Architectures of Affect: anticipating and manipulating the event in processes of videogame design and testing

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Abstract

This paper examines the process of designing and testing the multiplayer levels for a large commercially released videogame. In doing so it argues that videogame designers work to create the potential for positively affective encounters to occur, a complex and elusive outcome that is key to creating critically and commercially successful multiplayer videogames. In unpacking various examples from this process the paper attends to debates regarding the distribution and transmission of media affects. Instead of acting to deterministically shape action, I suggest that processes of videogame design are predicated on producing contingency, albeit a contingency that designers attempt to manage and control. In this case positively affective outcomes can only be understood as a relation between the code space of the game and the somatic responses and techniques users generate in response to these environments.

1. Introduction

> "[I]n selecting what merits the name of 'event' […] industries co-produce at the very least, access to what happens through giving it the status of event […] Thousands of potential events, at a minimum, happen without happening, take place without taking place, or take place without happening" (Stielger 2008a p115).

> "[W]hat is an event in fact? At first, we can only define it as what was not expected, what arrives unexpectedly and comes to us by surprise, what descends upon us, the accident […] The event in the strong sense of the word is therefore always a surprise, something which takes possession of us in an unforseen manner, without warning, and which brings us towards an unanticipated future." (Dastur 2000 p182)

Referring to the television news industry, the philosopher of technology Bernard Stiegler argues that a key aspect of media today is the active process of selection through which events are rendered visible in the world. In every selection a decision is made to broadcast one story over another, to open up one potentiality whilst closing down another (also see

Stiegler 2001b, 2007). In this sense, every selection involves a loss—a covering over of that which has not been shown at the expense of that which has been shown (also see Derrida 1998). In this paper I argue that, through emerging technologies and techniques utilised in videogames testing, game designers go further than selecting what pre-given or already occurrent event is shown; they actively attempt to shape the very contingency of the event itself prior to a specific content or situation through various calculative logics of anticipation and pre-emption. As Dastur argues in the second quotation, an event can be understood as an unanticipated happening. Games designers utilise the process of testing to shape the *potential* for such unanticipated happenings to occur. To make these claims, I unpack examples from the testing process for the multi-player component of a single game *Crucial Pivot*[1] which was released in 2008 for the PC and Xbox 360 and Playstation 3 videogame consoles. In examining this process, I argue that videogame designers actively manipulate spatio-temporal aspects of the game environment in an attempt to produce positively affective encounters for users (by which I mean encounters which increase the body's capacity to act and produce associated positive senses of intensity).

More broadly, this paper aims to connect debates regarding the affective nature of social life with the emerging spatialities of new media in order to think through the ways in which affect is designed into environments and the consequences this (attempted) affective manipulation has on users' bodies. Much recent writing on affect in human

[1] The empirical material developed in this paper is drawn from interviews and participant observation conducted between August 2007 and February 2008 as part of my ESRC funded PhD research at a large videogame design company. The commercial sensitivity of the processes involved means that the name of the company, game and employees have been replaced with pseudonyms or removed altogether. Specific details that would identify the game have also been changed to maintain confidentiality. Whilst the examples given in this paper are one example from a single company, it was made clear to me by employees (many of whom had worked at other videogame companies) that the processes detailed were practiced in other companies.

geography has considered the ways in which affect is woven into the material microspaces of our everyday ways of being (Dewsbury 2003, McCormack 2007, Anderson and Wiley 2009), including bodily experiences of boredom (Anderson 2004, 2005) and (dis)comfort (Bissell 2008, 2009), or how affect is enrolled into skilled practices such as busking (Simpson 2008, forthcoming). However, much less work has been conducted on how affect is actively manipulated for commercial and economic ends in the design and production of consumer services and goods. With this in mind writers such as Thrift argue that technologies involved in practices such as videogame design require the development of a new kind of 'microbiopolitics of the subliminal':

> "much of which operates in the half-second delay between action and cognition, a microbiopolitics which understands the kind of biological-cum-cultural gymnastics that takes place in this realm which is increasingly susceptible to new and sometimes threatening knowledges and technologies that operate upon it in ways that produce effective outcomes, even when the exact reasons may be opaque" (2004 p71).

On the other hand Barnett argues that such an account of affect, as operating in the subliminal realm of 'doing without thinking' that Thrift describes, can inadvertently re-establish, earlier, discredited discourses that position consumers of media as passive dupes who are shaped unwillingly by the technologies with which they engage (also see Hansen 2006 p249). As Barnett writes in relation to the work of William Connelly (2002):

> "Classical media-effects research is often criticised for assuming a hypodermic model of media power, ascribing to 'the media' the ability to inject their

> preferred messages into the minds of their audiences. Connolly goes one better than this: his account of media-affects is meant almost literally as a hypodermic model of influence, with media technologies ascribed remarkable determinative power in infusing affective dispositions under the skin of their audiences" (Barnett 2008 p193).

