It also demonstrates other theoretical challenges, namely the misinformed equation of the real and the actual.

In the illustrated examples there are several misconceptions that are often lumped together in the analysis of technology. The first is that the digital realm is separate from reality. Second, digital, electronic and technological is referred to as virtual or virtuality. Third, reality is the same as actuality and materiality. The Google auto-search and chat room acronyms portray an assumed separation of virtual/digital and real spaces, and while the Matrix dialogue points the viewer towards questioning the givenness of reality, it still assumes that cyberworlds are lacking physicality/materiality. The analytical confusions have several repercussions that hinder academic inquiry into Virtuality. Equating Virtual with digital and real with actual prevents any fruitful analysis of reality.¹⁴ The implications for this project are then that political action misses out on a great deal of ‘space’ for manoeuvre because its reality is tied to the offline, sensible and corporeal realm. Whether high or low-tech, political games have often been criticized as extravagant and expensive tools that do not really impact upon ‘real-life’ politics. There has been some progress toward accepting online social media as a political force since phenomena like the Arab Spring; nevertheless, this is still different for immersive environments for training purposes. Ultimately, this chapter faces the following challenges: first, to demystify terms like, Virtual, real, actual and digital; second, to show

¹⁴ Note the difference between Virtual, the realm of potentiality, and virtual which is in fact the digital. The chapter will avoid using lower case virtual to refer to the digital, since this is precisely the misconception, just in linguistic form, that this project tries to counter.

how these realms come together in gaming technology and, third, how in turn gaming offers political leverage.

Butterflies and Techno-Romances: Conceptual Challenges of the Digital and the Virtual

The digital is not intended to be a representation of reality, but an expression of it. The digital as representation of reality seems to be by far one of the biggest myths about the internet and other digital environments. Since Plato, Western thinking and intellectual traditions have always been based on logics of representation, which became dominant and the “dogmatic image of thought.”¹⁵ In this sense, it is not surprising that techno-events are believed to be and do the same – to digitally represent aspects of ‘real’ and material encounters. Recent debates by designers about the emergence and popularity of skeuomorphism is a case in point.¹⁶ The battle is between flat design and a more ‘realistic’ design referred to as skeuomorphism, which is the digital representation, visual or sound, of a ‘real’ object. So for example, smart phones make use of imagery like calendars, clocks, sun and clouds, maps and cameras to indicate that the particular icon will open the according function of the phone’s operation system.¹⁷ Phone cameras will make a sound to make us remember the original noise of a manual camera, while the shutter sound indicates that the touchscreen is locked – just to make the locking a bit more ‘real’. The increasingly realist representation by smart phones is impressive to say the least, yet, it points toward the very assumption that the calendar, message or alarm programme is less real and just a digital representation of the ‘original’ – the material. This also suggests that there seems to be a need for symbolic representation to support ‘realness’ and the existence of things. The question is then why is

¹⁵ See chapter 2 for detailed explanation. Generally speaking, with the dogmatic image of thought Deleuze refers to a tendency in philosophy itself, see for example Gilles Deleuze, *Difference and Repetition* (London: Continuum, 1994), 167-8.

¹⁶ “The Half-Life of Metaphors,” March 13, 2013, from *Johnson – Language and Technology II*, accessed November 01, 2013: <http://www.economist.com/blogs/johnson/2013/03/language-and-technology-ii>.

¹⁷ Sacha Greif, “Flat Pixels: The Battle Between Flat Design And Skeuomorphism,” March 12, 2013, from *sachagreif*, accessed November 01, 2013, <http://sachagreif.com/flat-pixels/>.

the intangible, digital calendar seen to be lacking in reality compared to a material calendar book. For all that can be said, the only difference is that data is stored differently so that the electronic version uses bits and bytes, rather than ink and chlorophyll. Including the previous examples as well, what seems to be the problem is that the familiar and habitual grounding of daily, social and political in the physical facticity of and through human bodies is changing fundamentally and this is causing theoretical challenges that have thus far not been dealt with.¹⁸ This leads Andrew Murphie to argue that what we seem to grapple with, personally, daily and philosophically is that new technology is “*the shock of the real immanence of the metaphysical.*”¹⁹

It can be claimed that technologies of lived abstraction like Virtual Reality, smart phones, online gaming or simulation technology challenge common assumptions about being in the world and the reality of it. By offering ways of interaction without physical proximity and bodily movement these technologies inserts ontological doubt. For example, the modern, slightly stereo-typical, online romance with someone yet unknown, troubles the very old, romanticised and offline notion of love.²⁰ Furthermore, cyberspace and the internet have always been known to question the variables of distance and time and add metaphysical complexity. Technology brings out the immediacy of possibility and change, thereby putting an end to previous ideas of “*stable bodies and fixed states of affairs.*”²¹ The culmination of this suggests that the digital is far more than just representation. Even though cyberspaces and VR have undeniable mimetic qualities, mimesis is much more than merely a depiction of

¹⁸ Allucquère Rosanne Stone, *The War of Desire and Technology at the Close of the Mechanical Age* (Cambridge, MA: MIT Press, 1995), 17.

¹⁹ Murphie, “Putting the Virtual Back into VR,” 192.

²⁰ As expressed even in academic literature: “A concrete factual reality: meet someone, love that person, make love to that person. Or, the game reality: use the technologies of cybersex to meet that person from a distance, without touching or risk of contamination, contact without contact”; Paul Virilio & Jerome Sans, “Game of Love and Chance.”

²¹ Murphie, “Putting the Virtual Back into VR,” 192.

reality²² because mimesis and cyber technologies are first and foremost productive.²³ Ultimately, the digital technologies of lived abstraction such as games mark a move from representation to operation.

In general, the discussion and investigation about reality has always been a touchy topic: it is often associated with a more relativistic approach and ‘everything-goes’ attitude. Brenda Laurel notes correctly that “the use of the word ‘reality’ in the singular belies a certain cultural bias.”²⁴ In many ways, it seems easier and more acceptable to talk about the computer virtual (digital) than reality itself because of the belief that computer worlds are just a representation of reality. The reasons for this belief are multiple, cultural, psychological and philosophical. What stands out most is the fact that new technologies lower territorial thresholds in terms of distance, time and speed. Essentially, computer chips topple centuries of the static notion of reality that hinges upon vision, position and the senses. Arguably, because it appeals less to the human senses and operates at different speeds than what we have previously been used to, new technologies are therefore perceived as subordinate to the real. Hence, what really is at stake here is the amplification of technology. This suggests then that rather than representing reality, what technology does is to “merely actualize, in a new formal series, an older [V]irtual machine, which could be called the world.”²⁵ This is why technology is an expression of reality, as a way to produce and transduce it, to bring it forward or as Murphie terms it a “predicate-as-event.”²⁶

This leads to the second misconception that needs to be dealt with, namely that the digital is often believed to be separate or even antagonistic to reality. This is the next argument and

²² Ibid, 193, Murphie paraphrasing Deleuze.

²³ Michael Taussig *Mimesis and Alterity* (New York: Routledge, 1993).

²⁴ Brenda Laurel, *Computers as Theatres* (Reading, MA: Addison, 1991).

²⁵ Murphie, “Putting the Virtual Back into VR,” 194.

²⁶ Ibid, 193.

description of the digital that will help to delineate it from the Virtual. The previous assumption that the digital lacks reality had the consequence that this electronic realm also got the reputation of being a counterpart to the actual – almost a rival. Statements like “cyberspace is everything” and movies such as the *Matrix*, *Blade Runner*, *I Robot*, *Total Recall* or *Twelve Moneys* nourish the almost apocalyptic view that the digital is an ever increasing counter force to reality that is constantly threatening to overtake the real/actual – and in case of *The Matrix* actually does. Academia often buys into the view of technology as a threat to the real and the “dark side to an Enlightenment”.²⁷ Apart from empirical studies, the theoretical projects on technology are mostly informed by a Baudrillardian suspicion and warning a la Virilio, suggesting that the imagery created by new technology, the ‘copy’, takes over the ‘real’ and original.²⁸ It is crucial to get away from this conception, however. The digital as rival force only results in false dichotomies of digital vs. actual and Virtual vs. reality. Furthermore, to acknowledge that the digital is actually part of reality as well as the actual, rather than a rival, enables one to fully participate and act in reality.

The digital can come in many forms: it can refer to cyberspace (Internet and the World Wide Web); it can refer to entertainment computer games (offline or online); it can refer to quotidian e-mail exchange and activity on social media websites; it can refer to immersive technology such as war and peace games; it can refer to artificial intelligence and virtual humans and it can refer to the use of smartphones, tablets or ebooks. What all of these examples have in common is a form of programming that is based on binary codes (0 and 1)

²⁷ James Der Derian, “Introduction,” *The Virilio Reader*, ed. James Der Derian (Malden, MA: Blackwell Publishers: 1998), 3. See for example Paul Virilio who is arguably one of the most influential authors in the current study of technology: “Now video games or the more sophisticated games of tomorrow’s virtual reality will induce this same desire for death.” Virilio and Jerome Sans (Interviewer). No date. “Game of Love and Chance: a Discussion with Paul Virilio.” in: *Watson Institute*

²⁸ See for example accounts as articulated in “The Delirious Spectacle of the Non-Event” and “‘The Matrix Has You’: Virtuality and Social Control” in William Merrin, *Baudrillard and the Media: A Critical Introduction* (Cambridge: Polity, 2008).

as well as hardware and software that are powered by electricity. The last two factors (software and electricity) are what cause the digital to be portrayed as such a mystified space and phenomena. Both are imperceptible to the majority of people (who do not possess expertise in programming) and to most of the senses that are constantly engaged by the human to consciously grasp actuality. While electricity is still the easiest to be felt and represents a shared characteristic of bodies and machines, the lack of vision, smell and sound triggers the idea that that codes and electricity would be somewhat of a second order reality, implying a hierarchy of reality determined by the senses. Yet, this idea of actuality determined by our senses is misleading because it neglects that “there is a strange and mysterious world that surrounds us, a world largely hidden from our senses” and “like everything to do with reality, it’s hidden from sight.”²⁹ Simply, there is a world beyond the human sensorium. Murphie’s explanation of Deleuze’s example of pleasure and pain in *The Fold* further highlights that the bodily perception in form of the senses is not the best approximation for reality or at least that a whole other reality imperceptible to the senses is lost in this approach. Consider the scenario of a needle digging into flesh – the pain perceived describes the movement of something pointy and sharp into a relatively solid surface, the skin. The clue here is that pain is not a material object but rather the somatic interpretation of the movement of an object.

Two arguments can be drawn here. First, any moving object that does not encounter a sense organ will not be considered as real. This view was first criticized by scholars such as Graham Harman in his *Guerrilla Metaphysics* and inspired writings under the banner of Speculative Realism and Object Orientated Ontology, such as Ian Bogost’s work on video

²⁹ *What is Reality?* BBC Horizon (2011), documentary.

games that the research draws on extensively.³⁰ Second, a view on reality that is based on what can be sensed implies a human-centric hierarchy of ‘being-real’ that ranks reality according to the level of the perceivable material impact on the human senses (rather the subsequent conscious awareness of the impact). Going back to the interpretation of the needle event, pain can be broken down into electric signals that travel from the pain receptors in our skin to our brain. In the brain these electric signals jump across synapses, triggering a response, that is transported back to the area of infliction via electronic signals and result in the body responding by, for example, moving away from the object that caused the pain in the first place. To be blunt, the electricity that vibrates throughout bodies is no different than the electronic signals that power a computer, smartphone or any other technology. Furthermore, there is even reason to believe electricity can jump across different circuits.³¹ The question that remains is why it is that there is still a distinction drawn and a hierarchy implied. This goes back to the idea that, since Kant’s Copernican Revolution, intellectual history has treated the empirical as though it were the objective.³² The electric scenario just outlined describes precisely this confusion.

Massumi’s elaboration of “force” in “The Palliative of the Empirical” demonstrates this more clearly. The conceptual challenge lies in the fact that force is unobservable and that the human senses can only detect force-effects and “not even Newton saw gravity.”³³ To be precise, force is a “set of invisible, untouchable, self-renewing conditions according to which

³⁰ Graham Harman, *Guerrilla Metaphysics: Phenomenology and the Carpentry of Things*. (Chicago: Open Court, 2005); Ian Bogost, *Unit Operation: An Approach to Videogame Criticism* (Massachusetts: MIT Press, 2008); Bogost, *Persuasive Games: The Expressive Power of Videogames* (Cambridge, MA: MIT Press, 2010).

³¹ See the investigation into mattered-thought/thinking matter in Chapter 2.

³² The point is, however, that empirical does not mean objective, which is a mistake, confusion often made especially in the social sciences and post-structural thinking more specifically. What empirical means since Kant’s Copernican Revolution is that scientific or any other investigation structures the truth of the observed, objective world according to the given forms of the mind. Suzanna Guerlac, *Thinking in Time: An Introduction to Henri Bergson* (Ithaca: Cornell UP, 2006), 94.

³³ Brian Massumi, *Parables of the Virtual: Movement, Affect, Sensation* (Durham & London: Duke UP, 2002), 160.

certain effects can habitually be expected to appear.”³⁴ Thus, the feeling of pain caused by the needle is nothing more than the cognitive registering of a force. More generally, perception by the senses, be this vision, touch or any other intermodal form, is merely a force-effect and not the force itself. Therefore, conscious experience is a force-effect. Interestingly, throughout intellectual history and philosophy, force-effect came to be seen as ‘more real’ than the force itself, simply because force is infra-empirical and imperceptible to the senses while its effect is not. Furthermore, sensual perception is the event of force that passes into the “added reality of the empirical” so that every intermodal experience is the passage from “an unrefusable (and unbeyable) complex limit-tension, through hallucinatory grounding in objectivity, to existential flight,”³⁵ which is commonly called ‘reality’.

Three points can be drawn from Massumi’s proposal. First, his elaboration confirms that common conceptions of ‘reality’ miss most of reality. Second, if force describes a passage, then force is a happening, a doing, a “verb” or event.³⁶ Third, the empirical is the phase shift in a perceptual event of the passage into a force-effect. Fourth, if the empirical is a perceptual event, it is not as stable and closed as it is often assumed for it depends on the constant renewal by iterations of force. If anything, the empirical is entropy and only temporal closure and stability of formed perception. Thus, the empirical is as passing as the cross-sensual reaction force-effects trigger. If the force is strong enough, the sentient experience of the needle pain becomes so prominent that the force-effect results in “localizable interactions between formed organs and object,” that is we move away from the needle, close our eyes if the sun is too bright and hurting our eyes, or take our hand off the hot stove.³⁷ This is the point

³⁴ Ibid.

³⁵ Ibid.

³⁶ Ibid.

³⁷ Ibid, 161.

when experience becomes “determined, objectified and empiricized.”³⁸ In conventional terms, it is only this passage into empirical appearance in the form of sensual perception where experience enters the ‘real’ – ironically. This leads Massumi to claim that the empirical is palliative; it is simply a realm of side-effect.³⁹ This is not to say that the empirical is not real, or actual to be precise. But, the empirical that we base our realness on is actually just one part in a complex process and, thus, “a beat in a rhythm.”⁴⁰ The intention is merely to labour the point that the empirical cannot be used as parameter for the real on its own and that to do so would be quite misleading. Furthermore, the intention for academic investigation and philosophy is to reconsider the basis of reality – as daunting as this task may sound. Yet, this is crucial for any political action, especially that of technological-becoming like gaming, which is why the next section will reconsider the ‘realness’ of binary codes and electricity.

“A Crazy Little Thing Called Physics”

It is important to remember that a philosophical inquiry into the digital, the actual and the Virtual, as part of reality, is not merely a lofty and conceptual exercise. It is as much a philosophical approach to reality as a theoretical one and it is also a material approach that cannot do without the bio-chemical and physical make-up of the world, or the universe for that matter. Given the technoscientific study of immersive technology and its commitment to the concrete and material, the analysis’ focus will be on physics. From a theoretical physics perspective things in the universe are made up of particles and energy.⁴¹ Energy can be seen as intensities and because of differences between them things happen, on a small and large

³⁸ Ibid.

³⁹ Ibid.

⁴⁰ Ibid, 160.

⁴¹ Since the advance of quantum physics and string theory we do also know that there are even smaller particles than protons and neutrons, called quaks, but this degree of detail is not necessary at this stage.

scale respectively; from reactions between atoms to those between large systems.⁴² Following energy is challenging and to put it in simple terms, there are two types of energy: potential and kinetic. Potential energy is the energy of an object at rest, waiting to be turned into kinetic energy, which is the energy of an object in motion. This applies to large objects such as rocks, planes or planets and infinitely small particles such as atoms, molecules and grains of sand. For example, thermal energy is a case of atoms moving rapidly. In contrast, potential energy can be referred to as stored energy of an object in a physical system. This difference between potential and motion energy is crucial and, equally, vibration and waves play a significant role. The idea of the posthuman as composed of vibrational motions and waves that can be charted as vectors⁴³ suggests that the posthuman body emerges out of a new encounter of potential and kinetic energy present in the game, which is the event of different intensities reacting (TPE) and then resonating and vibrating at the same speed and frequency. In physics such systems are called harmonic oscillators. More specifically, and tying this back to energy, string theory shows that within such a system the most fundamental objects are made up of “tiny little strings of energy that vibrate.”⁴⁴ In theoretical physics more generally vibration is often referred to as mechanical waves and such waves transport energy, but not matter, from one point or region to another. Importantly, this is better thought of as transferral of energy as one molecule passes on its energy to another – in water or air for example – rather than travelling with that energy. The example of a wave in water is ideal because it illustrates that energy is being passed on by the water molecules in the ocean. The water actually only travels a short distance, mostly up and down, whereas the energy is being transferred all the way from the initial point of the wave to its crest and further. Up and down displacement is referred to as amplitude and it describes the movement of a posthuman

⁴² See thresholds and gradients in *Intensive Differences as the New Skin* in chapter 2.

⁴³ See chapter 2 *Flow of Experience in a Body without Organs*.

⁴⁴ Andrew Zimmerman Jones with Daniel Robbins, *String Theory for Dummies* (Indianapolis, Indiana: Wiley Publishing, 2010), 68.

gaming entity in the form of vibration and rhythm.⁴⁵ There is also wavelength that is the distance from one crest to another. Frequency is used to describe the velocity of a wave (speed). All these units matter in the way that they can be used to describe not only the movement of the posthuman, but also the behaviour of sub-entities such as electricity (electromagnetic waves). It is useful to note that waves or strings of energy vibrate in ways that are so minute that they cannot be perceived themselves, but only their effects. Strings of energy are not only fundamental to understanding the materiality and ‘realness’ of computer worlds, but also the very make-up of posthuman bodies.

Going back to the initial conundrum of why force effects are often being considered more real, particularly in the digital realm, the case of electricity is most easily explained as it is a form of energy that results out of charged particles in an energy potential. At the stage of an energy gradient the energy is still potential; it is not kinetic yet. Using the example of *The Matrix* with human bodies being used as batteries that power the digital world, the energy that the bodies hold is potential and only when the batteries are depleting themselves is it possible to talk of actual energy. The depletion describes the passing of energy out of the bodies, so that, in simplicity, (kinetic) energy describes a form of particle movement. Related to this, the change of particles’ movement is defined as force (this is a change from potential to kinetic energy by force).⁴⁶ Essentially, this captures Newton’s second law of motion, which says that force is equal to the change in momentum of an object and in this case electro-magnetic particles.⁴⁷ Importantly this means that energy and force are what makes matter vibrate and corrugate and are therefore the most fundamental units to movement regardless of the scale of movement. Essentially, this makes electricity a specific form of

⁴⁵ Although connected through posthuman movement, the electromagnetic amplitude is different from how the term is used by designer for affective game design.

⁴⁶ This also involves a change in velocity, which means that it will also change its kinetic energy.

⁴⁷ In turn, momentum is equal to mass times velocity and in calculus this is all referred to as $F=ma$; F: force, m: mass and a: acceleration.

movement based on energy and force, which means that electricity is a fundamental unit of reality. It is the interplay of energy and force that causes force-effect/perception. Accordingly, everything that is powered by electricity is literally particle movement, and, therefore, not only material, but very real.

Looking at the other variable, binary code, this is a more complex step. Codes and software can be intimidating for the non-expert and different programming languages are sophisticated and challenging. Yet the level this analysis is concerned with is the computer itself and how it can produce a 'virtual' world and games based on codes. This code system is called binary because it does not draw on all digits from 0-9, but it only works with 0's and 1's. The numbers merely signify the state of 'on' or 'off'. This is for the simple reason that essentially a computer, with all the magic and mysterious cyberworlds that it creates, consist of electric circuits that can either let electric energy pass through (on) or not (off).⁴⁸ As an electric charge that is passed on through these circuits it is like a wave, which is why it is also referred to as an electric current or electric wave.⁴⁹ Despite the sophistication of political games and other digital, supposedly intangible, phenomena, we are still dealing with energy in the form of electricity that powers the digital. In other words, because of electricity and code the digital is material and as 'real' as it gets. There is nevertheless an underlying assumption that perceiving something supposedly 'organic' is more real than perceiving digital images. This relates back to the first misconception, of the electronic realm being less or not real at all, and the digital image tricking the human senses. But here is the question. What is the difference, biologically and neurologically, between looking at an actual tree and

⁴⁸William Swanson, "Introduction to Binary Numbers," *Swanson Technologies* (blog), accessed January 15, 2014, <http://www.swansontec.com/binary.html>.

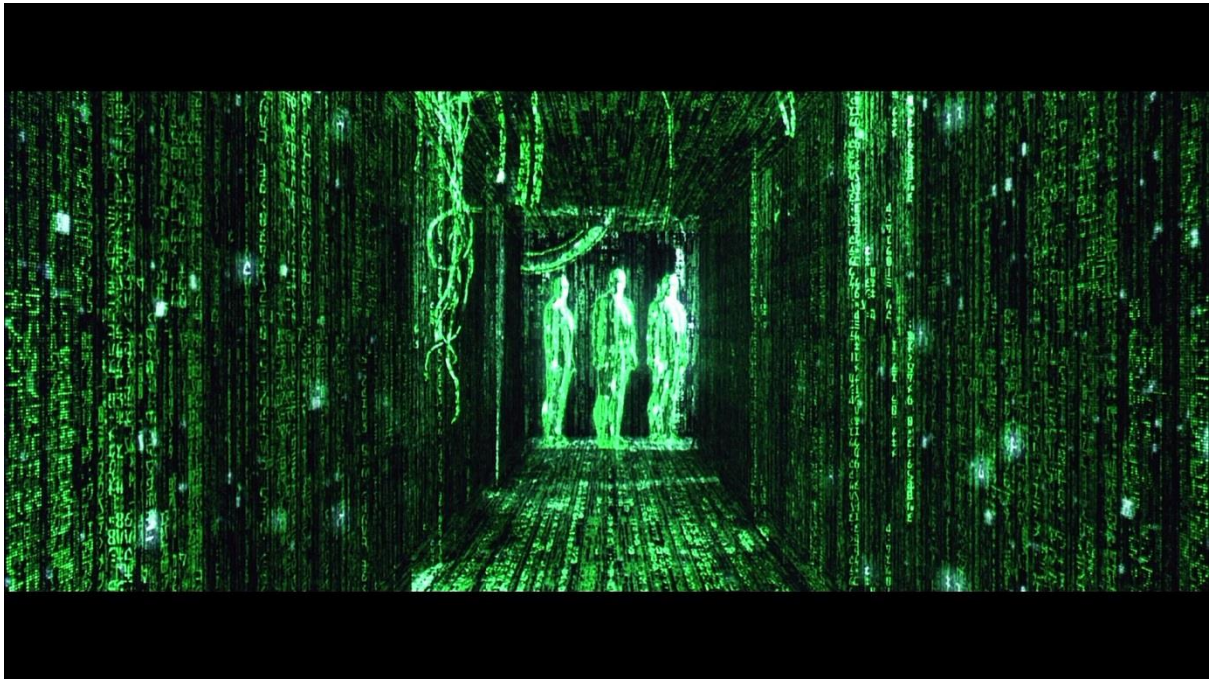
⁴⁹ Physically this is referred to transversal wave, rather than a longitudinal wave, because the oscillation of the wave is perpendicular to the direction of wave motion. See "The Electromagnetic Spectrum," from Math and Science Activity Centre, accessed January 15, 2014, http://www.edinformatics.com/math_science/electromagnetic_spectrum.htm.

looking at the digital image (2D or 3D) of a tree? Ostensibly, there is none. While the digital image may fail to give off smell (there is technology that can produce scents), the processes of perception are exactly the same. Yet, viewing something that is digital tends to be ascribed a lesser degree of reality, highlighting a very strong and long-standing bias when it comes to the question of reality in the digital age. Despite knowing better, the intangible is still at the lower end of the spectrum of reality than things that can be experienced tactilely. Again, this highlights the confusion of materiality that is perceivable to the human and actuality as reality.

