Videogames, Interfaces, and the Body:

The importance of embodied phenomena

to the experience of videogame play

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DECLARATION

I declare that:

1) Except where due acknowledgment has been made, the work presented here is mine and mine alone;

2) This work has not been submitted previously, either in whole or in part, to qualify for another academic award;

3) That the content of the thesis is the result of work which has been carried out since the official commencement date of the approved research program;

4) Any editorial work, paid or unpaid, carried out by a third party is acknowledged;

5) Ethics procedures and guidelines have been followed.

Signed:

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Date: 15th December 2010

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CONTENTS

SUMMARY

This thesis is concerned with setting out the importance of embodied phenomena to the experience of videogame play, and exploring the implications of those phenomena for how we understand the experience of videogame play. In particular, it argues that if we are to understand the experience of playing videogames as it is experienced by the player, we need to reorientate our approach to foreground the experience of the player. By taking this path it diverges from much, if not most, extant research on the experience of videogame play, which, it is argued, focuses more on theorising the likely effects or outcomes of particular formal qualities or design decisions, rather than how the experience of videogame play in itself emerges from the interaction between the embodied player and the videogame during the course of play. This approach opens up the phenomena of videogame play to more detailed and grounded accounts of the player's relation to the interface used to play, the nature of the experience of engagement in the course of play, and the deep involvement of the body in the experience of play.

The approach and theoretical framework employed in this thesis is influenced by Dourish's notion of embodied interaction, which is adapted to the context of videogame play through further consideration and employment of phenomenological concepts, such as Merleau-Ponty's work on the importance of our embodied being and of habituated bodily experience, and Heidegger's differentiation between the ready-to-hand and the present-at-hand, to the articulation of the experience of videogame play. This leads to the key recurring thematic concern of this thesis, namely the role played by the interface in the experience of videogame play. Over the course of several chapters a more expansive conceptual model of the interface than the more technically based definitions usually employed is developed. This expanded

conceptualisation of the interface is applied to the nature of the interface itself, the role played by its physical aspects, and how it affords the player access to, and a sense of presence within, the game-world.

By understanding the embodied relation between the player and the interface used to play the importance of the phenomena of bodily experience is made visible, and opens up the phenomena of videogame play to more detailed and grounded accounts of the player's relation to the interface used to play, the nature of the experience of engagement in the course of play, and the deep involvement of the body in the experience of play. What emerges from such an approach is not only an increased understanding of the nature of the experience of videogame play, but also of the centrality of embodiment to that experience. This centrality of embodiment to the experience of videogame play is demonstrated in the final chapter, which employs the work done over the course of the thesis to examine and articulate the phenomenological experience of movement within game-worlds.

INTRODUCTION

Too often in the study of videogames, the actual experience of videogame play is overlooked in that it is not dealt with directly but rather as a secondary concern to other factors. Videogame play is commonly reduced to the concept of gameplay, a concept generally regarded as a property of the videogame being played, something possessed by the videogame that arises out of its particular design. However, if we are to understand the experience of playing videogames as it is experienced by the player, we need to reorientate our approach to foreground the experience of the player in our minds and ask how that experience arises not simply from the design of the videogame in question but rather in the interaction between the player and the videogame effected through the interface during the course of videogame play itself. This thesis will argue that the notion of embodiment presents a means of reorientating our approach to focus on the experience of videogame play in itself, by conceiving of the player as an embodied being so that the player, their actions, and their experience of videogame play is constantly fore-grounded within the researcher's concern. This approach is heavily influenced by Dourish's notion of 'embodied interaction', particularly his assertion that it is "not simply that it is a form of interaction that is embodied, but rather that it is an approach to the design and analysis of interaction that takes embodiment to be central to, even constitutive of, the whole phenomenon" (Boehner et al. 102). A focus on embodiment allows us to intimately examine and analyse the nature of the experience of videogame play as an experience through drawing us into the moment to moment experience the player has with the videogame during the course of play. This approach opens up the phenomena of videogame play to more detailed and grounded accounts of the player's relation to the interface used to play, the nature of the experience of engagement in the course of play, and the deep involvement of the body in the experience of play. What emerges from such an approach is not only an increased understanding of the nature of the experience of videogame play, but also of the centrality of embodiment to that experience.

This thesis does not argue that the approach it takes is in some way the only 'correct', or even 'best' way to go about studying videogames, for as Aarseth presciently noted in 2001 "When faced with the rich and varied world of digital games, it is hard to think of a subject or discipline that *could not* in some way be used to study the field" (Aarseth "Computer Game Studies, Year One" 1, emphasis in original). Indeed, such a situation now exists, with lenses as diverse as marketing, physiology, education, politics, and ethnography being used to examine an equally diverse range of questions about videogames. What is being claimed here is that if we wish to understand the experience of videogame play as it is experienced in and of itself by a particular, actual player, then it is within the actual experience of videogame play that our attention must dwell. As will be detailed in Chapter One, current writing on the experience of videogames seems to in fact be discussing the formal properties of videogames that tend towards affording a particular kind of experience for the player, particularly focusing on why a particular videogame is 'fun' or 'enjoyable' to play; rather than the way in which the player, an actual player rather than a theoretical one, experiences playing that videogame, and how their active engagement in the course of videogame play gives rise to that experience. It is for this reason that this thesis employs the phrase 'experience of videogame play' to express the sense of the experience of videogame play as it is experienced rather than the more common and conventional 'gameplay', which as noted above has connotations of being something the videogame in itself possesses, rather than something experienced by the player as a consequence of their engagement in videogame play. As we shall see repeatedly throughout this thesis the experience of videogame play is fundamentally imbued with an embodied aspect, which is evident in that the player has a bodily relation to the videogame they play, through taking up the interface used to play and incorporating it as a ready-to-hand extension of their bodily schema, where their intentional concern moves into the game-space, which the player thus comes to inhabit, not simply consciously, but also in a way bodily.

Thesis Outline

Chapter One aims at presenting the case for the position taken by this thesis as a whole, specifically that the experience of videogame play is a fundamentally embodied experience, and showing how this position relates to the field of videogame studies more broadly. It begins by drawing upon Leino's case for what he describes as a first-person perspective to establish the over-arching orientation upon which this thesis is based. This is followed by an exploration of what actually constitutes videogame play, noting concerns with the connotations implicit within the term 'play'. Existing research on the experience of videogame play is then turned to, firstly noting the shortcomings of the common or prevailing approaches in dealing with the concern of this thesis of understanding the experience of videogame play as it is experienced. However, this is not intended as a literature review in the traditional sense, as it is not aimed at providing an exhaustive overview of previous findings, but rather presents particular examples which illustrate and articulate the more general trends and underlying assumptions of such research. Secondly, promising work on the experience of videogame play is drawn upon to demonstrate how this thesis fits into the wider context of an emerging trend of research into understanding the experience of videogame play concerned with its embodied aspect. This section also draws upon ideas and theories from outside the field of videogame studies which suggest new lines of enquiry that more adequately address the experience of videogame play as it is experienced. Dourish's notion of embodied interaction, and aspects of the work of the phenomenologists Merleau-Ponty, and Heidegger, that Dourish as well as other scholars that form part of the emerging trend mentioned above draw on extensively, are particularly in focus within this section. This treatment is not intended as an exhaustive coverage of these theories – to do so in some cases would entail that this thesis change its subject matter from the experience of videogame play to philosophical arguments well outside the concerns addressed here. What these theories do furnish is a set of

conceptual 'tools', which will be employed to articulate and analyse the experience of videogame play as it is experienced throughout the course of the thesis.

Chapter Two begins our engagement with the experience of videogame play by considering the interactive installation *[giantJoystick]* (Flanagan [Giantjoystick]). This work features a vastly oversized, but still functional Atari 2600 joystick,[1] and because of this change in scale presents a useful example of the importance of the body to the experience of videogame play in terms of the player's embodied relation to the interface used to play. The increased size of the joystick necessitates the involvement of the player's entire body in the act of videogame play, highlighting both the importance of the interface to the player's experience of videogame play, and that despite functioning in the same manner as a conventional Atari 2600 joystick, the increased size of *[giantJoystick]* means that it is unfamiliar to the player. Importantly, it is through the player's bodily familiarity with the interface more generally that that sense of immediate engagement in the activity of videogame play is facilitated, for it is through this familiarity that the player can take up the interface, in Heidegger's terms, as equipment ready-to-hand, something in-order-to do something else rather than being the immediate end of the player's intentional concern. Thus, as Heidegger argues in relation to equipment generally, for the interface to be genuinely ready-to-hand it must be withdrawn from the player's immediate awareness and subordinated to that which it is used in-order-to (Heidegger 360), specifically the activity of playing the videogame.

This withdrawal of the interface in the experience of the player is addressed in Chapter Three, for in its withdrawal the interface becomes more complex conceptually in terms of the experience of videogame play, for in being taken up as an extension of the player's body the interface goes beyond what the limited technically based understanding of the interface

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[1] Also known as the Atari VCS (Video Computer System)

dominant in the field of videogame studies can account for, and thus the question of what and where the interface is provides the focus of this chapter. In this context the example of *EyeToy: Play 3* (Sony Computer Entertainment Europe) is employed to address this ambiguity of the interface, in particular formulating an understanding of the interface not as a thing or object in the world, but rather addressing it conceptually as the site of the relation between player and videogame, that which puts the player and videogame into relation and thus affords the player the extension of their bodily schema and intentionality into the game-space. Whilst *EyeToy: Play 3* presents, similarly to *[giantJoystick]*, an unconventional example of the experience of videogame play, it is argued that its overt employment of the player's body as part of the interface used to play opens up a unique avenue to exploring the player's embodied relation to the interface, leading us to two important implications that inform the remaining chapters. These implications concern the way in which the player's embodied relation to the interface is constitutive of their experience of videogame play by providing the means through which the player's intentional concern can come to dwell within the world of the videogame. These implications concern firstly, the importance of the physical interface in the experience of videogame play – despite its withdrawal from the player's immediate intentional concern – and secondly, as a result of this withdrawal of the physical interface, the player's embodied relation with the deeper aspects of the interface with which the player acts within the game-space, namely the avatars and characters they control, and through which they are able to experience videogame play.

Chapter Four and Chapter Five address these two implications in turn, the former considering the role of the physical aspect of the interface to the player's experience of videogame play by drawing upon examples of videogames that should arguably foreground the physical aspect of their interface within the player's attention – tangible interface videogames. Particularly focused on are *The Eye of Judgement* (Sony Computer Enterainment Japan) and *A Game of*

Marbles (Devine and Mason), which are addressed in two related areas of theory adapted from the field of Human-Computer Interaction (HCI), tangible computing and tangible interfaces. Chapter Five considers what role is played by the deeper levels of this expanded conceptualisation of the interface to the player's experience of videogame play, through considering how the avatars or characters used to play come to be in a particular embodied relation to the player. A distinction between embodiment as a state of being, and embodying as a dynamic act, is employed to argue that the player's locus of manipulation does not simply act as a passive conduit for the player's intentionality into the game-space, but rather is a feedback based process of co-embodying between the player and their locus of manipulation that comes to shape the implicit understanding the player has about what the locus of manipulation is 'in-order-to' within the game-space. This chapter finishes with a consideration of how the player's experience of a sense of feeling present in the game-space, that important aspect of the experience of videogame play often simply described as immersion, can be understood as a consequence of their incorporating the locus of manipulation, and the interface more generally, as a ready-to-hand extension of their bodily schema. Such an approach moves beyond assuming that the experience of being present in the game-space is based upon a kind of sensory transportation based primarily upon the visual verisimilitude of the videogame, where the player passively enters into a suspension of disbelief, to argue instead that the player's sense of presence in the game-space arises from their active engagement in the experience of videogame play through the projection of their intentional concerns into the game-space that accompanies the incorporation of the interface into the player's bodily schema.

Chapter Six seeks to integrate the implications, namely the importance of both the physical interface and the locus of manipulation to the experience of videogame play, that arise out of Chapters Three, Four, and Five, particularly considering how the process of embodiment

developed over those chapters, of the simultaneous incorporation of the interface into the player's body and the extension of the player's body into the game-space, can articulate the phenomenological experience of play as an experiential whole. In a sense this question is intended not merely to set up an activity of verifying our conclusions so far, but rather to bring these conclusions together to articulate further the richness of the experience of videogame play, not so much to identify any gaps or omissions to be addressed but to open up the experience of play beyond the physical and software elements of the interface we have previously focused upon. Thus Chapter Six continues the concern with the player's experience of a sense of presence in the game-space. For, if the consequence of the argument developed over the course of this thesis is that the player experiences a sense of presence within the game-space, in a way experiencing a sense of actually being there, how does this consequence affect the player's experience of videogame play, or in other words what are the implications of this experience of being-in-the-game-space for the player's experience of videogame play as a whole? Drawing upon existing work in the field that employs Merleau-Ponty's understanding of the experience of spatiality, in particular the importance of intentionally directed movement to the experience of space (Flynn 55), the phenomenon of experiencing a sense of actual movement within the game-space is taken up and considered in terms of the implications developed over the course of the thesis to conclude that embodied phenomena and particularly the player's embodied relation to the interface are central to the experience of videogame play.

A Note on Methodology and the Structure of the Thesis

Given that this thesis doesn't contain a conventional 'methodology' chapter, a short note regarding the methodological approach taken, and in particular how the slight variations in the overall approach from chapter to chapter are informed by the overall structure and inter-

relation between the individual chapters, is felt to be appropriate. In broad terms, while Chapter One is inherently theoretical in nature, the remaining chapters in general employ a mixture of theoretical exposition and phenomenological investigation of particular aspects of the experience of videogame play. However the composure of this mixture and the nature of the phenomenological investigation vary according to the purposes served by the individual chapters within the overall structure of the thesis. For instance, Chapters Two is something of a bridging chapter between Chapter One and Chapters Three to Six, in that it introduces the general approach of the application of phenomenological concepts to specific examples, while the analysis remains at a theoretical rather than experiential level. As such, it is not intended as an articulation of the experience of playing *[giantJoystick]* in itself, but rather makes use of the installation as a way of developing the overall argument of the thesis through identifying and articulating the importance of the player's embodied relation to the interface in the experience of videogame play which is further addressed through phenomenological investigation in the later chapters.

Chapters Three to Six seek to open up the problem space of the experience of videogame play, grounded in the role played by the player's embodied relation to the interface, to exploration and articulation, and as such it was felt that as broad an understanding of the variety of the experience of videogame play that could be included was thus advantageous. For this reason my own experience of videogame play is integrated with the reported experiences of others, both first-hand and observed, as well as the speculative setting forth of the experience of what is described, following Kücklich, as model players in Chapter Five. However, within this sequence of chapters there is a movement from the sustained investigation of my personal experience of playing *Eyetoy: Play 3* in Chapter Three, to a wider number of examples, and sources of the experience of playing them, in Chapters Four and Five to address the insights and conclusions that arise from Chapter Three in greater

detail. Chapter Six focuses on bringing together the various moments of the experience of videogame play addressed in the earlier chapters and employing them to consider the experience of videogame play as an experiential whole. As such it returns to the sustained consideration on my own experience of videogame play in seeking a deeper articulation of the experience of videogame play through grounding that articulation in my own experience. Rather than attempting to account for the wider variety in the experience of videogame play addressed in Chapters Four and Five, we are left free to consider how the arguments made in those chapters help us to articulate and address the experience of videogame play of a particular player, with whose experience I am most familiar.

CHAPTER 1:

THE EXPERIENCE OF VIDEOGAME PLAY

This chapter argues that the experience of videogame play is a fundamentally embodied experience, setting out the central concepts, theoretical framework, and the approach to understanding the phenomena of videogame play that informs this thesis. The first section sets out the general theoretical approach to the experience of videogame play, a phenomenological or first-person orientation, and demonstrates how this diverges from other approaches to the study of the experience of videogame play within the field of videogames studies, noting important previous contributions in this direction from the field. This is followed by a consideration of the notion of play more generally to attend to assumptions implicit within the term 'play' which permeate much study of the experience of videogame play, particularly the tendency to set play and in consequence videogames apart from everyday life.

After having outlined the general approach and key notion of play we turn to existing research into the player's experience of videogame play in more detail. Firstly, what could be characterised broadly, following Leino, as objective or distanced approaches to the study of players' experience of videogame play (Leino "Understanding Games as Played: Sketch for a First-Person Perspective for Computer Game Analysis" 3-5), are addressed to highlight the weaknesses which this thesis addresses. This is not meant as a literature review in the traditional sense, as it is not aimed at providing an exhaustive overview of the field, but rather presents particular examples which illustrate and articulate the more general trends and assumptions that permeate much of the study of players' experience of videogame play. This demonstrate how the experience of videogame play as it is experienced has been largely overlooked by the field of videogame studies and the implications of this to our understanding of videogame play. This is followed by a section discussing countervailing research emerging within the field of videogame studies as well as relevant research from outside of the field, such as HCI and phenomenology, to identify and discuss the more specific elements of the approach that is taken in this thesis, and in particular to demonstrate the importance of the

notion of embodiment in understanding the experience of videogame play as it is experienced.

From Third to First Person

> Researchers interested in player's experience would assumedly, across disciplines, agree that the goal behind enquiries into player's experience is to understand how games' features end up affecting the player's experience. Much of the contemporary interdisciplinary research into player's experience leans towards the empirical-scientific, in the forms [of] (neuro)psychology, sociology and cognitive science, to name a few. In such approaches, for example demonstrating correlation between physiological symptoms and an in-game event may amount to 'understanding'.

> However, the experience of computer game play is a viable topic also for computer game studies within the general tradition of humanities. In such context, the idea of 'understanding an experience' invites an approach focusing on the *experienced significance* of events and objects within computer game play. This focus, in turn, suggest turning to the principles associated with (broadly speaking) phenomenology, among which is the idea of describing things as they appear, or as they are *given*, in the experience, from the first-person perspective. (Leino "Understanding Games as Played: Sketch for a First-Person Perspective for Computer Game Analysis" 1, emphasis in original)

As Leino notes, much current study of players' experiences of playing videogames focuses not so much on those experiences in themselves, but rather as a marker or indicator of the effects of various features of particular videogames.[2] In a sense, the players themselves and their experience of videogame play serve as a sort of testing ground to enable the establishment or evaluation of theoretical frameworks that suggest what kind of features will likely lead to fun, interesting, compelling, moving, or whatever other type of desired experience for the player. The complex nature of the player's experience itself is left largely unexplored, reduced into general categories which can be ranked or measured in some other

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[2] It is due to this general use of 'player experience' within the field of videogame studies that this thesis employs the somewhat rhetorically intended phrase 'the experience of videogame play as it is experienced'. Though, given the phenomenological approach taken within this thesis, this construction is arguably tautological, it is intended to foreground or emphasise this distinction between the experience of videogame play in itself, and as a indicator of the effects of particular features of videogame design that Leino identfies.

way, or theorised as abstracted cognitive processes.