In this paper, it is my aim to complicate both accounts. To do this I detail a particular case in which affect is actively produced and manipulated for explicitly economic ends and unpack how this anticipatory manipulation shapes the subliminal realm of 'doing without thinking' that Thrift describes. However I also show that such manipulation is itself a fragile achievement that is prone to failure and is reliant upon being continually reworked in relation to the creative responses users develop in relation to the designed environments they interact with. In doing I de-centre the position of the designers in the design process. The designers are not all powerful architects (which may be inferred from Thrifts account) who can simply and successfully design affects into, and in doing so manipulate responses to, an environment.

Instead, I argue that producing successful videogame environments (by which I mean environments which cultivate the desired kinds of affect) is a complex, problematic and ongoing struggle between the openness and performative play of contingency and chance (that emerge through the techniques and intelligences which users develop as they become skilled at these games) and the mechanical systems and calculative rationalities through which these environments are designed. In the case of multi-player videogames this tension is played out in designing environments which stimulate contingency:

videogames rely on the affective properties of this contingency in order to be commercially and critically successful, but the contingent events and encounters this success rests on can only be realised *through* the technical and human limitations of quantitative forms of data manipulation. Skilled games designers aim to mechanically produce and design contingent outcomes reliably; they want to produce an alluring and captivating spatio-temporal image by staging, managing and controlling events within the limited computational architecture of the consoles on which these games play and the technologies, programs and software through which these games are designed and programmed. Over the course of this paper then, I want to work with this apparent paradox within games design by unpicking the processes through which designers attempt to engineer particular outcomes and states of being and highlight the ongoing struggle between the assemblage of human and non-human actors, from screens to desks to software code that are involved in attempting to create these desired outcomes (see Cohendet and Simon 2007, Latour 2005 159-165, MacKenzie 2009).

The rest of the paper forms four parts. In section two I introduce *Crucial Pivot* and provide a short background on the financial rewards that can be generated through creating positively affecting videogame environments and the scale on which these environments are taken up and used. In section three, I move on to the specific process involved in designing and testing the multiplayer maps for '*Crucial Pivot*'. Here I argue that the processes and practices of videogame testing are a way of rendering contingency itself visible, or at least an attempt to do so. Designers can, then, use the information and feedback gathered in the testing process in an attempt to design out the types of

contingency that create negatively affective encounters and to cultivate the types of contingency that produce positively affective encounters. In section four, I demonstrate how designers did this through the manipulation of the spatio-temporal conditions of the designed multi-player maps and environment in *Crucial Pivot*. I conclude the paper by arguing that, while designers' productively attempt to subsume the contingency of events within a logic of calculation, they must also work to maintain and guard the contingent as a positive force, because the contingent aspects of multiplayer videogames are central to their commercial and critical success.

2. *Crucial Pivot* and the business of creating positively affective encounters

Crucial Pivot is part of the massively popular First Person Shooting (FPS) game genre, where users look through the 'eyes' of the character onto a visual field, and can see their avatar's hands holding a gun in front of them. The multi-player mode of *Crucial Pivot* is similar to many other games within this genre, where between four and eighteen (on average) users' battle across the internet on pre-specified maps, playing different game modes such as capture the flag, team death match or free-for-all. In 'team death match' mode for example, users are split into equal teams, and they set out to accumulate as many points as possible by 'killing' as many members of the opposite team as they can (users are awarded a set number of points for each 'kill', and these points are added to their team total). The team with the most points at the end of a preset time limit (often around ten minutes) is declared the winner. In all these modes, battles take place on self-enclosed multi-player maps, which usually represent one or two kilometres squared of space and are populated by a number of geometric objects and landscape features.

Contingency—as the unexpected, the random, the singular, the un-repeatable or the surprising—forms the key part of what gives multi-player online videogames an alluring and addictive quality that is absent in most single-player games (Salen and Zimmerman 2004 p572-586). As one user in the testing sessions puts it, playing against real humans rather than the computer "makes every match different", such that one "can never get bored" (comments from participants in *Crucial Pivot* testing sessions). In a single-player game, the user moves through a predefined level with a set destination in mind with only enemies controlled by the game's artificial intelligence to battle. Within multi-player modes the user has to pit their wits against other human opponents in self-enclosed 'arena' style areas. 'Living', 'dying', winning and losing in these games is often decided by reactions to encounters that last for less than two or three seconds, and this demands a high level of concentration and attunement to what is happening on screen from users, because human opponents are much tougher and creative than the computer controlled artificial intelligence enemies. As such, whilst they are often very limited in size, the multi-player maps are massively open to the potentials for movement within them. There can be literally thousands of different routes around the average map, and the route taken is dependent on where a user is heading or the direction from which a user is being attacked, and there are perhaps hundreds of thousands of positions and angles from which to fire upon the other users (see Mackenzie 2002 chapter five).