The Virtual and the Digital: Similar, But Not Quite the Same.

The confusion about the equation of the Virtual and the digital is arguably one of the greatest obstacles to understanding both realms, technological mediations and techno-becomings such as games and reality in general. The relationship between the Virtual and the actual (that includes the digital), apropos technologies of lived abstraction, helps to understand why the digital and the Virtual might be confused in the first place. The Virtual and the digital, in our case simulation games that present the unknown, share some traits and hold multiple futures that are yet to come and the crucial difference between them can be summed up as easily as this: whereas the digital realm is possibility, offered by all the possible combinations of coding demands, the Virtual is the realm of potentiality, which is infinity. While a game can generate multiple futures that the gaming code allows for, the pool the Virtual draws on is limitless, the indefinite plane of immanence. Thus, it is a case of digital possibility versus Virtual potentiality/infinity. This distinction will be clearer after an introduction into the Virtual and it is essential to understand this difference as it explains why the digital and the Virtual have to be looked at together.

On Soap Bubbles and Salt Crystals: What is the Virtual?



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Given the techno-dystopian hype that writings and films such as “Simulacra and Simulations” and *The Matrix* et al have created,⁵¹ when talking about the Virtual, virtual or cyber worlds, the image that pops to most minds is the one above, or at least similar to it. These are better thought of as digital, electronic or computer generated environments. These are not rivalling worlds or realities, but merely different forms of interaction and modality – electrical to be precise. Nor is it the case as in *The Matrix* that this form of interaction is taking over and that our bodies are merely dormant husks or batteries. The Virtual is so much more; it is pure immanence that holds all the potential to let utopian impulse become true. This will become clearer when characterising the Virtual in the following section. A good starting point to formally introduce the Virtual is Michelangelo’s parable for the Virtual. As one of the first to

⁵⁰ Image accessed January 17, 2014, <http://451heat.com/wp-content/uploads/2013/08/large-matrix-blu-ray7.jpg>.

⁵¹ Jean Baudrillard, “Simulacra and Simulations,” *Jean Baudrillard: Selected Writings*, ed. Mark Poster (Oxford: Blackwell Publisher, 1988b).

mention the realm of the Virtual, he chose the example of crafting his marble sculptures to explain the process of actualising the Virtual.⁵²



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Talking about his art, Michelangelo said that all his sculptures were already there in the marble, each shape, position and expression was held by the solidity of the stone. All he had to do was to uncover it, extract it, and present it.⁵⁴ This is a perfect entrance into understanding the Virtual, as it holds any possible future in it already, all that needs to happen is the actualisation of a particular one.

On Infinity and Emergence

The problem of the Virtual can be approached from a material point and Deleuze uses thermodynamics as a context for articulating the ontology of the Virtual. According to

⁵²Sjoerd van Tuinen, "Michelangelo, Leibniz and the Serpentine Figure," *Deleuze Studies* 5, no. 1 (2011): 63-72.

⁵³ Image accessed January 17, 2014, <http://25.media.tumblr.com/tumblr_li693tiSFn1qelyjho1_500.jpg.

⁵⁴ Tuinen, "Michelangelo, Leibniz and the Serpentine Figure."

Deleuze's adaptation of Henri Bergson's work, the Virtual is best understood as a couplet with the actual and with intensities as the transducing element between the two realms.⁵⁵ The intensive processes are triggered by differences such as in electromagnetic charge or temperature and this difference creates movement. In this intensive process or movement, the Virtual can be described as difference. To be precise, it can be thought of as "a purely differential field, composed of differential elements, differential relations, and singularities."⁵⁶ In contrast, the actual is an arrangement of stable substances with extensive properties and as such it is locked into conventional behaviour patterns.⁵⁷ However, this is not to imply that the actual is order and the Virtual is disorder. The latter is not to be interpreted as undifferentiated chaos, but rather the virtual is a set of "'Ideas' or 'multiplicities' that serve as regional ontologies, laying out the many ways in which society, a language, an animal and so forth, can exist" or come into existence.⁵⁸

The difference with Michelangelo's marble block is that the Virtual is not a container in the way that it would be closed off or as in the case of the marble block that the size of the sculpture is determined by the size of the block. The fascination with the Virtual is due to its infinity and, hence, the indeterminate futures it holds. In short, "the [V]irtual is the transformation matrix for systems."⁵⁹ As such it holds infinite ideas and these spread throughout the virtual via self-differentiating processes, or differentiation.⁶⁰ Differentiation with a 't' was distinguished from differentiation with 'c' which is the process of the actualisation of an idea, the move from the Virtual to the actual.⁶¹ The infinity of ideas and

⁵⁵ Gilles Deleuze, *Bergsonism* (New York: Zone Books, 1991), 42-43; See chapter 2 for thermodynamic registers and intensity.

⁵⁶ John Protevi, *Political Affect: Connecting the Social and the Somatic* (London: Minnesota UP, 2009), 11.

⁵⁷ See the difference between intensive and extensive properties in chapter 2.

⁵⁸ Protevi, *Political Affect*, 11.

⁵⁹ *Ibid.*

⁶⁰ See chapter 2 *Ordinary Experience, Sensation and Involuntary Thought – Rupture through Gaming* for detailed explanation of differentiation and differentiation.

⁶¹ Protevi, *Political Affect*, 12.

the manifold forms that can emerge from it leads thinkers such as Deleuze and Guattari, Massumi and Protevi to speak of the Virtual as having topological features in the way that it allows for continuous variation through deformation and transformation of one state and shape to the other .

The process through which these emerge, their actualisation or differentiation can be thought of a ceaseless folding of the Virtual into the actual. This also means that there is no clear division or border between the Virtual and the actual (the infinite and the finite), but rather a fold or, as Massumi suggests, “a structure [the actual] is a regularized infolding of an aleatory outside [the Virtual].⁶² Let us unbundle what Guattari has to say about the Virtual/actual-weave:

It is by a continuous coming-and-going at an infinite speed that the multiplicities of entities differentiate [actualise] into ontologically heterogeneous complexions [the actual/finite] and become chaotised in abolishing their figural diversity and by homogenising themselves within the same being-non-being [behaviour pattern/actual]. In a way they never stop diving into an umbilical chaotic zone [...] where they can re-emerge invested with new charges of complexity [in a word ‘change’, or newly emerging experiences and patters]. It is during this chaosmic folding that an interface is installed – an interface between the sensible finitude of existential territories [actual] and the trans-sensible infinitude of the Universes of reference bound to them [Virtual].⁶³

⁶² The thesis speculates that crossing a fold happens in the same way as on a Möbius strip, through twisting rather than crossing boundaries. Felix Guattari, *Chaosmosis: An Ethico-Aesthetic Paradigm* (Sydney, Power Publications, 1995), 110-11; Gilles Deleuze, *The Fold* (London: Continuum, 2006); Brian Massumi, *A User's Guide to Capitalism and Schizophrenia: Deviations from Deleuze and Guattari* (Cambridge, MA & London, UK: MIT Press, 1992), 58.

⁶³ Guattari, *Chaosmosis*, 110-111.

What Guattari describes essentially is the production of reality through the continuous folding of the infinite into the finite. Furthermore, it highlights that this point of folding is where change can emerge. This moment was identified as the locus for newly emerging, alternative subjectivities as well as the break away from faciality. To recap this creativity in the production of new actualities, patterns and, eventually, subjectivities, is what Deleuze calls the “event,” here the techno-political-event (TPE) specifically. Therefore, it is important to stress that the Virtual and the actual are in constant contact, in order to understand how any form of action, including gaming, can produce change. Furthermore, the idea of a folding process is crucial in order to prevent the perpetuation of the bar between the infinity and the finite. In addition, the fact that ideas are immanent to the Virtual and stabilize in the actual does not mean that the Virtual would be a transcendent realm above the actual. To the contrary, it is the very ground of the actual. More importantly, the process of differentiation is non-hylomorphic (self-organising and self-emerging) as there is no conscious drawing on ideas from the Virtual. Folding is an essentially self-dynamic process. To illustrate this, in the case of Michelangelo’s example he assumed that the shape of the sculpture was already inherent in the marble and that it was not him who determined the form. He was merely the one who facilitated the actualisation of that sculpture. A small difference needs to be added here. In this project’s ontology of the Virtual the form of the actualisation is unknown until the moment of differentiation. Ideas are constantly shuffled and take the form of attractors and intensities. This is why the Virtual is also seen as potentiality or where potential is a situation of infinity.

All that the Virtual is not: Possibility and Probability

In order to further explain this idea of the Virtual as potential, the analysis starts with the Hegelian method of approximating what something is by describing what it is not. In this sense, the Virtual is not possibility. This is yet another popular misconception because the Virtual holds all the possible futures. However, a serious game holds all the possible futures for a particular game as well. So what is the difference here? If the digital is a codification based on zeros and ones, then essentially this is also a form of quantifying the possible, so that this codification or “digitization is a numeric way of arraying alternative states so that they can be sequenced into a set of alternative routines.”⁶⁴ Thus, the working of the digital or electronic realm is the combination and the systematization of the possible, which leads Massumi to argue that “*the medium of the digital is possibility, not virtuality.*”⁶⁵ However, that does not mean that the digital and the Virtual are not in relation to each other, they share a special connection indeed. What this highlights again is that the Virtual and the digital need to be looked at and analysed in conjunction. Yet academic analysis and socio-political practices respectively have to be careful to not merely equate the digital and the Virtual. The key is that the electronic realm is only connected to the Virtual through the analogue:

Take word processing for example. All of the possible combinations of letters and words are enveloped in the zeros and ones of ASCII code. You could say that entire language systems are numerically enveloped in it. But what is processed inside the computer is code, not words. The words *appear* on screen, in being read. Reading is the qualitative transformation of alphabetical figures of speech and thought. This is an analog process. Outside its appearance, the digital is electronic nothingness, pure systemic possibility[...] The digital is sandwiched

⁶⁴ Massumi, *Parables for the Virtual*, 137.

⁶⁵ *Ibid*, original emphasis.

between an analog disappearance into code [...] and an analog appearance out of code [...].⁶⁶

The same can be said about immersive games. Without the act of playing, these games are nothing more than code that only comes to full fruition through their analogue reception of playing. Thus, the analogy of digital gaming being sandwiched between the Virtual and the actual perfectly portrays the crucial role that the digital plays as it is the medium through which differentiation/actualisation takes place, located right in between the Virtual and the actual. Contextualized within Human Computer Interaction (HCI)/becoming-technology this means that digital technology is at the very heart of the folding of the infinite into the finite. Contextualizing this further, gaming technology is right at the intersection of two modalities, Virtual becoming and actual being. Moreover, not only does it facilitate the move, it also transduces virtuality into actualities faster than older technologies of the world. Therefore, it is more important to analyse technology on the basis of what it does rather than looking at whether it is inherently good or bad.⁶⁷ Coming to the same conclusion Murphie continues to argue that digital technology is neither progress nor disaster, but merely the increased ability to operate and translate the Virtual.⁶⁸ Expanding on this productive relation between the Virtual and the digital, what is the Virtual then if it is not possibility? As potential, it is the multiplicity of possibilities. It is insensate and immanent. It is the reserve of differentiation or qualitative transformation of every event. And every event is the unfolding of the unfelt Virtual in the sensible analogue through the digital. In other words every TPE is the locating and situating of the Virtual within digital technology. Its force appears only as a potential drive and can only be felt as the possibilities that unfold from it, as varying effects in a game, the sense of option and openness that is generated within games. The digital is exhaustively

⁶⁶ Ibid, 138.

⁶⁷ Murphie, "Putting the Virtual Back into VR," 189.

⁶⁸ Ibid, 192.

possibilistic and limited – it belongs to the order of the finite. But the Virtual as potentiality is infinite.

The question at this point is how the potentiality/infinity of the Virtual relates to the finite actual. How can differentiation through technology be conceptualized in a way that it makes sense in the context of political games? Put simply, what is the role of these games in the actualisation of Virtual eventualities? The fact that gaming allows for the repeated playing of the same problem is used to argue that it thereby offers the possibility of topological transformation. Topology and topological design are a case in point of the connection between the Virtual and the actual. Take the example of the coffee cup that turns into a doughnut shape (torus) as shown in the image below.



$$n[q] = \int \frac{d^3 k}{24 p^2} e^{mnr} \text{tr}[(q^{-1} \partial_m q) (q^{-1} \partial_n q) (q^{-1} \partial_r q)],$$

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The cup can be transformed/deformed into a doughnut shape without being cut or glued, by creating a dimple and progressively enlarging it while shrinking the whole in the handle. This

⁶⁹ “What is Topology?,” *Education and Sciences*, accessed January 20, 2014, <http://cidocido.hubpages.com/hub/What-is-topology>.

type of transformation is called homeomorphism which is the most basic topological equivalence. The relation between the topological transformation and the static figure is the same as between the Virtual and the actual with technology as the driver of the deformation. Further, to illustrate the point, a game (a particular software) is the cup in this case. The form is given already, it is definite. Yet, there are an infinite number of static figures that could be extracted from one transformation, since in Euclidean space it holds that between any two points regardless of how close they are to each other, lies another definable point.⁷⁰ Thus, during a transformation the figure runs through an infinite number of static forms so that it is not itself determinate, but determinable.⁷¹ This geometric “superfigure always falls between Euclidean points” and “recedes continuously into the between” or infinity. Therefore, even though a given game is possibilistic because it is code and thus finite, the forms and transformation it offers can be thought of as topological movements that despite running on pre-given trajectories (from cup to doughnut) passes through infinite forms and states. This transformation/differentiation/movement from the Virtual to the actual is technologically driven, which is why the possibility stored in a game can be said to potentialise. In this way digital technology “carries a [V]irtual centre of self-varying experience across the running of code-bound routines.”⁷² This is how the Virtual and the digital are in constant connection and why it would be detrimental to perpetuate the belief that they are the same. This directly relates to Murphie’s previous argument that technology is about translating the Virtual. In other words, the Virtual is expressed in contemporary technological-becoming.⁷³

⁷⁰ Note that this is an operation perceived in Euclidean space, which is different from the non-Euclidean space where posthuman initially originates.

⁷¹ Massumi, *Parables for the Virtual*, 185.

⁷² *Ibid*, 141.

⁷³ Murphie, “Putting the Virtual Back into VR,” 190-191.

Not without the Analogue: Conscious Movement on the Gamers

The movement from the Virtual to the actual highlights that what happens in the actual is just as important as the Virtual pool of potential futures. The main attention that was given to the Virtual in this chapter by no means implies that the effects gaming has on the actual are of lesser importance when it comes to changing and improving existing peace practices. Indeed, both realms are necessary to bring reality forward, for the latter is nothing more than the Virtual and the actual in tandem, the continuous folding of the two. Thus, changing peace operations necessitates an understanding of the Virtual and the actual, the latter including the digital and the analogue. Because the Virtual is inaccessible to the senses and can only be felt as effect in the actual, the analogue, offline realm is all the more important. In fact, as it was argued before with the example of word processing, digital technologies have a connection to Virtual only through the analogue reception.⁷⁴ Furthermore, in a political sense, the analogue is crucial, not only because it is the realm in which concepts materialize and where effects can be felt, but also because it is a realm of choice. Hypertext is a case in point. Internet wary academics label it totalitarian in the way that all the possible links are programmatically prearranged in the architecture of the World Wide Web.⁷⁵ Political action online is very much a politics of the possible and it is important to pay attention to such criticism and be cautious of the structural inequality of Internet and technology.⁷⁶ The same criticism can be made for political games as well, since it is a case of possible futures prearrayed in the gaming software. However, what these criticisms fail to note is that programming is only half of the story, because the “digital always circuits into the analogue.”⁷⁷ In essence, while the mode of existence of the digital is actual, in an electronic bit and byte form, its effect can also be felt in the analogue. In short, the posthuman exists across the gap, it is Virtual and actual at the

⁷⁴Massumi, *Parables for the Virtual*, 138.

⁷⁵ See for example Ilana Snyder, “Beyond the Hype: Reassessing Hypertext,” *Page to Screen: Taking Literacy into the Electronic Era*, ed. Ilana Snyder (Abingdon: Routledge, 1998), 125-143.

⁷⁶ Access to technology is the first instance of this.

⁷⁷ Massumi, *Parables for the Virtual*, 138.

same time,⁷⁸ meaning that it has an actual, felt presence. Furthermore, the political comes to full fruition in the digital's offline effects on the posthuman and its emerging subjectivity. The freedom from 'totalitarian' coding comes with the openness of analogue reception in the posthuman. This puts the posthuman in tension, between its coding architecture and the creative responses that precisely such coding triggers. To recall, this tension triggers posthuman movement (a way of expression), a self-dynamic of expansion and contraction. Because of the analogue reception, this self-dynamic does not unfold strictly according to the game's designed logic due to the intensities that are brought into the equation by gaming environments and gamers. In this dynamic the forces that come together and that provide for entirely new and unpredicted gaming outcomes and concepts are the co-presence of alternative and possible states of software code and the gamers action, the "serially experience [of] effects", their accumulation "in an unprogrammed way."⁷⁹ The different vectors come together "in a way that intensifies, creating resonance and interference patterns moving through the successive, linked appearances", expressions and concepts.⁸⁰ This does not mean that first coding happens and then the response, but rather describes a back and forth dynamic, a co-presence in different modes of being and becoming.

The analogue process in the game, that is the conscious movement of the gamers and their communication, is already an enveloping figure of thought or, in other words, "there is no thought that is not accompanied by a physical sensation."⁸¹ Meaning that once an idea-problem emerged in the Virtual, there will be an actual and analogue effect to it. These effects do not have to be lasting and always trigger the new, or even subjectivities, but nonetheless fold through the actual. For example, it can range from an increase in heart-rate,

⁷⁸ See the discussion of the Virtual and actual half of any entity in *Intensive Differences as the New Skin* in Chapter 2.

⁷⁹ Massumi, *Parables for the Virtual*, 138.

⁸⁰ Ibid.

⁸¹ Ibid.

to raise of an eyebrow, eye movement, to actual speech and body movement. This interplay between the Virtual and the actual, through the digital and the analogue, is where the potentializing effects of the flow from infinity to the finite come in; however, it also highlights the analogue aspect of felt reality and the play on the sense, which is a challenging territory.

The Slippery Road to Posthuman Sensation and Human Perception

The idea that judging reality according to the senses are obsolete parameters, does not mean that senses are unimportant altogether. As the conscious registering of force-effects they are indeed a crucial part of actuality and subjectivity and essential in the folding process. It is worth the time to look into how infinity eventually ends up circuiting into sensation in order to better understand how gaming technology transduces the Virtual into actual sensation.

First Sensation: Event-Space

Going back to the movement of the posthuman, agency is dispersed so that it is not the player that is acting, but rather he/she is part of the action. The game has as much or little agency as the playing field, the immersive 3D environment or the player. The reaction/action of the player is only an actionability of the posthuman that partly flows through the body of the player, but not an individual, separate, agentic action as such. A change in the game is not an expression of the player, but of the overall game and the player's body is a point of expression among many others. Before flowing into subjectivity the player is a material channel for intensities that move from the Virtual to the actual in the first place. Therefore, it catalyses the TPE. The point of expression is a transducer of change of a local physical movement into another energetic mode or intensity, as for example from potential energy to

kinetic energy.⁸² Two crucial points can be drawn: first, a change in the game releases new potential from the Virtual into the game that entirely reorganizes the field of potential movements. Second, “the players, in the heat of the game, are drawn out of themselves” and therefore there is no self-conscious player or “the player must let his trained body synthesise his separate perceptual impressions into a global sense of the intensity.”⁸³ Massumi goes as far as to argue that the players as the channels for transformation are picking up the potential “as in an immeasurable but actionable degree of intensity affecting the polar continuum of the field”⁸⁴ and suggests that rather than the player sensing, it is the player that is sensation for the game. This is taken to be an essentially posthuman form of sensation. As sensation the player is then channelling potential into local action. More importantly, sensation is the mode in which potential is present in the perceiving body. This posthuman sensation means that the posthuman in its pre-subjective state, the player is nothing but a flow of sensation. Thus, it is only during EPS where sensations become subjectivised and registered as a sensual experience.

However, the argument that players are withdrawn from their previous subjectivity in the course of the game and are merely a flow of sensations does not mean that players are only bio-physical entities. Reflex and impression are much more: they are a medley of “shards of intentions and conscious memories,” “shimmers of reflection and language” that mostly influence game preparations.⁸⁵ Split by different sensory channels, these shimmers enter the field of perception of the players and thereby affect the game as well. In simple terms, they are another vector in the equation/collision on the plane of immanence. Thus, “a heterogeneity of levels contract into [the posthuman] from which they reissue in an action –

⁸² Massumi, *Parables for the Virtual*, 74. However, according to Massumi it can also be the other way around, from kinetic to potential in the case of an actual ball game for example.

⁸³ Ibid.

⁸⁴ Ibid, 74-75.

⁸⁵ Ibid, 75.

in a unity of movement through which their multiplicity is singularly expressed.”⁸⁶ Sensing potential and reissuing action, the players are transducers in the game rather than subjects in it. In many ways, potential (the Virtual) is also the space of the game, not only the net of movement markers of the posthuman. From this perspective, the potential in the game (potential movement) is a variable to judge game-space against, rather than quantitative units of square meters. Every move in the game is a particular actualisation of the potential, an event. Therefore, game-space is event-space that is the event-dimension of potential, a dimension of relationality of intensities, forces, and elements.

Second Sensation: The Use of Human Perception – the Advantage of Mixing Up

Senses

The strength of immersive technologies and gaming is that it is multi-modal for human sensation, not only drawing on one or two senses as it is the case with more traditional Human Computer Interactions (HCI) such as 2D computer or console gaming. While vision always seems to be the more prominent one, it never occurs alone. Even the most monosensual activity plays on all sense modalities and vision is always contaminated by other senses, any sense experience is already mixed. Gaming draws on all senses and makes use of the mixing of senses by providing a synesthetic field of sensation and learning experience. Arguably, some of these sensual experiences are simulated sensations, which makes for a fascinating sensual encounter. For example, seeing a rock plays on tactile knowledge of a rock and instantly triggers associations of firmness. One does not have to touch the rock in order to imagine what it feels like. This is based on past experiences of touching and movement. The interesting point is that gaming triggers such associations through vision, so that the process that happens at the sight of something solid happens at the

⁸⁶ Ibid.

sight of a digital image that presents something solid. Even more interesting is what chemically happens in the brain to have this association is the same as what happens at the sight of something materially solid. It is important to remember at this point that the image of the stone is no less real than the perception of an analogue stone – images are matter too and belong to the same order, the actual. The only difference is their modality, one is analogue, the other is digital. That is the only difference. To speak in conventional terms, they are both real.