Importantly, Leino shows that this tendency is shared not only by the type of empirical-scientific cause and effect orientated approaches he mentions in the first paragraph in the quote above, but can also be found in much of the work within the field of videogame studies that would largely fall within the humanities. This tendency is "implied by the *de facto* methodological paradigm of humanities-inclined game studies [. . .] according to which the computer game researcher distances him/herself as the playing subject from the object under study" (Leino "Understanding Games as Played: Sketch for a First-Person Perspective for Computer Game Analysis" 3, emphasis in original). Noting this tendency across several influential methodologies for the analysis of videogames including formalist, critical, and ethnographic orientated approaches Leino concludes that "the lived gameplay carried out by the researcher is not material in itself, but one means among others by which to gather material to support claims about 'the game'" (Leino "Understanding Games as Played: Sketch for a First-Person Perspective for Computer Game Analysis" 4). Whilst such approaches rely to some extent on the researcher's own experience of playing the videogame, that experience itself is often pushed to the side, and as Leino notes "there is a difference between *studying a game by playing it and studying a game as played*" (Leino "Understanding Games as Played: Sketch for a First-Person Perspective for Computer Game Analysis" 3, emphasis in original).

A way of understanding the difference Leino identifies between the third and first person perspectives is found in Lanigan's contrast between the order of analysis and the order of experience. Lanigan describes the "**order of analysis** [as] moving from the *experienced* to the *experiencing* to the *experiencer*" (Lanigan 1, emphasis in original). The reverse of this movement is "the **order of experience** [where it] is the *experiencer* who is *experiencing the*

experienced" (Lanigan 2, emphasis in original).[3] The order of analysis is clearly present in much of the work Leino identifies as adopting a third-person perspective, as they begin with the experienced (the videogame), continue to the experiencing (via mechanisms or models of the experience of play appropriate to the researcher's particular discipline) and ending with the experiencer (player's response to various features of the videogame). By reversing this order, that is, by following Lanigan's order of experience, and starting with the experiencer, rather than deriving them from the experiencing of the experienced, we can avoid the problem of abstracting first person experience to third person processes to fit the particular approach taken towards the experienced, and of claiming to be talking about the experience of videogame play as it is experienced when we are in fact talking about the thing which is experienced – the videogame. Consequently, we would then have a focus on the experiencer (the player) experiencing (through playing) the videogame (the experienced) with the important consequence that rather than establishing abstracted models as explanations for the experience of videogame play at a general level we instead open up the richness and heterogeneity of the experience of videogame play as it is experienced, in Lanigan's terms as a "phenomenological human becoming" (Lanigan 2), to description, consideration, and understanding.

This is not to invalidate the results or arguments of research which Leino describes as being orientated from a third person perspective, but simply to point to both the focus and limits of their understanding of the experience of videogame play. As Leino notes, "the experienced significance of gameplay is not, from the third-person perspective, really a lack at all" (Leino "Understanding Games as Played: Sketch for a First-Person Perspective for Computer Game Analysis" 5), for "The objects of study are different from the two perspectives: it is not

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[3] It should be noted that these two orders aren't oppositional in nature, but rather are based in Merleau-Ponty's notion of reversibility. Richard L. Lanigan, "Embodiment: Signs of Life in the Self," <u>Twentieth Annual Meeting of the Semiotic Society of America: Musement to Meaning: Body and Mind</u> (San Antonio, Texas, USA: Semiotic Society of America, 1995), 2.

necessarily the 'same game' one is studying from two angles." (Leino "Understanding Games as Played: Sketch for a First-Person Perspective for Computer Game Analysis" 6). Through maintaining a concern with an objective distance from the object of study the third person perspective when employed by both "'those who study players' and 'those whose [sic] study games' [. . .] inhibits both from accessing the experiential qualities of computer game play" (Leino "Understanding Games as Played: Sketch for a First-Person Perspective for Computer Game Analysis" 2). It is those experiential qualities of videogame play with which this thesis is concerned, and as such it is a first person perspective or phenomenological approach that will be employed.

In a general sense, we will follow Leino's advice where "Instead of trying to define the borders of the player's experience from outside, we should seek to accept the experience as it is" (Leino "Feeling So Real - a Phenomenological Exploration into the Realities of Emotions in Play" 7). As implied in its name, taking a first-person perspective towards the experience of videogame play inherently draws upon the first-person experience of the researcher, or, as Leino terms it requires the researcher to occupy a 'player's perspective' (Leino "Understanding Games as Played: Sketch for a First-Person Perspective for Computer Game Analysis" 5-6). However, the experience of videogame play which is drawn upon is not simply described in evaluative terms, for as Leino notes:

> Phenomenology is not interested in the idiosyncratic experience, but in the experience's 'invariant structures.' Thus the phenomenological questions are not about how a particular person experiences the world (or how a particular player experiences the game), but about how is it possible for anyone to experience a world (or for any player to experience the game). (Leino "Understanding Games as Played: Sketch for a First-Person Perspective for Computer Game Analysis" 6)

Thus it is not a question of whether the researcher liked or disliked the videogame, that they found it confusing or familiar, boring or engaging, but rather a deeper question about the

nature of their experience of videogame play – those invariant structures of the experience that make the videogame available to the player as an experience of videogame play. For Leino, the invariant structures of the experience of videogame play can be approached through an understanding of the conditions of the player's experience, themselves "sought from the materiality of the game artefact" (Leino "Understanding Games as Played: Sketch for a First-Person Perspective for Computer Game Analysis" 1), by which he means "all aspects of the single-player computer game being played which do not originate in the player wand which are shared by all players and playings of the same game" (Leino "Understanding Games as Played: Sketch for a First-Person Perspective for Computer Game Analysis" 7). The explicit reference to single player videogames informs the choice of examples used throughout this thesis, which are predominantly single player videogames, as the inclusion of other players opens up the experience of videogame play to the interpersonal (Leino "Understanding Games as Played: Sketch for a First-Person Perspective for Computer Game Analysis" 8), complicating the task of the researcher who wishes to study the experience of videogame play as it is experienced in itself by introducing another level of complexity into that experience which is not directly pursuant to the invariable structures of the videogame being studied.

Though Leino acknowledges Juul's argument that there "is not necessarily any common 'material support' or 'medium' to *all games*", whilst maintaining the relevance of the material support of individual games (Leino "Understanding Games as Played: Sketch for a First-Person Perspective for Computer Game Analysis" 9, emphasis in original), this thesis will argue that, in the case of videogames specifically, there is at least one common element of material support common to all videogames, specifically that all have some kind of interface between the player and videogame. This commonality of the presence of the interface amongst videogames derives in part from its necessity to the experience of videogame play,

for as Wirman and Leino argue "The interface is a surface allowing two parties of fundamentally different kind, the simulation and the human player, to communicate with each other" (Wirman and Leino 461). The notion of the interface, particularly the player's relation to it, seems on the face of it to be one of those invariant structures of the experience of videogame play which the phenomenological or first person approach to be taken in this thesis is tasked with exploring, and while the exploration of the notion of the interface forms a significant part of this thesis at this point we will limit ourselves to observing that the relation between player and interface is a bodily one where "The interface is an umbilical cord through which, in the gaming situation, new senses are enabled rather than existing ones limited" (Wirman and Leino 462). An important consequence of the player's bodily relation to the interface relates to the position of the interface in the player's experience of videogame play, in that it is not necessarily experienced by the player as a separate entity from the videogame itself during the course of play. Rather, the player's bodily relation to the interface leads to the interface being subsumed or incorporated into the player's bodily being and thus withdrawn from the player's immediate concious attention. The interface, while central to the player's experience of videogame play, is also potentially at the same time curiously absent from that experience. This withdrawal of the interface, and its consequence for the player's experience of videogame play, is addressed in detail in Chapter Three.

This a well known phenomena within the field of videogame studies though one not necessarily discussed in terms of the body – Calleja, for example, notes "when the movement controls are learned, the player devotes less attention to figuring out how to perform an action and simply does it" (Calleja 254). The phenomena of the bodily incorporation of the interface into the player's body and the subsequent extension of the player's body through the interface into the world of the videogame is an important and recurrent theme throughout this thesis. Furthermore, its importance to the experience of videogame play requires an articulation of

the nature of the interface that goes beyond the commonplace or everyday meaning of the term to recognise and describe the complex of bodily relations between player, the interface, and the videogame. For now, having now briefly outlined the approach that will be taken to articulate and understand the experience of videogame play in this thesis let us turn towards the key concepts of play and games.

Play and Games

The concepts of play and games, central to the field of game studies, are fraught with difficulties due to the breadth of the field, incorporating as it does theories and approaches as diverse as marketing, physiology, education, politics, and ethnography, addressing an equally diverse range of questions about videogames. However, a side effect of this breadth is an associated lack of depth, arising from an uncritical acceptance of the concept of what videogames are and their function in our lives. Malaby negotiates these issues through paring back our understanding of games, and by inclusion videogames, to the essential features of their being based on contingency and that they generate meaning, captured in his simple definition that "A game is a semi-bounded and socially legitimate domain of contrived contingency that generates interpretable outcomes" (Malaby 106). Malaby's argument also provides a useful position on the concept of play, given that he reappraises the importance and position given to the concept of play by the field of game studies, through reducing games to what he argues are their essential qualities. In doing so, he seeks to break what he considers to be a normative bias that pervades the academic and popular discourse on games, namely that they are essentially about entertainment – they are supposed to be fun (Malaby 96). He argues that this bias extends from what is connoted by 'play', namely that it is separate from everyday life, safe, and pleasurable, features which he argues are not intrinsically part of games but are rather "*cultural accomplishments* specific to a given context" (Malaby 96,

emphasis in original).

In part, Malaby's argument is a criticism of the widely held 'magic-circle' thesis, whereby games are seen as being, or belonging to, a different order of reality than the everyday world, thus separated from everyday life. Malaby sees this argument as a logical extension of an exceptionalist view of games which takes the perspective:

> that games are play and therefore set apart. This perspective allows some to hold games at arm's length from what matters, from where "real" things happen, whereas others cast them as potential utopias promising new transformative possibilities for society but ultimately just as removed from everyday experience. (Malaby 97)

This situation is even more serious for videogames, whose digital basis brings into operation "another form of exceptionalism, one that sees the 'virtual' as separable from the 'real'" (Malaby 97). Malaby uses the example of traditional gambling practices in Greek rural communities to point out the fundamental inseparability of games from the real world in which they take place (Malaby 98), further noting that anthropological studies have also found that the distinction between work and play does not exist in all cultures (Malaby 97). While Malaby speaks about games generally, it is simple to find examples of this innate connectedness of games with the real world in the context of videogames, such as when a player's individual identity is seen as relevant to the videogame being played. For example, in Linderoth's observation of children's disapproving reaction to a boy choosing a female character in a fighting game, and the boy's response of couching his choice in terms of the avatar simply being equipment used to play, claiming that "Zelda is awesome" (Linderoth 8), there is clearly an importance placed on gender distinctions by the other children.

However, in Malaby's criticism of what he sees as game studies' current focus on "the limited purview suggested by the play concept" (Malaby 96), he perhaps errs in attempting to set his

account of games too wide by treating games as a single category. This focus on games as a general category has similar drawbacks to what Leino describes as the 'transmedial argument' where games can be implemented across any number of mediums, such that chess "is the same *Chess* regardless if it is played on a wooden board with ivory pieces (or with pieces that represent characters from Star Wars, for example), or on a computer" (Leino "Understanding Games as Played: Sketch for a First-Person Perspective for Computer Game Analysis" 8). Noting similarly the many variations of *Tetris* Leino argues that "The transmedial *Tetris* is not accessible from the first-person perspective, because the player's experience always involves a particular *Tetris* game with its distinctive materiality" (Leino "Understanding Games as Played: Sketch for a First-Person Perspective for Computer Game Analysis" 10). Like the transmedial argument, Malaby's approach of establishing an all encompassing definition of games as a category tells us little about the experience of videogame play as it is experienced, illustrating Leino's distinction "between *studying a game by playing it* and *studying a game as played*" (Leino "Understanding Games as Played: Sketch for a First-Person Perspective for Computer Game Analysis" 10, emphasis in original). This is not meant to undermine the quality of Malaby's conclusions regarding the pervasive normative bias around the concept of play, but simply to recognise their inherent limits, namely that the general focus taken by Malaby of addressing games in all their forms necessarily doesn't let us address the specificity of actual human experiences of play that relate to games beyond his central example of gambling practices in Greece. If we are interested in the experience of videogame play as it is experienced, holding to all encompassing definitions of games as a singular category runs the risk of losing the granularity and richness of the experience of videogame play in itself.

By excising the concept of play from his treatment of games for its normative connotations Malaby loses perhaps the central quality that characterises particular games as an activity

taken up by particular individuals, as Leino notes at a conceptual level "to conceive of something as a game necessarily implies filling the position(s) of the player(s) with something, that is, conceiving something as being the player of the game" (Leino "Understanding Games as Played: Sketch for a First-Person Perspective for Computer Game Analysis" 2). More practically, games only move from abstract entities of rule structures to actual things in the world when they are taken up and played, where their contingency comes into action, and the outcomes that are generated become meaningful, not to an idealised player, but as realised by an actual player. This sense of games as actual things in the world, rather than as abstract categories, can be lost in all encompassing definitions such as Malaby's or transmedial approaches, as "Calling a chess board and pieces (or a binary executable file, for that matter) a 'game' without reference, through the activity of play, to those who make the decisions to move the pieces on the board would be an arbitrary reference to the purpose of the artefacts" (Leino "Understanding Games as Played: Sketch for a First-Person Perspective for Computer Game Analysis" 2). What we are talking about here are games not as an abstracted theoretical category but as a lived experience. Games exist to be played, and it is through this play that we come to experience them, and that they come to be things in the world.

Malaby is perhaps aware of this as he does not reject the concept of play completely, arguing that "it is clear that the term may continue to have some usefulness as a label for a *mode of experience*, a way of engaging the world" (Malaby 102, emphasis in original), as opposed to "a label for a *kind* or *form* of distinct human activity" (Malaby 100, emphasis in original). While maintaining that the connotations latent in the concept of play must be dealt with, suggesting that "More work in this vein must be done to recuperate the concept of play" (Malaby 102), Malaby turns away from play to concentrate on the ontology of games without further mention of this work to be done. This thesis aims at taking up the task of returning the

concept of play to a meaningful significance, beyond the normative connotations which it often invokes, and towards a consideration of the experience of videogame play as it is experienced. We have already noted that Malaby approaches games as a general category, and his conception of 'play' is similarly broad, extending beyond the playing of games to a broader attitude of dealing with the world, a mode of experience. To reconcile this broader conception of the play concept, let us consider Malaby's claim that play refers to a mode of experience rather than a form of activity within the more specific context of videogame play.

By restricting the concept of play to being a mode of experience, a generalised attitude towards or way of engaging with the world, Malaby seeks to avoid the normative use of the word as a "label for a *kind* or *form* of distinct human activity (something that allows us to differentiate between activities that 'are play' and those that 'are not')" (Malaby 100, emphasis in original). Whilst at a general level the usefulness of this is clear, in terms of the first-person approach taken in this thesis its utility is far from self evident. If 'play' is only a mode of experience as Malaby argues, what status then does actually 'playing' a videogame hold when we are concerned with the experience of videogame play as it is experienced if, as Malaby argues, it is the game itself which is the activity (Malaby 102)? Given the common usage of the terms 'play' and 'game' Malaby's position is both understandable yet confusing, for 'game' is a noun and not a verb, the name given to the activity but not the doing of the activity itself.[4] This leads to the question of what the term in common usage for engaging in the activity associated with videogames is, of which the answer of course is that one plays a videogame. Is it possible to engage with a videogame in a manner that still constitutes this activity as a game without playing it? It would seem that while 'play' as a general concept can indeed be characterised as a mode of experience, in the case of a specific instance of play, such as that of playing a particular videogame, it can also be regarded as a distinct kind or

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[4] Of course 'game' as a verb has entered into informal usage, such as in the phrase 'gaming the system', or to denote the pastime of playing videogames as 'gaming'.

form of human activity. Here we are following Leino, who argues that "one could postulate a narrower category by speaking of computer game play: the activity that takes place upon or involves the artefacts we take as 'computer games' could be referred to as computer game play" (Leino "Understanding Games as Played: Sketch for a First-Person Perspective for Computer Game Analysis" 10).

The possibility of describing play as a distinct form of human activity comes about because of the cultural work that Malaby identifies behind the particular conventions commonly ascribed to games (Malaby 96), a particular videogame is not an abstract intellectual category but a particular instance of a product that is designed to fulfil a particular purpose or purposes in our everyday life, most directly that it is made for the activity of play. This purpose does not necessarily have to be the entertainment principle that Malaby seeks to demystify, for as Leino notes "computer game artefacts can be used for a number of activities other than playing the game," such as the difference "between playing the game and playing *with* the game" (Leino "Understanding Games as Played: Sketch for a First-Person Perspective for Computer Game Analysis" 10).[5] As the serious videogames movement demonstrates videogames can be about education outcomes or political activism, whilst 'art' videogames show that their motive can be self expression, or even a meta-analytical investigation of the form's own conventions and the associated expectations of player's, for example *Second-Person Shooter* (Oliver Second Person Shooter), which as the name suggests places the player in a second-person perspective, rather than the more usual first- or third-person perspective found in more conventional commercially orientated videogames.