Being successful at these games requires the development of what Sutton terms 'open skill'. This is a form of contextually-appropriate responsiveness that is required in order to

negotiate a situation: "within the game's structured patterns, the actions required for success in responding to the changing environment must be flexibly and minutely adapted" (Sutton 2007 p264). That is to say, users have to be able to react in context-dependent ways to situations as they emerge within the game. These emergent situations are themselves produced by the movement and action of other users across a network, which makes them inherently unpredictable and unknowable (Aarseth 1997, Bogust 2006). Sutton terms this form of flexible and minute adaption—that takes place "under […] (what can be) severe time constraints" (ibid p264)—'regulated improvisation'.

Stimulating positive affects in videogame users bodies requires game designers to attempt to regulate the spatio-temporal aspects of the game environment and preempt the kind of open skill and regulated improvisation that users develop as they become familiar with the game. The designers do this through manipulation of the type and quality of events that occur within the game's levels and maps. The designers were able to shape the potential of these affective encounters by making alterations to the environment in which the user acts within the game and by changing the rules that govern the users' engagement with that environment.

In this paper I refer to affect in the Deleuzian sense as the outcome of an encounter between two or more bodies (which can be human or inhuman, organic or inorganic), which either increases or decreases a body's capacity for action (Deleuze 1988 p24, also see Delanda 2002 p62). In *Crucial Pivot*, the meeting of users' avatars within the maps, and the subsequent actions taken by those users, is an affective event, which either increases or decreases the capacities of those users to act within the game. Within FPS games, positive

affects produce complex mixtures of bodily states, which can culminate in experiences of giddiness ("I hit two people with one shot!!"), surprise ("where the hell did he come from?") and triumph ("I won, nineteen kills, no deaths!"), for example. On the other hand, negative affects may invoke senses of frustration ("How could he hit me from there!"), fatigue ("I'm sick of this"), a bodily sense of tenseness in the muscles and joints, inevitability ("I am just going to re-spawn and he is going to kill me again") and so on (all of these responses are taken from participants in testing sessions for *Crucial Pivot*). Playing against other humans online, rather than against computer controlled opponents' in a single player game, increases the intensity of such affects. As such online gaming can arguably be considered the most affectively charged form of gaming available to users.

The online component of videogames, where users play against one another, either competitively or cooperatively over the internet has a relatively short history in home videogame consoles. It was only with the arrival of current generation consoles, such as the Playstation 3 and Xbox 360, that the technology and infrastructure matured to such an extent that home console users would be willing and able to play online in large numbers. Microsoft suggests that the Xbox 360's 'Live' service currently has over seventeen million members, while rival Sony's own 'PSN' (Playstation Network) boasts fourteen million registered users worldwide. These users spend a huge amount of time using these services. As a Microsoft press release for the hit FPS game *Halo 3* states:

> "Within the first day of its launch, *Halo 3* players worldwide racked up more than 3.6 million hours of online game play, which increased more than elevenfold to 40 million hours by the end of the first week, representing more

than 4,500 years of continuous game play" (Microsoft Press Release 2007).

Indeed, over a year after launch, *Halo 3* is still in the top five most played games on Xbox's Live service and, as of early 2009, users have racked up over 64,109 years of playtime in total (Bungie Press Release, 2009). Developing a successful online component for a game, then, is highly desirable for game designers as it gives the game a longer shelf life and builds IP (intellectual property) awareness and loyalty, both of which are crucial in developing and marketing sequels. Moreover, longer-term engagement with a single game increases users' interest in playing any sequel because they have already developed a set of familiarities and skills with the user interface, weapons systems and specific play mechanics of that title (all of which vary dramatically between IPs) (see Curran 2004, Juul 2005 p139). Furthermore, producing an affective engagement with particular products is important in a business environment that is increasingly reliant upon a 'micro-transactional' model of profit generation. Most developers now regularly release extra content—such as levels, weapons and upgrades—at timed intervals after a game's initial release, and these can be downloaded for a fee. The creation and maintenance of an online community of users is key to realising the profit from these releases. This is particularly important because additional content of this type can result in a large amount of extra income for a developer in exchange for relatively little work, as the game engine, art assets, and physics modelling already exist. For example, the FPS game *Call of Duty 4* has sold over 10 million copies worldwide, while 1.5 million copies of the downloadable map pack, which was released four months after the initial game, had been sold as of mid 2008 (CNET.com News Item, 2008). Creating and maintaining an online community for a

videogame relies on designers' abilities to produce environments and contexts which stimulate and cultivate the continuing production of positively affective encounters. Indeed, the success of a videogame (in terms of sales and income generation) depends upon the successful creation of such affects.