This leads to the idea that vision has taken up an important tactile function, which Deleuze terms “haptic” and is the embedding of another mode function in vision.⁸⁷ This provides gaming with a wealth of synthetic experience and associations, since a pool of tactile experiences can be triggered through vision. That means that experience and learning can be multiplied in the game as compared to offline games. A quick example would be the cultural and stability training simulations that soldiers go through to practice their communication skills. The environment that is created approximates verisimilitude and offers much more than just practicing dialogue. The experience becomes so full and rich because of the digital props integrated into it. The sight of a blurry, watery layer hovering above the ground as though one were in the desert; the perception of sweat on the forehead of one’s interlocutor and the visual feast of outdoor fruit stores selling exotic fruit all trigger sensations of warm weather, dry air, and the burning sensation of sun on one’s skin. All this can be transmitted in an instant. No lengthy descriptions are necessary, all the player has to do is to skim the parameters for a couple of seconds. The world and sensation that unfolds in front of him/her by merely playing on the soldiers senses is abundant. It only needs a few clues to trigger such a reaction and more. Depending on the imagination of each individual soldier, there is no

⁸⁷ Ibid, 159, Deleuze & Guattari, *A Thousand Plateaus*, 492-99. It is important to note that Deleuze uses haptic differently and not synonymous with tactile.

limit to the creative continuation of the initial haptic experience. Massumi identifies the embedding of one sense in the other as phase-spaces and argues that these spaces co-function as differential attractors governing self-intensifying fields of experience.⁸⁸ Systems of experience have a self-dynamic that is intensifying and the interrelating of sense is believed to increase the learning experience through detail and providing a more lasting after-effect. Connecting the posthuman sensation with conscious human sensation means that it folds in and out of the Virtual throughout the game. First, there is only the sensation that flows in the game and in and out of the player, and, because the latter is still in a larval state, the player as well as sensation are without subject. After subjectivity formation the mixing of phase spaces triggers conscious reflection that feed back into the game. This feedback loop is essential in the players' creative use of a particular game or simulation. Crucially this dynamic is only complete because of the analogue reception after expression.

The Body-Event: Harmony in Movement

The relationship between physical states, sensations, and their conscious reception and interpretation needs to be clarified further. The posthuman arises out of and exists in a state of physical tension that is caused by different intensities constantly encountering each other, and the flow of experience it passes into often enters consciousness as a less enjoyable experience.⁸⁹ It is important to note, however, that attributes of physical or psychological pain does not mean that a game is in a constant state of unease, struggle, bitterness or conflict. Although these secondary sensations can be amplified by mixing senses, even with tension there can be harmony according to Deleuze and Guattari, which comes in many forms.⁹⁰ The crucial point is that dissonance and tension are not the same as disharmony. Indeed

⁸⁸ Massumi, *Parables for the Virtual*, 158.

⁸⁹ As seen in the example of 3T and general neuro-psychological studies of flow experience.

⁹⁰ See the different models in "The Smooth and the Striated," in Deleuze & Guattari, *A Thousand Plateaus*, 523-52.

dissonance is important and does not necessarily have to be resolved.⁹¹ According to Deleuze there is harmony between dissonances and, for example, pleasure and pain are usually intrinsically connected.⁹² Theodor W. Adorno held similar views of music, in the way that his compositions are mostly perceived and described as disharmonic and unpleasant by the inexperienced ear. As described in *The Fold* the harmony lies in the dance or melody between contrast and differences⁹³ or in other words, to move in and out of pleasure and pain. In fact each counterpoint is “spilling over its frame and becoming the motif of another such that all of Nature becomes an immense melody and flow of bodies.”⁹⁴ This beautifully sums up the movement and dynamic of the posthuman and the self-dynamic of intensities and dissonances that drive its progression. Thus, the interplay of dissonances describes an interactive harmony of vibrating matter across the gap from the Virtual to the actual and sensations that fold in and out of each other. Murphie argues that new technologies have the rare capacity to transduce such melodies, precisely because they are located between the Virtual and the actual and what these melodies describe is continuous folding between the Virtual and the actual.

Gaming as Continuous Variation: Event and Experimentation

“Vor dem Spiel ist nach dem Spiel” or “the end of the game is before the game”

Sepp Herberger⁹⁵

Gaming produces reality, but in a very specific and distinct way in the form of continual variation. Hence, when viewing reality in a posthuman condition, the TPE is productive continuity between the Virtual and the actual, but so that the end always marks the beginning of new difference. It is especially the case with personal games such as *Antiwargame* that can

⁹¹ Deleuze does not prescribe a dialectic synthesis here.

⁹² Deleuze, *The Fold*, 135

⁹³ Ibid.

⁹⁴ Ibid, 135.

⁹⁵ Herberger, S. German Football coach, comment during the 1954.

be played over and over again. This stands in contrast with simulation games that are longer in duration, but are usually run just once such as those games offered by CRISP. Even though they equally emerge from the Virtual and unfold in the actual, the mode of continual difference after the game has finished can only happen through conscious reflection, carried by a new subjectivity and practiced through a body politic. In contrast, shorter games that are not institutionally run, but available to the individual, such as *Antiwargame*, *A Force More Powerful*, *PeoplePower* and *Against All Odds* can be played ad infinitum. In fact, their strength lies precisely in the fact that they can be played over and over again. The end of a game marks the reshuffling of possibilities and thereby creates conditions for different actualities. More precisely, every end of a game marks the beginning of a new one with all the possibilities for an entirely new future and arriving at the beginning summons yet another TPE. It is important to remember here that the parameters for failure or success are different when it comes to political games, since the intention is to encourage problem-solving, learning and creative thinking.⁹⁶ This becomes more apparent in the light of Herberger's quote, so that winning is really only about the continuation of play, which in turn "necessitates a learning curve of losing through movement first."⁹⁷ In other words, the incompleteness and imperfection of 'losing' is the very condition for continuity. What could be interpreted negatively, as failing to create conditions of security, is actually only the chance to produce reality anew. "Game Over" is the very precondition of continuing, trying again and keeping the posthuman's continual variation. This leads Jamie "Skye" Bianco to argue that "productive continuity becomes the process and object of play, and losing then becomes winning [as] more time(s) to play."⁹⁸ What is important in this circle of loss and what makes serious games different to other forms of losing is that losing or incompleteness in this case has

⁹⁶ See posthuman pedagogical analysis in chapter 3.

⁹⁷ Jamie "Skye" Bianco, "Techno-Cinema: Image Matters in The Affective Unfoldings of Analog Cinema and New Media," *The Affective Turn: Theorizing the Social*, eds. Patricia T. Clough & Jane Halley (Durham & London: Duke UP, 2007), 49.

⁹⁸ Bianco, "Techno-Cinema," 49.

nothing to do with imperfection or causing psychoanalytic paucity of some sort. Losing in political games is different in the way that it achieves quite the opposite, actually becoming the fullness of memory in movement of “that which has already happened – that which is both materially and perceptually present as actuality and that which is virtually to come.”⁹⁹ Close circuit losing is close circuit movement, a constant looping from the Virtual to the actual. Therefore, as long as there is movement there is continuity and as long there is continuity there is winning.

Furthermore, continuity is the only way to actualise the Virtual, where the bridge between the Virtual and the actual has to be crossed constantly in order to perpetuate reality. Bianco uses *Run Lola Run* to illustrate this point and indeed the example works well to belabour the point of continuity. In the movie, Lola, the main character, gets three runs/rounds to complete her task. As long as she is running, the game is still on, and each round reaches out to different Virtual futures, a play on the butterfly effect. If she ‘fails’ to reach the ‘goal’, the game reboots, she runs again, continuously actualising the Virtual – running symbolising this movement from the Virtual to the actual, and movement constituting the playing field. Stopping would dematerialise the actual and constitute material loss.¹⁰⁰

And at the end of all our exploring
Will be to arrive where we started
And know the place for the first time¹⁰¹

The return to the beginning is fundamental not only because it is yet another chance to create the new, but because a finished game is the return to the same coordinates where the players

⁹⁹ Ibid.

¹⁰⁰ Ibid, 49.

¹⁰¹ T.S. Eliot quoted by Bianco, 47-76.

started, it is a familiar place but with new material conditions. *We arrive at the same place but know it for the first time.* The material remains from the previous round are like an energized, embodied memory, so that a round in the game is both the same and new each time.¹⁰² In other words, the course of a game accumulates temporality, which acts as a history for the future at the beginning of each new round, at the same material coordinates, but not under the same material conditions. The familiar and old becomes new as difference with repetition. All the player has to do is “remember to forget.”¹⁰³

Undoing Memory as Learning Process

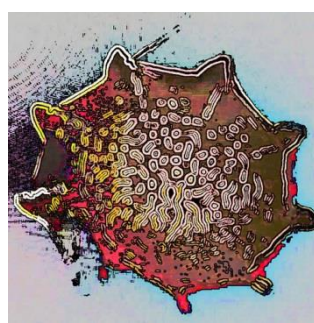
What stands out in gaming, especially in contrast to other forms of learning and training, is that it does not have a linearity inscribed into it. Despite the game design, the level of contingency is very high in gaming, depending on the creative responses of the players.¹⁰⁴ The double looping between the Virtual and the actual as well as between different rounds, which change conditions but not coordinates, is a force of disarticulation. This happens on two levels. First, attempts of the previous rounds are either undone entirely or used only partly. The scents of memory are reshuffled to be used in the next round, but in different constellations and scenarios; rebooting acts as disordering of the known to increase the newness in the rounds to come. Furthermore, this breaks the linearity in EPS of and through the game. To illustrate this and for the sake of simplicity, if gaming were a narrative, there would be no story line that unfolded singularly and linearly. It is not only a case of one round and the posthuman emerging rhizomatically. It is also about linking up various rounds in one game can be conceived of as a rhizomatic collage/montage: an amalgamation and growing of sensate movement of past rounds, their inherent histories of unmatched futures and Virtual

¹⁰² Ibid, 49.

¹⁰³ Ibid, 53

¹⁰⁴ See *Doppler Effect* in chapter 3.

energies unfolding in the present.¹⁰⁵ The second disarticulation lies in the capabilities of new gaming technology itself. Digital two or three-dimensional environments that have been created in the game can evaporate or change at an instance, leaving the player at the same coordinates, but in an entirely different environment and/or scenario. Arguably, old notions of the stability of one's environment are undone through digital environments. Inhabiting computer worlds lies beyond the human comfort zone of linearity and stability, by promoting disordering and ephemeral environments.



The images above attempt to visually represent this non-linearity and active disordering of memory and the environment through gaming. While the individual elements are familiar to the viewer, the arrangement of them is strange and unfamiliar to say the least. Trying to represent a rhizomatic fashion, the images express the familiar as the new, through disordering, reshuffling and displacement. Given these characteristics of gaming, the argument is that the attraction of the TPE is its promise of probability, coming and compassable futures, a genealogy of forward thinking through undoing the familiar and habitual. Game design is crucial in this effort to remember to forget what has been ordered and structured in the immediate round before, and to forget chronology, dismissing linear narrative tendencies privileging accumulation and teleological ideas of progress.

¹⁰⁵ Bianco, "Techno-Cinema," 54-55.

¹⁰⁶ Images accessed February 09, 2014, (left to right): Photobucket, <http://s61.photobucket.com/user/rhizomatic/media/collage/everydayx.jpg.html?sort=3&o=4>, Bachelor Machines http://www.bachelormachines.org/stevecalvert_texts.html.

This active forgetting goes further requiring players to temporarily forget their past, at least selectively. This is the challenge for game design and the strength of gaming, its capacity to undo the player as a historic subject and with it notions of prejudice, personal loss, even hatred. This can be seen in official reports by CRISP detailing the experience of the participants who started living “outside of [their] suit.”¹⁰⁷ The moment of the participants’ memory can actually only be long enough to open up to new virtual multiplicities and enable new futures. These memories cannot persist or dominate the game, however, as this would stand in the way of working towards alternative political futures. Through repeated close-circuit gaming, players can be taken out of their personal history and personal chronology is collapsed with the emergence of a new system of experience and new posthuman, merely leaving tatters of memory. If anything, the only sense of posthuman memory during a game is latent as possibility coded into the game’s architecture, a form of digital memory waiting to be triggered and played. This awaiting, unformed digital memory (at the expense of personal memory) is apparent in trans- and multimedia environments of political games, which includes digital and analogue props in order to trigger certain memories and reactions. The objects are placed carefully in the same way as digital appearances are carefully designed into the gaming software. Often working through haptic, these props (whether digital or analogue) are placed strategically, not only to trigger secondary sensation, but also to disorder and displace personal memory.¹⁰⁸ Arguably, the temporal loss of memory, at least selectively so that personal bias does not stand in the way of gaming dynamic, is a necessary part of the evacuation of the subject in order for the new subject to emerge.

¹⁰⁷ “SIMVISION,” CRISP, accessed September 01, 2014, <http://www.crisp-berlin.org/index.php?id=106>.

¹⁰⁸ Elaine Raybourne, “Designing Compelling Transmedia Learning for Military Training & Education,” (conference paper, Interservice/Industry Training, Simulation & Education Conference 2013, Orlando Florida, December 02, 2013).

Open-Ended-Reality Studios: Games' Posthuman Dreaming

Being-made and Becoming

Images are matter and matter is imaged.

Henry Bergson¹⁰⁹

Gaming technology's ability to matter images and initiate imagination through mattered-thought/thinking-matter adds to the riches of this technology that can be cultivated more to open up possibilities of alternative political futures. Political games are claimed to be experiments with images of reality in posthuman space and time. At the intersection of technoscience and politics, gaming for political training or education is the "mediated capture and release of temporalities, force, and complex matters in order to produce affect, extra-anthropocentric perceptual speed, and modular control."¹¹⁰ In agreement with Bianco and his interpretation of the cinematic-event and other mediated digital environments, gaming is identified as reality-by-design, as well as reality-in-the-making.¹¹¹ The realities created in each round of gaming make futures without any loyalty to the past or personal memory, and this is precisely their strength. Rupture in ordinary experience, personal memory and habit is crucial not only for EPS, but also for new temporalities and actualities to emerge out of the game. The affective forces of the game and the vibration of different matters at the same speed in the form of a reality experiment forms a new political aesthetic, one that engages these fast, intensive material, digital and Virtual dynamics. Indeed, political gaming technology is a way to critically and constructively engage with forces by designing affect and movement that intensify and alter energy in a system of new experience.¹¹² The TPE as reality-by-design and -in-the-making expresses an affective aesthetic that goes beyond digital narratives, but fosters new conceptual and material political cartographies by offering to

¹⁰⁹ Henri Bergson quoted in Bianco, "Techno-Cinema," 49.

¹¹⁰ Ibid, 50.

¹¹¹ Ibid, 67.

¹¹² Ibid, 51.

creatively produce realities through gaming. In short, gaming folds Virtual capacity into the morphogenetic, charging matter with power and distributing affect, contingently and programmatically, across multiple topographies and temporalities.¹¹³ There is no single trajectory in this speedy productive and creative materialism. Ultimately, the application of Bianco's model to the present analysis means that political games create modular, interfaced techno-socialities that open up slow and rigid liberal humanism (faciality) onto variable new subjectivities.

Posthuman Imagination and Dreamtime

Apart from the political and practical aspect of creating reality through the TPE, gaming is also an invitation to dreamtime and journeys of imagination. The creative material dynamism captures the player, providing space and time, away from daily routines and duties, and for its body to be captured by the unthinkable thought and the unimaginable. Fitting the posthuman condition, gaming for political purpose is a way to update traditional ways of reflexivity and problem-solving grounded in philosophical and historical inquiry, to 2.0 practices, necessities and specificities via digital playtime and thought-experiments. As becoming-concept event, game-dreams seek to bring alive unimagined theoretical as well as practical inventions and interventions that can live across different scales of posthuman organization, intension and duration. To design for and play the politically unfamiliar is an the effort to capture "the transient", hidden fantasies that so far have remained "blind spots in the mind" and unthought scenarios beyond political habits.¹¹⁴ At the point at which the surface tension of stable bodies does not hold anymore, and new systems of experience emerge, posthuman imagination occurs, giving way to new socio-political aleatory futurities. Thus, posthuman imagination transduces the Virtual potential into the actual via playful encounters in the form of gaming,

¹¹³ Ibid, 52.

¹¹⁴ Siegfried Kracauer, *Theory of Film: The Redemption of Physical Reality*. (New York: Oxford UP, 1960), 52-59.

thereby slowly integrating the unconscious, former larval non-conscious into analogue, conscious materiality. In this manner, games produce constellations of bodies that bear the capacity to think difference and that can be modulated at any point through the TPE. These latent futures are multiple-scaled, organismic, yet technologically rhythmic compositions of micro-matters, variable speed and signals that are ever evolving in volatile systems of experience, “summoned by the [V]irtual”.¹¹⁵ In the open-ended reality-studios of games, political imagination unfolds according to the rhythm and vibrations of the posthuman beating to the sound of war, noises of conflict, sight of injustice and injury, scenarios of stalemate and hostility, circulating affects of fear, grief and desperation. In almost dialectical nature, alternative political futures characterized by hope, political opportunity, social novelty and economic prosperity emerge out of the “precision of realist simulation.”¹¹⁶ It seems that it is precisely this juxtaposition, at the end of the human subject’s comfort zone, at which novelty then begins.

Conclusion

In the pursuit of mapping an ontology of reality that fits the posthuman condition, the chapter started by clarifying the deeply rooted confusion and equation of the digital and the Virtual on the one hand and reality and the actual on the other. Furthermore, it was not only the intention to show that the digital and the Virtual are different things, but also that the digital is an intrinsic part of actuality. These are crucial steps in relation to techno-political practices; similarly, to argue that the digital and the analogue are both equally important and equally real parts of the actual brings a fresh perspective to IR debates as well. The case for the ‘realness’ of digital phenomena was made on the grounds of simple Newtonian physics, the

¹¹⁵ Bianco, “Techno-Cinema,” 66.

¹¹⁶ Baudrillard, “Simulacra and Simulations,” Baudrillard is quoted here for his rather bleak view of new technology and its effects in order to highlight that hyperreal copies are not the only possible outcome of digital mediations.

physics of the anthropocene, which is the realm within which the digital shows its effect and within which games are played. The exploration in physics led to the distinction between force and energy movement as well as the conscious registering of their effects. The latter is commonly referred to as human perception and it is argued that digital phenomena are equally real in so far as they are the workings of force and energy. It was shown that what is usually referred to as reality is human sensation and perception of these force effects, but that these are only secondary, subjective and conscious after-images of force, energy movement and other plays of intensity. This initial distinction was used to draw out the materiality and physicality of the digital realm, to belabour the point that the digital is just as real as the analogue, offline realm and that therefore any claims about a hierarchy of realness – and by implication judgements about the impact digital technologies can have – need to be questioned. This clarification and claim is essential in order to fully appreciate phenomena like political gaming and to integrate them into daily political practice.

The chapter explored the Virtual and characterised this realm by arguing that it is not inferior to the actual realm, but actually fundamental for the production of reality and one's conscious experience of it. Not a platonic sphere of ideas, it still is an infinite pool that holds all particles to make up any future. These persist in an unformed state, not as fixed ideas, but as intensities that can form idea-problems that then can be actualised, that is transduced to the actual. One means of transduction is through technologies of lived abstraction like gaming. The fact that the digital (gaming) and the Virtual work so closely together in the way that digital technologies are located as transducers or abstract machines right at the gap between the Virtual and the actual, is why the digital and the Virtual are so often confused and why this needs to be stressed especially with regard to gaming technology. This implies also the fundamental role that games play when it comes to the emergence and actualisation of

alternative political futures. However, it is important to be clear that digital technologies do not share the Virtual's infinity and potentiality. Instead technologies are finite and possibilistic. Therefore, not everything is possible with (gaming) technology, but they can help in transducing multiple futures faster and in different, creative ways – continuous playing and rebooting of a game is a case in point.

Grounded in the Virtual and transduced by digital technology, gaming is still an occurrence of reality as a whole and therefore does not work without the analogue. Indeed it is only due to the ceaseless interplay between the Virtual and the actual that reality is produced, change occurs and gaming makes sense. Given that gaming is important for and geared at the conscious *Erfahrung* of target players, the chapter highlighted the role the analogue reception of the players takes. The task that gaming as a digital practice fulfils is the continuous folding of the Virtual and the actual through the analogue, specifically first and secondary sensation. It is an intrinsic connection between the Virtual and the actual in contemporary peace practices that opens up the realm of the Virtual so that actual political practice can be affected by continuous variation.

The precise working of this productive continuity was explained with the Virtual/actual looping that repeated playing represents. Whether losing or winning, the game needs to stay in motion (harmony in movement) in order for change to continue. Importantly, this change has no teleological trajectory given that the players start from a similar, if not the same, position once the game resets. Yet even though they find themselves at the same coordinates, they enter the game as difference, with different material conditions. Repeated play was therefore identified as undoing memory, of slowly defamiliarising the players with their own past. This and the looping dynamic are, hence, seen as difference with repetition within which political

games are open-ended reality studios, where the TPE is reality-in-the-making. More specifically, this being-made and political-becoming in gaming is due to its ability to matter images and imagination, while working on the basis of mattered images and imaged matter at the same time. Consequently, gaming allows for material imagination and posthuman dreaming, which is its creative political potential.

Chapter 6 ~ Infinite *Erlebnispolitik* for a People-Yet-to-Come: Movement, Space and Rhythm

I think that only daring speculation can lead us further and not accumulation of facts.

Albert Einstein

We can no longer afford to view games as separate from our real lives and real work. It is not only the waste of the potential of games to do real good – it is simply untrue. [...] Games aren't leading us to the downfall of human civilization. They're leading us to its reinvention.

Jane McGonigal¹

Introduction

The present chapter seeks to draw out a posthuman political space and foundation for a posthuman political theory. The close analysis of political gaming, as an example of technology of lived abstraction, has allowed the thesis to develop substantial theorisations about technological-becoming in a posthuman condition. It turns attention to the idea of a general infant posthuman politics for *a people yet to come* and necessarily this is a theoretical outlook based on differential, abstracted experience in political games. It fits within a notion of an affirmative political philosophy that enables innovative ways for the study, theory and practice of posthuman political becoming, particularly the interaction with creative technology. As debates about technological determinism indicate, the fear of technology looms large, especially inside academia.² If anything, the political space and theory developed here is an effort to show that viewing technology as external and as a threat to the human realm is ill-conceived. Instead it suggests that if analysis starts from different assumptions such as the posthuman, this will allow for a novel and inventive engagement not only with technology, but also the political and alternative political subjectivity. Therefore,

¹ Jane McGonigal, *Reality is Broken: Why Games Make Us Better and How They Can Change the World* (New York: Penguin Group, 2011), 354.

² See the discussion of technology and the body in chapter 2 and the discussion of techno-reality in chapter 5.

undoing and redoing Human Computer Interaction (HCI) along posthuman and speculative lines not only paints an entirely different ontological landscape that greatly impacts upon the way academia studies the role of new technology (NT) in IR, but also enables genuinely new political spaces, temporalities and practices to emerge.

Erlebnispolitik (politics of lived experience) is the name that captures this posthuman politics (based on the reconceptualization of gaming) because this politics rests on lived experience, Erlebnis (in the game). In addition, this term highlights the importance of a *life* in experience, technologies of lived abstraction and politics alike, given that it contains the root of the German word for life (Leben). Developing this micro-posthuman politics is necessary because, after having undone stable notions of the human, phenomenological experience, the subject-as-is, political subjectivity and, last but not least, reality it is impossible to draw on any existing conceptions of politics. These concepts are fundamentally marked by the human condition and only work within these parameters. While a new political conceptualisation as suggested by this research are initial efforts and tied to the relatively small scope of gaming, it is nonetheless argued that the development of materialist *Erlebnispolitik* can offer more leverage when it comes to social change that is not in reference to or caused by the human subject. As such, it is joining existing attempts that have been made by philosophers such as John Dewey, Louis Althusser and Bruno Latour to draw out a politics of the molecular and the more-than-human. However, in contradistinction to these efforts, and expressed through the technoscientific commitment to the material and concrete, it is also argued that there is much more at stake than just ontological clarification. This is because it is argued that the problem lies precisely in the fact that it is not a case of either/or (either human or posthuman). Nor is it a question of a politics for things as different from a politics for humans. Instead, the challenge is to cater for both: a politics that works for the posthuman condition but is

connected to the human nonetheless. After all, the category of the human is the conscious realm where judgement happens. In short, *Erlebnispolitik* is a continuous looping between a posthuman and human condition.³ However, in order to get to a point from which *Erlebnispolitik* can be articulated, the analysis of a posthuman people has to overcome practical issues: of a posthuman political space that is non-representational; and a modality of this space that is differential so that it allows for expression and change. The question of how these efforts can be structured needs to be considered in order to allow for untamed openness of the political, yet at the same time both of analytical and practical value in the everyday.