So we are left with two related yet differentiated meanings for our concept of play. Firstly, that highlighted by Malaby of play as a mode of experience, or to put it another way as a

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[5] This distinction between playing the game and playing with the game Leino mentions is taken up in reference to the player's relation to their in-game avatar in more detail in Chapter 5.

particular way of opening to the world, a meaning captured in the common phrase 'a playful spirit'. For this wider meaning of the play concept Malaby finds weighty support, acknowledging Huizinga's argument that "play should be understood as an always potentially present mode of human experience, rather than as a distinct activity" (Malaby 101). Indeed, Huizinga goes further to argue that the play concept is constitutive of much human activity, from laws, to war, to philosophy, and even culture itself, as "The great archetypal activities of human society are all permeated with play from the start" (Huizinga 22). However, if we follow Huizinga too closely we seemingly fall straight into the same normative trap that Malaby rightly criticises, for Huizinga also argues that "Play is distinct from 'ordinary' life both as to locality and duration" (Huizinga 28). At first this seems incongruous, that he can assert that play permeates culture, yet that "for the adult and responsible human being play is a function which he could equally well leave alone. Play is superfluous" (Huizinga 26). This apparent contradiction becomes non-problematic if we understand that Huizinga's central theme is "the relation of play to culture" (Huizinga 25), which becomes clear when we look at the spheres of human activity with which Huizinga address; ritual, art, philosophy, law, and even warfare. In each of these domains we find evidence for Huizinga's argument that "The function of play in the higher forms which concern us here can largely be derived from the two basic aspects under which we meet it: as a contest *for* something or a representation *of* something" (Huizinga 32, emphasis in original).

Thus we encounter again the same problem that we raised with Malaby's conception of play, that in a broad sense it is a mode of experience rather than a particular activity, yet at the same time it is embedded within and permeates through particular activities, even some that we would not normally regard as 'playful' activities. It is for this reason that I have articulated a more specific sense of 'play', that of a particular instance of activity on the part of an individual engaging the world in a playful manner – for the purpose of this thesis through

playing a videogame. Here though we would be still be wise to take Malaby's council on the normative assumptions associated with the play concept, for even if our engagement in the activity of play does not result in an enjoyable or fun experience, that experience might still be described as an instance of play. For example, if we are loosing badly in a game of pool our actual experience may be one of frustration, anger, boredom, or even grim determination, yet we would still describe our activity and the experience that activity as one of playing pool. Clearly then, though the play concept carries a much wider meaning than the normative associations that Malaby identifies, we are still left with the question of how to understand the experience of someone who is engaged with the world in this playful mode of experience through the particular activity of playing a videogame, that is, of addressing the experience of videogame play in itself.

The Experience of Videogame Play

The experience of playing videogames has received increasing attention within the field of videogame studies as the field matures and moves on from the definitional debates that characterised its early stages towards a more holistic approach. For example, this development is characterised by the theme of the 2007 Digital Games Research Association (DiGRA) conference, 'Situated Play'. However, despite this apparent advance we soon encounter the problem of the normative assumptions raised by Malaby within the field, for instance one quantitative study of player experience aimed to "design and test a reliable measurement of the overall enjoyment derived from the gaming experience" (Tychsen et al. 51). The measure developed was named the FUN construct, and consists of several sub-constructs that "target specific aspects of the gaming experience" such as temporal dissociation, immersion, and enjoyment (Tychsen et al. 51). Implicit in these measures are the normative assumptions of enjoyment and separability that Malaby identifies, and the focus of

the study informing the FUN construct seems, in line with the tendency Leino recognises more generally, to be not so much the experience of playing videogames in themselves, but rather the underlying reasons why playing one particular videogame may be fun whilst another may not. These criticisms can be applied more widely, for instance Ermi and Mäyrä, whilst acknowledging that "Playing games does not always feel fun: on the contrary, it quite often appears to be stressful and frustrating" (Ermi and Mäyrä 3), develop a model of the experience of videogame play based largely on the concept of immersion, yet the same type of normative assumptions again arise, as they argue that "'fun' is the ultimate emotional state that they [the player] expect to experience as a consequence of playing" (Ermi and Mäyrä 3). Again, what is addressed is not so much the experience of videogame play in itself but rather the factors and features of videogames that contribute to creating a particular type of experience for the player, in this case that experience being enjoyable and somehow separated or distinct from everyday life.

This is not to undervalue the results of these studies or others like them, but merely to point out that neither addresses the experience of videogame play as it is experienced. Each study is indirectly asking the question of what makes videogames enjoyable, as Leino notes, they ultimately attempt to theorise the effects that different formal properties of videogames will have on players from the point of view of game design (Leino "Understanding Games as Played: Sketch for a First-Person Perspective for Computer Game Analysis" 1). This is evident even in the methodology of Ermi and Mäyrä who, by basing their model on interviewing children to discover "the different holding powers they had recognized in games" (Ermi and Mäyrä 6), implicitly exclude frustrating, boring, or confusing experiences of videogame play, and resultantly derived a three part model of immersion based on a videogame's audiovisual qualities, level of challenge, and fictional content (Ermi and Mäyrä 7-8). This is not to discount these elements of the videogame form, for quite clearly, they are

present to our experience when we play videogames, but they cannot by themselves account for the actual experience of videogame play, that moment to moment unfolding of experience that arises during the course of videogame play. The way in which individual players may experience the features identified in such studies, as well as others not identified, are not broken down into separate formal elements in the course of our actual playing, but rather exist as a holistic totality in the experience of videogame play.

Another common approach to understanding the experience of videogame play is to turn towards cognitive based theories, that is, to step back from the immediacy of videogames as they are experienced to consider the mental processes inherent in the player's experience of them. Grodal presents one such approach and, like Malaby, criticises narrative approaches to the studying of videogames not simply because of an assumption of the primacy of ludic features over narrative features, but rather "because phenomena such as 'story' or 'narrative' are then only defined in relation to their media realization, not by their relation to unmediated real-life experiences and those mental structures that support such experiences" (Grodal 129). According to Grodal, cognitive mechanisms can be used to explain much of the experience of videogame play, for "The experience of stories is based on central embodied mental mechanisms" (Grodal 130), specifically a flow from perception, to emotion, to cognitive processes, and finally a motor response (Grodal 131), and it is videogames' engagement of this flow that accounts for the particular experience of playing videogames as "they allow 'the full experiential flow' by linking perceptions, cognitions, and emotions with first person actions" (Grodal 132). It is these first person actions that underlie the characteristic interactivity of videogames for Grodal, introducing an "interactive motor dimension to story experience" that differentiates them from other media forms (Grodal 138). Furthermore, Grodal's approach highlights the sense of videogame play as an activity for as he notes "The interactive capability also raises a series of new problems that [. . .] are similar to those raised

by interacting with real-life phenomena on a first-person basis" (Grodal 139), and as such "the player needs to possess a series of specific skills to 'develop' the story, from concrete motor skills and routines to a series of planning skills" (Grodal 139).

However, while Grodal argues for an understanding of the experience of playing videogames based upon its basis in cognitive structures common to real world experiences, he still adheres to the common normative assumptions concerning play, stating that "a central element in the concept of 'play' is linked to what kind of reality status is manifested in a given play activity" (Grodal 140). Though this statement in itself is non-committal, Grodal finds that the reality status of videogames tends towards the pleasurable and separable, as "A central element in those playful activities that we call games is [. . .] their repetitiveness, because somehow repetitive (reversible) activities are far less serious, less 'real' than activities like tragic stories that represent irreversible processes" (Grodal 140). Once again, we seem to have come full circle, and it seems that play, considered as a mode of experience from a cognitive perspective, is still overtaken by normative assumptions of its value or consequence.

Yet, what really undermines Grodal's theory of experiential flow, and cognitively based theories more generally for elucidating the experience of videogame play, is that while he attempts to address the experience of playing videogames, that experience is implicitly abstracted, or turned into 'third-person processes', as Merleau-Ponty would put it (Merleau-Ponty Phenomenology of Perception 92). Whilst Grodal orientates his approach towards the first person experience of videogame play his understanding of it is based in what Lanigan calls the order of analysis as it is not the experience in itself with which Grodal is concerned, how it is experienced in the first-person in the order of experience, but rather abstracted cognitive processes which have little direct relevance to the experience of videogame play as it is experienced. Whilst for the purposes of systematic analysis of the cognitive processes

involved in the experience of videogame play an approach such as Grodal's has it uses, in the first-person experience of playing videogames such experience simply does not proceed in an orderly step by step fashion between the discrete stages identified by Grodal. The progression from perception, to emotion (or motivation), to cognitive activity, and finally to motor action, are not discrete stages in the experience of videogame play as it is experienced but rather these categories blend and blur into each other – not consciously separated in the experience of the player but again part of the greater experiential whole that is the experience of videogame play. And whilst the examples given so far are hardly exhaustive of research into the experience of videogame play within the field we can see the trend Leino identifies, that in general "the goal behind enquiries into player's experience is to understand the [sic] how games' features end up affecting the player's experience" (Leino "Understanding Games as Played: Sketch for a First-Person Perspective for Computer Game Analysis" 1), rather than the experience of videogame play as it is experienced.

The Experience of Videogame Play and Interactivity

We can see this tendency to overlook the experience of videogame play as it is experienced more clearly if we take up in more detail the question of interactivity, a concept both reviled and central to much theoretical work on videogames. As an influential example let us consider Salen and Zimmerman's typological model of interaction, which identifies four modes of interactivity: cognitive/interpretive, functional/utilitarian, explicit/participatory, and cultural participation. What is meant by the cognitive/interpretive mode is simply "the psychological, emotional, and intellectual participation between a person and a system" (Salen and Zimmerman "Game Design and Meaningful Play" 70), whilst the functional/utilitarian mode involves the player's interaction with the "material components of the system (whether real or virtual)" (Salen and Zimmerman "Game Design and Meaningful Play" 70),[6] essentially the

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[6] It should be noted that Salen and Zimmerman's use of 'material' is in some regards similar to

interface both physical and on screen at the most basic or mechanical level. Explicit/participatory interaction refers to the everyday use of the term, "overt participation like clicking the non-linear links of a hypertext novel, following the rules of a board game, [. . .] using the joystick to manoeuvre Ms. Pac-Man" (Salen and Zimmerman "Game Design and Meaningful Play" 70). Finally, the mode of cultural participation refers to the player's interaction with the game outside of the game itself "The clearest examples come from fan culture, in which participants co-construct communal realities, using designed systems as the raw material" (Salen and Zimmerman "Game Design and Meaningful Play" 70).

Whilst obviously Salen and Zimmerman's fourth mode of interaction, cultural participation, lies outside of our interest here dealing specifically as it does with the player's experience beyond their immediate experience of videogame play, with the other three modes we can raise a similar criticism to what we made of Grodal's stages of experiential flow concerning the abstraction of the experience of play into discrete modes or types for the purposes of third person analysis. While there is no doubt that there is value in breaking down the often nebulous and ill defined concept of interaction and giving it a rigorous and multi-faceted standing for certain approaches to understanding videogames and the experience of playing them, particularly for those concerned primarily with questions of effective videogame design such as Salen and Zimmerman, its utility for understanding the experience of videogame play as it is experienced is less evident. Though each of Salen and Zimmerman's modes of interaction articulate a facet of the experience of videogame play they tell us little about videogame play as it is experienced in the first person apart from that it involves various levels or modes of interaction between the player and the videogame. Like Grodal's stages of experiential flow these modes of interactions are not experienced as discrete moments or kinds of experience but rather as varying aspects without clear delineation or distinction

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Leino's use of the term, but perhaps does not go as far.

within the wider experience of videogame play as it is experienced.

Yet a more serious problem with Salen and Zimmerman's conception of interactivity, if we are concerned with the experience of videogame play as it is experienced, is in their assumption that interactivity consists of a series of meaningful choices by the player (Salen and Zimmerman "Game Design and Meaningful Play" 60). While such a view of interactivity may be appropriate for a slowly paced strategy game such as chess, where the focus is on carefully considered moves, it seems less apt for faster paced games that demand a speedy response from the player. For Salen and Zimmerman 'choice' seems to stand in for a much more complex process involving intentionality, skill, and physical limitations such as reaction time, which are all involved in taking action when playing a videogame. This broad notion is taken to somewhat counter-intuitive degrees, such that "intuitive physical action" and the "random throw of a die" both constitute a form of 'choice' for Salen and Zimmerman (Salen and Zimmerman Rules of Play 61). Their choice of "choice" as the basis of interactivity, even over the perhaps more appropriate "relationship between action and outcome" (Salen and Zimmerman Rules of Play 354) they describe, is a surprising one, and possibly a legacy of the influence of hypertext theories of interactivity, or of overly cognitivist assumptions about the experience of videogame play.

In general terms a 'choice' implies a decision made between options, and as Heaton notes, "A decision in a sense is nothing [. . .] It is a change in the state of the overall intent of the player" (Heaton 4). Heaton moves from the abstract notion of choice to the more concrete idea of skills that we have already encountered in Grodal's approach, differentiating between analytical and implementation skills (Heaton 5).[7] Heaton's model is a cyclical one where "The

[7] These different types identified by Heaton are similar to the evaluation and execution stages of Norman's model of the human action cycle, which the circular model of videogame play developed by Heaton also resembles. Donald A. Norman, The Design of Everyday Things, 2002 ed. (New York: Basic Books, 2002) 47.

player's analysis of the current and potential future states of the game inform the decision. [. . .] After the decision has been made, the player uses another set of skills to implement the decision" (Heaton 5). The example given by Heaton of his cycle at work in a hypothetical situation of videogame play in *Burnout 3* (Criterion Studios) is telling – given the fast pace of the videogame the player's "assessment of the risk and reward will be incomplete" (Heaton 6). The player would simply not have the time to make what we would generally refer to as a 'choice' between their options during the course of play, but would instead have to rely on the skills they have developed, constantly correcting and adapting their moment to moment actions rather than a definite decision at any one point. In such a case it is arguably the aporia-epiphany structure identified and articulated by Aarseth (Aarseth <u>Cybertext</u>), which would be more central to the experience of playing *Burnout 3* than the ability to make meaningful choices.

Of course both of these elements, as well as a gamut of others such as aesthetic appeal, narrative content, and intensity, all contribute to the emergence of the experience of videogame play in differing degrees depending on the particular videogame and the particular player. However what is particularly useful about Heaton's analyse-implement skill based approach for our purposes is that it foregrounds the active role of the player who employs their implementation skills through taking action. Consider a game of chess for instance – that a player's choice about which move to play next will be altered if they perceive, rightly or wrongly, that their opponent is attempting to set up a trap would be an uninteresting point to make. Yet the manner in which the player takes action to implement their choices inherently folds back into the experience of playing. For example, does the player make quick, but confident moves in an attempt to intimidate their opponent, or do they indifferently move their pieces because they are bored with the game? What of the role of what Leino describes as the particular material implementation of a game of chess (Leino "Understanding Games as

Played: Sketch for a First-Person Perspective for Computer Game Analysis" 8), is it played in a face to face setting or against a computer coded opponent? Is the game being played on such a large board that moving pieces requires a significant physical investment? Perhaps the player even 'accidentally' knocks the board over, so as to prevent the inevitable defeat towards which they are headed? Such factors, which may be considered extra-ludic in a strictly formal sense, are none-the-less an integral part of the experience of playing games. Thus any examination of the experience of videogame play requires that attention be paid to the ways in which the player is able to take action and perceive its outcome – the interface from which interaction emerges. Again, it must be emphasised that 'interface' is used here more broadly then in its usual sense as a property of the technical game-system, such as the controllers, television screens, or on screen menus. These elements are all integral parts of the interface, but without a player interfacing with them they aren't much more than plastic, circuitry, and software. Rather the 'interface' is used here to describe the sites or spaces of relation between the player and the videogame, extending beyond the formal characteristics towards a consideration of the different potential uses that a videogame, via the interface, presents to the player.

The Experience of Videogame Play as it is Experienced

Clearly then, we need to move away from approaching the experience of videogame play as abstracted cognitive processes and ask again what constitutes the nature of the experience. Shinkle offers one solution, arguing that a "visually based, structural semiotic angle has tended to dominate game studies" (Shinkle "Corporealis Ergo Sum" 21), such that "interactivity still tends to be understood as a predominately visual and semiotic activity" (Shinkle "Corporealis Ergo Sum" 22). For Shinkle, the experience of videogame play is much more than simply perceiving and interpreting the action presented onscreen, for it also

involves "phenomenological or *affective* dimensions which cannot be programmed into a game, but are nonetheless vital for videogame play" (Shinkle "Corporealis Ergo Sum" 22, emphasis in original). By affect, Shinkle is referring to "a way of describing the 'feel' or intensity of a game" rather than simple emotional reactions (Shinkle "Corporealis Ergo Sum" 22). In making this distinction Shinkle is drawing upon Massumi's articulation of the difference between affect and emotion, whereby "emotion and affect—if affect is intensity—follow different logics and pertain to different orders" (Massumi "The Autonomy of Affect" 88). This is not to say that there is no relation between the affective and the emotional, but rather that emotion is affect captured from the immediacy of experience and abstracted, for "Emotion is qualified intensity, the conventional, consensual point of insertion of intensity into semantically and semiotically formed progressions, into narrativizable action-reaction circuits, into function and meaning" (Massumi "The Autonomy of Affect" 88). In this way the distinction between affect and emotion resembles and resonates with both the distinctions referred to earlier in this chapter between approaching the experience of videogame play from a first person perspective versus a third person perspective identified by Leino, and the order of experience as opposed to the order of analysis identified by Lanigan.

In the context of videogame studies this distinction between affect and emotion is particularly important due to the baggage associated with emotions in videogames, for as Leino notes "More emotional games are often dubbed as the next milestone in the development of computer games" (Leino "Emotions About the Deniable/Undeniable: Sketch for a Classification of Game Content as Experienced" 113). Importantly, this desire for more 'emotional' videogames has the tendency to frame its objectives in extreme terms, "such as sadness so overwhelming that it makes a player cry" (Leino "Emotions About the Deniable/Undeniable: Sketch for a Classification of Game Content as Experienced" 113). While this tendency does not always fall into the normative trap identified by Malaby, in

many cases this is because such desires for more emotive videogames are a reaction to the conception of videogames as fun and insignificant, thus informed instead by a wider normative bias concerning 'worthwhile' media forms, and the importance of eliciting particular emotional responses from the player.