3. Rendering contingency visible

Crucial Pivot, like many other games in its genre was designed and produced by around eighty members of staff, split into specialist teams of programmers, artists, level designers and so on. The whole process, from initial design to released product, took around two years to complete. Testing was a crucial stage in the games development because it was only through exposing the game to outside individuals who had not played it that designers could judge the 'success' of the environments they had created in shaping users' movements and actions. In this section I want to point to how the process of testing operated around attempting to resolve the irreducible tension between contingent and analogue bodily action and attempts to control this action using digital quantitative states governed by computational rules within the games database.

In *We Have Never Been Modern*, Latour (1993) theorizes scientific laboratories as sites for rendering entities visible. He discusses the case of Robert Boyle and his famous air pump experiments in the 17th century, which signaled the beginning of modern scientific experiment. In these tests, Boyle (the scientist) brought together a complex assemblage of tools and equipment alongside a number of learned colleagues to create a "theatre of

proof" (ibid p18) regarding the (in)existence of an 'ether wind' within a vacuum. The 'fact' of the ether wind as a (non) entity is only produced and reproducible through the complex assemblage of tools within a locality, i.e. the laboratory. At Angle Games, the developer of *Crucial Pivot*, the aim of the testing process was to see in practice how effective the multi-player environments were at producing positively affective encounters. If, and when, the designers registered that these these affects were not occurring they could then attempt to manipulate properties of the spatio-temporal environment in order to encourage the cultivation of such affects through quantitative variables in the game's database.

In Latour's account of Boyle's laboratory, the entity that was to be rendered visible was physical object or material thing (an ether wind); the entity that is to be rendered visible through the games testing process was *contingency itself*. Contingency is a complex concept and I want draw upon two senses of the term. First, contingency refers to an absolute unpredictability. For Meillassoux, who advocates a speculative realist metaphysics for example, "contingency expresses the fact that physical laws remain indifferent as to whether an event occurs or not—they allow an entity to emerge, to subsist, or to perish" (2008 p39). From this perspective, contingency is an absolute phenomenon, in which literally anything can happen; it is the unforeseen and indifferent—a highly illusive non-thing which may (or may not) shape or disrupt specific entities at any moment. The second sense of contingency I want to draw upon is a more relative concept of contingency as the unknowable. In this second sense, contingency is not absolute, but relative to humans' understanding of a given entity or process; contingency is that which cannot be pinned down by the process that attempts to pin it down (Dastur 2000, Dewsbury 2000,

also see Delanda 2002 chapter 1). What is common to both senses of the term is the notion of 'event'. Contingency is the unexpected happening of an event, whether that contingency is absolute in the universe or simply relative to humans incapacity to adequately understand it. In relation to *Crucial Pivot* an event is an unpredictable taking place; it is the creation of a situation that requires a creative response, rather than the mere fulfillment of a pre-understood goal or application of a pre-formed behavior (see Bateson 1972 part five), albeit a happening that is already pre-structured by the ethologically limited world that have been created by the designers (see Ash 2009, Ash et al 2009). To be clear, events in *Crucial Pivot* are not absolute in the sense that writers such as Meillassoux or Derrida understand them. For Derrida "the event cannot be reduced to the fact that something happens. It may rain tonight, it may not rain. This will not be an absolute event because I know what rain is…The *arrivant* must be absolutely other…" (Derrida 2005 p13 author's emphasis). Rather events in *Crucial Pivot* operate within an already existing horizon of expectation and are thus relative to the coded structure (the programs and rules that make up the game) which allows these events to unfold.

From this 'evental' perspective, contingency in the context of games testing can be understood as operating in two ways. Firstly, contingency can be understood as the unpredictability of the intelligences displayed and employed by the users themselves (the creative responses produced within a match that users develop through their experiences with the game). Secondly, contingency can be understood as the unpredictable emergence of the relations between these intelligences through the spatial and temporal rules and structures of any given level or map. That is, the events produced by these intelligences

within a given level or map, which themselves engender creative responses and so forth. The process of testing *Crucial Pivot* involved gathering together sixteen videogame users in one space (the offices of Angle games) in an attempt to force these two forms of contingency—the contingency of users' intelligence and the contingent events created through user responses—into the open in order to translate both these factors from something that was inherently unpredictable and unknowable into something that could be anticipated and repeated. The aim was to make the forms of contingency that occurred within any one match into a visible object. Only by rendering contingency visible could the designers attempt to bring it under their 'control' and to shape it to the game's advantage.