The crucial question concerns that of integration. In the political realm games are one way to incorporate posthuman practices into peace operations and security practices. Yet, this integration is impaired and cannot be lived to the fullest given that the philosophical and theoretical integration is still missing, which is due to unhelpfully strict adherence to categories of technology and the human. Integration therefore needs to outline the strange horizons that political gaming can offer.⁴ Despite the structured and organised articulation of a posthuman politics, this is by no means intended to put a rigid theoretical architecture in place. Instead *Erlebnispolitik* aims to provide a working model for the study and experience of techno-political becoming. In the pursuit of developing this model the chapter will first upgrade the thesis' conception of game space to a political level, which is essential given that game space in the present context is the realm of posthuman politics. This political space will be theorised as gaming biograms or the expanding and contracting movement of the posthuman but as micro-political dynamics. Furthermore, based on the argument that posthuman gaming opens up multiple other dimensions, it is imperative to rearticulate

³ As well as the Virtual and actual.

⁴ Based on Massumi's work regarding topological architecture, see Brian Massumi, *Parables for the Virtual: Movement, Affect, Sensation* (Durham & London: Duke UP, 2002), Chapter 8.

political space to include n dimensions and thus more room for political practice and manoeuvre.

This posthuman political space is where *Erlebnispolitik* unfolds and the chapter will continue characterising it by teasing out its fundamental pillars, namely desire, utopian impulse and rapid capture/at-tension. It will combine these concepts in the form of a working model and an active foundation of *Erlebnispolitik* for the political practice of a posthuman people yet to come. After an outline of change and variation on biograms and an *Erlebnispolitik* that can be situated on/in this biogram, the chapter will proceed to highlight concrete manifestations of this politics through the analysis of gaming movement. The latter will not only provide a lens of analysis, but it will also be identified as a principle posthuman way of political expression, thought and participation in general. The example of motion analysis will show that new high-tech practices call to re-evaluate the human, but that these offer new ways of evaluation in themselves. This is important as gaming as a form of posthuman pedagogy necessarily implies a new articulation of posthuman analytic as well as methodological tools.

The close analysis of motion and movement will lead the chapter to draw a political posthuman portrait of lived experience and lived abstraction based on the rhythm of posthuman gaming movement. This section deals with *Erlebnispolitik* depending upon the tension between theoretical and tempo-spatial abstraction on the one hand and immediate and concrete gaming experience on the other. The ensuing argument will show that gaming's dynamic of lived abstraction is crucial in undoing facial subjectivities as well as reversing new subjective trends.

“Strange Horizon:” Self-Variation Continued⁵

Erlebnispolitik is unique in the way that it is a highly localized and specialized form of politics that hinges upon a very short time frame and relatively small game space. Building on the theme of continuation and change (continued change), this section will further theorise game space in terms of variation that allows for political change. Two main themes are important for this task: experience and movement. Political gaming is a movement-experience and while experience is important for the emergence of the new,⁶ movement is crucial to establish space.⁷ The coming together of various intensities into one attractor field to form the posthuman through a complex process of individuation was thought of as vectors that intersect on the plane of immanence. However, given the posthuman dimension of experience, a two or three-dimensional diagram would not suffice to represent this space. For a game space conception to fit a posthuman condition, change and the primacy of pre-subjective, non-personal experience needs to reflect this lived and dynamic aspect of the gaming event. Therefore, the space that political games generate is conceptualized as *biograms*.⁸ A biogram is a space that emerges with mattering dynamics and self-organising bodies; it does not exist prior to posthuman bodies. In view of this, it is helpful to think of a biogram as a spatial event that is inseparable from the posthuman body, which is an event too. In this way the biogram reflects that the divide between the category of technology and human (usually referred to with dichotomies of organic/nonorganic, living/nonliving, human/nonhuman, natural/unnatural) is undone. For this reason the “bio” refers to the gaming technology as much as it does to the player. It is important that the whole game space is not perceived as any less natural than other spaces, neither is it any less real.⁹ Inversely, space is technological at the same time that the players, whose becoming, short and long-term, has

⁵ Massumi, *Parables for the Virtual*, Chapter 8.

⁶ See chapter 2 for the analysis on novelty versus recognition.

⁷ See chapter 3 for dynamic movement space based on expansion and contraction

⁸ Borrowing the term from Massumi, *Parables for the Virtual*, 187.

⁹ See discussions on the realness of games in chapter 5.

been influenced and shaped by technology are technological.¹⁰ Game space is essentially hybrid.

Furthermore, the hybridity of the game space leads the research to suggest that the biogram as a spatial situation or event collapses the boundaries between internal, external, public and private space. This works on two levels. First, there is no physiological boundary between the players that correlates with the perceivable skin and conscious representation of a human body during the game.¹¹ The only boundaries emerge along intensive difference and are ever-shifting. These are imperceptible to the conscious eye and on a conscious level the boundaries between players is collapsed too. To be precise, personal and private space can be seen as subjective constructs. The minute the subject is evacuated, becomes undone and redone due to flow experience, subjectivised conceptions of internal and external space fall away as well. This results in a game space without fixed (human and social) boundaries, which is extremely helpful for the dynamic of the game. The only borders of 'identity' that exist in the course of the game are the ones suggested by the game design, which asks the players to enact certain roles. However, these role-boundaries are already part of the game space due to software coding and not an obstacle to the game dynamic as older, personalised, subjective limits would be. Furthermore, these roles have no fixed boundaries either, only preliminary indicators that leave the development and performance of the character open, so that their actions and reactions are up to the players and the dynamic of the game. Nevertheless, this is not to say that the player is completely dominated by game design, space and its dynamic. Given the Doppler-contingency, the players' creative response to their roles and task is equally contributing to the biogram.¹² Therefore, a biogram is a conception that

¹⁰ Bruno Latour, "Pragmatogonies: A Mythical Account of How Humans and Nonhumans Swap Properties," in *American Behavioural Scientist* 37, no. 6 (1994): 791-808.

¹¹ See how chapter 2 undoes these boundaries.

¹² See chapter 3 *Doppler-Contingency* and Chapter 5 *Not without the Analogue*.

primarily allows for creative movement in the game, which, due to the analogue response of the players, removes limits and restrictions that existed prior to the game.

Furthermore, in view that the posthuman body is inseparable from “*lived abstractness*,” it cannot be understood in any other way than in topological terms,¹³ which necessitates a body space that is abstract and allows for a conceptualisation of topological figures and transformation. The biogram is precisely this topological and abstract body space of the posthuman. The posthuman is a mattering process based on the encounter of different intensities that form relations based on desire and as such, it is in constant movement (of matter) and therefore needs to be conceptualised in a body space that is equally mobile. In mathematical terms, the biogram needs to be “non-Euclidean” which is a ‘temporal’ space as it were, one “that cannot be separated from its duration due to a transitional excess of movement.”¹⁴ In light of the fact that the biogram is dependent on movement, it arises from the position of the posthuman and is neither prior nor exterior to it.¹⁵ This is why the biogram is also argued to be a suitable spatial construct for newly emerging systems of experience as these equally depend on mattering and movement. In this sense, the biogram is the necessary body space of a posthuman in the way that it is equally topological and ‘experiential’.¹⁶

The creative strength of this spatial conception is due to the fact that it allows for topological movement and transforming mobile metric bodies. Building on the argument that gaming can be thought of as producing/differentiating actuality by means of topological transformation, the posthuman itself can be thought of as topological movement. That is, as a moving entity that can change into other forms without having to change in its composition and content. To

¹³ See topological transformations and figures in Chapter 5 *All That the Virtual is not: Possibility and Probability*. Massumi, *Parables for the Virtual*, 177, original emphasis.

¹⁴ Massumi, *Parables for the Virtual*, 185.

¹⁵ *Ibid*, 188.

¹⁶ Experiential as adjective of experience, as distinct from experimental.

speak of topological movement and dynamics is nothing new in Movement Studies, where space is seen as the volume that results out of the field of relations by connecting the points of the outreaching body.¹⁷ The only difference here is that it is the outreaching posthuman that constitutes this movement-space. Labanian movement theories relate directly to this chapter and the thesis more broadly as these are interested in showing how inner, personal space folds into the outside, which closely aligns with the idea of posthuman emergence.¹⁸ Furthermore, the factor of rhythm and vibration have been identified as crucial aspects in the way the posthuman moves. Laban takes the same interest by incorporating intensive elements such as light and sound into his conception of harmonic movement space of the body.¹⁹ Not quite undoing the boundaries between the aforementioned dichotomies he still seeks a space that goes beyond the conceptual limits of the traditional kinesphere of the moving body by finding movement properties in any form, organic or inorganic.²⁰ The posthuman's movement space leaves behind precisely these conventional limits and in doing so opens up a (new way of seeing) space.

Every Game Has a Silver Lining: Movement and Regenerating Possibilities for Change

To conceptualise game space politically matters for two reasons. First, political games viewed from a posthuman condition are an access to more space that exceeds conscious dimensions that can be explored for political purposes. Second, this space is creative because it has the capacity for transition and continual variation.²¹ This is because the relational net-space between the points of the outreaching posthuman can be conceived of as a metric space that is argued to be able to undergo topological transformation. To be precise, this space is a

¹⁷ Rudolf von Laban. *Choreutics* (London: Macdonald & Evans, 1966), 10; Nicolas Salazar Sutil, "Rudolf Laban and Topological Movement: A Videographic Analysis," *Space and Culture* 16, no. 2 (2013): 174.

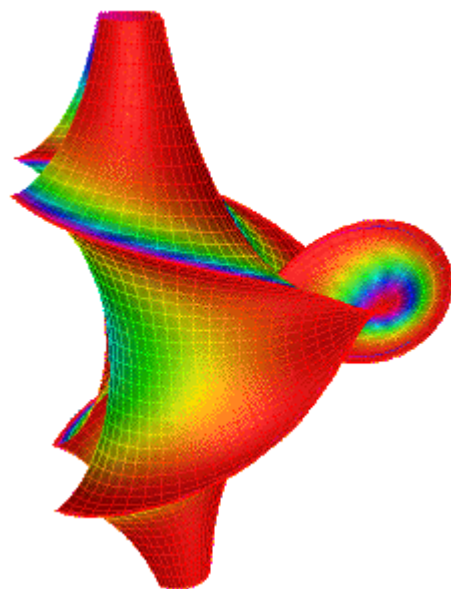
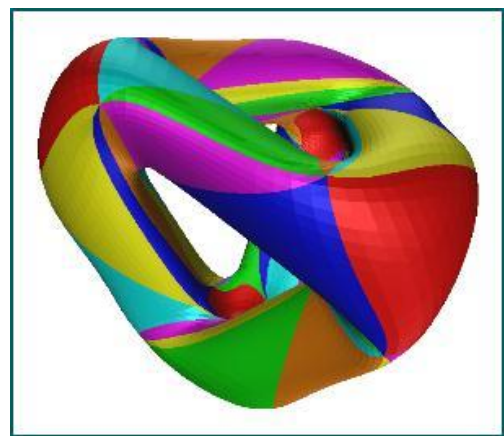
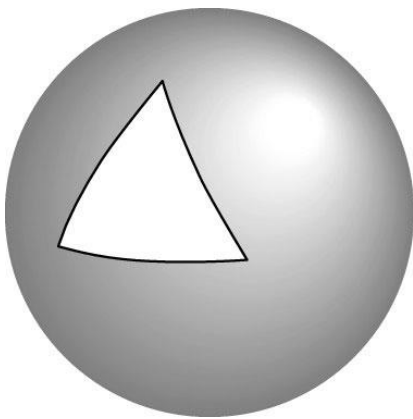
¹⁸ Salazar Sutil, "Rudolf Laban and Topological Movement."

¹⁹ See expansion in Chapter 3; Salazar Sutil, "Rudolf Laban and Topological Movement," 175.

²⁰ Kinesphere was conceptualized by Laban himself who defined it as the "space which can be reached by easily extending limbs," it is often referred to as "zone of reach;" Laban, *Choreutics*, 60.

²¹ Salazar Sutil, "Rudolf Laban and Topological Movement," 180.

metric figure according to Riemannian geometry, which in the most basic terms is a metric composed not of flat surfaces, as in normal geometry, but of manifolds and sub-manifolds that are curved, twisted and folded.²² Bernhard Riemann, a former student of Carl Friedrich Gauss, developed a geometry for non-Euclidean space, so that it can be performed on curved surfaces.²³ The images below are examples of Riemannian metrics and the posthuman movement space inspired by Laban's movement theories is argued to look similar to the depictions.



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²² John M. Lee. *Riemannian Manifolds: An Introduction into Curvature* (New York: Springer, 1991), 1-2.

²³ Riemannian metrics were the mathematical basis that enabled Albert Einstein to develop a geometry about space-time, known as is his general relativity theory.

²⁴ Images taken from Bill Watson, "The Goldberg Conjecture," *Research in Differential Geometry*, accessed September 10, 2014, <http://facpub.stjohns.edu/~watsonw/diffgeom.htm>.

To picture this further, various participants geographically come together in the space and time of a game, the points of their outreaching limbs, technological objects in the immediate gaming environment and other gaming equipment are all points of the outreaching posthuman. One snapshot capturing the posthuman movement where all these points are connected would then generate a metric figure as depicted in the images above. With movement these points change their position so that the metric figure changes. However, given that the body of the posthuman has not changed in its composition, but only in its form, turns the posthuman's movement into topological transformation. To be precise, the posthuman's metric movement space is a topological manifold that can have n dimensions. Seeing movement in this way makes it possible to conceive of n possibilities of change and continuation. This does not mean that this space always does change *ad infinitum*, but that it has the potential to do so. Recognizing this potential that topological metrics (and crystalline forms) allow for is important because it makes visible possibilities for change visible, development and learning where others do not. This is because the metric posthuman can generate n topological solutions merely by variation, rather than having to rely on external vectors (additions in the form of other intensities) to seek out alternatives. In other words, gaming situations that may be deemed a dead-end in a human condition in which the 'subject-as-is' is taken to be the main agent are not in a biogram view. In essence, there is already an implied multiplicity within the posthuman in the form of a Virtual topological solution that can always give rise to new shapes and new dynamics. This is a crucial feature of this political space as it enables *Erlebnispolitik* to remain open to transformation and the new. Stressing topological movement as political space in this way means emphasising that there is always possibility to 'move on', which implies a logic of continuation and change. More specifically, the posthuman during gaming is generally high in tension (at-tension even) due to the multiple, varying intensities that are brought to the game. This may be due to the

players' analogue reception of the gaming software, which are their different thoughts carried into the game or initial tensions and intensions between participants. These are dynamospheric tensions and actions that drive the production of reality. This means that game development (essentially motion and movement) that may have moved in an unfavourable direction (metric figure) has always another form it can change into as long as tensions translate into movement, so that unsuitable game choices do not have to mean stasis. Laban identifies emotions, psychological and corporeal factors as the driver of such movement. Yet in the posthuman view of this thesis these are all affects in one form or another. Thus, building on and adjusting Laban's kinespheric model, where spatial movement is driven by subjective emotions, this suggests that topological transformative movement is affective. Therefore, affective tensions are not only the building blocks of matter, scientific theories of growth and crystalline formation of the posthuman, but also fuel specific moves in the game. Looking at the continuity of the posthuman's movement space, where the initial starting point is that of Laban's kinespheric space conceived through topological metrics, aids this research by highlighting the movement that a posthuman body is capable of and the potential of change that this implies. The latter is what makes gaming and its spatial event political. In short, gaming opens up potential space of political action or *Erlebnispolitik*.

Sketching *Erlebnispolitik*

The strength of *Erlebnispolitik*, as witnessed in gaming, is that it acknowledges and fosters the Virtual origins of political life, and, thereby, enables the politically new. In contrast to most political conceptions (which are set on the Aristotelian idea of a polis of *actual* communities and that have a particular size and material existence already) *Erlebnispolitik* starts on a much lower and unformed level. The concept of the political even in writings by the New Left, post-structuralists and feminists/queer theorists start in the actual. Although

these works go down in scale, the type of politics that each suggest does not go below the individual neither do these attribute political leverage to the Virtual. There are some efforts that go above, below and beyond the subject, such as Protevi's *Political Affect*. However, these do not go below the human body, but only the procedural subject. Similarly, recent research in security studies follows experience all the way down to personal, singular, ineffable experience of an individual or goes beyond the subject-as-is to include the more-than-human towards a worldly conception of security; yet these efforts still remain either at the level of the subject or in the actual realm.²⁵ While there are philosophical models like Louis Althusser's "aleatory materialism," often referred to as "materialism of the encounter," and an increasing number of work by Speculative Materialists and Realists such as DeLanda, Protevi or Connolly that draw out the molecular origins of the political, these efforts are still quite rare and criticised for drawing too much on abstraction and the natural sciences. However, gaming's capacity of abstraction can have considerable theoretical purchase with regard to political existence given that abstraction can be lived – in the present case as gaming experience. Furthermore, going below the subject *and* the human body is the only way leading to the politically new.

Erlebnispolitik as a new political engagement is different from post-structural efforts towards new politics. Post-structuralism in and outside IR sought a critical and post-metaphysical politics.²⁶ Of course, such endeavours cannot be summed up in one homogenous effort. Yet, important pillars for the post-modern project, such as Jacques Derrida's *Spectres of Marx* or Michel Foucault's *The Order of Things* converge over several aspects. In broad strokes, these crucial figures problematize the difficulty of becoming the post-metaphysical subject that has

²⁵ Audra Mitchell, "Only Human: A Worldly Approach to Security," *Security Dialogue* 45, no. 1 (2014): 13; Carolin Kaltofen, "Engaging Adorno: Critical Security Studies after Emancipation," *Security Dialogue* 44, no. 1 (2013), 37-51.

²⁶ Claire Colebrook, "Bourgeois Thermodynamics," *Deleuze and Politics*, eds. Ian Buchanan & Nicholas Thoburn, (Edinburgh: Edinburgh UP, 2008), 121.

no law other than the law he/she must give him/herself, yet they seem to accept the aim of Kantian politics of “freeing the polity from concepts of human nature from which positive norms may follow.”²⁷ In suggesting that the human is no longer the privileged being that due to reason can order the world and dominate nature, they propose that humans are actually just part of an evolving process. The new logic that post-structuralists proposed was that language, for example, was not taken to be representative of prior order and reason anymore, but rather a way to create order in the first place.²⁸ Language and power would recurrently take centre-stage in the post-structural project, along with deep criticism of “truth” and “knowledge”. Not to dismiss these efforts or minimize their crucial role in the development of intellectual history in any way, the arguments and assumptions put forward all extend an anthropocentric enterprise (implicitly or explicitly) by starting with the human. Taking the example of language as a structuring process that yields power, deconstructivist politics seek to undo such systems of power that are based on discursive practices and then go on to suggest alternative ones. Yet, the problem is that deconstruction only goes as low as the subject and remains in the realm of the actual. Furthermore, the very concept of power also only operates in the realm of subjects. For this reason, Deleuze and Guattari took a few steps back, going beyond and below the subject by speaking of desire rather than Foucaultian power. Based on the argument that desire is taking to be the drive of a body to produce relations toward what is not itself, means that it is, therefore, also the genesis of systems (one should note the ethical component that is thereby attributed to desire).²⁹ As simple as it seems, this was a crucial step as it changed the whole approach and focus; it was not about deconstructing systems anymore, but about the genesis of them. Accordingly, in setting out to create entirely new political beings and political-becomings in the present research, speculative *Erlebnispolitik*

²⁷ Colebrook, “Bourgeois Thermodynamics,” 123.

²⁸ Ibid, 124.

²⁹ See desiring-production in Chapter 4.

starts at a very different point and from quite different assumptions than recent post-structural approaches.

Gaming as the basis of *Erlebnispolitik* is, therefore, right at the heart of this political process. *Erlebnispolitik* can be structured and illustrated with the conceptual aid of double-articulation. Double articulation refers to the formation of geological, biological and even social strata. To be precise, the first articulation always concerns the selection of materials out of which a stratum will be synthesised; that is the material an object selects in its self-production or organization.³⁰ Through this articulation the materials will also get their statistical ordering. In a second step, articulation involves expression, which refers to abilities and qualities that the new, larger scale object comes to embody. This does not refer to linguistic expression, but material expressivity such as colour, texture, movement, sound, geometrical forms and other qualities through which geological and meteorological entities can express themselves.³¹ DeLanda's account simplifies this:

The synthesis of sedimentary rock proceeds by the sorting out of pebbles of different size and composition, an operation performed by rivers that transport and deposit the raw materials at the bottom of the ocean. The loose accumulations are then cemented together and transformed into layers of sedimentary rock, that is, of an entity with emergent properties not present in the component pebbles. Then at a different scale, many of these emergent rocks accumulate on top of one another and are then folded by the clash of tectonic plates to produce a new emergent entity: a folded mountain range like the

³⁰ Levi Bryant, "Double Articulation: Notes towards a Theory of the Genesis of Objects," *Larval Subject* (blog), April 11, 2011, accessed April 25, 2014, <http://larvalsubjects.wordpress.com/2011/04/01/double-articulation-notes-towards-a-theory-of-the-genesis-of-objects/>.

³¹ DeLanda, "Deleuze, Materialism and Politics," 163.

Himalayas or the Rocky Mountains... What really matters is not to confuse the two articulations with the distinction between form and substance, since each articulation operates through form and substance: the first selects only some materials, out of a wider set of possibilities, and gives them a statistical form; the second gives these loosely ordered materials a more stable form and produces a new, larger scale material entity... the first articulation is called “territorialization” and concerns formed materiality, the second one “coding” and deals with a material expressivity.³²

The present argument is that emergence of posthuman bodies, as outlined with the example of gaming, is captured by double-articulation as well. The first articulation describes the self-emerging process of the posthuman through experience, the second articulation that of a larger socio-political strata, which was referred to as the emerging posthuman subjectivity (EPS) that results in a larger scale of bodies politic. Through experience materials are selected, which are intensities from the gaming software, participants and objects from the immediate environment to form attractor layouts.

In contrast to structuralist, modernist and post-structuralist conceptions of the political, the claim and difference here is that materialist *Erlebnispolitik* begins with the first articulation not only with the second. This is not to suggest that these other accounts are not interested in formative processes, but rather that the conception of the political always hinges upon the latter articulation; to be precise, the very end stage of the second articulation when a subject has already been formed and reached consciousness. This creates a problem for politics of change, however, because it has no conceptual room for the claim that all entities that

³² It is important not to assume that double articulation is an attempt to distinguish between form and substance, since both actually operate through both form and substance; Manuel DeLanda, *Deleuze: History and Science* (New York: Atropos, 2010), 32-33.

populate the world, from mountain ranges and buildings to bodies and institutions, “come into being through specific temporal processes that affect both their materiality and their (non-linguistic) expressivity.”³³ Significantly, this means that all identities are historical, referring to geological, biological or cosmological history rather than human history. Accordingly, all entities can be subject to mind-independent change because their very materiality and expressivity can be subject to destabilizing processes at any point.³⁴ Applied to this project it means that deterritorialization and decoding can happen at any point. Agreeing with DeLanda and more general materialist claims, this is absolutely crucial for politics as this historicity implies that social change is at stake. Trying to effect change by looking at the after-image, (the ephemeral, phenomenal world) is not enough and leaves interventions ineffective. The problem is that a great deal of post-structuralist political efforts in the form of social justice movements have become what DeLanda calls “linguistic idealists,” who stopped drawing a distinction between what materially exists and what is mere discourse.³⁵ However, it is politically impossible to effect any real social change, if the modality of one’s target of change is unclear and by only looking at the phenomenological experience of discursive practices.³⁶ There is a political danger and risk in dismissing materialism on the basis of scientific suspicion, while at the same time trying to change what are merely reified generalities, such as Power, Resistance, Capital and Labour.³⁷ It is precisely this point where a technoscientific account of gaming that is committed to the concrete and material is argued to fit in and able to affect difference.

The analysis of and engagement with technology used for politics is where a new materialist approach for gaming can make a difference. Paying attention to pre-subjective experience

³³ DeLanda, “Deleuze, Materialism and Politics,” 164.

³⁴ Ibid, 164.

³⁵ Ibid, 176.