It is also important to note that affect is inherently embodied, as the phenomena is more than simply a mental state but is rather characterised by what Massumi characterises as "the irreducibly bodily and autonomic nature of affect" (Massumi "The Autonomy of Affect" 89). Anecdotally, many game players have had the experience of shuddering when their race car slams into a barrier at high speed, of ducking and weaving as bullets whiz by, or even more simply of experiencing autonomic responses such as increased heart rate or muscle tension as a result of playing videogames. Such experiences demonstrate the inherently embodied nature of affective experience, an experience that is often described with reference to proprioception, which refers to our sense of "the location of my arms and legs without any conscious reflection" (Leino Emotions in Play 191), and the related concept of kinaesthesia, which similarly describes the preconscious experience of movement of the body (Merleau-Ponty Phenomenology of Perception 107-8), a sensory experience aptly demonstrated by the examples of player's bodily involvement in the experience of play mentioned above. Furthermore, such bodily experiences in the course of videogame play demonstrate the important role played by embodied affective experience in providing a basis for the meaningfullness of experience more generally, as it is the affective dimensions that give the player's movement's their meaning, as Massumi notes, "the primacy of the affective is marked by a gap between *content* and *effect*" (Massumi "Autonomy of Affect" 84, emphasis in original). It is the affective dimensions which bridge this gap between the audio-visual content presented to the player and their bodily movement and autonomic responses to make sense of those bodily experiences and to give them their meaning in the player's experience of

videogame play.

This ability of videogames to elicit such affective and motor responses from their players is a widely known aspect of their appeal, suggesting Caillois' ilinx, or vertigo, category of games "which consist of an attempt to momentarily destroy the stability of perception and inflict a kind of voluptuous panic upon an otherwise lucid mind" (Caillois 138) – a statement which, through the use of the phrase 'voluptuous panic', clearly evokes the involvement of bodily experience into the experience of videogame play. Yet Shinkle's articulation of the experience of videogame play, what she terms the 'affective dimension' still does not quite capture the entirety of the phenomenological experience of videogame play, despite the valuable move away from the privileging of vision towards a more synaesthetic sense of perception (Shinkle "Corporealis Ergo Sum" 25), a tendency towards the perceptual aspects of the experience of videogame play remains. For instance, despite a brief description of how the *EyeToy* series embodies the player's real-time, real-world movements into the world of the game, her focus is on the embodiment of perception, rather than of action. Indeed, she focuses more on the experience of watching someone else playing *EyeToy* rather than that of playing in itself (Shinkle "Corporealis Ergo Sum" 25). What then is the significance of this sense of immediate and bodily engagement in the experience of videogame play?

The affective experiences of videogame play noted by Shinkle are sometimes treated by the field of videogame studies in terms of an experience of immersion within the videogame being played, in the sense that the player in some way feels present within the world of the game they are playing, often drawing upon the idea of the suspension of disbelief. However, as Ermi and Mäyrä note, the term is "widely used in discussing digital games and gameplay experiences. [. . .] but often in an unspecified and vague way without clearly stating to [sic] what kind of experiences or phenomena it actually refers to" (Ermi and Mäyrä 4). While this

lack of specificity is perhaps the more egregious issue with the concept of immersion, another more nuanced problem is reflected by the reason Ermi and Mäyrä employ the term rather than others that are often used synonymously, "because it more clearly connotes the mental processes involved in gameplay" (Ermi and Mäyrä 4). Whilst mental processes are no doubt involved in the particular experience of immersion or presence within the videogame during the course of play and indeed the experience of videogame play more widely, a similar objection to that raised in regards to cognitive based approaches earlier can also be applied in this case. The experience of videogame play becomes implicitly abstracted into third-party processes which are not explicitly present to the player's experience of videogame play in itself. Furthermore, even if such mental processes can be reconciled as being implicitly part of the experience of videogame play this still overlooks important aspects of the experience of videogame play which are difficult to characterise as mental processes, such as the affective and phenomenological dimensions identified by Shinkle. The particular aspect of the experience of videogame play whereby a player feels present within or connected the world of the videogame is often held out to be an important part of the overall experience of videogame play, and a limited understanding of this particular experience of engagement in the experience of videogame play is engendered by understanding it in terms of 'immersion' as simply being present within the game-space due to 'mental processes'.

In contrast with naive accounts of immersion flow theory, arguably one of the more predominant theories of the player's experience of videogame play, flow theory comes closer to articulating the player's experience of videogame play as it is experienced. Unlike immersion based approaches, which as Salen and Zimmerman point out are all too apt to fall into what they term the 'immersive fallacy' based upon "the idea that the pleasure of a media experience lies in its ability to sensually transport the participant into a illusory, stimulated reality" (Salen and Zimmerman Rules of Play 450), the flow experience is instead better

understood as a type of active engagement, specifically an effortless type of investment of attention to the activity of playing, which as Järvinen, Heliö, and Mäyrä point out, engages all aspects of the interface (Järvinen, Heliö and Mäyrä 20-21). While one of the key elements of the flow experience is a loss of self consciousness, an aspect shared with the concept of immersion, there are important qualitative differences that should be underlined. Primarily important is that in the flow experience, the player's sense of self is not so much lost as it is expanded, such that the player can have a feeling of union or involvement with the game, whilst remaining aware of the contextual situation in which they are engaged (Järvinen, Heliö and Mäyrä 26). This is hardly the 'suspension of disbelief' found in immersion, which evokes a sense of passive surrender and transportation, but something that requires the explicit and active engagement of the player.

Another way of understanding the difference in perspective on the experience of videogame play between the concepts of immersion and the flow experience is by drawing upon the distinction raised by Dourish between the 'virtual reality' and 'augmented reality' approaches within HCI. The assumptions implicit in the concept of immersion in game studies could be understood as part the greater prevailing world view regarding computational media that Dourish describes as the 'virtual reality' approach, where "interaction takes place in a fictional world, either through immersion or, more commonly these days, through a window onto the world on a computer screen. The world of interaction is the world of the computer" (Dourish 38). In contrast, the flow experience is more closely attuned with Dourish's concept of augmented reality, where "The site of interaction is the world of the user [. . .] the world may be imbued with computation, but the computer itself takes a back seat" (Dourish 38). Thus, under the flow model, rather than the player being transported into the world of the videogame, the videogame itself is instead is drawn out into the player's because of their more engaged role, though we should say rather that both player and videogame come to

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experience a shared space of being. Though Dourish's conceptualisation of the augmented reality approach stems in part from his work on emergent trends within the field of HCI, which he categorises broadly as ubiquitous computing, as a way of refiguring the relationship between the user and computer, it is useful for approaching the experience of videogame play as it is experienced. For, as Shinkle observes, "From a phenomenological standpoint, [. . .] virtual space is irreducibly part of the real world, and interactivity, rather than a transaction between eye and mind, is framed as a feedback loop between eye, mind, and body" (Shinkle "Corporealis Ergo Sum" 23). This also recalls the argument drawn earlier from Malaby, that alongside the normative assumptions implicit in play "there is another form of exceptionalism at work, one that sees the 'virtual' as separable from the 'real' (Malaby 37).

For our purposes, the important implication of what Dourish terms the augmented reality approach is that it places the player and their experience of videogame play firmly as the focus of our analysis. A similar benefit is presented by the flow model, where the player's action and awareness merge, specifically that the player experiencing the flow state becomes so caught up in the activity of videogame play that it is no longer experienced as something separate or distinct (Järvinen, Heliö and Mäyrä 22). As such, while augmented reality and pervasive games, roughly the videogame equivalents of Dourish's ubiquitous computing, may be in their early days the augmented reality approach remains relevant to our concerns in this thesis, as the world around the player of more conventional videogames is no less filled with computation during videogame play due to the narrowing of their focus and involvement with the action that is unfolding. However, whilst flow theory presents a potential avenue for addressing the experience of videogame play as it is experienced, we still find relevance for Malaby's admonition regarding the normative bias surrounding the concept of play, for as Järvinen, Heliö and Mäyrä openly attest "Obviously, flow and optimal experience have to do with enjoyment" (Järvinen, Heliö and Mäyrä 20), and thus they focus on how "to design

products that make the focusing of invested attention flow smoothly and in the most rewarding way" (Järvinen, Heliö and Mäyrä 21). As this focus on producing one particular aspect of the experience of videogame play, its fun or pleasurable aspect, diverges from the more inclusive sense of the experience of videogame play we are addressing, we will instead turn towards adapting Dourish's concept of embodied interaction, of which his augmented reality approach is but one part.

The Experience of Videogame Play and Embodiment

Dourish's articulation of the embodied aspects of interacting with computers provides an approach with which to consider the experience of videogame play as an embodied experience. Though Dourish's notion of embodied interaction arises out of his work within the field of HCI with a design orientated perspective, his articulation of the fundamentally embodied nature of our interaction with computers provides an avenue for bringing the player's body into our understanding of the experience of videogame play by foregrounding the importance of our status as embodied beings in our experience of the world. Importantly, by 'embodied interaction' he means that "not simply that it is a form of interaction that is embodied, but rather that it is an approach to the design and analysis of interaction that takes embodiment to be central to, even constitutive of, the whole phenomenon" (Dourish 102). In following Dourish's notion of embodied interaction we can aim towards an understanding of the experience of videogame play as embodied which implies that it is not a particular form of videogame play that is explicitly bodily, but rather that it is an approach to videogame play that sees embodiment as a central and essential part of the phenomenon of the experience of videogame play.

This is not to say that the body generally, and the notion of embodiment we are developing

here, are entirely absent from the field of videogame studies, as we have already encountered them obliquely through Shinkle, whilst other researchers in the field of game studies have addressed the issue of embodiment directly. For example, Rambusch draws upon the framework of embodied and situated cognition, noting that videogame play "is largely shaped by the player's bodily experience and her interactions with and use of the game environment" (Rambusch 1), and importantly that the bodily relation between the player and the interface involves the interface becoming an extension of the player's body (Rambusch 4). Wirman and Leino make a similar point, describing the interface as forming "an umbilical cord through which new senses are enabled" (Wirman and Leino 461), noting also the importance of the player's "operational intentionality or the basic 'intentionality of the body-subject'" to the experience of videogame play (Wirman and Leino 461). Within the context of phenomenology intentionality is important in understand the relation between people and the world as "Rather than separating humans and world, the concept of intentionality makes visible the inextricable connections between them" (Verbeek 388). The consequence of this conceptualisation of intentionality is that it grounds or embeds human experience as always being in the world, such that action, perception, and cognition, are always directed towards something in the world (Verbeek 388). This is something that the abstracted or third-person perspective approaches discussed earlier often lack, and is one of the key advantages of the phenomenological, first-person perspective approach. Indeed the notion of operational intentionality, which Wirman and Leino take from Merleau-Ponty, can further clarify our criticism of Salen and Zimmerman's use of 'choice' to characterise interaction, as Merleau-Ponty distinguishes operational intentionality from intentionality of act, "which is that of our judgements and of those occasions where we voluntarily take up a position" (Merleau-Ponty Phenomenology of Perception xx).

Sjöblom employs the notion of embodiment, including Dourish's notion of embodied

interaction, to study collaborative videogame play in an internet café, noting that "The specific situatedness of each and every gaming session greatly influences the ways in which participants interact with each other, and thereby structures the activity of gaming and gaming cultures more generally" (Sjöblom 13). However, while a perspective that takes the notion of embodiment into account when addressing the experience of videogame play is beginning to emerge, such approaches remain greatly outnumbered by those that approach the experience of videogame play as abstracted and simply cognitively based, as Rambusch contends "little attention, [. . .] has so far been paid to the actual activity of playing computer games with the player and her actions in focus" (Rambusch 1). This thesis aims to build upon this early work done in bringing the notion of embodiment into the debate of the nature of the experience of videogame play as it is experienced, and will employ it in more detail over the course of various chapters where relevant.

Videogame play of course has always consisted of embodied action, it's just that previously the player's actions were generally minute, small movements of the hands and fingers on buttons, d-pads and analogue sticks, though as was noted earlier in relation to the concept of affect videogame play is of course quite capable of eliciting the involvement of the player's entire body. Compared to the visual action, narrative development, and strategic depth to the videogame experience, these barely noticed actions of the player have unsurprisingly been low on the agenda of videogame research. It is an oversight limited not just to theorists and other observers though, for videogames actively attempt to draw attention away from the hands towards the screen.

Here is but one area where Dourish's concept of embodied interaction is useful, for while a player's attention might initially be focused on the controls whilst learning to play a particular videogame, after a certain competency is reached this attention shifts away – action and

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awareness merge, or as Dourish describes it, the controls move from being present-at-hand to being ready-to-hand (Dourish 109). These concepts, taken from Heidegger, suggest a closer relationship between the player and the control surface than flow theory, that for the sufficiently competent player the control surface becomes an extension of the hand, as Dourish puts it (Dourish 109). For Heidegger, in our everyday experience our intentionality is directed not towards objects or tools used but rather towards the activity we are using those tools to accomplish - "That with which our everyday dealings proximally dwell is not the tools themselves. On the contrary, that which we concern ourselves primarily is the work—that which is to be produced at the time" (Heidegger 358). Heidegger's distinction between the ready-to-hand and the present-at-hand is much more significant than the orientation we might take towards an object for it actually captures the nature of the relationship with have with that object. For example, when using a computer mouse "the mouse exists for us as an entity only *because* of the way in which it can become present-at-hand, and becomes equipment only through the way in which it can be ready-to-hand. And in being ready-to-hand, it disappears from view—or 'withdraws'—as an independent entity" (Dourish 109, emphasis in original). Thus the relation we have to objects that have become equipment to us, that is have become ready-to-hand, is one where they become attached to our body such that they have become part of our preontological world in that "it is outside of and prior to our focused attention" (Dourish 110).

Merleau-Ponty, who Dourish also draws upon, offers an in-depth account of the same phenomenon, couching it in terms of habits, and using the example of a blind man's stick. Merleau-Ponty argues that for the blind man his walking stick "has ceased to be an object for him, and is no longer perceived for itself; its point has become an area of sensitivity, extending the scope and active radius of touch" (Merleau-Ponty <u>Phenomenology of Perception</u> 165). Importantly, this extended sensitivity is not experienced conciously, but

instead the stick has become an extension of the body through being incorporated as part of the body, for:

> habit does not *consist* in interpreting the pressures of the stick on the hand as indications of certain positions of the stick, and these as signs of an external object, since it *relieves us of the necessity* of doing so. The pressures on the hand and the stick are no longer given; the stick is no longer an object perceived by the blind man, but an instrument *with* which he perceives. It is a bodily auxiliary, an extension of the bodily synthesis. (Merleau-Ponty <u>Phenomenology of Perception</u> 176, emphasis in original)

This thesis will argue that applying conceptualisations of embodiment such as these to the experience of videogame play can achieve our aim of recuperating the play concept, by addressing the experience of videogame play as it is experienced, rather than as a normative category.

We are using embodiment in a very strong sense here, not merely its meaning of giving a material form to an intangible concept, but again following Dourish providing it with an explicitly phenomenological sense where, "By embodiment, I do not mean simply physical reality, although that is often one way in which it appears. Embodiment, instead, denotes a form of participative status. Embodiment is about the fact that things are embedded in the world, and the ways in which their reality depends on being embedded" (Dourish 18). That is, people are not objects who find themselves in a world but are as bodies which participate in creating that world. Here embodiment takes on a literal meaning since "Physically, our experiences cannot be separated from the reality of our bodily presence in the world" (Dourish 18), and "because our experience of the world is intimately tied to the ways in which we act in it" (Dourish 18). Hirose notes that "There are two basic meanings of the word given in dictionaries: the state of being embodied and the act of embodying" (Hirose 290). Both senses are important to understanding the experience of videogame play, as each sense helps us to unpack and articulate the complexity of the experience. When thinking of the player it is

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important to foreground their state as an embodied being that not only has a physical body but is also embedded within a certain world that underlies their position as a player of a videogame. This is the basis of the concept of embodied interaction, which takes the notion of embodiment, or the direct rather than abstract experience of phenomena as Dourish puts it, as central to the experience of interaction (Dourish 100-03). The other sense that Hirose identifies, the act of embodying, aids in understanding the moment to moment unfolding of the experience of videogame play, such as the way in which the interface has been described as being taken up and incorporated by the player as a ready-to-hand extension of their body.

This distinction between the static and the dynamic aspects of embodiment is raised to articulate the relation between the player, the interface, and videogame, for this is an embodied relationship that calls upon not only the inherent embodied nature of the player, but also their ability to actively alter their potential to act within the game-world by taking up the interface in an act of embodying. This ability to change their range of potential actions should not be seen simply as an addition of new potentials, for the player's ability to act within the game-space is necessarily limited by the abilities and limitations provided by the interface within the game-space. It should be emphasised that the distinction between the state of being embodied and the act of embodying is not meant to suggest two mutually incompatible ways of being, but rather to note the variation between the static and the dynamic aspects of the phenomena of embodiment. As Dourish notes, our experience of the world builds upon our fundamentally embodied nature, for:

> the source of meaning (and meaningfulness) is not a collection of abstract, idealized entities; instead, it is to be found in the world in which we act, and which acts upon us. The world is already filled with meaning. Its meaning is to be found in the way in which it reveals itself to us as being available for our actions. It is only through those actions, and the possibility for actions that the world affords us, that we can come to find the world, in both its physical and social manifestations, meaningful. (Dourish 116)

Beyond the most elementary sense of embodiment as our being-in-the-world, the notion of embodiment as simply a static state seems absurd, for as the quote above points out the body is dynamic, reaching out to act in the world and extending its potential to act in the world. Yet embodiment as state is taken up as a useful concept here as it allows us to set a sort of base-line from which to consider this dynamic nature of the body as it relates to the player's experience of videogame play, and opens up the moment of transition from one state of embodiment to another during the course of the act of embodying where the player takes up the videogame interface as an extension of their bodily schema as a way to understand the unfolding of the experience of videogame play during the course of play.

This move towards a phenomenological notion of embodiment achieves three outcomes in support of addressing the experience of videogame play as it is experienced. Firstly, it recognises the importance of our actions, and our perceptions with which they are intrinsically tied, that constitutes our experience of the world and our relationship to it. Secondly, by bringing us closer to our experience of the world as it is experienced we can hopefully avoid, or at least reduce significantly,[8] the need to draw on the analysis of abstracted processes and theoretical structures to describe those experiences. And finally, returning to our initial problem of play as a mode of experience, it affords us the context with which to consider those cultural accomplishments (as Malaby describes them) that characterise our normative views of play, as well as a level of focus for a consideration of the interaction between play as a mode of experience and videogame play as an activity via the concept of the embodied player.