The emergence of these intelligences, and the events they created, were so difficult to anticipate because they are what Massumi terms an 'analogue' process. Massumi describes the analogue as something that is irreducible to measurement through quantitative states or mathematical modelling. The analogue is:

> "a continuously variable impulse or momentum that can cross from one qualitatively different medium into another. Like electricity into sound waves. Or heat into pain. Or vision into imagination. Or noise in the ear into music in the heart […] Variable continuity across the qualitatively different: continuity of transformation […] In sensation the thinking-feeling body is operating as a transducer (2002 p135)."

The analogue is so powerful because of its capacity to translate or transduce energy between different material and phenomenal states of being. This transduction occurs

proprioceptively (between sensory organs and perceptual systems within the body) and affectively (between bodies and other objects). The problem for the designers at *Angle Games* was that they could only attempt to control and manipulate an analogue body-subject through the digital quantitative states of the game's programming software. As one of the lead designers for *Crucial Pivot* explained:

> "Once you've put the mechanic in there, normally…[the]…programmers will put it in and initially it will be a little bit rough. The basics will be in there…at that stage you will start playing the game and playing that new mechanic and seeing if things need tweaking and, normally as you design, you identify certain areas that are going to need a bit of tweaking…So how long you've got to heal a character or how long a particular animation takes, how much wobble there is on the sniper scope, all these kind of values normally the programmers will set for us, or we've got a set of tools where we can go in and tweak things. Things like enemy AI [artificial intelligence] or the health of a particular player or the amount of damage a weapon does; we've got a very large statistics database that we can edit directly, make a change and then try that out directly. So, normally, it's a process of iteration: put the basics in there, you go in and play it, make a few tweaks, play that again, see what you feel" (Lead designer on *Crucial Pivot*).

As Massumi argues: "The digital is […] exhaustively possibilistic. It can, as it turns out, potentialize, but only indirectly, through the experiential relays the reception of its outcomes sets in motion" (2002 p141). The 'possibilistic' nature of the digital states of the

database was problematic for the designers because the digital code—and, therefore, the control they held over the game's environments—could only be represented and manipulated through discreet quantitative states: as either 'on' or 'off', or as 'one' and 'zero' (the language that make up the basis of binary code).

In order to deal with the tension between the irreducibility of potential inherent in human action (the emerging intelligences of users and the events these intelligences created) with the games digitally coded structure (which could only be manipulated through quantitative variables in the game's database that controlled the physical rules and systems of the game world) the designers had to develop and draw upon what Anderson (2007), via Foucault terms 'anticipatory practices'. By anticipatory practices, Anderson means practices that attempt to plan, pre-empt and rationalise the potentiality of future events in order to bring this potentiality within a logic of calculation. These logics and rationalities are powerful because they are not simply 'neutral'; they "produce different epistemic objects through which future possibilities and potentialities are disclosed, objectified, communicated and rendered mobile" (2007 p158, also see Anderson and Fenton 2008, Anderson and Holden 2008). In other words, these logics are not merely thought experiments whose effects are localised in the present; they also produce ways of thinking that affect the possibilities inherent within a particular future. At Angle Games, the designers' explicit aim was to shape the potential actions of potential users, which would only take place once the game was released to the public. Rendering contingency visible was crucial to this process because it allowed the designers to anticipate and model potential forms of action and movement within the game and, thus, pre-emptively to

foreclose actions and movements they deemed to produce negative bodily affects (such as frustration). As the lead designer for *Crucial Pivot* put it:

> "There has been a tendency, especially in the previous generation [of FPS games], for games to…frustrate players who don't play games all that much. There is a lot of tendency for players to play 30 to 40 percent of the game and then put it down and not come back to it because they got to the point where it just got a bit too difficult for them".

For the designers, the aim of the testing process was to reduce the number of such experiences.

> "You are trying to find the sweet spot for the majority of players. You're never going to get it perfect for everybody, [you have to] test it with enough people so that you can canvas opinion from a large number of testers" (Lead designer on *Crucial Pivot*).