³⁶ Ibid, 176-177.

³⁷ Ibid, 177.

enables a technopolitics that is not framed within ideas of determinism or alienation, which is common to IR notions of technology. The political framework needed and generated here moves away from implied structures of power within existing understandings of politics by assuming nothing but matter movement. Political conceptions based on the human subject attached to notions of agency, citizen, sovereignty, or even labour and alienation imply an existing natural, essential human condition in the first place.³⁸ Again, this is problematic in its own right, especially when it comes to the interaction between what is supposedly ‘human’ and ‘technology’ and a political sphere that is increasingly marked by their fusion. This requires a new political view that focuses on various scales, most importantly pre-subjective ones, which “is where philosophers can one day make a difference.”³⁹ Gaming as a case of *Erlebnispolitik* is indeed one form this difference can take.

In the way that thought, experience and an emerging body has its onto-material grounding in molecular and sub-atomic matter movements, an alternative political conception, a posthuman politics, has to start with immanent, molecular and micrological conditions of interactive, pre-subjective and pre-conscious change as well. Given that the chances for territorialisation in the current political landscape are fairly limited, with only deterritorialization and reterritorialization being an available feasible option, technologies of lived abstraction and their capacity to compose-away are therefore all the more important. Assuming that it is not possible to start from *ex nihilo*, or the Althusserian void, the analysis has to look at what drives deterritorialization. It was established that Virtual differing intensities can create idea-problems that can become actualized as an event. The question that remains asks about the essential driver for, first, deterritorialization and then reterritorialization. It is important to clarify at this point that this is not a question of active or conscious resistance. It is not the

³⁸ Ralph Krause & Mark Rölli, “Micropolitical Associations,” *Deleuze and Politics*, eds. Ian Buchanan & Nicholas Thoburn (Edinburgh: Edinburgh UP, 2008), 241.

³⁹ DeLanda, “Deleuze, Materialism and Politics,” 177.

human that can initiate this on its own terms; it will only ever be a residual product of a politics, not the origin. In the pursuit of *Erlebnispolitik*, it is essential to think of socio-political change other than in terms of resisting power. While power structures are an effect of the second articulation, *Erlebnispolitik* precedes the second articulation. Therefore, power and its structuring effects of socio-political fields cannot be the only force that influences movements in social, political and economic interactions.

Erlebnispolitik without Power but with Desire

The crucial difference between a theory of change articulated within the parameters of posthuman politics and other forms of politics is that it does not rest upon resistance or the existence of an opposition for that matter. This difference goes all the way back to desiring-production that does not only depend on affect, but that is the driving force of the new, not resistance. A further essential factor in this difference between ‘resistance for change’ and ‘desire that changes’ is that the term desire signifies a fundamentally different creative force in contradistinction to its common, everyday use. This creative quality is crucial in order to extrapolate what drives onto-material processes of political formation (*Erlebnispolitik*) given that this drive is not placed within an agency, structure or power. Instead, based on a Deleuzoguattarian view, desire is argued to be the drive that arranges the socio-political field and action. The treatment of desire as driving political force and as theoretically celebrated through desiring-production goes back to Deleuze and Guattari’s treatment of Foucault’s work and is, thus, a backdrop against the linguistic and theoretical placement of desire within academic discourse of sexuality and morality as seen in Foucault’s *History of Sexuality* for example.⁴⁰ The problem is that, for Foucault, desire flows from discourses of Power, whereas for Deleuze and Guattari it seems to be that desire actually takes centre stage in the realm of

⁴⁰ Simon Bignall, “Deleuze and Foucault on Desire and Power,” *Angelaki: Journal of the Theoretical Humanities* 13(2008), 130.

Erlebnispolitik in the way that it is a primary force in the first articulation: “it is not the *dispositifs* of [P]ower that assemble, nor would they be constitutive; it is rather the *agencements* (assemblages) of desire that would spread throughout the formations of [P]ower...[P]ower is an affection of desire.”⁴¹ This is important as it not only increases insight into agency and resistance as argued by Bignall,⁴² but also into primary movements in *Erlebnispolitik*, because desire affects the quality of power relations, thus, political relations, and not the other way around.

The discussion of desire and the desiring-machine is not referring to a process motivated by dissatisfaction and acquisition. Whereas the traditional logic of desire in Western philosophy has always associated desire with a perceived lack of something, dating back as far as Plato⁴³, to Descartes and all the way through to Marx, Freud and Lacan, just to mention a few,⁴⁴ there are alternative philosophical treatments of desire that “focus on the motivational force [...and] as productive,” as found in the work of Spinoza, Kant, Nietzsche, Deleuze and Guattari. This thesis argues that the affirmative treatment of desire is important to understand the affirmative nature of *Erlebnispolitik*. The problem is that in linking desire with acquisition “makes desire an idealistic (dialectical, nihilistic) conception,”⁴⁵ which in turn means that the ontology of every being and object that does the desiring is necessarily that of an “essence of lack” and “associated by needs,” thus, subjectivity is always lacking

⁴¹ It is acknowledged that Foucault distinguishes between “power” as “a moving substrate of force” that is volatile, “always local and unstable” and “Power” as “permanent, repetitious, inert and self-reproducing” that actually seeks to “arrest” these smaller, mobile powers. Whereas the thesis’s scope of analysis is that of lower-capital power, Foucault’s main work is based on the latter with capital “P”. Gilles Deleuze, “Desire and Pleasure,” *Foucault and his Interlocutors*, ed. Arnold Davidson (Chicago: University of Chicago Press, 1997), 186; Bignall, “Deleuze and Foucault on Desire and Power,” 132.

⁴² Bignall, “Deleuze and Foucault on Desire and Power,” 137.

⁴³ Gilles Deleuze & Felix Guattari, *Anti-Oedipus: Capitalism and Schizophrenia* (London: Continuum, 1984), 26.

⁴⁴ Bignall, “Deleuze and Foucault on Desire and Power,” 137.

⁴⁵ Deleuze & Guattari, *Anti-Oedipus*, 26.

something.⁴⁶ The upshot of this is that desire is a process of “*passive syntheses*” of “partial” beings.⁴⁷ However, such a conception is detrimental to the articulation and practice of *productive* politics, because it is a regressive as well as idealist dynamic. Agreeing with the theoretical work that overcomes the negativity attached to desire, the underlying idea here is then desire is enabling, affirmative and, thus, should be seen as a positive force in a new politics.

Reality is therefore actually produced by desire,⁴⁸ which means that desire is the political concept for what has been referred to as the gradient between intensities that produces reality. The term desire is therefore a political appropriation that helps to characterise *Erlebnispolitik*. Desire is an essential starting point for *Erlebnispolitik* in the way that every material production underlying the smallest and simplest forms of life, the social and the political, is a form of desiring-production. Significant in another aspect, this also means that desire is pre-subjective so that *Erlebnispolitik* is not generated out of an idealist notion towards unity, or sense of whole and fixed identity.⁴⁹ This gives the desiring-production of *Erlebnispolitik* considerable leverage for change, because it is not a result of vested, subjective interest. Importantly, this is not to be confused with political dynamics and formations at the level of social movements, for example, and their perceived ‘desire’ for change and according resistance to the status quo. This is not what is meant here by desire and change; neither can perceived, conscious desire be deemed the origin of emerging relations. The act of resistance and what retrospectively may be interpreted as emerging out of ‘desire’ happens at a conscious level that is far removed from the first articulation where *Erlebnispolitik* takes shape. Instead the primacy of desire turns *Erlebnispolitik* into an associative process of

⁴⁶ Ibid, 27, original emphasis.

⁴⁷ Ibid, 28, original emphasis.

⁴⁸ Bignall, “Deleuze and Foucault on Desire and Power,” 138.

⁴⁹ Deleuze & Guattari, *Anti-Oedipus*, 31.

connecting varying bodies to create new forms of political existence. It is only at a later stage of a continuous feedback motion of desire, which spirals through various scales, when it can produce and affect associations on the level of a body politic, such as social organisations or institutions which are all material developments. Therefore, desire is not only immanent in the process of production in *Erlebnispolitik*, but it is also the “abstract cause of all order” that eventually takes very concrete forms and socio-political relations.⁵⁰

An *Erlebnispolitik* developed through gaming highlights that desire is the ‘glue’ of diachronic and synchronic posthuman bodies, socio-political relations and organizational formations that gaming produces. The elements that will come to compose this politics in the process of the first articulation are scattered throughout the game design and software, the associative bodies of the participants and the local game-space. Desire is important because one of *Erlebnispolitik*’s defining characteristics is that it is volatile and subject to change, defying form and content. Once the posthuman emerges it does not automatically stay in this shape, but constantly has to be produced. What is an important attribute that allows for transformation always to be possible at the same time complicates that moments of subjectivity can last. The possibility of change thus comes with indeterminacy. It is only at a larger scale of a body politic where subjectivities become more solidified in the form of institutions, new practices or policies, for example. The way leading up to this scale is shaky, however. The game might not be a significantly different experience so that the posthuman only ever witnesses moments of subjectivity that subside once its gaming body disperses after the game has stopped.⁵¹ In short, *Erlebnispolitik* depends on a constant productive dynamic in order to influence larger political subjectivities and formations in the long run. Therefore, the elements that come to compose the posthuman are kept in relation with each other through

⁵⁰ Bignall, “Deleuze and Foucault on Desire and Power,” 138-9.

⁵¹ See chapter 4 *Body Politic: Posthuman Bodies, Their Subjectivity and the Political* for the move from small scale bodies politic to civic bodies politic.

desire, because the latter is “directed primarily at the proliferation of desire. Desire aims to produce: this production is itself the process of desire.”⁵² Desire creates more desire and thereby ensures a constant production which enables a process of association. This is the very dynamic of *Erlebnispolitik*, which fundamentally depends on desiring-production.

Therefore, desire is the immanent force of *Erlebnispolitik*, which initiates any material production that happens during, and that comes out of, gaming. This is why games are “desiring-machines,” functioning to synthesise various elements to create political momentum and can affect, if not co-constitute, socio-political organization and practice.⁵³ Importantly, this fusing together does not happen according to any preconceived ideal. It is not a case of form following function, in the way that “biological formations and social formations are not formed in the same way in which they function.”⁵⁴ In fact, in *Erlebnispolitik* “use, functioning, production, and formation are one and the same process” and it is only desire that gives these micrological bodies their tempo-specific use in a bio-socio-political field. Yet, desire does not represent anything in this case given that is not desire as in longing *for* something, it is merely a drive.⁵⁵ The function of larger assemblages such as institutional practices are welded at the level of *Erlebnispolitik*, where flows of energy organise “inclusive disjunctions,” thereby distributing states of becoming and aggregate beings in “zones of intensities”.⁵⁶ This is why desire is a particular quality of force that generates bodies and characterises relations between them. This qualitative nature of desire is in contrast to the quantitative force of power that occurs at the solidified level of

⁵² Bignall, “Deleuze and Foucault on Desire and Power,” 138.

⁵³ Desiring-*machines* not because of the technological components of gaming, but because games *produce*.

⁵⁴ “It has often been said and demonstrated that an institution cannot be explained by its use, any more than an organ can”, Deleuze & Guattari, *Anti-Oedipus*, 197.

⁵⁵ *Ibid*, 197, 200.

⁵⁶ *Ibid*.

already relational bodies and the political force that they exercise upon each other.⁵⁷ Thus, desire in *Erlebnispolitik* is invaluable because it not only disposes political practices and interactions, but also highlights that political formations and practices are never fixed and given, but always depend on a continuous process of relational production.⁵⁸ This is why power alone cannot account for movement and connections in socio-political interactions. Apart from desire there are two more characteristics of *Erlebnispolitik* that describe how gaming as a socio-political practice has the pre-subjective inventive and creative capacity to transform different, even conflicting behaviour into new political assemblages. Importantly, even though *Erlebnispolitik* shapes up at the pre-subjective level of the first articulation, this does not mean that its scope of operation is restricted to this level and that it would be a “politics *in miniature*, nor a single [body] in contrast to a whole,” but instead it is a multiplicity of flows that spreads across various scales of bodies politics.⁵⁹ Krause and Röllli draw out the contours of micropolitical associations, and their work will be used to identify further characteristics of immanent political formations such as *Erlebnispolitik* in gaming.

Utopia and Erlebnispolitik

The new political space in the form of *Erlebnispolitik* fundamentally depends upon the utopian impulse, which means that *Erlebnispolitik* only emerges in virtue of an affirmative philosophical take. And it is only through proposing utopian ideas with regard to gaming (that is, ideas that are forward looking, imaginative and speculative) that its inherent philosophy can become political and, thus, subject to criticism in its own time. The interesting aspect of utopian reterritorialization in gaming is that it does not split off from the infinite (Virtual), but is nonetheless grounded in a very specific gaming context that speaks to immediate political applications (this is because gaming has the capacity of abstraction).

⁵⁷ Bignall, “Deleuze and Foucault on Desire and Power,” 140.

⁵⁸ Ibid.

⁵⁹ Krause & Röllli, “Micropolitical Associations,” 243.

Deleuze and Guattari adopt Samuel Butler's terms of *Erewhon* for this utopian condition, which refers to "no-where" and "now-here."⁶⁰ It is like a sub-molecular particle that cannot be captured because it is here and there at the same time (both abstract and concrete). The utopia of immanence in gaming is important because it is the conjunction of a gaming-specific philosophy and emerging concepts with contextual, political need.⁶¹ Unfortunately, the term utopia has suffered somewhat bad press, especially in the second half of the twentieth century. However, this should not distract from its theoretical purchase. Nevertheless, it is important to remember that the utopian impulse here does not refer to a historically situated and lodged ideal striving towards 'perfection', the better place. It is merely used to describe the connection between the philosophical and the political through the realisation of change; not through revolution, but through the pre-subjective emergence of the new.⁶² Whereas becoming designates this drive on a pre-subjective level, the term utopia is more encompassing of larger scales so that it is applicable and intrinsic to *Erlebnispolitik*. Furthermore, in order to tease out the development from imagination and dreamtime in gaming to *Erlebnispolitik*, the utopian impulse is essential in highlighting the extra step towards a politics, rather than just a force in the game. It is therefore an important step towards *Erlebnispolitik* and a fundamental pillar of it.

Politics of Rapid Capture

Erlebnispolitik has the unique character of rapid capture – that is captivation in gaming – which makes it such a rich experience and a particularly timely mode of politics. In fact, rapid capture describes many aspects of *Erlebnispolitik*. First of all, it is the immediate, interactive Erlebnis in gaming that captures the posthuman's attention quickly, similar to the

⁶⁰ Gilles Deleuze & Felix Guattari. *What is Philosophy?* (London: Verso, 1994), 100.

⁶¹ Deleuze & Guattari. *What is Philosophy?*, 99.

⁶² See Utopian Impulse in Chapter 1, Technoscience, the Political Gaming and Immanent Ethics.

way in which a piece of art captures the viewer's attention more quickly than reading the commentary on that particular piece of art would. Importantly and second, capture is open-ended because the viewing of an art work does not impose a meaning onto the viewer, while the commentary does. In other words, the strength of *Erlebnispolitik* is that of content through the encounter rather than a top-down approach of passing on content.⁶³ Third, this capture necessarily implies affective materiality, so that forces are caught up in the encounter and are readily available to be transformed into something else. For example, not only changing bodies or subjectivities are, thus, a political moment, but the captivation and attention prior to their formation is already as well. Fourth, forces being readily available is crucial because *Erlebnis* can be immediately used for civic bodies politics, in the form of *Erfahrung* (memorable experience). Indeed this is crucial as lines of flight that can give rise to new moments of subjectivity and *Erlebnis* in the game come only to full fruition if they enter and reshuffle the organizational levels of the civic.⁶⁴ Lines of flight shape a society, yet, these lines are molecular, pertaining to the workings of *Erlebnispolitik*.⁶⁵ But whenever there is a "segmented line [of flight], we notice that it continues in another form, as a *quantum flow*".⁶⁶ While there is reason to believe that Deleuze and Guattari mean quantum in a metaphorical sense, in order to explain that with each line there is a gravitational, electromagnetic centre that holds together a particular domain, this metaphorical use nonetheless portrays nicely that the gaming *Erlebnis* is a gravitational core of a somatic bodies politic and that these energies (quanta) can quickly catch on to larger formations at the civic level. The reason they can is due to gaming's distinct aspect of being able to transduce from the Virtual to the actual more quickly, which facilitates not only the production of moments of subjectivity, but also assists in extending these moments beyond the game,

⁶³ See chapter 5 for concept formation and movement.

⁶⁴ Deleuze & Guattari, *A Thousand Plateaus*, 238-9.

⁶⁵ *Ibid*, 238.

⁶⁶ *Ibid*, 239.

creating more stable subjectivities. To capture a civic body politic rapidly is possible because the learning experience in the game is affectively more highly charged than analogue processes that work at a slower transducing pace. What leads Paul Virilio and Sylvère Lotringer to articulate a rather dystopian view and intellectual tradition of technology, due to its capacity to produce speed as well as speed as its *modus operandi*,⁶⁷ is used here precisely to the contrary. Gaming technology captures and it captures quickly, putting emphasis on the speed of the event in *Erlebnispolitik*. Ultimately, rapid capture characterizes and is intrinsic to *Erlebnispolitik* in many ways, highlighting that this is a fluid politics, based on relatively short and quick gaming rounds, and as such only comes to be more stable and solid when it slows down. Finally, *Erlebnispolitik* is characteristic of desire, utopia and rapid capture.

Turning to the differential structure of *Erlebnispolitik* shows that its logic of association escapes the mode of representation. This is not only because the form of politics is pre-subjective with one foot always in the Virtual, but also because its structure is not that of actual connections of sense data, but rather that of Virtual chains or multiplicities of singularities. Furthermore, the utopian pillar influences the structure to be non-identical and extraordinary. They simply cannot be compared to the structures of everyday politics. The crucial difference is that the contrast between the abstract, immaterial and the concrete, material does not apply to *Erlebnispolitik*. Even though *Erlebnispolitik* can be abstracted, it still arises out of the gaming event and, thus, it is material and immaterial, even organic and inorganic, at the same time – that is the posthuman through lived abstraction. *Erlebnispolitik* is an abstract-organic mix that “is inorganic, yet alive, and all the more alive for being

⁶⁷ “Speed is Violence”; “Speed as essence of war; technology as the producer of speed;” Paul Virilio & Sylvère Lotringer, *Pure War* (New York: Semiotext(e), 1997), 37 and blurb; see Chapter 4: *Fragmentation and Technology* in particular.

inorganic.”⁶⁸ It is apparent that a dualist, representationalist thinking does not further the understanding of pre-subjective politics, as one has to think what is deemed contradictory, in the way that *Erlebnispolitik*'s structures are ““mechanical” relations [raised] to the level of *intuition*”.⁶⁹ Mechanical refers to two things here: first, these relations are automatic, as in happening without thought; second, there is smoothness of the physical forces of motion and movement. Both aspects of “mechanical” facilitate the differential structure of *Erlebnispolitik*. In a further step then, it is best thought of as an abstract organism with structures that consist of lines of vibration with impulses traversing it; a germinal, intensive grid that operates on speed that contrasts the slowness and heaviness of representationalist politics. This active structure, where structure is process at the same time, is *Erlebnispolitik*'s fugitive mobility that allows for alternative politics. The elements that *Erlebnispolitik* brings together have neither form nor content before they encounter each other and only make sense in their association with each other.⁷⁰ It is for that reason that Deleuze treats such micrological structures ontologically as “*implication*, which cannot be grasped in reference to actual representation, nor in reference to representational, transcendental figures (such as God, substance or subject).”⁷¹ Association by implication of non-hylomorphic elements means that *Erlebnispolitik* is the possibility of free association without predetermined entities in spaces that have been segmented beforehand.⁷² This is essentially the freedom of posthuman expression, allowing creativity through movement. Therefore, *Erlebnispolitik* is free of “unified and clearly delimited divisions” in the form of content, but with inherent contingent conditions of association and conceptual practices.⁷³ Importantly, this means that *Erlebnispolitik*'s structure is anti-hierarchical and non-identical without assigning singular

⁶⁸ Deleuze & Guattari, *A Thousand Plateaus*, 550.

⁶⁹ Ibid, 550, original emphasis.

⁷⁰ Krause & Rölli, “Micropolitical Associations,” 246.

⁷¹ Ibid.

⁷² Ibid, 247.

⁷³ Ibid.

cases to overarching categories.⁷⁴ In turn, such aleatory, anti-hierarchical structure means that *Erlebnispolitik* is not a normative project as such. While it affects change in existing social structures, it does so without prescribing, or suggesting rules of interaction and mediation, because the transformations triggered by gaming are subject to un-ordered Virtual intensities and gaming contingency. Thus, sub-representative change affects socio-political power structures while remaining connected to the Virtual realm and through this keeps its free conditions of immanence. This makes *Erlebnispolitik* a transgression of the given by producing an imaginative, speculative politics of experience.

An Active Foundation: Half Virtual Half Actual

Erlebnispolitik of gaming is a form of politics that carries the philosophical effort to counter dogmatic hylomorphic practices into the political landscape. What politics needs at this point is a way of organisation that does not rest on production as a transcendent imposition of an ordered vision of form onto chaotic socio-political relations. To the contrary, *Erlebnispolitik's* constant connection to the Virtual – because gaming is the transducer located between the Virtual and the actual – means that its forms are only “‘implicit forms’ [which] are potentials for material self-ordering.”⁷⁵ However, these implicit forms have to be put together (produced out of software code) in the first place in order for them to enter negotiations with the posthuman. A pre-subjective politics cannot be based on pure forms, but rather variable intensive affects that allow for new constellations. These new constellations are based on conditions of possibility of experience, which is why it is an *Erlebnispolitik*; experience is the negotiation process of forms that result in material traits of expression that imply new ways of working with and transforming material structures.⁷⁶

⁷⁴ Ibid.

⁷⁵ John Protevi, *Political Physics: Deleuze, Derrida and the Body Politic* (London: Athlone Press, 2001), 7.

⁷⁶ Protevi, *Political Physics*, 7-8.

Erlebnispolitik highlights that new ways of socio-political formation are not “dreamed up and then imposed on a passive matter”; rather they are derived through pre-subjective experience.⁷⁷ *Erlebnispolitik* is the political theorisation of flux of matter, self-ordering energy and their attempts at formation/informance, through gaming for example, where the latter acts as triggers that when encountered give rise to patterns of self-ordering processes. Therefore, *Erlebnispolitik* is a disarticulation of canonical Western “hylomorphic ‘State philosophy’.”⁷⁸

Political Action: Qualitative and Meaningful Movement

Based on this conception of *Erlebnispolitik* that unfolds within and co-constitutes the biogram, (which is political space, game space, as well as a spatial event of the posthuman) suggests that movement and movement space is indicative of posthuman political dynamics. Furthermore, this means that gaming movement as ‘Erlebnis-political’ needs to be analysed and evaluated qualitatively. The strength of understanding the posthuman body/movement as a topological metric figure (as part of a biogram) is that it allows for a qualitative observation and analysis of game development, which are in fact Erlebnis-political undercurrents. Given that the parameters for failure and success are not simply a question of ‘winning’ a game by managing to establish or maintain peace and security, makes the evaluation and improvement of gaming development a difficult task. Movement analysis can add a crucial aspect for a more attuned, qualitative rather than quantitative evaluation of happenings in political games and their politics. Building on the argument that the ‘biogrammatic’ game space is not only an abstract, but also biological, ‘vital’ and living space, suggest that it is full of energy, intensities and larger forces whose interplay give rise to varying shapes and different movements. The posthuman’s expansion and contraction are one way of using the energy of

⁷⁷ Ibid, 8.