The significance of the implications of adapting Dourish's notion of embodied interaction to build a new understanding of embodied videogame play can be demonstrated through a

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[8] Of course, fixing experience into language through description and articulation necessarily leads to a degree of abstraction.

comparison of the approaches already addressed. For instance, let us again consider Grodal's psychological model, which he describes as "An embodied brain-approach to story experience" (Grodal 132), the nucleus of which "is the first-person experience, because third-person perspectives are—from an evolutionary point of view—expansions of a first-person point of view even down to the level of motor activation" (Grodal 133). Whilst the notion of the body is a central part of Grodal's model, there is then the question of our relationship to our body and of our bodily experience, which is where Grodal's approach diverges with Dourish's notion of embodied interaction. While Grodal's focus on first-person experience, or experience as it is experienced, is largely in keeping with the perspective we are developing here, we previously described his account of these experiences as abstracted, third-person processes, and we can now identify how Grodal arrives at this transition from first-person experience to third-person processes. Whilst the body is implicit in Grodal's approach, characterised as eyes, ears, and muscles, it is not a body experienced but a mechanistic object of cause and effect, which we can see in his explanation of how the interrelation of its separate parts distinguishes videogames from other media forms – "eye and ear will not only be linked to an activation of the premotor cortex (as in previous media) but also to a full motor cortex and muscle activation" (Grodal 139). What is in dispute here is not the accuracy of the neurological processes he describes, but rather the effectiveness of using these processes as a basis for addressing the experience of playing videogames as an experience, one which has little self awareness of motor cortices and muscle activation. Grodal has successfully located the experience of play as an embodied one, but applies an understanding of embodiment, the body as function, which keeps the experience of this embodiment fundamentally a cognitively based account which allows him to conclude that "Videogames are furthermore mainly based on sympathetic, aversive emotions, due to their output-driven setup" (Grodal 153). This does not resonate as an articulation of the experience of videogame play as it is experienced, but rather as an explanation of how the experience of videogame

play operates in terms of cognitive or psychological structures and processes, that is "central embodied mental mechanisms" (Grodal 130).

To understand the particular nature of our bodily experience for the experience of the playing of a videogame we need to consider the body as it is experienced, namely, as an inherent and largely preconscious embodiment and existence in the world. What we need to address is the tendency towards the assumption of body-mind dualism, which Lanigan identifies as an issue extending back to Plato, but most commonly arising in the context of the Cartesian separation (Lanigan 1), that sees mind and body as fundamentally separate. While this separation between body and mind, between the objectivity of the body and the subjectivity of consciousness, is no longer an uncontested perspective within academic debates, having been disputed by various scholars across various fields of study, including Merleau-Ponty's approach to embodiment which this thesis draws upon, the absence of attention paid to the position and role of the body in the experience of playing videogames is indicative of its continuing influence. This is not merely a question about how we account for our bodily experience, for as Merleau-Ponty argues the conception of a conscious mind separated from the objective body constitutes "a crucial moment in the genesis of the objective world" (Merleau-Ponty Phenomenology of Perception 83), whereas in contrast we are concerned with the phenomenological world in which we are embedded through our embodied being. In other words, given that it is through our body that we have a world as Merleau-Ponty argues: "The body is our general medium for having a world" (Merleau-Ponty Phenomenology of Perception 169), the relationship we have with that world is derived from an understanding that must proceed via our bodily experience. Thus we must challenge the notion of an objectified body separated from our conscious experience posited by the Cartesian separation, and instead ask how an appreciation and understanding of the involvement of our body in our experience and of our experience through our body changes our perspectives on, and

understanding of, videogame play. This is in keeping with the arguments raised by Leino and Malaby, though extending them further to consider the basis of our first-person experience of playing videogames, where play, as a particular mode of experience, is a fundamentally embodied one.

The conception of embodiment we are developing here refers not only to immediate bodily experience, such as sensation, but more broadly to the embeddedness of the body in all aspects of our experience. The concept of learned habits that Merleau-Ponty develops is essential in this regard, for he rejects the idea of an innate or 'natural' state of being for a more nuanced position where "Everything is both manufactured and natural in man, as it were, in the sense that there is not a word, not a form of behaviour which does not owe something to purely biological being—and which at the same time does not elude the simplicity of animal life, and cause forms of vital behaviour to deviate from their pre-ordained direction" (Merleau-Ponty Phenomenology of Perception 220). The type of embodied experience we are discussing here is not an essentialist account based on a linear cause and effect description of our body apparatus, but instead refers to our lived experience of being-in-the-world, recognising that we are not simply controlled by the processes of our body, for such a view reintroduces the separation between a mechanistic body and a transcendent subjective consciousness. Rather than a stimulus-response model of our bodily experience, the phenomenological approach we are employing here posits a more complex and nebulous situation where "there is not a perception followed by a movement, for both form a system which varies as a whole" (Merleau-Ponty Phenomenology of Perception 127), and it is this 'whole' with which we are concerned, rather than the breaking down of that whole into particular mechanisms and processes of the body addressed objectively.

This immediate sense of embodiment remains the underwriter for our more complex

involvement with the world, for "Bodily experience which runs through me, yet does so independently of me, is only the barest raw material of a genuine presence in the world. Yet at least it provides the possibility of such presence, and establishes our first consonance with the world" (Merleau-Ponty Phenomenology of Perception 192). Our status as embodied beings places us in a phenomenological world, which as Merleau-Ponty notes "is not pure being, but the sense which is revealed where the paths of my various experiences intersect, and also where my own and other people's intersect and engage each other like gears. It is thus inseparable from subjectivity and inter subjectivity" (Merleau-Ponty Phenomenology of Perception xxii). This is to say that the world in which we are embedded is also a human world, that is, one of intersubjective relationships, communication and shared meaning. Yet crucially, our experience of this world is based on our pre-existing familiarity with it, for example when we converse with others "In order that I may understand the words of another person, it is clear that his vocabulary and his syntax must be 'already known' to me. [. . .] We live in a world where speech is an *institution*. For all these commonplace utterances, we possess within ourselves ready-made meanings" (Merleau-Ponty Phenomenology of Perception 213, emphasis in original). In this sense, the cultural conventions by which we organise and understand our conduct can be considered as a kind of collective habit, developed, learned, adapted, and learned again, what we would call instinctual apart from that term's association with innate processes, but which we experience as something akin to such a natural response which we can call on largely without conscious effort during the conduct of our everyday lives. We can see then why the normative assumptions surrounding play that Malaby identifies are so pervasive within the Western cultural tradition, it is not merely a case of a consciously adopted attitude, nor simply a mistaken understanding of the world, but a particular habituated lived orientation towards and existence in the world based on a cultural convention of temporal and spatial differentiation that demarcates productive and non-productive activities.

The point of course is not so much whether such a distinction between work and play is or is not preferable to Malaby's insistence on its demise, only its normalisation as an essential and 'natural' difference, rather than a 'cultural accomplishment' in Malaby's phrase. But, having noted the inadequacy of cognitive and psychological approaches to play as a mode of experience, and keeping in mind Shinkle's objection to what she sees as a bias towards the visual and the semiotic in discourses surrounding videogame play, we must consider the effect of moving towards a consideration of play that grounds it in our wider everyday experience as an embodied experience. How then does an orientation that focuses on the body affect how we understand videogames and more importantly the experience of videogame play? More specifically, what frameworks and concepts are sensitive to this orientation and can effectively account for an understanding of videogame play as an embodied experience? Furthermore, what opportunities arise from such an understanding, not only from a theoretical point of view, but also in regards to videogame design? Videogames seem to be becoming more physically performative, a process that perhaps started with *Dance Dance Revolution* (Konami), and continuing on with the E*yeToy* series, before becoming the basis of an entire gaming platform in the shape of the Nintendo Wii – perhaps future cases of "Nintendo-itis" will affect the wrists and shoulders more often than the thumbs! Videogames such as *Wii Fit* (Nintendo <u>Wii Fit</u>), which specifically aim at integrating a videogame experience into everyday fitness regimes, further highlight this tendency of increasing bodily involvement in the experience of videogame play. Beyond this explicit involvement, the more general implicit involvement of the body in the experience of videogame play remains an important aspect in videogame play.

Conclusion

In this chapter we have articulated a position for addressing the experience of videogame play as it is experienced, rather than as the abstracted processes or theoretical structures more commonly found within the field of videogame studies. We have taken up Leino's argument that to understand the experience of videogame play as it is experienced it must be addressed from a first-person perspective, which we have followed through adapting Dourish's notion of embodied action and the phenomenological concepts upon which it is based for use as our conceptual tool set to explore the experience of videogame play. The following chapters aim to employ this position, that of the fundamentally embodied nature of the experience of videogame play, to describe, articulate and consider the experience of videogame play as an experience in itself. The next chapter begins this process by considering what it is that the embodied player actually does in the course of videogame play, not in the sense of the ludic events represented onscreen, but rather how their embodied being is engaged in videogame play, and how understanding this engagement expands our understanding of the experience of videogame play.

CHAPTER 2:

VIDEOGAME PLAY AND

THE BODY: *[giantJoystick]*

What exactly are we doing when we say we are playing a videogame? In everyday situations it seems that we are referring to what is happening on screen, after all, that is where our attention is directed, and it is where we are able to express the agency and control that is often offered up as the particular attraction of playing videogames. When we describe our own play activity we are likely to refer to the on-screen action, recounting how we shot the monster, won the race, or cleared the level. We are unlikely to discuss our bodily movements that arose out of and directed our play activities, such as that we pushed a certain button at the appropriate time or that we moved the mouse in a certain direction, but rather recall what these physical actions were translated to on screen. This in itself is not unsurprising, for button pressing and mouse moving are not in themselves particularly interesting or memorable, being at first glance simply instrumental actions that have no context or meaning without the on-screen action to which they are related.[9] However, as was argued in Chapter One, such oversight of the role of embodied action limits our understanding of the experience of videogame play as it is experienced. This chapter will demonstrate the importance of the player's embodied engagement in their experience of videogame play through focusing their bodily relation with the interface used to play. While the usage is not as common as it used to be, interface devices such as joysticks and game pads were once referred to as peripherals, as technically they were separate devices attached to the main computer unit. The related inference suggests a particular attitude towards these devices which sees them as of secondary importance, when they are arguably as central to the experience of playing videogames as the screen or the CPU.

In this chapter we will take as an example the art installation *[giantJoystick]* by Mary

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[9] It is instructive that one of the few instances where a particular sequence of physical actions by the player onto the controller becomes noteworthy and worth the effort of remembering is related to special moves, such as those in fighting games, and even in this case the particular sequence is retained in memory only for as long as required for the player to learn the special move, that is, be able to perform the required sequence without having to consciously recall it.

Flanagan (Flanagan [Giantjoystick]) to demonstrate and explore the importance of the interface to the player's experience of videogame play. It should be noted that this analysis is not intended to articulate the experience of *[giantJoystick]* in its totality, but rather takes an important aspect of the work, its bigness, as the basis for developing and demonstrating a wider theoretical argument concerning the importance of the player's bodily relation to the interface in their experience of videogame play. As is sign-posted by the work's title, a very large joystick is used to play videogames, the joystick in question being a recreation of the classic Atari 2600 joystick. However, apart from the marked increase in size of the now ten foot tall joystick, the games themselves are simply original Atari games such as *Breakout* (Atari Breakout) and *Asteroids* (Atari Asteroids). Though nostalgia for such classic videogames in itself is an important part of this work, what is more important for our purposes is the associated familiarity that many participants will have with both the system itself and the games which it runs, as it could be expected that a large proportion of likely players of *[giantJoystick]* have some previous experience of playing Atari 2600 videogames. As a result of this familiarity we are able to focus on the most significant aspect of the work for the purposes of this chapter, simply put, its size and the implications of that size on the experience of the installation.

Bigness

What then is the effect in this change of scale of the input device? Clearly the artist felt there must be some effect to warrant making the work in the first place, and indeed Flanagan's own website states that "[giantJoystick] explores group collaboration in play. … [it] is situated in the gallery or in public space in order to produce a childlike scale, to generate discussion and group play" (Flanagan "[Giantjoystick]"). Unsurprisingly, the accompanying essay for the installation in the catalogue for the exhibition in which *[giantJoystick]* was first shown is

supportive of Flanagan's intentions, stating that "Mary Flanagan highlights the spatial and social role of the interface. The joystick itself becomes a social structure and territory for inter-personal communication" (Paul 29). Interestingly, this statement by Paul was taken as the basis for online criticism of *[giantJoystick]* by some, while the installation itself has also drawn criticism from other anonymous online commentators. Of course such criticisms are from unknown individuals, and it is impossible to know whether or not they actually experienced the work, or if they have any experience of videogame play more generally. However, what we can glean from such criticisms is a general sense of 'so what, it's a big joystick,' suggesting that such commentators have either overlooked the significance of that bigness or are responding to it negatively. In fact, in these negative reactions the very essence of the work itself, its bigness, seems to be the point of contention. It makes it 'cool' but not significant, just a novel bit of meaningless fun, or 'juvenile', relying on the novelty of bigness to cover for a lack of imagination, which is in a way amusing given Flanagan's own stated intention of invoking a sense a childlike scale.

Whilst the premise of *[giantJoystick]* may seem simple, making an everyday object in massive scale,[10] it does present an opportunity to rethink our experience of videogame play by deftly bringing back into our awareness the physicality of these systems, of interactivity, and of our experience of playing them. And while there is much more to the experience of the exhibition than the physical size of its interface in itself, for our purposes in this chapter it is its inherent bigness and the visibility of the player's embodied relation to the interface that that entails which is our focus. Let us consider then the bigness of *[giantJoystick]*, particularly in reference to the Atari 2600 it is based upon. In the first case there is the essential size of the installation, a player usually does not have to climb onto an Atari 2600 joystick to operate it.

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[10] It should be noted that enlargement of everyday items or consumer products is common artistic practice, such as Damien Hirsch's *Hymn*, a 20ft tall reproduction of a 14 inch anatomical model, or Claes Oldenburg's 45ft tall Clothespin. In fact another artist, Jason Torchinsky, has also produced a working large scale Atari 2600 joystick.

Rather the joystick usually sits in the player's hand, it is graspable, enclosed within the player's grip, giving the player a sense of control over the joystick. *[giantJoystick]* is much too large for the player's hand to surround, rather they must grip the joystick with both hands, one on each side, almost as if they were embracing, or perhaps more aptly, wrestling with it, pushing and pulling it using not just the wrist and forearm but the entire body, bracing legs and shifting body weight. In fact the player has to position themselves such that the joystick itself does not occlude their vision of the game action projected on the wall, something the player using the normal sized joystick does not have to worry about. The scale of *[giantJoystick]* also necessitates collaboration, as a single player would have a difficult time both moving the joystick and pressing the button at the same time. Whilst the button on the original Atari 2600 joystick is designed to be pushed with the thumb of the non-preferred hand, with the rest of that hand supporting the joystick from underneath, in the case of *[giantJoystick]* many options are possible. Some players may stand beside the unit so that the button is at about waist height, so that they can push down on the button, other players could use their hands to push the button, but kneel or crouch on top of the controller next to the button so that their hands can actually reach the button. Still other players might opt to use their feet to press the button, either standing next to the button and depressing it with one foot as shown in Figure One, or standing with both feet on the button, so that its default state becomes 'pressed', and jumping ever so slightly to repeatedly trigger the button.

Figure One: *[giantJoystick]* in use. (Image copyright Mary Flanagan, reproduced with permission.)

By altering the size of the joystick Flanagan makes visible the nature of our bodily relationships with videogame controllers, indeed even the essentially embodied nature of our interaction with videogames. These physical interfaces are commonly naturalised parts of our experience of playing videogames, at least in the case of experienced players, in that they

have become so familiar with the controllers which they use to play that a situation arises not unlike that of Merleau-Ponty's example of the blind man's walking stick which we drew upon in Chapter One (Merleau-Ponty Phenomenology of Perception 165), specifically that the joystick in itself is no longer in the immediate awareness of the players but rather extends the 'reach' of the players. In the case of the videogame controller, it has not so much become an area of sensitivity, though the inclusion of tactile feedback in most contemporary controllers certainly gives the players a sense of the 'feel' of the videogame, so much as it extends the player's scope and radius of touch in the sense that it extends their ability to act into the game-space. The familiarity that underpins this phenomena in turn feeds into, and is fed by, the way in which videogame controllers are largely conventionalised, so much so in fact that many gamepads designed for use with personal computers mimic the design of Sony's Dual Shock controller, even if many omit the more complicated and hence more expensive features such as the actual analog sticks. Furthermore, generally there is a certain homogeneity to videogame controllers – even Nintendo's motion sensing based WiiMote is designed to be grasped comfortably in the hands and with a mass that doesn't require a substantial physical effort on the part of the player to lift it off the coffee table. The buttons, directional pads, and analog sticks on these controllers are themselves responsive, with only a minimal amount of mechanical resistance to give them the right amount of feedback and feel to the player – a joystick that requires significant physical effort to move is likely to be broken unless it is one designed to provide force feedback, for instance for use with high end flight simulators. This is not to say that the player's body isn't involved in the experience of play more generally, as noted in Chapter One, the affective dimensions of videogame play often results in the involvement of the player's entire body in their experience of play. Rather, the point here is that *[giantJoystick]* explicitly requires this total involvement of the player's body in the course of their experience of videogame play.

Figure Two: Using the entire body to move the joystick. (Image copyright Mary Flanagan, reproduced with permission.)

[giantJoystick] however introduces this aspect of physical effort as the joystick is not merely moved but must be forcefully pushed using the entirety of the player's body as can be seen in Figure Two, and similarly the button now presents significant resistance, requiring one or both arms, or even the player's entire body weight to trigger it. How might this added element of physicality affect the experience of play? Most obviously the experience of play would be more physically demanding, and resultantly more difficult for the player to achieve their intentions within the videogame being played. At a basic level, it would be interesting to compare the scores of experienced players between play sessions using standard Atari hardware and Flanagan's *[giantJoystick]*, as I would argue that the gap between these two

scores, even accounting for the additional co-operative elements of the latter, would show a significant decrease in performance for the larger joystick. We would expect that the added physical element would have played a significant role in this degradation, as the effort required to use *[giantJoystick]* would be considerably higher than that of the standard sized joystick, so issues such as fatigue become an issue. Even so, if it were possible to remove the effect of the physical effort required on the part of *[giantJoystick]* I am confident that a performance degradation would still exist, or to put it another way, that it isn't only the physical effort required that would affect the experience but rather that there is a fundamental difference in the nature of the experience. Once the two variables of co-operative play and physical exertion are removed from this hypothetical experiment being described there would still exist one variable that would affect the player's performance – the players' bodily unfamiliarity with the joystick. What such a comparison between scores would tell us it not simply that *[giantJoystick]* is more difficult to play, but that the basic compentency player's might have with more conventional interfaces would not transfer across, and that more generally the player's intentional orientation would be profoundly altered – despite their familiarity with the videogames they are playing via the installation, it is likely that they would be unable to play them as 'games' as such.