To find this 'sweet spot', the designers attempted to diagram users' intelligences (understood as a series of somatic bodily techniques and analytical ways of conceptualizing and responding to situations within the game) and reduce them to abstract and codified tendencies which could then be manipulated in a number of ways. In this sense, in rendering contingency visible through the practices of testing *Crucial Pivot,* the designers sought to build affect into their anticipatory practices. As Anderson notes, "affect is, consequently, not a mere 'extra' […] that can be attributed directly to individual personal feelings or vaguely to a collective mood but a necessary component of how

anticipatory practices function" (2007 p158-159).

The most obvious way in which contingency was rendered visible in the testing process was through *repetition*. Repetition was a necessary part of testing for two reasons. Firstly, repetition was key to producing the contingency that designers wanted to study. Groups of users would play the same level a number of times over a three hour period. This repetition was required so that the designers could observe the development, or nondevelopment, of various tendencies of behavior and movement, including: the route that the average user would generally follow to access a specific location in the map; spots where users were likely to hide or 'camp' within the map; and specific areas which could act as 'choke points' where a small group could gain a disproportionate advantage over a rival team by using a geographical feature to hold and defend a position, whilst the enemy could only attack this position in one way. By requiring testers to play the maps over and over again, the designers were able to bring to light and codify "habits and embodied movement capacities [that] are to some extent both consciously inaccessible and verbally inarticulable" (Reynolds 2006 p766) through the expression of these habits and capacities as tendencies to move towards certain points or to fire in a certain way. During the testing process, matches would often be restarted unexpectedly in order to check that a previous action or course of action was repeatable or likely to be repeated by users. It was only when specific actions became demonstrable through repetition that they could be recognised as tendencies, and it was only on this basis that designers could attribute positive or negative value of the tendencies that emerged through repeated game use.

4. Producing positively affective encounters

The spatio-temporal manipulation of bodies through the medium of architecture is nothing new. As Adey shows, through the example of airports (2004, 2006, 2007, 2008), architecture plays a key role in encouraging passengers to move in ways deemed 'right' and 'wrong' by the authorities and institutions that attempt to control them.

> "The most typical of these techniques involve the architect trying to give the passenger 'no option'. Giving them no options meant delimiting the circumstances passengers find themselves in. The passenger is faced with a situation in which forwards or backwards are the only directions they may go" (Adey 2008 p444).

For the designers of the multi-player component of *Crucial Pivot*, however, the aim was not to limit possibility and push users towards an end destination or state; instead they wanted to actively expand users' possibility for movement and to *discourage* the creation of instrumental end destinations or states. Although designers have no direct control over users' actions, in the multi-player mode of FPS games, and in *Crucial Pivot* in particular, the developers attempted to produce positively affective encounters through the manipulation of quantitative variables in the game's database that affected the rules of the game and the properties of the game world without any intention of simply encouraging users to move from point A to point B.

In this section, I want to signal two ways in which the production of these positive affects were cultivated through altering specific spatio-temporal variables of the game environment and the rules that governed the users interaction with that environment. In doing so, I will explore how these positive affects were mobilised in an attempt to create a

state of attentive captivation in users and the ways in which alterations made to the spatio-temporal structure of the environment also shaped the potentialities for specific bodily capacities to become opened up or closed down.

Introducing delay

The first example I want to draw upon is an incident that occurred in the second-to-last testing session before the game was due to be released. Most of the in-game variables were already tied down and there was little room for large changes to be made at this late stage in the game's development. Nonetheless it was becoming clear, as users were complaining across the room, that there was a problem with the grenade launcher. The grenade launcher had been a source of many issues throughout the games testing process. It was a contentious weapon in *Crucial Pivot* because a user could fire and miss yet still kill their enemy with the shrapnel from a single shot. As such, it was considered a weapon for unskilled and unsporting users and one which created high levels of frustration in opponents who were subjected to its power.

Furthermore, because of the specific mechanics of *Crucial Pivot*, only one out of the two characters available could be equipped with it. This tended to result in users all using the same character (the one equipped with the grenade launcher). This meant that the specific properties of the grenade launcher were understood to produce a series of negative affects for the broader game as a whole. The first of these was frustration in users who felt themselves to be unfairly killed by the grenade launcher, and the second was that it indirectly affected the user's choice of character. This had a number of further, unanticipated, effects for the game. By mostly choosing character B, users would not

choose character A and this meant that they would not have access to a sniper rifle. The sniper rifles gave users a zoomed scope and, thus, the ability to aim and fire accurately at very long distances, whereas the grenade launchers had a very short range. As a result, character choices would alter the potential distances and types of battle that could take place within a map. In order to avoid harbouring and cultivating such negative affects, the designers altered the properties of the weapon in order to limit its power. As I recall:

> "One of the testers was moaning because he had died whilst reloading the grenade launcher. The length of the animation was there to offset the power of the grenade and thus make it harder for players to simply keep using the grenade launcher to create quick and easy kills" (Research diary 11th Feb 2008).