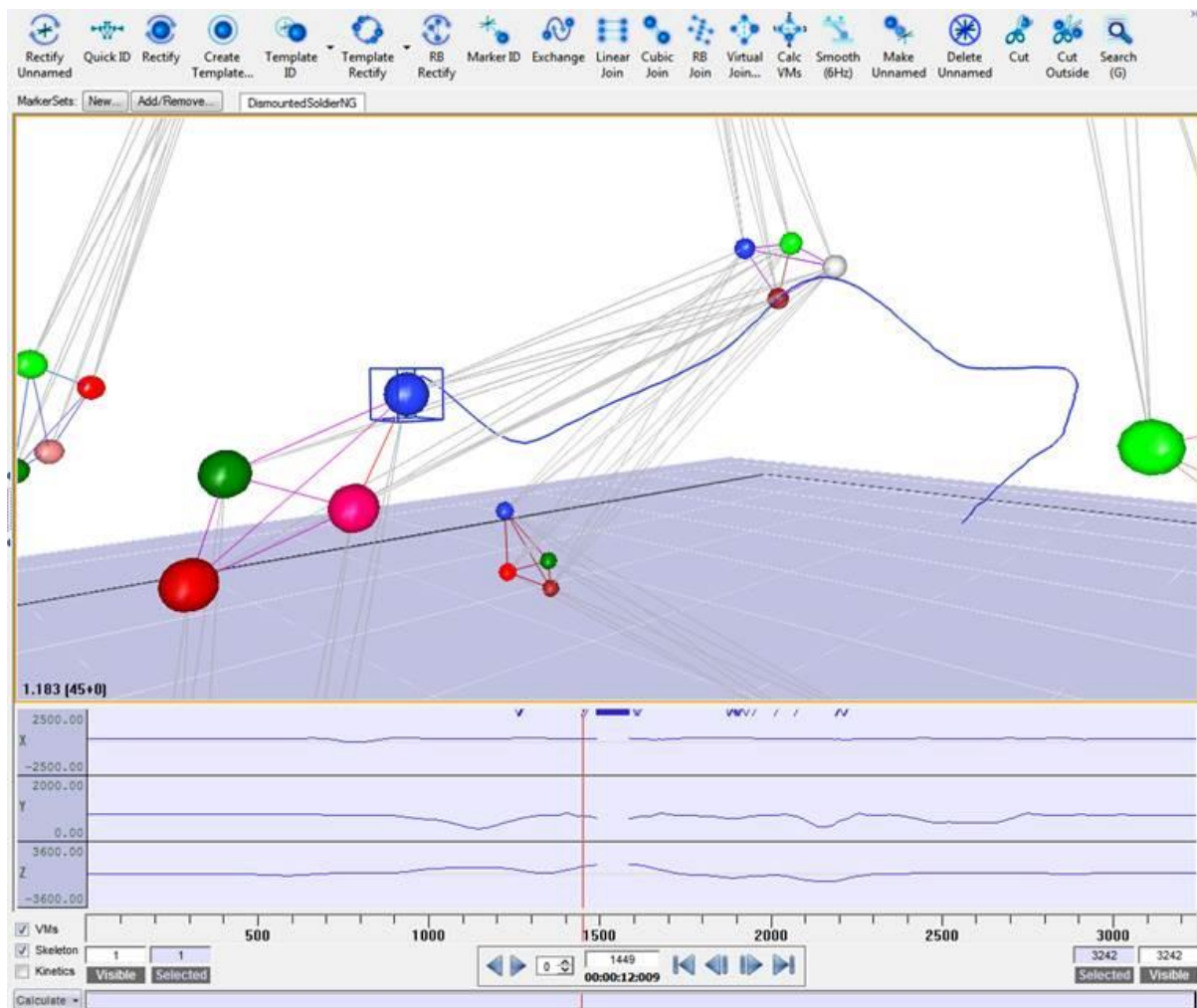
⁷⁸ Ibid, 10.

and in this space. Following the biogram's flow of energy in terms of observing movement and seeing how the posthuman's movement expends and recovers energy according to decisions that have been made in the game, is an interesting factor to pay attention to. The proposition here is that motion and movement tracking is a useful tool for analysing and describing game development because it is qualitative and because it captures the unmediated political expression of the posthuman as conveyed in its movement. In light of the fact that the posthuman is a form of life that is independent of language and that finds expression through movement, it is argued that the evaluation of posthuman expression has to happen in a similar fashion. Cognitive and behaviour sciences have already started analysing gamers' behaviour by looking at eye movements, head positions, posture and how much they shift in their seats while playing. Even though this is pinned upon the human body and subject, this is a similar type of motion and movement analysis as suggested here. Regardless of the scale of the game, whether multi-player or not, whether immersive or just single-screen interaction, looking at the flow of movement in the game, particularly in terms of harmonious movement, contributes to the analysis. Motion graphic technologies can now plot most of the points of the various positions that a posthuman (at least its perceivable playing body) assumes throughout a game. As a technology that captures movement in 3D space, it is not able to sketch an entire posthuman dynamic. Yet it can be used in extension and as an approximation of posthuman movement, because it captures more-than-human movement. Here are some examples of what this may look like and how the technology behind it works.⁷⁹ Motion capture or tracking systems capture points in 3D space by tracking the reflection of light through the cameras' near-infrared sensor. The reflections come from reflective markers on objects or people. So far, participants have to wear suits adjusted with markers. Each marker needs to be seen by a minimum of two cameras. Sets of markers on each limb generate

⁷⁹ The motion capture system that is used as example is based on the hard and software and explanation provided by "Motion Analysis Corporation." Information on specific applications, software details and graphics have been provided and checked by Ray Stephenson, April 2014.

animated 3D characters or movements on screen. This can be used for a wide variety of purposes, as large as military training and as small as minimal motion for surgery. The screenshot below shows four different markers (blue, green, red and white) over a short period of time and the graph shows the blue marker's position in X,Y, & Z over time.⁸⁰ The curve in the 3D view shows the path of the blue marker over previous frames. The cameras can capture data at 150-500 frames per second (fps) and up to 10,000 fps by reducing the field of view, which means that very fast smooth motion can be captured.

Image 1



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⁸⁰ If a marker failed to be identified correctly at runtime, it can be manually identified in post-processing to fill in its data.

⁸¹ Motion Analysis Corporation, 2014, <http://www.motionanalysis.com/index.html>.

This means that a whole game can be split up into frames, and a multiplayer game would entail considerably more markers. However, taking one frame and connecting all the markers/dots would result precisely in the field of relations that Laban was referring to with his idea of movement space. The field would look like a metric figure (although here only 3D). Doing this for consecutive frames (not every frame but selecting one with relative frequency) and linking them back together would show the transformation of the metric organism as it was shown in the topological transformation from a coffee mug to a doughnut. Furthermore, depending on the course of the game this transformation can be either very dynamic or slow and it can flow and be harmonious or be interrupted. What is interesting and new here is that such narratives would not be linguistic, but rather topological and rhythmic. In other words, paying attention to posthuman topological transformation does not only open up more space for the political beyond three dimensions, it also allows the inclusion of advanced analysis methods that are better attuned to more-than-human spaces by capturing expression rather than language.

More specifically, movement analysis enriches the evaluation of games by adding analytical markers that escape conventional measurements by paying attention to measurable and non-measurable variables alike. For example, gaming behaviour and outcomes that may be interpreted as setbacks, wrong decisions or failure in conventional qualitative and quantitative terms, could still count as a successful gaming experience because the posthuman moved easily in a continued flow. The latter could be an indicator of uncomplicated decision-making, good communication between the participants and an overall natural behaviour in the game. Conversely, even though objective standards may have been fulfilled successfully, motion analysis could reveal that movement was forced, decisions made too hastily or with hesitation. This added insight is achieved by increasing the scope of analysis beyond merely

functional action to include what Laban refers to as “*shadow forms*.”⁸² The posthuman moving expression is nuanced for it includes multiple intensities, forces and material dynamics that escape conventional assessments. Accordingly, parameters of what is successful and what is not differ for each game, which is why standard methods of evaluation would fail to capture important yet subtle dynamics of play, such as the minimal motion of shifting in one’s seat, slightly tilting forward and looking the other way. Arguably, motion tracking and movement analysis is an initial effort to start analysing game-play in a more complex way; because it is in agreement with idea of a posthuman biogram, movement analysis is a means to analyse gaming dynamics politically.

‘Real Stuff:’ Movement Analysis Applied

Combining the theories of movement evaluation with instances of simulation games suggests that motion analysis can capture dynamics in a game that normally remain unnoticed in more conventional methods. Let us consider the simple example of a scenario-based simulation (low and high tech respectively) that trains soldiers communication and negotiations skills for abroad deployments, in which a trainee would usually practice a certain scenario with an interlocutor who plays a foreign soldier, citizen or politician. The interlocutor is part of the make-up of the game and would, for example, speak only in broken English with a very strong local accent. While such an exercise could be deemed successful when judged by the standards set out in training manuals. More precisely, reaching some kind of arrangement with a stranger and ‘not arguing’ is not necessarily a successful and productive interaction. To the contrary, even though quantitatively one could argue that main targets have been reached, this leaves out what was communicated through body language for example. Passive aggressive behaviour will not be picked up by conventional methods of analysis, but

⁸² Salazar Sutil, “Rudolf Laban and Topological Movement,” 177.

precisely those can be detrimental to effective communication and trust building. Furthermore, standard markers for success will not detect how comfortable a trainee felt with his/her task. For example, soldiers could feel very tense throughout the training, shifting around in their seat a great deal, exuding nervousness and looking very stern. Nervousness cannot only impair communication, but send the wrong signals. Yet, interaction between people and in unfamiliar environments is difficult to study by the book. More importantly, it necessitates a dynamic form of learning *and* a dynamic form of analysis too. Even though trainees can memorise and tick everything on the checklist, in the eyes of a more experienced observer, the simulation can still be ineffective and unsuccessful.

This hypothetical scenario underlines many arguments within this research because it not only reveals the weaknesses of traditional ways of training, thereby highlighting the strength of the gaming innovation in political training, but more specifically details that objective standards of evaluation fail in the face of nuanced movement and that other measures and methods need to be in place for this. The argument for the advantage of training with games is therefore quite prominent. First, reading a book is insufficient in order to prepare for such socio-political encounters and it shows the advantage of a posthuman pedagogy that allows for explorative, experimental and experiential learning, which enables for entirely new systems of experience and, thereby, political novelty.

Second, it highlights that there are considerable efforts towards alternative ways of training, but that posthuman pedagogy is lacking a functional structure. To be specific, the fact that the inadequacy of conventional training includes many simulation exercises shows that games are training methods already, so that using games and doing so more frequently is not the problem as such. What it points to, rather, is the fact that simulation games need to be better

integrated into everyday training as well as regular training routines. This means that not only do soldiers or political personnel, for example, have to be able to access and train/play with games on their own terms or with their colleagues before going into a larger, multi-player simulation game, but this also means that games need to be more widely adopted as a common way of personal education. More generally, systematic and monitored integration of games seems to be a problem of a coherent posthuman gaming curriculum, instead of a shortage of games and technology. At present there are personal games used within the American Armed Forces, such as *America's Army* and the interactive training video *Machinima*,⁸³ and there are highly sophisticated personal political games such as *PeoplePower*, the structure and design of which could be tailored to other political and military scenarios with relatively little effort. Therefore, successful widespread training with games seems to be an issue of bringing different efforts of games for change together in a coherent way so that it covers multiple aspects of education and is not just used as a one-off training highlight. As an important side note, this would not only improve current political pedagogy, but it would include the gamers in the political progress to a larger extent given that gaming is highly political for its implied possibility of conceptual practice and subjectivity formation.

Lastly, there need to be more qualitative evaluation methods in place to successfully monitor performance in games. Verbal communication, even facial expression are not sufficient qualitative markers on their own. Aspects of movement and motion matter significantly. Even though motion analysis cannot stand alone as analytic method, it reveals additional aspects in training assessments. Movement and motion are indicative of unspoken thoughts and

⁸³ Ian Bogost, *Persuasive Games: The Expressive Power of Videogames* (Cambridge, MA: MIT Press, 2010), 79; Roger Smith (Chief Technology Officer for the U.S. Army Program Executive Office for Simulation, Training, and Instrumentation (PEO-STRI)), interviewed by Alice Atkinson-Bonasio, "Video Games in Military Training: An Interview with Roger Smith," *The Escapist*, August 29, 2008.

dynamics. This is not so much an argument for the need to be able to interpret the unspoken, yet expressed, in the interlocutor, so that the acting trainer would pick up on the unease of the trainee or the other way around, but for the observer and non-participating trainer to pick up on the subtle affects such as those that influence communication in the game. Being able to pick up on players' doubts, insecurities and queries would tremendously improve training. Importantly, this goes both ways so that it would not only benefit overall political and security training, be this in military, governmental or civil terms, but also benefit the players on a personal, subjective level. An important aspect of games is how they benefit the soldiers and other personnel rather than what these games would achieve for overall security operations. The main focus is often the *psychological* wellbeing of the trainees and to provide a training method and environment that leaves the participant with a sense of being well prepared, confident and less nervous about using new methods in a conflict scenario.

There is a crucial speculative remark to be made in this respect where gaming as a pedagogical tool and training innovation is identified to be making a significant difference that should be explored further. This concerns young soldiers who train with these games. In view of the fact that many of the young men and women being educated through the Armed Services have not had any previous experience in working abroad, let alone being in combat, these gamed scenarios are one of the few ways to actually assess what the deployment and the professional world they are about to enter may be like.⁸⁴ Regardless of age, speaking to someone from a different language and cultural background in an extremely difficult and volatile political situation may well be an unfamiliar task for many experienced practitioners (in and outside the military).⁸⁵ Therefore, it is argued that motion analysis picks up on these

⁸⁴ Charlotte Sennersten, "Model-based Simulation Training Supporting Military Operational Processes" (Doctoral Thesis, Blekinge Institute of Technology, 2010), 10.

⁸⁵ Ibid, 36.

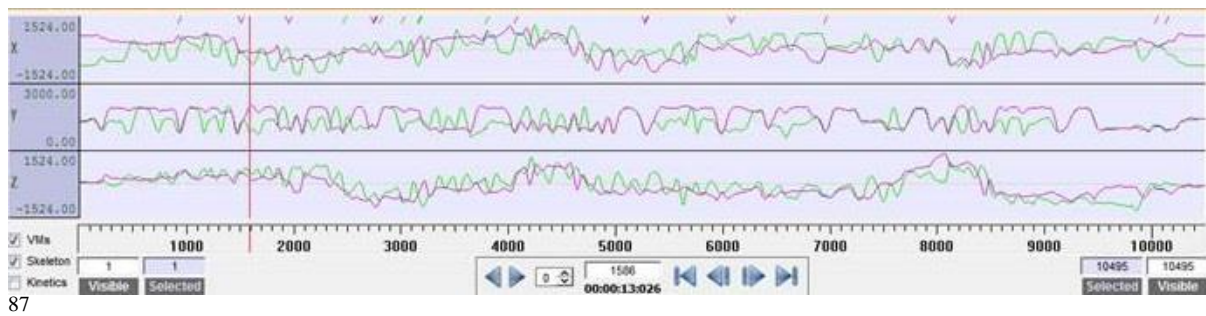
personal, often subtle and subliminal insecurities during games and that gaming is a valuable and optimal strategy to counter these challenges of the known unknown at the same time.

Analysis through Rhythm & Rhythm Narratives

Analysing games by tracing movement with the help of motion tracking technology can have single or multi-player applications and whereas the movement of an individual is certainly interesting, the general game dynamic is more important, which would also include the movement of interlocutors that are part of the game setting. Even if these movements were relatively minimal, motion analysis would be able to track them; giving insight into how the gaming entity expands and contracts as a metric figure which can be used to make further qualitative evaluations of the game development. The idea of motion tracking in general is to pick up what other evaluation methods would miss. This is the case here as well based on the assumption that movement can reveal flows of affect in a game that would go unnoticed otherwise. As the capacity to act or be acted upon, affect is not communicated through systems of language, but expressed through movement.⁸⁶ Therefore, paying close attention to movement and motion can arguably provide insight into what and how a posthuman is limited during gaming and into possibilities of how its capacity to act can be increased. On top of attuning game evaluation, its development and play in this sense, motion analysis is a good way to describe the rhythmic movement in the game as demonstrated in the image below. Whereas the movement of a nervous trainee (as imagined in the previous example) would most likely result in a plotting similar to that in Graph 1 with very frequent spikes, and X, Y, Z indicate a lot of motion and movement, the movement of an experienced soldier on its own (or together with his training partner) should have resulted in smoother graphs, closer to Graph 2.

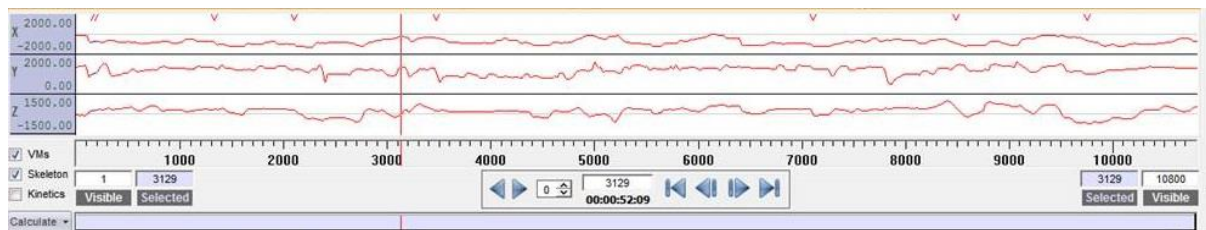
⁸⁶ Massumi, "Introduction: Like a Thought," *A Shock to Thought: Expression after Deleuze and Guattari*, ed. Brian Massumi (London and New York: Routledge, 2002b), xvii.

Graph 1



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Graph 2



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Used in conjunction with other qualitative forms of assessment, parameters for success and failure can be further substantiated through motion analysis. Given the activity level of a game, the movement can be expected to have a fast, abrupt or smooth rhythm based on possible (inter)actionability offered by the game design. In the first instance, this requires identifying what type of movement can be expected in a specific game and which type would seem most appropriate in order to achieve the tasks set by a game. Such initial parameters can help to assess game performance through motion analysis after a game. Therefore, the mapping of rhythmic behaviour can offer an alternative way to evaluate game play.

Apart from analysing and mapping, motion tracking has the potential to generate new, non-linguistic narrative forms that are based on movement rather than language. These game-narratives tell rhythms of transformation rather than putting words and linear story lines. To recall, rhythm is used in a Deleuzian sense and was identified as the patterns of difference

⁸⁷ Example provided by Stephenson, 2014.

⁸⁸ Ibid.

that constitute a local dynamic in the game.⁸⁹ Therefore, as an effect of milieu – which is “a stable point in the midst of chaos, a locus of order in a nondimensional space”⁹⁰ – rhythm narratives trace emerging patterns and habits. Rhythm “is difference, or relation – the in-between whereby milieus communicate with each other.”⁹¹ Roland Bogue highlights the role of rhythms of the human body where different internal systems and organs (milieus), that each have their own periodic repetition, interphase through vibratory rhythm, known as the pulse in the human body which is triggered by (but not the same as) the individual repetitions in the milieus.⁹² The crucial point here is that rhythm is not cadence or meter, which is regulated repetition. To the contrary, rhythm traces the difference of repetition. In other words, “it is difference that is rhythmic.”⁹³ Hence, it can be argued that the variability of the inter-milieu rhythms of the game that can be approximated by motion tracking narrate the emerging posthuman subjectivity (EPS). In the example of this chapter, this would include tracking the movement of Josh as well as his interlocutor. Matching their movement curves against each other, as well as bringing them together as a metric figure, can reveal how movement may have picked up or slowed down within one game and thereby narrate transformation, variation or stagnation through rhythmic movement. Yet, while focussing on rhythm may sound like a quantifying effort of turning away from qualitative accounts to computer-based forms of evaluation and narration, it is precisely the opposite. In fact, it is extremely difficult to quantify rhythm because it is a “non-metric [intensive] entity,”⁹⁴ and can therefore only be analysed qualitatively. Crucially, rhythm narratives therefore offer perhaps not an entirely posthuman, but at least a more-than-human way of qualitatively retelling a gaming experience.

⁸⁹ See chapter 3 *Pedagogy and Beyond: New Learning Spaces and Processes*

⁹⁰ Ronald Bogue, “Rhizomusicology,” *Deleuze and Guattari: Critical Assessments of Leading Philosophers*, edited by Gary Genosko (London: Routledge, 2001), 243.

⁹¹ Bogue, “Rhizomusicology,” 243.

⁹² *Ibid.*

⁹³ *Ibid.*

⁹⁴ Salazar Sutil quoting Laban, “Rudolf Laban and Topological Movement,” 183.

This reveals a twofold meaning of movement in games that can be used to further the understandings and interaction across different social, professional and cultural contexts, not only the immediate movement in games. In the first instance, movement reveals the way in which participants encounter the game, so that their bodily reaction and the overall posthuman motion is indicative of affective states that escape the conscious players and trainers as well as conventional forms of evaluation. Movement is meaningful (political by extension) because it expresses affective states. However, given that movement does not only express affect, but EPS as well, suggests that movement has socio-political meaning above all. Laban distinguishes between bodily, psychological and social locomotion, whereas the latter describes movement across social fields over a longer period of time.⁹⁵ Given that gaming is a highly condensed and mimetic socio-political scenario, the locomotion of the posthuman is indeed an amalgamation of various gestures and movements that have different social origins and meanings, depending on the individual background of the participants to a game. The possible encounter of two soldiers from different, cultural, socio-political backgrounds as discussed earlier is a case in point. In this sense, it is important to identify context-dependent and culture-specific locomotion before assessing overall movement. This is due to the fact that the same bodily gestures (one can think here of the space these gestures and movements can take up) can have completely different interpretations depending on where and by whom they are performed. Similarly, in the games run by CRISP the number of different socio-political and geographical influences that are all reflected in locomotion and movement is relatively high and, in agreement with Laban, it is argued that these are expressed through movement. Therefore, motion analysis is claimed to be qualitative in the way that it bears considerable leverage to reveal underlying and subtle socio-political

⁹⁵ Ibid.

currents. In essence, different social grammar and syntax is expressed as the posthuman's movement and movement analysis of gaming would increase the scope of understanding of 'social movements'.

Zooming in on Posthuman Rhythmic Movement

The leverage of rhythm as a material, political event as well as an analytical lens is that it cuts across different register and scale, which helps to trace the posthuman's resonance that is generated in the game. While rhythm is perceivable in the human register and on the conscious scale through motion analysis and traceable to the level of influence of previous bodies politics in the way that movement is expressed in the game, this also works below the human subject on a molecular level. This is because rhythm is caused by differential frequencies of oscillating and corrugating particles (vibrating matter).⁹⁶ In this sense, building upon the idea that rhythm partakes in the process of shaping the posthuman as well as its subjectivity, rhythm is a way to characterise the posthuman and its emergence. Due the fact that rhythm is different from meter, in the way that the latter is binary and assumes a coded form, rhythm is the passing from one form into the other. In light of its in-betweenness "it ties together critical moments [...] it changes direction,"⁹⁷ and, therefore, it is "the link between truly active moments."⁹⁸ As such, rhythm is the political dynamic of novelty and change because it is the in-between of two definable topological points in the posthuman metric figure. Therefore rhythm is "critical,"⁹⁹ "differential"¹⁰⁰ and novel.

⁹⁶ See waves, energy and force in Chapter 5 *Crazy Little Thing Called Physics*.

⁹⁷ Gilles Deleuze & Felix Guattari. *A Thousand Plateaus: Capitalism and Schizophrenia* (Minneapolis: Minneapolis UP, 1987), 409., p. 346.

⁹⁸ Deleuze & Guattari, quoting Bachelard, 346.

⁹⁹ *Ibid*, 345.

¹⁰⁰ John Protevi, *Life, War, Earth: Deleuze and the Sciences* (Minneapolis & London: University of Minnesota Press, 2013), 94.