Competency in playing videogames is much more involved than simply knowing the right time to perform the right action, but also includes a factor that is usually implicit and largely invisible in our experience of playing videogames. The actual performance of that action through the manipulation and use of the controller, what we as players actually do as we 'play games', is a particular skill that we must develop through our familiarity with videogame controllers – how they feel and how they move to our touch. Furthermore, the experience itself of this performance has a certain fluidity to it, a sense of ease and of relatively direct control not of the controller itself but over what the controller relates to in the game – the

experienced player does not consciously think to themselves to push a button at a certain time but simply presses it as if it were second nature. It would seem that for experienced players their level of experience with the controller is such that it has become almost transparent to them, simply a ready-to-hand conduit through which their intentions flow into the environment of the videogame. *[giantJoystick]* however, so drastically changes the relationship of its players to the control interface that the built up skill of the experienced player cannot simply be transferred across. The player may still know the optimal time to perform the relevant actions within the game, but they would still find their performance unsatisfactory as the manner in which these actions are performed calls on them to make use of their body in a very different way to what they are used to.

Merleau-Ponty describes how an experienced typist relates to their keyboard, not through positing the keys required at a particular instance as objective points in space, arguing rather "that the subject who learns to type incorporates the key-bank space into his bodily space" (Merleau-Ponty Phenomenology of Perception 167). A similar scenario could be put forward for experienced players, that the familiarity they have with videogame controllers arises from the incorporation of the button and joystick space into the bodily space of the player and *[giantJoystick]* arguably demonstrates this. *[giantJoystick]* disrupts the comfortable familiarity we have with videogame controllers, as it requires the player to use their entire body, as opposed to just the hands alone, and this necessitates the player not merely learning a new way of moving the joystick but an entirely new way of playing to incorporate the joystick into their bodily space. This new 'style' has kinetic considerations wholly absent from the experience of using a regular sized joystick, for instance if the player suddenly wishes to change the direction of the joystick a mere flick of the wrist will no longer be sufficient, as apart from simply having a longer 'travel', the inertia of the joystick would be considerably higher, and as such the player will require some small amount of time to properly position

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themselves to move the joystick in the direction desired - we could expect that this would require a change in the player's approach towards the game, as they may need to plan their movements more carefully to take into account these new conditions. The nature of the experience of play becomes less about 'shooting down the aliens' but rather 'learning how to make use of the joystick in order to shoot down the aliens'.

This 'learning to play again' aspect of *[giantJoystick]* is illuminating, as for many of us that have grown up with videogames the various joysticks, control pads, and other conventional interface devices have become such a naturalised part of our everyday experience that we tend not to think about them, we simply use them as we would use any other part of our nominal body. As a result they have become somewhat invisible to us as has the mediating role played by these interfaces in our experience of playing videogames. The inherent bigness of *[giantJoystick]* highlights this mediating role and the importance of familiarity with the interface to what we usually consider as the experience of playing videogames – that generally when we play videogames our attention is focused on the screen and we expect the controller to transmit our intentions with as little trouble as possible. However, Flanagan reverses this situation so that rather than acting *through* the joystick as we usually would the focus instead becomes one of acting *upon* the joystick. This is why even an experienced player would find their experience does not necessarily accord with their experience of videogame play in more conventional settings, as whilst for them using a conventionally sized controller has become such a second nature experience that they need not even think about it while playing, this familiarity does not transpose to *[giantJoystick]*, simply because this familiarity was based on a bodily relationship with the control interface that was taken for granted and which is no longer applicable.

Here Dourish's use of Heidegger's distinction between the ready-to-hand and the present-at-

hand is helpful in understanding how merely changing the size of an object could have such an impact. According to Dourish, [replace moved text] In effect, through its bigness the joystick of *[giantJoystick]* makes the joystick present to our awareness again, something to pay attention to in its own right, rather than something peripheral to the experience of playing videogames, moving it out of our preontological world by making it present-to-hand, thus becoming more than simply equipment used to play videogames but rather an entity in its own right. Importantly, it is not simply that the players become aware of its existence, but also that their intentional concern comes to rest upon the physical interface itself rather than through the joystick and into the game-space.

Collaboration

As noted earlier the scale of *[giantJoystick]* requires two players to co-operate in using the installation, and this collaborative aspect is an important part of the installation, as what were once single player games suddenly become multiplayer ones, further demonstrating the importance of the player's bodily relation with the interface to their experience of videogame play. Furthermore, it is informative to consider how the interface alters the experience of play through requiring this collaboration, both in regards to a more conventional interface, and through considering how the interface mediates that collaboration by considering how changes to the interface might affect the player's experience of collaboration and of the videogame play more generally. A player using a normal Atari 2600 joystick does not need to verbally communicate between their two hands to co-ordinate their activity, their hands do this automatically through the sensory-motor proprioceptive systems with which we perceive and act within the world. However, the players of *[giantJoystick]* must co-ordinate their individual actions in some manner, whether this involves communication during the course of play or some establishment of particular strategies preceding play, though of course there are

also other options depending on the sort of game being played. For instance, in a shooting game such as *Centipede* (Atari <u>Centipede</u>), the player operating the button could simply fire continuously, leaving it to the player operating the joystick to make use of this steady stream of fire through appropriately aiming it. On the other hand there are technical limitations inherent in the Atari platform that restrict the number of moving objects on screen (Wolf 55), and in some games such as *Space Invaders* (Tatio), where the rate of fire is slow because of this limitation the player operating the button may be better served by carefully watching the on-screen movements of the other player and attempting to push the button at the appropriate time. In any case this communication between the two players is a completely new layer of interaction over the original versions of these games played with a conventional sized controller, and as a result an entirely new layer of the experience of play is added to the mix. The bigness of Flanagan's *[giantJoystick]* changes what would have been the co-ordinated action of a single body to a process requiring inter-personal communication between two bodies, and the joystick as the site of this communication becomes a focus of attention, thus the experience of play is centred not only onscreen, as is the case with a conventional Atari 2600 joystick, but rather also literally on the joystick.

The ability for the players to co-operate is itself based on the proximity between the two players and their location within the same space required to make use of the installation, they are co-located in that they "are within range of each other's naked sense perceptions and can see, hear and even touch each other without physically re-positioning themselves" (Zhao and Elesh 569). This is important not only for the act of communication, as there is no apparatus provided that would allow either player to act at a distance, but also for a sense of co-ordination, as both players would be able at some, if not at all, times to see their co-player at the periphery of their vision, providing some awareness of the other player's movements and demeanour. Indeed, it would be possible to set up some type of remote control for the button,

such that the player operating the button could be unseen to the player using the joystick, perhaps being located somewhere behind the joystick and able to view both the projected image, the joystick, and the other player somewhat detachedly. This remote player would still be able to push the button, but would also have a much clearer view of what the joystick player is doing, and as a result would be better able to anticipate when the correct time to fire would be. Would this change in the interface, and thus the player's embodied relation to the interface, affect their experience of videogame play?

The co-location of the players is more than just a practical requirement of the installation's physical design, for the players are not only present together within the same space but also present to each other – they are not merely co-located but also co-present, which could be thought of as a relation of being-with, as opposed to simply being-in-the-same-space.[11] To see this distinction more clearly, let us imagine a scenario where I am playing games at a net café, and the patron sitting next to me is checking their email and browsing the internet. We are both in the same space, we are co-located, we are even aware of each others presence given our close proximity, but could it be said that we are in a relation of co-presence, where we are experiencing that space together? Whilst we may be physically in the same space we are engaged in different activities, whereas if we were co-players of *[giantJoystick]* we would both be attending to the same activity, and it is this sense of collaboration that is the essential ingredient in the creation of the sense of co-presence, "copresent [sic] individuals are not only located in each other's close proximity but also play close attention to each other, ready to engage and be engaged" (Zhao and Elesh 570). Co-presence captures the phenomenological sense of 'withness' we experience when another person becomes closely part of the immediate world we perceive, such as, for instance, when we are collaborating on the same

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[11] It should be noted that Zhao and Elesh draw comparisons between their sense of co-presence and Heidegger's sense of 'being with', and whilst the sense of being-with used here has roughly the same meaning, it is not intended as a reference to Heidegger's concept.

task and thus share an intentional concern, as opposed to the sense of being-in-the-same-space I may experience "in public places like malls, streets and parks, where people are next to each other, minding their own businesses" (Zhao and Elesh 570).

Intrinsically, co-presence requires co-location, for if each individual is outside of the other's perceptual range they would not be able to "pay close attention to each other, ready to engage and be engaged" (Zhao and Elesh 570). In the hypothetical situation of the remote button, the co-players would be unable to establish any sense of co-presence, as the preceding condition of being co-located cannot not be met, for whilst the player operating the button would have within their perceptual range the player operating the joystick, this situation would not be reciprocated. This again underlines the central role of the player's embodiment as the basis for their experience of playing *[giantJoystick]*, for the co-location upon which co-presence rests derives from being "within range of each other's naked sense perceptions and can see, hear and even touch each other without physically re-positioning themselves" (Zhao and Elesh 569), it is a physical, bodily closeness that allows for the possibility of collaboration during the course of play. Yet, while the importance of physical bodily closeness in the experience of playing *[giantJoystick]* specifically would seem to indicate that co-presence depends upon a condition of physical proximity, as Zhao and Elesh argue more generally in the case of physical separation, a sense of co-location "can be partially restored through sensory extensions via electronic mediation. A multimedia communication device, such as a videophone, allows distant individuals to see and hear each other as if they were co-located in the same physical place" (Zhao and Elesh 569). Would it be possible then to establish a mediated sense of co-presence in the experience of playing our modified version of *[giantJoystick]* through electronically mediated communication between the players?

As we have seen, more than just proximity is required for an experience of co-presence, so let

us consider if a mediated form of co-location in itself is sufficient, by extending our hypothetical version of *[giantJoystick]*, this time with the co-players unable to observe each other directly due to being placed in discrete locations, but with each being able to view the game action onscreen. Already we lose one of the most important aspects of the actual *[giantJoystick]* experience, namely that the joystick as both the physical location, and more importantly as the locus of the co-player interaction with each other and hence of the experience of the installation, is no longer present. The only means each co-player has of communicating with each other is through the game itself via the dynamic image projected onscreen – the joystick player knows when their co-player has pressed the button by the results of the button push on-screen, whilst similarly the button player can see the actions of their co-player through the movement of the co-players' avatar on screen. No longer is the co-players' attention focused primarily on the physicality of the joystick as it no longer serves as the basis for the co-players interaction, but rather their attention turns towards the screen, which now provides the only means with which the co-players can attempt to co-ordinate their actions. The experience of the installation would change markedly as well – though there would still be the bigness of the joystick the co-player's experience would no longer be based around the joystick itself but the on-screen action, and it is likely that *[giantJoystick]* would lose some if not all of its wistful and childlike appeal and instead become an instrumental aid to the more teleological experience of 'playing the game'.

However, though physically distant, the co-players are engaged with the same activity so we can ask if they experience a sense of co-location within the game environment and as such a sense of co-presence within that environment. This would, in the first instance, rely on the co-players experiencing a sense of being located within the mediated environment of the videogame world, and as Susi and Rambusch argue, players are not only situated in their immediate physical and cultural environments but also "they are *simultaneously situated*

within the game's virtual world; the activity of controlling a game's characters places the player in the virtual game world" (Susi and Rambusch 733-34, emphasis in orginal).[12] According to this perspective the players of *[giantJoystick]* are co-located in another sense in that they are present in both real and virtual spaces, a situation which must be "handled by players if the game is to be played successfully" (Susi and Rambusch 734). Would the co-players experience then a sense of co-presence within the videogame environment, that is, would their shared activity be sufficient to impart a sense of being present to each other within their mediated environment, or would the lack of communicative facilities outside of the actions that each can perform undermine the very sense of collaborating towards the same end? After all, the player with the button has little recourse but to push the button as they feel appropriate, whilst the joystick player can only position the avatar in regards as to where they think is an appropriate place to push the button. This disconnection between the two co-players means that for any sense of co-presence to be experienced the co-players would need to be 'in-sync' – the individual actions of each player would need to be fairly close to the expectations that the other player had of the appropriate action to take at that time. In other words, the sense of a shared task between the two players would rest on a mutual understanding of the requirements of the task between the two players, an understanding limited by the communicative options on offer.

This is not to rule out the possibility of communication between the co-players through the limited channels on offer, for as Sjöblom notes, "the actions that constitute the gaming, both on- and off- screen are the very same actions by which gaming gets understood, and the situation (context) in which this is done is constructed out of those very same actions" (Sjöblom 4). The context of playing videogames implicit in the installation assists with the

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[12] It should be noted that Susi and Rambusch characterise this sense of being situated within the game-space through their control over the character not in the sense of a narrative immersion within the videogame's fictional setting, but rather in a sense of habitual tool use not dissimilar to that mentioned in regard to Heidegger and Merleau-Ponty.

co-players understanding the actions they view on-screen of their collaborators. However, unlike the actual version of *[giantJoystick]*, it is only this onscreen aspect that can be directly viewed, their co-player's off screen actions are only indirectly available through inference from their onscreen actions, resulting in the re-centring away from the joystick as the focal point of attention towards the on-screen game. This transformation in the experience of *[giantJoystick]* could be alleviated to some extent through the addition to the hypothetical remote locations of each co-player of some means of communication, for instance a video camera aimed towards the co-player that displays their actions and transmits their voice to a screen with speakers at their co-player's physical location. Once again the co-player's can see and hear each other, and their focus of attention would turn away from the videogame projected onscreen. However, the co-players would not be focused back onto the joystick, but instead their attention would be turned towards the audio-visual screens which display their co-player and thus provide the opportunity of collaborating on the operation of the joystick. The experience of co-presence would likely be much stronger for the co-players than that of the previous hypothetical set up, as the co-players can now communicate directly, albeit through the mediating screens, rather than relying on inferences based on the onscreen action.

Even so, would there be qualitative differences between the experience co-presence offered by this modified version of *[giantJoystick]* and the experience of co-presence which is so central to the actual installation? In both cases the co-players are able to communicate both through spoken language, as well as through body language; and in both cases the co-players are engaged with a common activity. At face value there seems to be little, if any difference at all, a viewpoint backed up by Sjöblom's analysis of videogame play at a internet cafe which highlights "the participants simultaneous orientation to on-screen and off-screen space, making an analytical distinction counter-productive when studying situated gaming," which leads him to argue that "the participants do not orient to these two resources as if they were of

qualitatively different orders," for instance through a combination of on-screen and off-screen pointing to nominate a feature of interest (Sjöblom 13). However, in the case studies that Sjöblom provides, his participants are located within the one contiguous area, the room of the internet cafe, and are thus physically present to each other, as opposed to being only visually present. Even in one of Sjöblom's excerpts, a player who is located about 5 metres from the other players must ensure that his own avatar is safe from harm before "he can turn his attention away from the on-screen action of his own screen and orient to activities that other people playing the game are part of" (Sjöblom 7-8).

A similar situation would exist in the modified version of *[giantJoystick]* where the co-players would have two screens to attend to, the screen showing the game environment, and the screen displaying their co-player, and they would not experience the same degree of co-presence with their co-player as they would in the actual version of *[giantJoystick]*. Though they would still be able to communicate verbally it would be the small details that would be lost, things such as vibrations felt through the joystick and its base that arise out of the co-players' movement and actions, or the possibility of touch whether intentional or accidental – these and other such familiarities of immediate physical proximity can simply not be perceived via a screen nor speaker, much like many of the nuances of face to face conversation, such as body language, that are omitted from telephone conversations (Steuer 78ff). The hypothetical modification of *[giantJoystick]* would still largely be about collaboration, but would also introduce to the experience of the participants the challenge of dealing with the multiple demands on their attention that arises from their negotiation of multiple in-between spaces, as opposed to the focus on the joystick itself as the space of both play and co-operation, a focus which emphasises the essentially embodied nature of interaction during the course of videogame play.

Conclusion

In this chapter we have seen how the physical size of the art game installation *[giantJoystick]* makes visible the player's embodied relation to the interface during the course of play, highlighting that the player's entire body is phenomenologically involved in the experience of videogame play through de-familiarising the joystick such that the player's relation to it changes from a ready-to-hand extension of their motility and intentionality to a present-at-hand object. This indicates that the interface plays a much more important role in the player's experience of videogame play than is generally acknowledged within the field of videogame studies, where it is addressed largely in a narrow and technical manner. While the Atari 2600 joystick and other conventional interface controllers lack the physical size that makes the embodied relation of the player to the joystick of *[giantJoystick]* so apparent, the player's embodied relation to the interface more generally is no less important in their experience of videogame play. However, it should be emphasised that *[giantJoystick]* is something of a unique case. For instance, whilst the games played using *[giantJoystick]* are the same games playable on the Atari 2600, the domestic context in which the later is played is quite different from the gallery context in which the players experience *[giantJoystick]*. The most obvious difference is that the gallery location introduces a public context, whereas the domestic location is one of private space. As such, there is a sense of performance on the part of the players of *[giantJoystick]*, as it is likely that other gallery patrons might stop to watch their interactions with the installation, possibly introducing a sense of self awareness that might interfere with the players' experience of the work. This possibility of the intrusion of self awareness into the players' experience raises another aspect of bodily being, the awareness of being observable by others. As Merleau-Ponty argues, "in so far as I have a body, I may be reduced to the status of an object beneath the gaze of another person, and no longer count as a person for him" (Merleau-Ponty <u>Phenomenology of Perception</u> 193). This aspect of

[giantJoystick], the potential for being regarded as part of the spectacle by others, suggests a very different kind of experience than that encountered with videogame play more generally.