The game designers increased the length of the animation that was played every time the user reloaded the grenade launcher. In the first testing sessions the reloading process took less than two seconds; in the amended version the same reloading process took close to four seconds. Although this difference may sound inconsequential to the casual observer, the extended delay put the user at a severe disadvantage when taking part in a multi-player match. The two extra seconds left the player essentially defenceless; they were unable to fire back if they encountered an enemy. As such, after each shot, users would have to react defensively whilst the grenade launcher reloaded and this gave rival users a chance to enact their revenge. Through alterations made to the delay between cause (hitting the Y button to reload on the Xbox 360 control pad) and effect (having a reloaded grenade and the ability to fire again), the designers were able to alter the potentiality of users' responses to various contextual events and encounters within any one match. By

extending this delay, the designers were able to reduce negatively affective encounters—they could minimise the experience of frustration for the user—and avoided a break down in the user's captivated state. In other words, through a relative slowing down of one aspect of the game engine, the designers were able to change the phenomenal experience of time for users. On the one hand users waiting for the grenade launcher to reload experienced anxiety and a feeling that time was passing very slowly as their avatar was exposed during the reload animation. On the other hand the other user, who had been shot at with the grenade launcher was given an increased window in which to react, which was experienced as a very small amount of time to shoot at the other user. By extending the time taken to reload the grenade launcher, the game designers could avoid the experience of time intervening in and replacing the captivation of users (other than those using the grenade launcher).

Altering the variables of the grenade launcher to make it a less deadly weapon encouraged the development of an increased aiming sensitivity between thumb, thumbstick and the aiming reticules on screen and thus sensitised the users ability to move through the environment as a whole as the space of the image had to be traversed in a more precise manner in order to aim and hit a rival user with one shot. Before its variables were altered, the grenade launcher offered a larger range for damage and was reloaded in a second or two. This meant that users could be imprecise with their aim and less attentive to the specific location the rival user's avatar was occupying or where they were about to head because they could rely on the large blast field of the grenade to kill them even if it hit indirectly. After it had been altered to be less powerful and to take longer to reload, users

had to focus more closely and try to anticipate the direction in which they thought the user might head because an indirect hit would not kill the user. As a process of passing, time became more apparent to the user in the seconds during which they remained vulnerable as the grenade launcher was reloading. They were also forced to sense time more minutely because, with a reduction in the power of the grenade launcher, the user had to track the enemy more closely in order to successfully hit and kill an opponent.

Spacing Flags

The second example I want to draw upon is the placement of flags in *Crucial Pivot*'s 'capture the flag' mode. In this mode, teams of users battled to control a number of flags spread throughout each of the multi-player maps. The more flags a team controlled, the more points that team would score and the team with highest points would be declared the victor after a set period of time. Reflecting on a 'capture the flag' testing session involving the 'pump room' level, I commented that:

> "The other area which had received a large change was the pump room. In previous weeks the level was very unbalanced; if a team captured a specific flag in the middle of the map they could dominate the surrounding area and basically hold the other team off and win. Tonight was the first night that this level had been played since 'Barry' made a number of changes to it. The flags had been moved in line with some timing tests they had been doing. The new spacing would mean that both teams were likely to reach the flag at the same time, which should result in a battle to win the flag. This battle was fair as it didn't privilege one team's geographical starting point over that of the other

> team. ‘Barry’ said they actually timed different routes to the flags from different spawn points to make all the times equal. This made a huge difference in the play in the level and resulted in a hectic but much more intense battle (Research Diary 24th September 2007).

By repositioning the flags within the spatial structure of the level the designers were able to directly affect the intensity of the gameplay. The new positions increased this intensity because it increased the number of synchronous encounters between users, as users on opposite teams would approach and contest the ownership of the flags at roughly the same time. The previous flag locations made it easy for one team to gain control of the central flag, simply because their ‘spawn point’ (the location the users’ avatars would reappear after being killed) was closer to that flag. This quickly produced negative affects in the opposing team because the game was suddenly perceived to be ‘lost’ and the flag ‘not worth fighting for’. These negative affects served to reduce that team’s motivation and, thus, their subsequent performance in the match.