Movement as the Original Thought

Motion analysis highlights and stresses the point that very small motions and movements during gaming are not conscious efforts by the playing subjects, but belong to the posthuman, a pre-conscious and pre-individual dynamic, which marks the development of a pre- and impersonal thought in *Erlebnispolitik*.¹⁰¹ This leads to question how movement and thought are connected in gaming and their relationship to the posthuman. The proposition has been that thought happens at a very initial stage of the emergence of the posthuman and that the conscious subject is only an after-effect of pre-human thought. The investigation of rhythmic movement provides initial tools to speculate about how posthuman thought influences gaming activities. Theorising within a working model of diffused agency, the posthuman and subjectivity have been explained as non-intentional and non-agentic processes, which makes the focus on gaming movement all the more interesting. This is because if acting thought precedes the articulation of thought, then movement is a more primary expression of thought than conscious enunciation. Indeed, it is nothing new for neuroscientists of free will to claim that humans do not consciously control their movement and that therefore locomotion is a more immediate expression of ‘mental activity’.¹⁰² For the last three decades leading experts in the field have conducted experiments that all show that a conscious action is only a “subjective referral backward in time,”¹⁰³ indeed there is a gap between conscious acts and bodily movement, whereby the latter actually precedes the former. Libet’s example paints a picture of the problem at hand, which is often referred to as the “mystery of the missing half second”¹⁰⁴:

¹⁰¹ See chapter 2 on *Ordinary Experience, Sensation and Involuntary Thought – Rupture Through Gaming*.

¹⁰² See the “Open Peer Commentary” to Benjamin Libet’s, “Cerebral Processes and Volition,” *The Behavioural and Brain Sciences* 8, no. 4 (1985).

¹⁰³ Libet, “Cerebral,” 559

¹⁰⁴ Massumi, *Parables for the Virtual*, 28.

[Which] can explain, for example, why a runner in a race can take off within 50-100 ms after the starting gun, presumably well before he becomes introspectively aware of the stimulus, but later reports that he heard the gun before taking off.¹⁰⁵

Experiments have shown that conscious perception of a stimulus, such as the gun shot, is the cerebral process of internal awareness and takes longer than 50-100 milliseconds. Therefore, the runner starting to move is not a conscious act, as it would not have been long enough for him/her to consciously register the sound and then act upon. This suggests that action is initiated pre-consciously and that there is a “temporal difference between RP [readiness potential] onset and conscious intention.”¹⁰⁶ In other words, the appearance of consciousness is delayed and only happens after movement has begun, so that the subject “automatically ‘corrects’ one’s conscious perception to coincide with the real time of the stimulus.”¹⁰⁷ Crucially, this suggests that one’s mental chronometry structures and linearizes sensation recursively and retrospectively puts decision and movement into a conscious chain of actions and reactions.¹⁰⁸ This does mean that thought and decisions are an expression of movement before consciousness.

This assertion elevates the importance of movement analysis in order to understand micropolitics or *Erlebnispolitik* even more for the practical purposes of analysing learning and performance during games. Proponents of movement analysis, albeit in studying performance art, started arguing along similar lines by putting forward ideas of “physical thinking” and questions regarding how moving bodies think.¹⁰⁹ Contextualising this claim within the

¹⁰⁵ Libet, “Cerebral,” 559.

¹⁰⁶ Ibid.

¹⁰⁷ Ibid.

¹⁰⁸ Massumi, *Parables for the Virtual*, 28.

¹⁰⁹ See for example work by William Forsythe on choreographic objects in their environment and how experience and thought arise out of the positioning of bodies and the movement of them as well as objects,

intensive materialist philosophy here, the argument is that movement is an immediate expression of pre-individual and pre-subjective thought and movement is thereby the primary indicator of the development of a game, a learning process and subject formation. Gaming movements are series events of mattered-thought/thinking-matter and as such the posthuman's movement during a game is indicative of its struggle for meaning formation. In short, to observe movement is then to observe what is conventionally referred to as 'sense-making'.

Posthuman Analysis and Methods

Thinking-movement contextualised within the posthuman's movement space (a dynamic biogram) highlights the productive, creative (topological) and operational value of games. The dissemination of gaming tasks over a variety of media and different interphases produce a myriad of movements that all engage conceptual problems in a different, often unique way. Movement as creative thinking also proposes that "movement is method" and not only a way to analyse gaming performance. If motion and movement is thinking, then allowing for movement-space in a game to emerge rather than restrict it, is to permit political thinking and the possibility of doing so in a different way. This type and space of thought is therefore an essential characteristic of *Erlebnispolitik*. In short, this suggests that gaming is thinking through movement and novelty through unique movement. This blurs the lines between analysis and method, so that gaming-movement is productive and analytic at once. As such, motion tracking technology turns into an analytical eye that helps to see topological transformations of the posthuman's movement and, thus, is part of gaming continuity and the effort for change.

William Forsythe, "Choreographic Objects," *William Forsythe* (2009), accessed May 19, 2014, <http://www.williamforsythe.de/essay.html>.

Therefore it is argued that taking a radical technoscientific approach towards gaming helps to better integrate and foster the change that technologies of lived abstraction introduce to the political realm. Massumi urges that we are in need of logics of transformation and gaming movement as qualitative topologies is identified as precisely such logic of change.¹¹⁰ Upscaling more political games to operate through technologies could prove very beneficial in order to increase these topologies. There are multiple projects that already seek to twist away the use of NT perpetuating pre-existing forms and functions toward “operating directly as technologies of emergent experience.”¹¹¹ However, these are mainly in topological architecture and art. Yet, the potential to integrate topological technologies into the political realm is evident. For example, the Technological Media Lab at Concordia University is increasingly concerned with philosophical and practical questions regarding how certain design approaches to HCI impact memory, temporal experience and rhythm and in turn create rich, creative environments rather than complicated, passive ones.¹¹² Such efforts include looking at aspects of overarching meaning in movement: how a series of movements can be one gesture, but also at aspects of structured lighting, sound as material or gestural sound.¹¹³ Importantly, all these efforts are geared at attuning space; in the context of this research this is movement-space, which is thinking. This is by no standards a single effort and it seems that every progressive media, computing and engineering department is working on how to integrate creative technology/technology of lived abstraction in fruitful ways, in and outside politics. Institutions such as the Department of Design Media Arts, University of California Los Angeles (UCLA), the Institute for Creative Technology, University of Southern California (USC) or the MIT Media Lab, Massachusetts Institute of Technology, are all well known for their efforts to push technology’s scope of operation beyond common confines,

¹¹⁰ Massumi, *Parables for the Virtual*, 201.

¹¹¹ Ibid, 192.

¹¹² “Experimental Philosophy,” *Topological Media Lab: Research Atelier-Lab* at Concordia University, not dated, accessed March 14, 2014, <http://topologicalmedialab.net/experimental-philosophy/>.

¹¹³ Ibid.

whether this be in the realm of politics, health, economics, civil engineering or psychology. Yet, the connection between political imagination and creative technology seems one of the more prominent links among all of these research clusters. The theory of new technological geometries developed here is intended to complement such efforts to produce new technological landscapes.

These philosophical as well as pragmatic issues are a question of appropriate technology finding an experimental, ethico-political frame. In the search for the ‘right’ technology and a ‘suitable’ philosophical approach, the primacy of *Erlebnispolitik* remains on the experience of and through technology and the bodies that emerge out of such new experiences. In this respect, the biogram in the way that it is appropriated here is a “lived topological event” and gaming is taken to be an “onto-topological event.”¹¹⁴ More specifically, it is the self-emerging, onto-material moment of *Erlebnispolitik* in gaming. While this is not all there is to politics, it displaces the origin of it and seeks out the emergence of the political in experience. In this way the biogram is “experience reaccessing its power of emergence” for its own furtherance.¹¹⁵ The biogram is not about the game corresponding to or reflecting an existing reality, but about participation and possibly the production of new ones (reality-in-the-making). It is a form of lived and onto-topological engineering where matter is going thoughtful in a qualitative modulation. The aim of conceptualising and treating political gaming in this way is to stimulate more modulatory and intensely lived learning experiences that will unfold in new politics.

¹¹⁴ Massumi, *Parables for the Virtual*. 206, original emphasis.

¹¹⁵ Ibid.

Abstraction and Difference: Politics of a Life

The strength of gaming is its implied lived abstraction (with a body space that is abstract) and lived experience (expressed through thought in movement). As much as this is a strength it is a theoretical challenge at the same time, which needs to be overcome first in order to be able to integrate and foster the innovation that gaming technologies can introduce into the political realm. The challenge is to ensure that gaming is always abstract to some extent because this is what produces and maintains the moment of openness (the political) in the gaming event and, therefore, preserves the connection to the Virtual (potential political futures). Affective game design, especially aspects of contingency in games, and alternative quantitative evaluation methods of motion analysis are means of creating conditions under which it is possible for *Erlebnispolitik* in gaming to emerge and to remain open to change and newness. In essence, this is a difficult task of striking a balance between theoretical abstractness and concrete experience. Put differently, gaming must be a functional configuration that is able to continuously access infinities of experiential potential. What can be said about emergent politics in gaming so far is that these are predominantly potential: there are no fixed forms yet and modulation is always possible, it is an embryonic politics. On a speculative level, gaming's *Erlebnispolitik* is the beginning of a rhizomatic trajectory and it will grow up and mature to a more tangible politics, but not the way we know it and not in a form that is conventional in politics. Such youth (unformed and unrepresented politics) is important, as this "is the newness, the "nextness" of what will be again – but already, as it is under way."¹¹⁶

This infant political process or *Erlebnispolitik* is not just a form of politics through movement (as part of double articulation), but it is a desiring-machine geared at disarticulating the face (anti-production/ deterritorialisation) before new politics can emerge (desiring-production/reterritorialisation). As such, *Erlebnispolitik* constantly engages in a double-move

¹¹⁶ Ibid, 232.

or undoing and doing. Every game is an effort “against the incursion of discourse, against works and obligatory meaning” and “supplementary message,” as a way of “defamiliarization” and opposing faciality.¹¹⁷ In essence, *Erlebnispolitik* is about out-treating old habits, concepts and ways of thinking. The task of gaming and its politics in search of the new is to render the habitual and ordinary strange. This politics, as a form of Deleuzian deterritorialization, is a process by which the “familiar is continually decontextualized,” so that “what initially sounds familiar always ends up sounding very different from what we actually expected. The paradox implicit [...is that] what seems strange and extraordinary on one level does so only because, on another, it is familiar and ordinary.”¹¹⁸ Out of a gaming scenario that may seem familiar at first unfolds another, yet stranger, dimension during the game. This dimension is grasped through new experience, which is the process of undoing, “the emptying of all meaning”¹¹⁹ and that sets in motion the making anew as well. Hinging on the question of immanence and with an appetite for expression, this suggests that gaming can be a completely novel posthuman (*informance*). Based on the double-move in desiring-production, *Erlebnispolitik*’s disarticulating and innovative potential lies in rhythmic movement and its spontaneous, aleatory tendencies. The creativity of gaming is based on movement and rhythm that is not a static meter but “vivid and alive,”¹²⁰ so full of intensities, that it is “intensely imagistic”¹²¹ creating an “imagery without reference.”¹²² The political potential in gaming is enabled by its rhythmic moving capacity that can trigger defamiliarisation, which is lived abstraction. In view of the fact that the posthuman’s rhythm/movement is vivid, this movement can break with ordinary experience because it is a

¹¹⁷ Arved Ashby, *Absolute Music: Mechanical Reproduction* (Berkeley: University of California, 2010), 234, 237.

¹¹⁸ Robert P. Morgan, “Ives and Mahler: Mutual Responses at the End of an Era,” *19th-Century Music* 2, no. 1 (1978): 76.

¹¹⁹ Ashby, *Absolute Music*, 223.

¹²⁰ *Ibid.*

¹²¹ Massumi, *Semblance and Event*, 156.

¹²² Ashby, *Absolute Music*, 237.

form of becoming at “its highest degree of abstractive intensity, making it absolutely felt as it can experienceably be,” but simultaneously “rendering it excessively non-specific.”¹²³ This is precisely why gaming carries “a number of image suggestions in its dynamic unfolding,” which are potential, unformed still, a state of pure expression.¹²⁴ These are absolutely fundamental in keeping open the political moment and ensuring *Erlebnispolitik*'s connection to the Virtual. Despite gaming's abstract experiences and image suggestions, these can be captured to create the new in a concrete and material way provided they are encountered in the game. These virtual suggestions burst into the game as experiences and lived abstraction. This means that the origin of infant politics is movement's capacity to abstract and that *Erlebnispolitik* in gaming starts out as a rhythmic motional glimpse of qualitative relations and is carried in the form of experiential becoming.

Politics in Gaming as Politics of Life

The further development of *Erlebnispolitik* in and through gaming is based on the idea that gaming is not only political because of its ability to deterritorialise and defamiliarise, but also because it creates conditions for the emergence of qualitative relations. This is claimed to be political, ethico-political even. In this sense, gaming is political because it de- and recontextualizes relations in such a way that the familiar becomes other. This is a phase shift into production and operation, a change from undoing to doing. Hence, given that gaming is about translating potential into relations makes gaming essentially about potentiality. And “what politics is not about potential?”¹²⁵ To rephrase this, what politics is not about “forms of life in the making”?¹²⁶ This suggests that if gaming is reality-in-the-making (the TPE as a

¹²³ Massumi, *Semblance and Event*, 157.

¹²⁴ Ibid.

¹²⁵ Ibid, 169.

¹²⁶ Ibid, 169.

reality studio), then it is equally about life-in-the-making. A life is a being of becoming¹²⁷ and gaming is becoming other. Developing this further, if gaming is a mode of becoming, it is a mode of existence – one that it is concerned with emerging forms of political life. “Politics is about the potential animating forms of life,” which confirms that gaming can be an operation of not only existence but also politics or *Erlebnispolitik*.¹²⁸

The fact that gaming is creative as well as inventive and placing “the problem of *lived abstraction* at the heart of the political” means that gaming is speculative yet pragmatic.¹²⁹ Furthermore, abstract energy, the primacy of expression, and the importance of movement and rhythm intertwine gaming with aesthetics. This is because acts of expression and lived experience have become core criteria for thinking the future and a politics to come. Importantly, these criteria for thinking politics can be applied to all domains, conventional (electoral politics, grassroots politics, security politics) as well as unconventional (gaming, protest through art and music, social movements such as Occupy).¹³⁰ Using the idea of “politicality” helps to illustrate this.¹³¹ The crucial point is that these criteria of thinking future politics are not about generating ‘the correct answer’, but rather about bringing immanent forces of political-becoming to expression. In the case of gaming this means translating political-becoming into movement and understanding *Erlebnispolitik* through movement. Lived abstractions are events of politicality, and their forms of expression determine how this political potential can unfold.

¹²⁷ It is “a complex manner of being/being able/knowing/wanting” and constantly under conditions of change. Life is a happening of successive events and in turn this makes events creatures, Massumi, *Semblance and Event*, 169.

¹²⁸ Ibid, 170.

¹²⁹ Ibid, original emphasis.

¹³⁰ Ibid.

¹³¹ Ibid, 171.

Starting with the notion of politicality and lived abstraction is important as it does not imply an already existing subject, as in the case of conventional political models that pivot on the human and political subject to begin with. To recall, it is crucial to avoid the assumption of the pre-established subject because it prevents new emergence. In order to prevent this, it is argued that Massumi's concept of politicality captures that immanent forces predate the subject, thereby allowing novelty and a different, posthuman political subject. The emergent character of *Erlebnispolitik* in gaming is a politics without the subject. Such pre-subjective politics are an immanent and imaginative force; it is not about marshalling true and false political statements, neither is it about political programmes nor prescribing how things ought to be. Politicality is about catalysing "what's to come, emergently, inventively, un-programmed and reflective of no past model."¹³² The mode of action is direct, performative, not programmatic, but aleatory and invocative of new relational realities.¹³³ In this type of politicalness it is not a question about what elements constitute politics, but rather about how elements are coming together and about the relations that are being formed. As the analysis of gaming has shown, the coming-together of *Erlebnispolitik* cannot be prejudged but only experienced. Furthermore, relational formation only happens through pre-subjective experience, where formation/informance does not imply fixity. What *Erlebnispolitik* as pre-subjective political formation refers to are lasting encounters,¹³⁴ blocks of affect and percepts,¹³⁵ moments of subjectivity. Gaming produces and at the same time keeps together these Erlebnis-political moments, the glue is experience. *Erlebnispolitik* is anything but fixed, but has to constantly be produced in the course of the game and is also under considerable pressure from forces within an ever-changing environment.¹³⁶ It is a politics that is constantly

¹³² Ibid, 173.

¹³³ Ibid.

¹³⁴ Nicholas Bourriaud, *Relational Aesthetics* (Dijon: les presses du réel, 2002), 20.

¹³⁵ Stephen Zepke, *Art as Abstract Machine* (Abingdon: Francis & Taylor, 2005), 180.

¹³⁶ Manuel DeLanda, "Deleuze, Materialism and Politics," *Deleuze and Politics*, eds. Ian Buchanan & Nicholas Thoburn (Edinburgh: Edinburgh UP, 2008), 164.

at-tension as it were. Importantly, the ensemble of the politicality of life as it unfolds in gaming has to be produced constantly and is the bare activity of expression; it has “no definite direction, no [predetermined] actor, no [set] aim” other than its own intensities that are carried into the game by its participants, affective game design and that are present in the game space.¹³⁷ For that reason *Erlebnispolitik* in gaming describes the ceaseless immanent process of “joining parts to yield a whole with properties of its own.”¹³⁸

Conclusion

Erlebnispolitik highlights that this form of politics is derived through gaming’s capacity of lived abstraction as well as the importance of lived experience (*Erlebnis*) and life (*Leben*) in the game and in general. Importantly, the development of an *Erlebnispolitik* is not intended to establish fixed parameters of what the political moment in gaming or other posthuman becomings have to be like, but rather to initiate a dialogue about the type of posthuman politics that mainly work below the level of the human category, yet also resonate on the human as well as supra-human scale. It was argued that it is imperative to start talking about this kind of micropolitics not only in order to cater to a posthuman audience, but also to understand and engage with technological-becoming, especially in the realms of politics. Essentially, technologies of lived abstraction such as political gaming make the posthuman condition we live in extremely obvious, yet, there is little conceptual space to integrate this in the form of a posthuman politics. Therefore, an initiating claim at the outset was that there is a lack and demand for theorising the posthuman condition politically. However, this posthuman *Erlebnispolitik* does not happen at the expense of the human or the anthropocene, as the latter two will remain important for conventional politics which can be known on a consciousness level. It is thus not a question of one over the other. The issue is that of

¹³⁷ William James, *Essays in Radical Empiricism* (Lincoln: University of Nebraska Press, 1996), 160.

¹³⁸ DeLanda, “Deleuze, Materialism and Politics,” 165.

understanding that politics happens outside of these stable anthropocentric categories at speeds and in dimensions that escape human consciousness; the latter are nonetheless crucial and increasingly undeniable. In other words, contemporary politics is marked by and confronted with strange horizons, that when theorised in a posthuman way are actually a chance for political theory and political practice to reinvent itself. This reinvention begins with conceiving of posthuman space and was articulated here through the development of Massumi's concept of the biogram, which is an n dimensional space that is dynamic, lived, abstract and concrete at the same time and not dependent upon space as something that is perceivable by the human eye or a static environment within which bodies move. To the contrary, space is movement with and of the body and that spreads across (is abstracted into) different media and substances; it can jump temporalities and scales. In short, the biogram is a spatial event through which posthuman politics play out.

In this view, movement makes space possible in the first place and conceiving space in terms of spatial events, spatial movement and metric figures allows extending the theory of topological transformation of the posthuman and its subjectivity onto space as well. This is an initial and fundamental step in so far as space that allows for change is crucial for an emerging posthuman politics that can give rise to difference and the new. As such, this space is fundamentally political. It is the space of posthuman micropolitics. This political becoming was sketched as *Erlebnispolitik* more generally and started with the argument that the process of double-articulation through which *Erlebnispolitik* emerges is not a case of active resistance to the status quo. *Erlebnispolitik* is not a reaction against power and is thus not motivated by it either. Instead, desire in a Deleuzoguattarian sense was identified to be the driving force of *Erlebnispolitik*. In this understanding, desire is neither indicative of sexual motivations or situations of lack and inadequacy. And it is only by understanding desire in this way and as

the driver for *Erlebnispolitik* that the latter can be affirmative (and thus in line with a posthuman affirmative philosophy) and the creation of something genuinely new. The affirmative modus operandi of *Erlebnispolitik* was tied into the notion of the utopian impulse that characterises posthuman politics as a method of grasping and pointing out the limits of political imagination. Importantly, these mechanisms happen at a posthuman speed, which was apprehended through “rapid capture” to highlight that *Erlebnispolitik* through technologies of lived abstraction like gaming is an accelerated politics. This is essential because it enables political theory to start analysing the immediacy of the moment of openness (the political) in gaming. Eventually, desire, utopian impulse and rapid capture are important pillars in the active and mobile foundation of a posthuman *Erlebnispolitik*. These are also the distinguishing factors to conventional theory, practice and association of politics. In essence, seeking out this alternative foundation of politics enables political theory to set itself up against representational, human models of politics and open up opportunities for the politically new.

In relation to *Erlebnispolitik*'s dynamic space, rhythm was identified as differential driver of movement. Apart from tying Erlebnis-political change to vibrating rhythm, it was also argued that viewing movement and game space in this way provides the option of analysing and describing gaming events politically in the form of rhythm narratives. The primacy here is on acknowledging and describing socio-political undercurrents through rhythmic movement. This suggested that *Erlebnispolitik* communicates through intensities such as rhythm rather than linguistic narratives or political discourse. Movement was further analysed and thereby elevated in its importance for *Erlebnispolitik* by showing how movement is a much more fundamental expression of thinking-matter/mattered-thought than conscious reflection. Based on examples drawn from neurosciences of free will, the argument was that there is no

political agency in the conventional sense during gaming's *Erlebnispolitik*. Agency is taken to be diffused and an enactment of thought through matter and re-configuration/variation based on the net of relational movement that constitutes the biogram. In short, rhythmic movement is physical thinking and expression of posthuman political agency. On a practical level, and with specific reference to gaming, these parameters of movement, motion and rhythm were outlined as qualitative evaluation methods of the gaming posthuman. Motion analysis and rhythm narratives are important tools in the concrete practice and study of *Erlebnispolitik*.

Despite practical approximations of *Erlebnispolitik* through motion analysis, it was argued that *Erlebnispolitik* is constantly caught between levels of abstractness and moments of concrete manifestation. In order to preserve its politicalness, games have to be lived and experienced on the one hand, yet remain abstract on the other. This is why gaming has to be designed as technology of lived abstraction in the first place and only then it is able to provide the conditions for posthuman politics to emerge. Therefore, it was concluded that techno-political events like gaming are right at the heart of posthuman political becomings.

~ Conclusion ~

This thesis argues that immersive political gaming can challenge conventional political theory if it is analysed as technologies of lived abstraction. As such it lays the groundwork for a posthuman condition that allows for explorative micropolitics of change and new political subjectivities. A politics of change (one that is not a form of *repetition*) has to begin by revisiting and reworking metaphysics. Immersive political gaming offers an opportunity for this type of politics because of its capacity to de- and recontextualize relations in such a way that the familiar becomes other. Gaming is therefore a political and ethical activity.

The very *experience of the world* has been identified as the starting point of this research because the dualism that informs metaphysics, and subsequent ideas about being and acting in the world, go back to inherent philosophical assumptions about our access to the objective world. Access happens through human sensual experience that mediates between the material realm of objects and the intangible, immaterial realm of ideas. In this way, philosophies of access, whether in the form of Platonism, idealism, phenomenology, or even post-structuralism, divide the world and use experience as the dividing line between the experienceable, and, as such, the knowable object, and the experiencing and knowing subject. Political games enter and highlight this problem in two crucial and related ways: first, Western metaphysics would suggest that, as technology, political games are the object, the material thing that can be studied/known; and, second, as technological object and practice, it is used to make sense of the world. This sense-making is supposedly happening through the phenomenological gaming experience. In other words, during the act of gaming things are presented to the players that are then recognised and processed according to the rational structures of the mind. In short, the conventional explanation of how and why games educate

suggests that this is because games present the player with a puzzle that, due to the player's a priori knowledge of the world as well as his/her mental capacity, can be solved. Eventually, this sense-making process will lead to certain understandings about the nature, meaning and further applicability of the puzzle (as represented in the game). The problem is, however, that in order to make this mediation between the phenomenal and noumenal world work by means of experience, Immanuel Kant needed to assume the rational human mind.