It could be argued that one of the aspects of the gallery context in which *[giantJoystick]* is shown is in a way necessary for its very being. The presence of *[giantJoystick]* within this context already marks it with certain expectations – it is an artwork, it aims to communicate something about itself, about its very bigness, it aims to get its audience to see things in a different way. Conversely, the humble Atari 2600 joystick is simply an object that is part of a consumer electronics product, its purpose is not to communicate with its user but simply function in the manner it was designed for. As such, the two joysticks are differentiated not only in terms of scale, but also significantly in their context of use, and as a result both the expectations of their users and the meaning those users will take away from their experience with either will be different. Is it relevant then to take *[giantJoystick]* as a particular case that has more far reaching implications for the field of videogames due to its status as a videogame of sorts, or does its other aspect as an artwork mitigate the applicability of the analysis above due to it being a special, or particular case, with limited relevance to videogames more generally? We have already mentioned the public aspect of *[giantJoystick]* which is not part of the context of use for the original Atari 2600 joystick, however a public setting for videogame play more generally is not uncommon, most obviously in the case of videogame arcades, where the issues of public performance, scrutiny by other patrons of that performance, and questions of etiquette around turn taking and other issues of appropriate conduct are relevant. Though these wider similarities are not of primary interest here they do suggest that the significant divergences between *[giantJoystick]*, and the Atari 2600 joystick it is based on, do not necessarily entail that the key implication arising from the analysis of *[giantJoystick]*, the role played by the player's embodied relation to the interface, cannot be applied more widely.

Even so, given the difference in the expectations towards, and purpose of, *[giantJoystick]* and the Atari 2600 joystick on which it is based, we would do well to be cautious with the comparisons being drawn. Yet it is instructive that we were able to discuss both joysticks within the same general frame of reference, namely how each relates to us as embodied beings, how each engages us in a different kind of bodily comportment or style, and different kinds of phenomenological space. That is to say, that the significance of *[giantJoystick]* for this thesis lies in how it makes visible the role played by our body in the experience of playing games, and that our bodies are no less present and essential when we are playing using a conventional controller. Let us consider Sjöblom's statement that "there is nothing about gaming that is 'virtual'. Gameplaying is not something that goes on only on-screen" (Sjöblom 13). Indeed, even in the sometimes idealised genre of massively multiplayer online role playing games the realness of the offline world is never far from the elves and orcs that populate the environment, such as in the familial relationships or geographical common ground underpinning playing groups that Jakobsson and Taylor describe (Jakobsson and Taylor 98-99). *[giantJoystick]* is instructive in that through its sheer size it moves the attention of its players away from the screen on which so much of what is described as videogame play is assumed to take place towards the physicality of the controls. By simply upscaling the familiar Atari 2600 joystick Flanagan achieves with *[giantJoystick]* that which every console manufacturer and games designer is trying to avoid, making the equipment with which we play games unfamiliar and present-to-hand, that is, making them objects again which require us to use them, and think about them, in new ways.

[giantJoystick] is thus relevant to wider questions about the role of our body in videogame play as it explicitly disrupts our conventional and expected relationships with the physical interfaces used to play videogames. Through increasing the size of a joystick to such an

impressive scale Flanagan amplifies the moment of our use of joysticks to such a degree that it distorts our conventional body schema as it relates to videogames. What this distortion highlights is the importance of this bodily relation between player and videogame through the interface to the experience of videogame play – an interface device may occasionally still be described as a peripheral, but as we have seen it is central to the player's experience of videogame play even if they are not consciously aware of it due to having become ready-to-hand and thus withdrawn. The next chapter extends the investigation begun within this chapter by focusing on the interface, specifically through developing a deeper and more nuanced understanding of the concept of the interface, extending beyond the technical definition normally applied to it.

CHAPTER 3:

WHAT IS AN INTERFACE?

In the last chapter we saw how the physical size of the art game installation *[giantJoystick]* made visible the role played by an important part of the equipment we use to play videogames, the physical interface. We also saw how a particular interface addresses us as players through a particular embodied relation, in the case of *[giantJoystick]* one that highlights how our entire body is phenomenologically involved in the act of playing videogames through de-familiarising the joystick such that the player's relation to it changes from a ready-to-hand extension of their motility and intentionality to a present-at-hand object. In examining *[giantJoystick]* though, a particular question was left unasked, or at least its answer was assumed – what is an interface? Like the Atari 2600 joysticks upon which *[giantJoystick]* was modelled, the interfaces between us and the videogames we play more generally have become so ubiquitous that we have become inured to their presence, as *[giantJoystick]* underlined they have become ready-to-hand, things we act through rather than upon, things that exist not as objects in themselves for us but as instrumental means to an end. This chapter seeks to examine more closely what is meant by the concept of an interface in videogame play, and aims at providing a deeper, more nuanced understanding of what an interface is by moving beyond the often technical basis in which they are discussed towards a view grounded in the player's embodied experience of using interfaces, and subsequently the nature of their relation with this broadened conceptualisation of what interfaces are. To achieve this outcome, this chapter will first expand the notion of the interface by adopting Dourish's historical model which understands interfaces through the ways in which they make use of different sets of human skills, and Shinkle's notion of the interface as the portal or junction between player and game. This expanded concept of the interface will then be used to explore the question of what an interface is by applying it to an example of a videogame with an unconventional interface design, Sony's *EyeToy: Play 3*. The insights gathered from this analysis will demonstrate an understanding of the videogame interface that considers how the player's interaction with the videogame they are playing involves a number of layered

relations that suggests that the concept of interface extends beyond the physical devices and screens with which is usually associated.[13]

The Game Interface

> The digital game interface is the portal between the player and the game form – a junction point between input and output, hardware and software. Designed to draw together eye, body, and gameworld, the game interface is a complex system comprising both graphical and physical elements such as screens, keyboards, joysticks, controllers, and other peripherals. This complexity has yet to be unpacked in any great detail by the field of digital game studies, however, where the graphic interface often stands in for a more thorough rendering of the game interface as an embodied instrument. (Shinkle "Digital Games and the Anamorphic" 1)

In the above quote Shinkle identifies many of the elements we often associate with interfaces, for instance that they involve various paired elements such as input and output, hardware and software, and graphical and physical factors. What is particularly important about the quote though is the theoretical shortcomings it identifies, namely how the graphic interface often comes to subsume the other elements of the game interface more generally, and as a result the fuller complexity of the interface as a thing used to play is overlooked. Certainly, this tendency is not limited to the study of videogames alone but can quite commonly be found in the literature dealing with HCI and interaction design. For instance, a section on user interface design in one particularly tome-like 'handbook' of HCI features chapters on the graphical design of user interfaces, the design of on-screen features such as menus, the role of interface metaphors, and the effects of colour on interaction – yet physical input devices are listed separately in another section dealing with the design of workstations, whilst a chapter on voice based input is included in a section that deals mainly with multimedia applications

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[13] This is not to deny that more nuanced approaches towards the concept of the interface exist within relevant fields such as interaction design, but only that within the field of videogame studies and more generally in treatments of the interface that the concept is often treated simply as the devices that form the surface of the interface.

(Helander, Landauer and Prabhu xvi-xvii). This suggests that not all elements of the interface are considered as part of the user interface. Similarly, Preece, Rogers, and Sharp's text book on interaction design features a chapter that addresses the affective impact of interfaces on users, which deals almost exclusively with how the representations on-screen can produce positive emotions on those who view it (Preece, Rogers and Sharp 141-64), yet makes no mention of how the other elements of the interface might have affective impacts. This is possibly due to the limited meaning often attributed to the word affect, for as Shinkle notes:

> affect is not the same things as emotion. Affect is a way of describing the 'feel' or intensity of a game, [. . .] Affect refers to the *unquantifiable* features of a game – those phenomenological aspects of interactivity that are difficult to describe and to model theoretically, but which nonetheless make a game come alive. (Shinkle "Corporealis Ergo Sum" 22-23,emphasis in original)

Furthermore, this affective aspect is something that should not be conceived of in terms of content, which Shinkle describes as "the sociocultural capture or qualification of this intensity" (Shinkle "Corporealis Ergo Sum" 22), but rather "in terms of the embodied nature of image perception and the player's material relationship to digital technologies" (Shinkle "Corporealis Ergo Sum" 23). That is, the affective aspect of the experience of videogame play should be approached with regards to its essentially situated and embodied nature, grounded in the concrete experience of the player that arises from the act of play. The omission of these material and affective relationships is underscored in an earlier section of Preece, Rogers and Sharps' text purportedly dealing with physical design – the design of the physical elements that Shinkle notes in the quote at the start of this section – which characterises such physical design decisions largely in terms of information visualisation, with the actual physical design treated as only an influencing factor on decisions concerning "The way the information will be structured, the kinds of graphical representations that will be appropriate, and the layout of the graphics on the screens" (Preece, Rogers and Sharp 65).

In these HCI texts the important point raised by Shinkle can be clearly seen, that when we talk about interfaces we are often referring to the graphical user interface alone to the exclusion of the other aspects she notes,[14] and this should not surprise us for three reasons. Firstly, as Dourish has noted "the key feature of interaction with computation is how we *act through* it to achieve effects in the world" (Dourish 137, emphasis in original?), which holds also for the interface we use to interact with videogames. In our everyday life we are more concerned with the 'doing of' rather than the 'of doing', and the screen, which presents back to us what we are doing, expectedly becomes our main focus. Secondly, our familiarity with the interfaces we use to play aids this first point, as they have often become ready-to-hand and incorporated into our bodily space and as such we act through them not only teleologically but also ontologically, in that "our relationship with the technology [. . .] was not about using an instrument, but *being* an instrument" (Shinkle "Corporealis Ergo Sum" 29, emphasis in original). Lastly, there is the simple pragmatism that the videogame systems, both console and personal computer based, that we use are mass produced standardised products with a largely conventionalised model of simultaneous controller input with audio-visual output. Very few of us are lucky enough to work at Xerox Parc or MIT's Media Lab and have the opportunity to design both the physical interface and the underlying software that utilises it, but instead have to fit our needs as best we can to the physical interfaces that are already in wide spread use.

As Shinkle points out, "most commercially available interfaces require the user to adapt his/her movements to suit the manufacturer's specifications, replacing individual gestures with [. . .] the homogenization of gesture and response" (Shinkle "Corporealis Ergo Sum" 31). This homogenisation of gesture acts in concert with our familiarity of conventional interfaces

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[14] Of course it should be noted that at least at a simple level the graphic interface is physical in the sense that it is the photons of which it is comprised that makes it possible for us to see them in the first place.

such that we develop enduring habits in our use of those interfaces, what Merleau-Ponty describes as 'praktognosia", or practical knowledge (Merleau-Ponty <u>Phenomenology of Perception</u> 162), a "knowledge in the hands, which is forthcoming only when bodily effort is made, [. . .] a knowledge bred of familiarity" (Merleau-Ponty <u>Phenomenology of Perception</u> 166). For the experienced player, which anecdotally many within the field of videogame studies are, there is a powerful habit based familiarity with the largely conventionalised prevailing design of physical interfaces, such that they have become ready-to-hand and incorporated into our bodily schema, not something we act upon but rather act through. The result of all this is that videogame interfaces are often considered as simply part of the technical system used to play, rather than as a central and vital part of the experience of videogame play in itself.

Stages of Interface Development

If we step outside of this everyday view of our use of interfaces and approach the topic more historically though it becomes clear that this on-screen bias was not always the situation in our experience of interfaces. Dourish puts forward such a historical narrative of the development of the interaction between humans and computers that does not focus primarily on the technical aspects but rather on "the development of user interfaces in terms of the different sets of human skills they are designed to exploit" (Dourish 5), describing the electrical, symbolic, textual, and graphical as successive stages (Dourish 7-11). What is useful here about the approach Dourish develops is that "it draws attention to the human experience of computation" (Dourish 5), rather than focusing only on the technical developments and advances or conceptual models that underpin these different paradigms of our interaction with computers. It describes how we relate to computers through the nature of our interaction with them, particularly how the interfaces that enable this interaction entail different experiences of

interaction, such as the different experience between using a command line based interface as opposed to a contemporary graphical desktop interface.

Given that Dourish's model is historical, it begins with our interaction with computers when electronic computers were first emerging from research laboratories where "Every machine was a prototype; every program, uniquely designed for a specific computer" (Dourish 6). Though Dourish chronologically situates this stage at the transition "from hardware configuration to digitally stored programs, [. . .] The boundary that we now take for granted [between hardware and software] was fuzzier then; interacting with the system, and developing new programs, relied on a thorough understanding of the electronic design" (Dourish 7). Hence, the interface used to interact with computers at this stage was the conceptual knowledge of how the computer, as an electronic machine, actually functioned in the physical world and the physical circuitry itself as "What we currently refer to as 'instruction sets' [. . .] were, at that stage in the history of computation, intimately tied to the individual details of the circuitry of any particular computer" (Dourish 6-7). As a result, "Entering a new program, even if that program was to be stored digitally in the memory of the computer, could still bear a remarkable resemblance to electronic reconfiguration, involving plugboards and patch cables" (Dourish 7). Screwdrivers, soldering irons, and cabling, rather than the keyboard and mouse with which we are familiar with today, were the primary interface device at this stage. Importantly, this physical reconfiguration ensued that interaction with computers was asynchronous, in that there were discrete stages of configuring the computer, and then running the program.

A more complex level of abstraction for this interaction with computers through the interface of the physical circuitry developed during the transition to the symbolic stage of interaction where "programming computers came to require less understanding of the detailed

construction of each particular machine, and relied increasingly on regularized and well-understood capacities that would be available across a wide range of machines—register files, index registers, accumulators, and so forth" (Dourish 7). The programmer no longer interacted with the physical machinery but rather with the conceptual machinery of computation as standards and conventions began to emerge. At the same time the way in which programs were encoded moved away from machine native forms "to other symbolic forms that were more readily understandable to human beings" (Dourish 7). Firstly assembly languages, still tied to a particular type of computer system, but later programming languages such as LISP and FORTRAN were developed which affected a type of interaction with computers that "was now lifted to a more abstract level that was simultaneously a more natural form of expression and independent of the precise details of any specific computer, its implementation and configuration" (Dourish 7-8). Whilst users unfamiliar with protocols of programming languages would still find this type of interaction almost as foreign as the earlier electrical stage, importantly "It introduced a set of symbolic *representations* of computer system operation as the primary modality by which interaction was conducted" (Dourish 8, emphasis added). Interestingly, Dourish argues that the physical interface mirrored the conceptual development of symbolic interaction – "Punched cards, for example, can be regarded as a primitive form of symbolic interaction" (Dourish 8), a development best seen in the later adoption of the alphanumeric keyboard as the key interface device for symbolic interaction with computers.

This development of the interface employed in interaction from the machinery of the circuitry to symbolic representations of that circuitry is a vital point in Dourish's historical model, as it underpins the development of his next stage, textual interaction. Dourish characterises this stage as an extension of the symbolic phase, for as he notes many programming languages are themselves textual in nature, yet given the concerns of his model with the human experience

of using computers "a distinction can be made between symbolic and textual interaction by looking at the *actual interaction* with the computer" (Dourish 9, emphasis in original). Primarily, this distinction lies in the temporal relationships the user would have with the computer – rather than the asynchronous, batch processing style of the symbolic stage the user now received co-temporous feedback which "brought the idea of 'interaction' to the fore. [. . .] replacing configuration, programming, or other ideas that had largely characterized the interplay between users and systems in the past" (Dourish 10-11).[15] Underlying this increased sense of interaction was the dialogical nature of textual interaction based on a habitual "'grammar' of interaction, one that broke input text into commands, parameters, arguments, and options" (Dourish 10), to which the computer would respond if not immediately then as quickly as a response could be processed, and as such "it was natural to look on the result as a 'conversation' or 'dialogue.'" (Dourish 10).

Graphical interfaces built upon this sense of interacting with the computer and added, quite literally, another dimension "by turning interaction into something that happened in two-dimensional space rather than a one-dimensional stream of characters" (Dourish 11). Dourish outlines various ways in which the spatial nature of graphical interfaces opened up new ways in which to make use of our everyday abilities in our interaction with computers, but what is of particular interest to us here is how these various factors came together in the direct manipulation model of interface design which "represent[s] explicitly the objects that users will deal with and to allow users to operate on these objects directly" (Dourish 13). Frohlich expands further on the direct manipulation model, noting that the sense of direct control "seemed to change the entire paradigm for human-computer interaction from *dialogue* to *manipulation* by utilizing what the programmers knew was a visual *language* in a way users

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[15] An interesting case which fits in between these two stages and helps elucidate the difference are programming languages such as python which features both command line mode (i.e. textual interaction) as well as a more conventional compile mode (i.e. symbolic interaction). Despite the difference in the temporal relation to the user, both modes follow the same protocols and syntax.

believed to be an entire interactive *world*" (Frohlich 464, emphasis in original). This 'worldness' of graphical interfaces is based on the experience of 'directness' they provided for their user, an experience Frohlich argues is based both on engagement and distance. Engagement, which "refers to the perceived locus of control of action within the system. [. . .] whether users feel themselves to be the principle actors within the system or not" (Frohlich 465), is high in systems utilising graphical interfaces, as the experience of directly manipulating the objects of experience "is like reaching into the world yourself to carry out the action. Users act on the world in 'first-person' and are therefore said to be directly engaged with the system" (Frohlich 466). The concept of distance draws upon Norman's concepts of the gulf of evaluation and the gulf of execution (Norman 49) to describe the ease with which users can "translate their goals into actions" (Frohlich 466). This is a task graphical interfaces can make easier by employing a system of metaphors based on real world objects and actions such as writing documents which invoke "a set of ready-made expectations in users about what kinds of things could be done with documents" (Frohlich 466). For example, the development of graphical interfaces made our interactions with computers more pragmatic, more concerned with the tasks to which we were directed than with dealing with the technical tasks and procedures required to perform those tasks.