As objects and markers, the flags had the potential both to disrupt and dislocate and to cultivate and individuate the performance of users and their sensibility to the environment as a whole. The position of these flags was calibrated taking into account the speed at which a user could travel to that marker from a range of different points, rather than in terms of the distance between these points and the marker itself. The flags themselves acted as nodes for the emergence of intensive encounters as users battled to control them. The sensitivity of this calibration was such that moving each flag only a few ‘metres’ within the game environment would upset the careful balance the designers had created.

Small changes to the placement of flags within a level could remove the possibility for the very potentiality of such battles to occur at all, which would produce negative affects in users and break down their captivated state of attentiveness. The successful production of events (fairly contested battles for control of flags) and the positive affects of intensity created by these events were predicated on the ability of the game designers to indirectly manage the speed of the avatars' movement as the users rushed towards the flags at the beginning of a match. As a result, the spacing of the flags was directly implicated in the processes of encouraging a state of captivation in users. Once users knew the position of the flags in a level, their efforts were orientated towards reaching the flag closest to them, wherever their avatar had spawned. On the journey to this flag, their thoughts would be centred on whether or not they could beat the other team to the flag, because they knew that the other team could reach the same point in a similar amount of time based upon their own starting position. This analytical attunement to the situation at hand, focused the users' attention on the immediacy of the moment (the urgency of getting to the flag), but it also allowed them to anticipate the coming moment in which an encounter with the other team was assured as they reached each flag. They were able to anticipate this moment of battle because each of the flags had been placed in a position so that it would take an equal amount of time to reach from the various spawn points within the level.

5. Conclusion

In this paper, I have argued that games designers attempt to *utilise* rather than simply *evacuate* or *subsume* the contingent within a calculative logic of preemption. This

complicates much writing that argues technology inherently or absolutely closes down the potential of the future (as inherently contingent) by framing and calculating the future as a temporal mode of the present (for example Derrida 1998, Derrida and Stiegler 2005, Heidegger 1977 p119, 1997 p157-159, Stiegler 2008b chapter 2). In this case, whilst videogame designers manipulate the environments they design to increase the *potentia*l for positively affective events to occur, they can never be sure of the events that will *actually* occur and unfold as the game is played 'in the wild' (Hutchins 1995) once released to the general public. This lingering contingency is the product of the analogue body subject, whose creative responses to the images on screen can never be totally codified and reduced to completely accurate tendencies for movement and action.

Utilizing a Deleuzian account of affect has also allowed me to complicate simple distinctions that posit videogames as either 'positive' or 'negative' for the bodies involved. On one hand 'successfully' designed FPS games do rely upon a logic of what Heidegger terms the gigantic: "the mania for what is surprising, for what immediately sweeps us away and impresses us […for] fleetingness as the basic law of constancy" (Heidegger 1999 p84). However on the other, these games also involve the development of somatic techniques for interacting with them that subsist over longer periods of time within the body. What I have shown in this paper is that positive affects designed into an image by one group, do not necessarily produce an equally positive affect when a body encounters that affect. For example, designers and users agree that captivation is a positive affect; designers want to produce the conditions that encourage it, and users want to experience it because it gives them the "buzz and rush" they desire (participant in *Crucial Pivot* testing

session). Thinking through the corporeal effects of these affects, what is telling in these accounts is that many people continue to use videogames even when their capacity for attention and concentration has diminished, which leads to poor performance in the game. The 'positive' affects that lead to captivation override the 'negative' affects of tiredness that are experienced in the individual sense organs of the body (such as the muscles in the eyes or the back aching). What this is pointing to is both the autonomy of affect and the manifestation of affect as a multiplicity which encounters different bodies in complex ways that cannot be (pre-)resolved as either simply 'positive' or 'negative' for the body that is shaped by an encounter. Rather what I have shown across this paper is that the 'shaping' of bodies and the 'infusion of affective dispositions under the skin' is not the product of passive exposure to, or reception of, affective images. Instead, I have argued that the body is shaped through the *creative responses* generated by users in relation to the images they experience, rather than the images themselves. Moreover, these responses are not negative or manipulative; they positively bring into being different bodily capacities and modes of attunement, which cannot be intentionally determined by those who produce the images through the processes of design.

Nonetheless, it is important to remember that currently most game designers and companies are unable to produce the correct mixture of contingency and structure within a game and, thus, they fail to captivate and capture an audience or community of users at all. Those games, such as *Halo 3* and *Call of Duty 4*, that have been received as both commercial and critical successes are the exception rather than the rule. This paper has argued that these games are successful because they create environments, and the rules

that structure the user's engagement with that environment, that emphasise immediacy and equally distribute the potential for movement and action throughout them. Whether the techniques that produce such positively affective encounters can be further codified, and what effect this may have on the contingent events made possible by multiplayer videogames remains to be seen.

Acknowledgements

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