This is problematic as experience can never be genuinely new because it is already determined to unfold according to structures of the mind. This way of experiencing hinges upon the division of the world into the objective realm and that of the mind. Furthermore, experience is an essentially human practice, which at the same time structures the living world according to the thinking referent: the human centric anthropocene. However, this research argues that this way of viewing the world prevents a more complex grasp of it and one that can consider, at least conceptually even if not practically, what happens outside the category of the human and independent of subject-object relations. Essentially, going beyond the human experience and its bifurcated world is a posthuman endeavour. Philosophers and theorists pushing these lines of thought, or rather pushing thought along these lines and away from the human condition and its centrality, are associated with some strands of contemporary French philosophy, and Speculative Realism and Speculative/New Materialism more recently.

Therefore, the example of political games is used in an effort to resuscitate materialism and its riches to tackle this posthuman endeavour. It combines three fundamental problems of the human condition through revisiting the philosophical breaking point of experience: the rational mind, the subject-object division and that between the Virtual, virtual and the actual.

Arguably the latter (ontology of reality) is a particularly recent problématique in intellectual thought because of a world that is increasingly marked by switching between modes of existence. The strength of political gaming is that it encapsulates and epitomises inherent misconceptions and unwarranted assumptions about metaphysics and it actually holds possible strategies to go about it as well.

The first step in this reworking of metaphysics (as relevant for political theory) towards a posthuman condition, and *Erlebnispolitik* more specifically, was diagnostic. Political gaming needs to be contextualised in the way it is commonly understood and used in the political arena as a tool to innovate current training in preparation for security and stability practices. As such, it grows out of very specific political, economic and generally ideological circumstances and institutional frameworks (MIME-NET and the Simulation Triangle) from which it cannot be detached. However, due to the thesis' affirmative philosophy, it identified gaming's roots in the market place and industrial arts not as a set-back, but as an opportunity for training as well political theory to reinvent itself. In many ways, the strength of gaming is that, although it is part of faciality, it has the capacity to generate change from within. Having contextualized gaming, the research examines its metaphysical underpinnings in order to understand how change can occur. It considered the initial problem of experience, but approached it from a technoscientific and materialist point of view by suggesting that instead of looking for the onset of experience in the human realm, and, more broadly, that of sentient beings, the analysis actually has to go beyond and *below* the anthropocene. This led the analysis to highlight matter behaviour on the scale of the molecular, atomic and subatomic. In order to distinguish between different matter, its behaviour was identified as belonging to different types of intensities, such as temperature, speed/velocity, pressure and rhythm, and these movements were observed more closely. Drawing on theories of self-emergence and

organisms having self-organising properties, these matter formations were identified as the onset of an emerging body. The theory of particle behaviour not only suggests that the birth of a body happens far below that of conceiving a human body, but also that the boundaries of a body cannot be drawn along human skin or tissue as found in the animal kingdom in general, and instead emerge along differences in intensity. A body can be constituted by a pool of particles sharing the same temperature (often this is closely tied to their similar speed as well) that ends where it encounters another particle pool with a different temperature. At this point, the bodies can merge into a new one or stay separate. Importantly, however, in the case of merging, this is a qualitative new body altogether because intensive differences cannot be added, contrasting extensive differences. Therefore, the new emerging body is not simply the sum of the two merging bodies, but mixing intensities transform into different qualitative relations. The thesis suggested that the same applies for larger bodies as well, given that the only difference in matter behaviour is in scale not in kind.

This encourages an analysis of the speed at which these bodies emerge and operate, which is much faster than the classical ontogenetic production of a human body. In respect to possibilities of change, this is crucial. Change, be this evolutionary, ecological or political, can occur much more rapidly than human timeframes of change can conceptualise. Given that the newly conceived intensive bodies all carry information, these bodies were treated as matter *information* that vibrates at different speeds; so that larger, more stable and humanly perceivable bodies are a case of slow information. This intensive body was further elaborated by arguing that this emergence is also the emergence of thought. To stress this point, the material emergence of a body *is* the process of emerging thought; it is one and the same process and not a case of thought developing parallel to that of a body. In short, thought is material, it is intrinsic to matter. This is how the matter/mind dualism was overcome,

especially by developing neurophilosophical theories of extended mind theories as well as quantum adaptations, to show that thoughts are non-local affective relations of information carried and expressed by matter. Importantly, this means that thought emerges pre-personally, pre-subjectively and pre-consciously, below the human category and independent of it. It is not a case of a subconscious or subliminal process that is nonetheless tied to the human body. In contrast, mattering-thought is a process that can occur anywhere because it is the same process as the emerging intensive body, which is the pooling of different information through interacting intensities.

As a rejection of the dogmatic image of thought that adheres to the dualist anthropocene, posthuman thought was further developed by showing how this thought is rooted in the encounter of intensities and can develop into new systems of experience. The theory suggests that this occurs when the encounter of intensities is so strong that it breaks up old intensive bodies, thereby old systems of experience, so that necessarily new ones have to form. This literally forceful disassembling of a body and experience is a rupture to ordinary experience and systems of meaning. This is a crucial point for several reasons. First of all, it marks the difference to phenomenological experience because posthuman experience as outlined and emerging in the thesis' philosophy happens independently of the prior condition of a human mind, and it is also more than the mere mediation between the realm of matter and mind. Second and consequently, this means that bodies and experience can be genuinely new because mattered-thought emerges independently of pre-structured categories of the mind. Third, this rupture then is a critical moment of openness (the political) in which anything can happen (it is aleatory) because intensities were argued to have a Virtual and an actual half, and thereby stay rooted within potentiality/infinity. Lastly, this was identified to be the phase-space that gaming operates in, in a way that non-conscious gaming dynamics of intensities

can feed this rupture, fuelling the production of new systems of experience. These processes (referred to by the thesis as onto-material, as they are neither only ontological nor ontogenetic, but a combination of both) are nonetheless pre-conscious and non-conscious even though they are happening during gaming.

The conditions for these encounters with the potential for the new are partly dependent on game design. While onto-material, self-emerging processes happen in open systems and are therefore untamed most of the time (Chaosmosis), this needs to be slightly adjusted for gaming. It can be assumed that certain intensities are carried into the game mainly through gaming software (or game plan in a purely analogue context). Based on the analysis of contingency (Doppler-contingency to be precise) it was shown how emergence is still aleatory, but only possibilistic rather than potential. In other words, not anything can happen (potential), but only some things allowed for by the constellation of the pool of intensities of the gamer bodies and that of the game (hard/software, which includes the analogue environment). Even though this confines what is produced during gaming (bodies, thoughts, experiences, and subjectivities) to the possible, the way in which these emerge is still contingent. All of these entities grow rhizomatically, yet in tandem with game design as well as the game design being a part of them. This is because the redrawing of posthuman bodily borders that are temporarily based on pools of intensities or attractor fields renders the game design (as imprinted in the software and hardware of a game) part of a potential gaming posthuman. The posthuman condition does not draw distinctions between the human, technology, nature and other categories. Provided that the shock to ordinary experience occurs, this means that former intensities in the attractor field that are categorised as human body can synthesise with those from game design in a new posthuman. This elevates the

importance of game design as well as a game's final architecture and indeed turns political games into an exploratory experiment for emergence.

The analysis of game design with regard to its importance in the production of the posthuman revealed that design matters in three aspects: the immediate gaming experience, the emergence of a posthuman and its subjectivity. Given, however, that the emergence of thought that can give rise to new systems of experience is a chance encounter, the game design needs to provide possible trigger points for these encounters. These are essentially points at which the intensities can act or be acted upon and these trigger/threshold points are *affective*. Therefore, the process of developing games needed to be analysed in terms of affective game design, which is fundamentally about the management of contingency. This is not only because a game needs to be designed in a way that it is 'prepared' for n number of eventualities that increase with a rise in intensities from other bodies entering the game, but also because the game has to *offer* contingency too. For a gaming experience to be as untamed and aleatory as possible, this needs to be allowed for by the game design in the first place. Such a play of contingencies during gaming and enabled by game design was analysed through movement, arguing that movement in the form of expansion and contraction of the posthuman is indicative of plays of intensities during the game. This is essentially a question of whether contingent threshold points are encountered and ordinary experience is broken, or whether these affective points were missed out or too subtle to trigger the emergence of a gaming posthuman. Accordingly, these suggested different parameters of failure and success in political games are not based on the outcome of a particular simulated scenario, but rather are based on non-verbal dynamics in the game as expressed through movement. Movement parameters change according to individual games, so that contingent movement has to be analysed on a case-to-case basis.

Regardless of these changing aspects, affective game design influences movement (through mechanisms of amplification, modulation and bandwidth) because movement is affection (not as a subjective feeling, but as a non-human, “pre-personal intensity corresponding to the passage from one experiential state of the body to another”¹) and the expression of thought, experience, the posthuman and its subjectivity in formation. This is why design matters (for) gaming experience: it has a direct impact on the way that it enables encounters, but it thereby also matters possible posthuman bodies based on these encounters and it creates the conditions for emerging subjectivities. The fact that design plays a decisive role in posthuman emergences led to a further analysis of it by acknowledging and theorising the political moment intrinsic to designing and gaming itself. The techno-political-event (TPE) was developed as a theoretical aid and sought to point out political practices on much smaller time-scales and on far less institutionalised levels than more traditional forms of politics. These levels and practices need to be taken into account because a posthuman politics is more fast-paced, prone to rapid capture and change than most conventional politics. In short, as a movement-event gaming encapsulates political moments, and these moments can even be moments of genuinely new experience.

It is the TPE that is unique and pivotal in gaming (and other technologies of lived abstraction). The resonance of this political moment hinges upon whether or not this event can emerge as a moment of subjectivity. The interplay and interphase between TPE and possible emerging posthuman subjectivity (EPS) is a crucial point as it constantly oscillates between the sub-human, posthuman and the human realm as comprehended through the human senses and consciousness. Acknowledging and theorising this looping between the

¹ Eric Shouse, “Feeling, Emotion, Affect,” *M/C Journal* 8, no. 6 (2005), accessed August 28, 2014, <http://journal.media-culture.org.au/0512/03-shouse.php>.

two conditions is crucial in order to understand that a posthuman condition and a human condition do not work against each other and neither is it a case of having to commit to either of the two or a question of co-existence. Instead, the situation is that the human condition emerges out of a posthuman one. Looking at the posthuman generated by the swirling and rippling intensities in gaming dynamics that can sediment as lasting subjectivities, which eventually operate on a scale of the conscious human subject, was taken to be an instance of this human to posthuman dependency. Detailing EPS by means of desiring-production sought to show how prominent subjectivities exists as part of faciality, but also how what is consciously known as a political subject and wider notions of subjectivity can be produced differently to that. A posthuman subjectivity that emerges otherwise, producing probe-heads, is therefore the continuation of the TPE and through this perpetuation aligns the TPE as well as posthuman subjectivity as parts of explorative posthuman politics.

The explorative aspect is found in the act of gaming itself and, more specifically, the possibility of ignoring one's face and living outside one's suit enables creative flight. This form of productivism is based on the playful aspect during gaming, which is a significant pedagogical strategy in gaming because playing other character traits destabilises personal, ordinary experience. It is a way of opening up the stable human subject so that encounter can happen and then deterritorialisation can occur. Creative flight is an important part of EPS that helps to produce probe-heads. Even on larger scales this is speculated to be a material process. The outline of how this mattering happens in speculative scientific terms lies beyond the scope of this research, but strongly indicates future research avenues into posthuman planetary politics to deal with climate and ecological challenges, for example.

Nonetheless, this larger mattering process of political subjectivity can be traced at least in the abstract through the idea of the body politic as used by Protevi. His model as further developed in this project suggests that bodies politics can emerge on a scale as low as that of the gaming posthuman, but that it can have a rippling effects on larger formations. This happens through newly emerging posthuman bodies after and outside of the game that carry on intensities, not necessarily through modes of gaming. The link between scales was further substantiated through a more nuanced, twofold notion of experience, where the latter not only referred to the experience in the game, but was spilt into immediate experience (*Erlebnis*) and a later cognitive process that enters the realm of the conscious human subject, called *Erfahrung*, as an after-effect of the posthuman image of thought. Splitting experience is essential for it not only offers a way of understanding how scales can be abstractly connected, but it also connects the human to the posthuman.

Gaming is not merely an analogue process, but switches between analogue and digital, and other electronic ways of existence. This adds challenging complexities to the theory of explorative posthuman politics as set out in this research. While analogue scenario-based games could have been used to trace a posthuman condition as well, it was imperative to outline these processes in reference to technologies of lived abstraction (technologically mediated gaming) in order to overcome misconceptions of different modalities and realms, such as that of the Virtual, which is infinite and potential, and that of the actual, which is finite, determinable and objectifiable. To make this theoretical clarification was important for three main reasons. First of all, the motivation was to show that the difference between the digital and analogue is just a case of reality materialising in different ways (electronic and less electronic), but not a case of one being less real (material) than the other. In order to develop posthuman micropolitics it was essential to remove this artificial hierarchy of

realness that often just pivots upon misunderstanding physics. In view of the fact that this is a problem that plays out through the human sensorium and cognition (as seen by following pain) this is a conceptual problem that can be explained by conventional Newtonian physics. Its significance with regard to explorative micropolitics during gaming is that it can explain why political moments involving the digital to a higher degree are not any less real or of lesser importance. Understanding this is a crucial step in taking gaming as a political practice and effort for change seriously because it is equally part of the actual realm. The second reason for this focus was that only the example of a technological event of lived abstraction such as political gaming illustrates the double-move of addressing and undoing the dichotomies between not only digital/real, but also between human/technology. The misconception of immersive gaming as an interaction between separate bodies/entities, where technology is the detached object from the human subject, offered the opportunity to outline the disappearing anthropocentric boundaries in a posthuman condition. Lastly, such misunderstanding about the ontology of reality as well as simple physics stands in the way of being able to seriously integrate political gaming into political training. In this sense, clarifying this misconception was crucial in the twofold defence of making a case for gaming regarding its real merits on a theoretical level as well as on a practical one.

Developing this further necessitated more vigorous engagement with the ontological status of reality, which occurred through the exploration of the Virtual. Importantly, a theory of change needs to have conceptual room for the Virtual, given that this is the realm of an infinite pool of futures. Any political theory not grounded in the Virtual runs the risk of marginalising change and novelty and can become essentially a theory of repetition, recognition and representation. What is remarkable in understanding change within terms of the Virtual/actual connection is that posthuman politics operates at different speeds and that

digital becomings are identified as being able to transduce from the Virtual to the actual more rapidly than other abstract/transducing machines. Confronting the metaphysical challenges related to the production of reality is fundamental to understanding how the world and becoming operate in the first place, before speculations about actual political realms, including posthuman micropolitics can be made.

In a posthuman condition the conceptual persona is determined and emerging out of pre-personal experience itself, rather than a disembodied mind. More precisely, this happens through the continuous stretch between the Virtual and the actual that becomes apparent through non-linguistic expression in the form of creative movement. Given that thought cannot be attributed to 'a person', expression and conceptual practice cannot either. In terms of a posthuman conceptual persona, its thought can emerge, vibrate, resonate and come to expression anywhere. In the case of gaming this space-time is defined by a game's architecture, so that thought finds its expression in movement, turning the perceptual persona into a highly mobile dynamic that allows for the possibility of continual variation due to its connection to the Virtual. This mobility and variation is reflected in new topological cartographies and metrics, where the latter describes singular moments and where there is always variation between one defined point and the next instantiation of it. This proliferation of concepts is fuelled by the repetition of gaming rounds, which is the increased exposure to encounters and possibilities for experience. In the same way that there is variation between rounds, because players arrive at the same coordinates, but experience the place anew and can know it again for the first time, conceptual persona is twisting and changing, producing altogether new concepts.

The crucial difference is that this is not a cycle and neither the perceptual persona nor the posthuman arrive at the same coordinates as the same entity that started it in the previous round. This conceptual and material variation is rather a case of continual variation where one can only return as something different in order to begin anew. This is why political gaming is an open-ended reality-studio where (in some cases) concepts can become known and used in the form of lasting moments of subjectivity. This further characterizes reality-in-the-making of political-becoming in the way that continual variation is not only tied to the movement of the posthuman and what this expresses, but also from round to round. Movement is mattered and it matters in multiple ways: thought is mattered; matter moves, pooled together as bodies that move; and the posthuman is moving mattered-thought/thinking-matter. It was argued that a political theory of posthuman micropolitics needs to be able to account for movement and the change this can generate. Subsequently, the biogram was developed and used as the theoretical articulation of political posthuman space. It is sketched to be n dimensional in order to be able to capture the complexity of posthuman space that stretches from the Virtual to the actual through different modes of existence at non-human (possibly quantum) speed. In this biogram change in games happens through the topological transformation of the posthuman body (which is movement space between composing parts). Although this was only possible to investigate and approximate with the human example of 3D motion analysis (for the format of this research is very much 2/3D and human), it nonetheless suggested that gaming dynamics are directly expressed through motion and movement (before it even reaches conscious levels) and that this movement-space and according change is meaningful – as it is the expression of thought. As such, it can be analysed qualitatively, issuing the development of posthuman qualitative methods, inside and outside politics.

The centrality of thought in moving matter and its according movement-space, which stretches in-between the Virtual and the actual based on the analysis of a technology of lived abstraction, further stressed the vitality of moving matter and of emerging posthuman life through gaming experience. Consequently posthuman micropolitics was theorised as *Erlebnispolitik*. Apart from the aspect of ‘living through’ an experience, *Erlebnispolitik* is about life as productivism and change. The term is poignant because it encapsulates the Virtual through the aspect of *Leben*/life, given that the Virtual is the very basis for becoming-life. Furthermore, *Erlebnis* stresses that it is not only about the conditions for political life and change, but the very mode of this politics is an emerging life, because the micropolitics plays out through the emergence of the posthuman and the production of its subjectivity. In short, *Erlebnispolitik* is about life-in-the-making and the posthuman politics of a posthuman life. The political concept for the intensive differences that drive molecular, atomic and subatomic syntheses that are the basis of this life was theorised as desire in a Deleuzian sense. In light of the fact that these processes can be scaled up, desire is understood to be the driver of desiring-production as well and a fundamental pillar of life-in-the-making (*Erlebnispolitik*). Politics as life and as a politics of life encapsulates a vitalism that adheres to affirmation and is thereby committed to change. This commitment was articulated as the utopian impulse. *Erlebnispolitik* not only happens in and through a posthuman space, but also in posthuman temporalities such as the fast-paced technologies of lived abstraction and the speed of matter movement and mattered-thought, which was conceptualised through rapid capture. This model provides the foundation for an explorative posthuman micropolitics of change and new political subjectivities based on technologies of lived abstraction. In this sense the defence and development of materialism and gaming ‘technology’ is a declaration of posthuman life.

The declaration of life works on such a fundamental ontological level that it has the potential to open up new areas of research for a wide range of subjects. Apart from challenging and developing contemporary political theory, the articulation of a posthuman condition raises very pragmatic issues, especially in the areas of game design/interactive computing and critical pedagogy. The output of this research is of particular interest to game developers (commercial and political games) that seek to design games that are fundamentally different in their structure, playing dynamics and outcome. In combining theories on flow experience, pre-subjective affect and movement, the thesis outlines gaming architectures that do not subscribe to conventional narrative structures, parameters of success and failure and teleological trajectories of movement. The research offers design suggestions for creative, innovative game behaviour and experiences (*Erlebnis* and *Erfahrung*). Similarly, gaming as a kinaesthetic way of learning is at the heart of current debates in critical pedagogy. The detailed account of how new experiences are triggered and can last beyond the scope of a game, with a particular focus on movement, adds greatly to current debates. In particular those related to new ways of teaching and learning and this may be in a conventional conscious sense or more subliminal, affective learning mechanisms. In this respect, the philosophy underpinning this research can be used to argue that posthuman pedagogy is a material and mattering process and political issue. It supports and contributes to recent multidisciplinary and cutting-edge scholarship concerned with new/posthuman modes of (educational) thought as expressed in very recent works such as *Deleuze & Guattari, Politics and Education: For a People-Yet-to-Come* and *Pedagogy of Objects: Politics, Aesthetics, and the Project of Learning*.²

² Matthew Carlin & Jason Wallin (eds.). *Deleuze & Guattari, Politics and Education: For a People-Yet-to-Come* (New York & London: Bloomsbury, 2014); Nathan Clendenin & Matthew Carlin. *The Pedagogy of Objects: Politics, Aesthetics, and the Project of Learning* (Sydney: Bloomsbury Publishing, forthcoming September 2015).

In addition, the articulation of an alternative conception of life and a specific micropolitics through lived abstraction is one of the thesis' main contributions to current debates on the question of what is (a) posthuman. Within its immediate academic circles, this work is part of posthuman interventions in IR that span a wide spectrum ranging from nonhuman animal studies to critical ecology and infrastructure to posthuman forms of harm and feral assemblages/'governance'.³ In view that the thesis traces posthuman life on a material as well as conceptual/noological level, it specifically adds to scholarship interested in posthuman and other/alien ontology because the present research distinguishes itself from the posthuman as discourse. By reengaging the natural sciences and naturalist ontologies, this project demonstrates that it is possible to do political theory together with the so-called hard sciences without being merely a return to positivism or scientific realism. In contrast to a twentieth-century mainstream "suspicion of science" in the social studies, especially in traditions that draw on continental philosophy, this research strengthens existing projects (for example work by Miguel Beistegui and Jeffrey Bell) that argue for a positive and beneficial relation between the sciences, philosophy, and social and political theory.⁴ This revived dialogue can directly inform timely and intensely debated issues such as technologies of war and the problem of locating agency and according responsibility in the employment of such technology.⁵ In this sense, the articulation of posthuman bodies particularly with regard to neuropsychology and neurosciences creates new opportunities and challenges. More specifically and recently, social scientists have applied theories of neuroplasticity to explain phenomena in international relations. The study of neuroplasticity is interested in behavioural

³ See for example the leading topics of the 'Posthuman Security Ethics' workshop which hosted a wide variety of posthuman scholars and thought; Audra Mitchell, *Posthuman Security: A Virtual Workshop* (blog), November 11, 2014, <http://posthumansecurity.wordpress.com/about-3/>.

⁴ John Protevi, *Life, War, Earth: Deleuze and the Sciences* (Minneapolis & London: University of Minnesota Press, 2013), 1; Miguel de Beistegui, *Truth and Genesis: Philosophy as Differential Ontology* (Bloomington: Indiana UP, 2004); Jeffrey Bell, *Philosophy at the Edge of Chaos: Gilles Deleuze and the Philosophy of Difference* (Toronto: University of Toronto Press, 2006).

⁵ Toni Erskine, "Moral Responsibility, Artificial Agency and Dehumanized War," (conference paper, 6th Oceanic Conference on International Studies (OCIS), Melbourne, Australia, July 11, 2014).

change on a neurological level due to drastic changes in the environment or directly to the body. Because games can work against behavioural habits, it seems imperative to further analyse how political gaming impacts upon habits and dispositions on a neurological level. One research avenue that academics such as Jairus Grove started looking into is how behaviour changes neurologically due to different torture methods. At this point and in reference to gaming's de-subjectivising capacities⁶ the dystopian potential of games due to its modus operandi needs to be acknowledged. While it was outlined that gaming bears the promise for political change and new political subjectivities, the research area exploring how gaming could be abused for torture from the point of neuroplasticity would be important to explore further based on the theories provided in this work. Related to this, another crucial aspect where the posthuman condition and *Erlebnispolitik* would allow developing new research are those projects working on a theory of (political) plasticity that is not neurocentric, in the way that the neurological network extends beyond what is referred to as the brain. The idea of the posthuman body and its micropolitics would fit perfectly into this line of scholarship and be able to contribute to it significantly. On a more general level, the research on posthuman life can be used to approach similar questions in moral philosophy concerning longstanding debates over abortion, euthanasia and life-support. Put simply, the declaration of posthuman life and its micropolitics provides a fundamentally different lens to explore a range of subjects. This non-anthropocentric view has the potential to take existing legal, neuro-political, moral and ethical research further and outside its all-too-human limits. In conclusion, the main implication of posthuman life as set out in this research is the emergence of a new form of politics through new technologies.

⁶ See Chapter 4 'A Dystopian Footnote'.

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