What is interesting about Dourish's historical model is that it tracks how our interaction with computers gradually becomes more and more like an everyday activity, "more easily integrated into our daily lives by reducing the complexity of those interactions" (Dourish 14), through drawing upon our skills and familiarity with the world in ways that developed an increasingly phenomenologically natural interface, for instance where the screen becomes a 'desktop', and a text file becomes a 'document'. At the same time the physical aspects of the interface, the real world devices such as the keyboard and mouse, seem to disappear into the background somewhere around the textual stage as the interfaces used become more

accessible and immediate and thus the user's attention increasingly focuses upon what is onscreen. Whilst Shinkle quite rightly disputes what she sees as the inherent occularism in the academic treatment of videogames, noting that "Within the field of game studies, interactivity still tends to be understood as a predominately visual and semiotic activity" (Shinkle "Corporealis Ergo Sum" 22), it perhaps should not be posited so much as an erroneous orientation limited to videogame studies but rather as a reflection of wider cultural understandings of and experiences with interfaces. For the many of us who possess extensive experience with computer interfaces those interfaces have largely become ready-to-hand and withdrawn from our immediate concern,[16] and what is primarily important to the user is what they can do with those interface devices onscreen. In regards to videogames, more specifically, these conventional ways of thinking about interfaces carry over, and as such the subsumption of the complexity of the game interface into the singular aspect of the graphic interface is similarly a reflection of our everyday habitual experience of our interaction with videogames.

Ironically, if not perversely, the dominant visualist approach which characterises both the popular and the academic discussion of videogames is in actuality an embodied understanding of videogames, in the broader sense of the term, to the extent that it reflects our experience of our life-world, that is of our own experience of playing videogames. At least for experienced players, during the course of play our relation to videogames usually focuses on the graphic interface onscreen rather than the controller in the hands, as the controller has become ready-to-hand and withdrawn from our immediate conscious experience, part of the equipment used to play. Here we are employing Heidegger's notion of 'equipment', which does not deal with the features of tools as things but rather as something that is for something else – "Equipment

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[16] It should be noted that two of the key physical devices that comprise the computer interface, the keyboard and the screen, predate the personal computer in the form of the typewriter and the television respectively.

is essentially 'something in-order-to' [. . .] In the 'in-order-to' as a structure there lies an *assignment* or *reference* of something to something" (Heidegger 356, emphasis in original). For the sufficiently competent player, the interface is something in-order-to play the videogame rather than a thing in itself, and as such it is unsurprising that it is on the screen, where the course of our play is visible, that our attention naturally dwells, as the physical interface itself refers towards what is represented onscreen. This is not to dismiss the need for the unpacking of the complexity of the game interface that Shinkle calls for in order to uncover and better understand the approach commonly taken towards it, as Shinkle herself traces influences on the way that we understand videogame interfaces as far back as the codification of linear perspective in the fifteenth century, what she describes as "the historical and epistemological baggage amassed by the perspective paradigm" (Shinkle "Digital Games and the Anamorphic" 1). The point is that the prevailing focus on the graphical interface is not a 'mistaken' view of our use of videogame interfaces but merely a limited one that does not account for how the other aspects of the game interface contribute to or indeed contradict the appeal of the screen.

The Interface as Site of Relation

If we are to take into account the other aspects of the interface and 'unpack the complexity' of the videogame interface as Shinkle puts it we first need to specify what those aspects are, and here we turn again to Shinkle, who as we noted earlier identified the paired elements of input and output, hardware and software, and the physical and graphical. The first step to unpacking the complexity of the videogame interface is acknowledging that these aspects overlap in complex ways, for instance how input and output are often associated with the physical aspect, in particular to refer to the physical devices which accept input into the computer system and provide output in the form of audiovisual and tactile feedback. In a sense,

focusing on the different aspects of the interface identified by Shinkle, namely hardware and software, input and output, and graphical and physical, leads us down the wrong path, not because they don't exist or aren't important, but rather because the interface is not these aspects in themselves but rather the relation between them, a relation Shinkle characterises as the portal or junction point between these aspects, and indeed between the player and the videogame as well. Thus, we will take the aspects Shinkle identifies and employ them as pairs of terms in relation – input and output, hardware and software, and physical and graphical, rather then as fixed oppositions.

This sense of the videogame interface as a type of intermediary that facilitates a particular relation also arises when the implications of the portmanteau term 'interface' itself are considered. The prefix 'inter' captures the essential betweeness of the interface, that it is something between two other things, and even that it suggests a sense of movement and process. Thus it can be seen that the contention that interfaces should be understood in terms of the relations they establish is implicit within the term.[17] Indeed, of the several meanings given in the Oxford English Dictionary for both the noun and verb forms of interface, this meaning of betweeness is present, whether in the sense of an inter-lying surface between things, the space of interaction between things, the means of connection between things, or simply the act of coming into connection or interaction with something (OED). Interestingly, the word seems to have a mostly technical history, as its earliest use in the late nineteenth century applies to the physical sciences, whilst later during the 1960's and 70's, the term took on a meaning associated with communications between various technical agencies and departments, whilst at the same time the more familiar technological, particularly computational associations arose (OED). Whilst the second component of the word, 'face',

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[17] Interestingly, 'inter' as a word rather than a prefix means to bury, particularly a dead body into the ground. Whilst it is perhaps a specious line of argument, it may be fruitful to consider the different implications that arise from this heteronym pair, such as how the player is 'buried' within the videogame via the interface, or rather intraface, as opposed to simply in contact with.

might be seemingly straight forward, many of the associations attached to it suggest much about the nature of the relation implied by interface. For example, some of the associations of the word include to look in a particular direction, to confront, to be confronted by, to meet with another, the outward form or appearance of something, or the surface of something (OED). When the two words are combined, we can see that the interface is not simply an object that sits between player and videogame, but rather between the important features of each, that it can put the player and videogame into a relation of opposition and contest, and that it implies a sense of particular orientations, both physical and conceptual, of the player towards the videogame and vice versa.

In this manner, the interface can be thought of as what Massumi describes as the 'in-between', "the being *of* the middle–the being of a relation" (Massumi <u>Parables for the Virtual</u> 70, emphasis in original), which is not a given of the individual elements, but rather that which puts them in relation as the "products, effects, coderivatives of an immanent relation" (Massumi <u>Parables for the Virtual</u> 71). While our concerns here are rather less ambitious than Massumi's immanent political philosophy, our case is the experience of videogame play as mediated by the consideration of the interface as a relational object. Each of the terms of that relation, be it player and game, input and output, physical and graphical, or software and hardware; have meaning only in their relation to each other. Whilst we can conceive of 'player' and 'game' as abstract and individual concepts, as indeed many theorists within the field of videogame studies already have, if we wish to dig further into the actual embodied experience of videogame play we need to realise that these concepts encourage an abstraction where the dynamic emergence of the actual experience of videogame play is lost, as their experience emerges from the intrinsic relation between the player and the videogame in the act of play, a relation that is effected and enabled only through the interface.

Thus, if we are concerned with the dynamic emergence of the experience of videogame play we should be concerned not so much with simply the outcome of the player's experience of the interface, such as whether the graphical interface is seen to take precedence over the physical interface, but rather how the particular relations between these terms figures the relations those terms are placed in, or out of which they emerge. Taking such a perspective allows us to explore how particular relations become shaped in particular ways, for instance how the particular relation between the physical and the graphical leads to the graphical being experienced as the locus of interaction, or how the relation between input and output lead to them being experienced as part of a continuous feedback loop. The key relation from whence the others arise is that between player and game, yet these terms in themselves offer initial problems, particularly as the definition of what constitutes a videogame is often a contentious issue within the field.

The question of what actually constitutes a videogame at first seems straightforward, yet it is a question that has received numerous answers in various attempts to argue for a particular formal basis for understanding videogames. Let us contrast here two similar, but slightly different positions where Juul argues that games are both objects and activities (Juul Half-Real: Video Games between Real Rules and Fictional Worlds 44), while Aarseth suggests that games are both object and a process (Aarseth "Computer Game Studies, Year One"). Both positions share a similar dichotomy between the static and dynamic, yet their individual choices for the nomenclature of videogame's dynamic state stresses the relational nature of videogame play as Juul's 'activities' suggests that it is about what the player does, whilst Aarseth's 'process', despite his intended meaning being that "Playing is integral, not coincidental" to the experience (Aarseth "Computer Game Studies, Year One"), suggests also the contribution of the videogame. Each position seems to suggest, though coming from different directions, a meeting point between the player's playing, and the videogame's

processing, a liminal zone between the player and the videogame where the player's actions become events within the videogame, and the videogame's processes become events within the player's experience of the videogame. The interface sits within this liminal zone between the external world of the player and the internal world of the videogame, facilitating the transition from one to the other, indeed making each party available to the other via this relation. As Wirman and Leino argue "the interface is an umbilical cord through which, in the gaming situation, new senses are enabled rather than the existing ones limited" (Wirman and Leino 462). Without the interface, the player has no means of access to the world of the videogame as a videogame, and the videogame cannot be experienced as a concrete activity by the player, but only as an abstracted concept – a static idea or model of the videogame, but not the videogame as the dynamic emergence of the videogame as experienced in play.

In regards to the term 'player', a question often unasked as its answer seems self evident is simply what does it mean to be a videogame player? If actually playing is integral to the experience of videogame play, is it possible to be a player without a videogame to play, and what does playing actually entail? It should be clear in the context of actual play that, as individual terms, player and videogame are comprehendible as concepts only in their relation to each other, for without the player the videogame as an object is simply software code, whilst without the videogame the player is not a player at all, rather a more general sort of individual (Aarseth "I Fought the Law" 130). As Kücklich notes "it [the videogame] is only observable through playing it, [. . .] When a game is being played, however, it not only becomes observable to the player, it also forms a cybernetic system of which both game and player are integral parts" (Kücklich "The Study of Computer Games as a Second-Order Cybernetic System" 107). Importantly, this cybernetic system between player and game is in actuality a second-order one, as "observing a game necessarily entails influencing it" (Kücklich "The Study of Computer Games as a Second-Order Cybernetic System" 107), that

is to say that the relation between player and videogame is interactive in nature, it is based not simply on the player's playing or the videogame's response to that playing but rather the cybernetic feedback loop between player and videogame gives rise to their respective positions in their intrinsic relation of player and videogame. As Polaine points out, such interaction is circular in its nature, where "the participant's changed behaviour creates another change in the device's reaction, which results in another change in the interactor's behaviour, thus providing a feedback loop of interaction" (Polaine 152). This relation is limited and indirect, as the player and the videogame are based in different types of ontical existence, the player in the messy, corporeal, and immediate experience of our everyday world; whilst videogames exist in the ordered digital code of the computer, as such the relation is realised through the interface for "The interface is a surface allowing two parties of fundamentally different kind, the simulation and the human player, to communicate with each other" (Wirman and Leino 461). Within the formation of the cybernetic system that incorporates both player and videogame described above, their relation must not be simply interactional in nature but interactional across the divide between the corporeal and digital – this relation must have a concrete site or place that constitutes the portal or junction which crosses this gap, in other words the interface.

The interface then is implicit in the player's experience of the videogame, for as Kücklich points out "the player does not interact with the code during gameplay, but solely with the interface" (Kücklich "Perspectives of Computer Game Philology" 4-5). The player's relation to the videogame takes place through the intermediary interface which is the immediate locus of the player's interaction, thus the interface itself can be thought of as the site of the relation between the player and videogame. To explore this mediating role of the interface in the player's experience of videogame play the broader player-videogame relation which the interface facilitates can be addressed through the series of relations between the pairs of input-

output, physical-graphical, and hardware-software used by Shinkle to describe the interface. As we have already noted these terms can overlap in complex ways when applied to the actual apparatus they refer to. For instance, a controller can be described not only as input, but also as physical hardware, and furthermore, if it includes tactile feedback, as physical hardware output. Similarly, a screen is at once both physical hardware, but at the same time and more importantly it outputs a graphical display based on the videogame software. As such these terms should not be seen typologically or taxonomically, but rather as different facings of one and the same interface, different ways of thinking about and describing the interface and its relation to the player. By focusing on each particular relation in turn we can start to articulate and unpack the complexity of the interface as a whole, as each relational pair of terms highlights particular aspects of the way in which the interface facilitates and figures the relation between player and videogame. These relations of input-output, physical-graphical, and hardware-software, will be used in the following section where we will further investigate the question of what an interface is through employing the example of the *EyeToy* system to consider how the different aspects of the interface-player relationship elucidates not only the corporeal nature of the experience of videogame play through a videogame interface, but also how the wider relation between player and videogame enacted through the interface can be understood by the more immediate relation of input-output, physical-graphical, and hardware-software from which it arises.

Blurring the Boundary: The *EyeToy*

EyeToy: Play was released by Sony Computer Entertainment Europe (SCEE) in 2003, and included both the actual camera device as well as a disc containing 12 mini-games with themes ranging from Kung Fu fighting, to dancing and window washing. Subsequently, more videogames were released for the accessory by Sony, including two sequels *EyeToy: Play 2* and *Play 3*, the sports themed *EyeToy: Play Sports*, the exercised themed *EyeToy: Kinetic*,

and *EyeToy: AntiGrav*, the first fully fledged videogame as opposed to mini-game collection for the camera. In addition to third party titles developed specifically for the camera, such as *Sega Superstars*, many other PlayStation 2 videogames make use of the *EyeToy* for additional features, such as the *Cameo* system that takes a scan of the player's facial features to use as the head of in-game avatars used most frequently for sports videogames, extra motion based mini-games such as *Jackie Chan Adventures*, or simply to represent the player on-screen, particularly in performance style videogames such as the *SingStar* series.

The *EyeToy* system is marketed as "a whole new gaming experience" where "instead of just playing the game you could be part of it!" (Sony "Eyetoy Features"). The promotional material implores its customers to not "just play a game, live the game with EyeToy" (Sony "What Is Eyetoy"). We should be wary of such strongly worded claims as 'a whole new gaming experience', particularly when dealing with marketing material, but of note are the more specific claims made about what the player actually does after setting up the *EyeToy* and standing in front of it – "Then you use your arms, legs, head, bottom [. . .] in fact any part of your body to play the games" ("Eyetoy Features"). *EyeToy: Play 3* makes some of the implications of the term interface explicit as the player must orientate themselves towards or 'face' the camera in a certain manner in order to play. A short demonstration video that launches before the videogame proper starts instructs the player to ensure a particular space for play by removing any likely obstacles, how to position the camera, and finally how to position themselves in front of the camera, a task made even more explicit by the use of onscreen silhouettes that indicate to the player how far they should stand from the television screen before each videogame activity. The aspect of bodily based interaction is a key part of the appeal of the *EyeToy* system as the player's body is much more explicitly involved in the course of play than more conventional videogames, and as such it is important to investigate how this foregrounding of the player's body opens up avenues of inquiry into the general

nature of the embodied player-videogame relation. The camera that is at the heart of the *EyeToy* concept is itself little more than a standard 640 x 480 web cam, with a microphone, connected to the PlayStation 2 console via a first generation Universal Serial Bus,[18] which records the player's movements and displays them onscreen in real-time. Yet, with the addition of motion capture software that can isolate the player from their background and track their motion, the *EyeToy* system provides an interesting case with which to examine the concept of the interface as it does away with one of the central elements of more conventional interfaces, the physical controller through which the player can take action. As in Chapter Two, where the uniqueness of *[giantJoystick]* made visible the importance of the player's embodied relation to the interface, the unconventional nature of the interface of the *EyeToy* system brings the question of what an interface is into sharp relief, as we can enquire what and where now is the interface in *EyeToy* based videogames? Through the direct employment of the player's body without the mediating aspect of a controller, joystick, or other input device the *EyeToy* system seemingly does away with the surface between the simulation and the human player as Wirman and Leino put it (Wirman and Leino 461), and thus the interface becomes indefinite and elusive. Of course our bodies, generally our hands, are used to play videogames no matter what kind of input device we are utilising, and as Shinkle notes, even those parts of our body not explicitly involved are none the less implicitly involved due to the synaesthic nature of our experience of the world, as she argues "Embodiment and hapticity, in other words, are crucial in generating what appears to be an exclusively visual experience" (Shinkle "Corporealis Ergo Sum" 25). Thus, the experience of playing *EyeToy* videogames may not on the face of it be anymore embodied phenomenologically than videogame play using more conventional videogame controllers, and as such we need to investigate whether the *EyeToy* interface effects a different experience of play, or of the interface, or of the body.

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[18] Which has lead to several unofficial efforts to develop device drivers to use it with standard personal computers, as well as PC based games that attempt to recreate a similar experience as *EyeToy* using of the shelf hardware and open source software.

As Polaine puts it, "Once the need to master a fiddly and complex game controller, or remember complex combinations of special moves is removed the nature of the games that are played also changes" (Polaine 156). The question is what the change in the nature of the games played through the *EyeToy* system can tell us about the nature of the interface and its role in the experience of videogame play.

EyeToy: Play 3 presents a useful case with which to examine the *EyeToy* system more generally, as it is in many ways a quintessential example of the videogames that make use of the camera and the movement of the player's body. Firstly, it is the most recent iteration of *EyeToy Play*, which was the first videogame to feature the camera, and continues to be its flagship series. Secondly, *Play 3*, like the vast majority of videogames that employ the *EyeToy* camera, consists of a collection of variously themed mini-games, including sports games such as volleyball, rhythm based music games, as well as more eclectic party style games, and as such presents multiple examples of how the *EyeToy* system engages its audience in body based videogame play. And, thirdly, *EyeToy: Play 3* prominently features one of the central, and most interesting, features of *EyeToy* based videogames, the representation of the players and their movements onscreen and the interaction of this representation of the players' bodies within the videogame's graphical interface. Whilst most videogames anchor the player's ability to exert control over the videogame in some graphical form, even if it is one as simple as a cursor or pointer, the incorporation of a representation of the player's own body into the environment of the videogame breaks down the usual boundary between the exterior real world and interior world of the videogame, and it could be expected that this configuration of explicitly making the player visible within the game-world could lead to a somewhat different experience of play.

Indeed, the experience of playing *EyeToy: Play 3* is different from that of conventional

videogames even at the very basic level of the player's bodily comportment. Videogame play is quite commonly seen as a sedentary activity, where the player sits still in front of the screen with only the most minor of movements. Contrastingly, *EyeToy: Play 3* does not fit this stereotype as most of the mini-games it features involve a substantial amount of movement on the part of the player, not to mention the fact that the player is expected to stand up during the course of play, creating a very different relationship between the player and screen than is usually the case. Another divergence arises from the actions required of the player in order to play, as rather than pushing buttons on a normal control pad, the player interacts with the videogame through the movement of their own body, movements that are captured by the camera and parsed through software designed to "track hand and body movements in real time and interpolate them into the videogame. In effect, a player's body becomes the controller: the player moves their body in real space in order to make things happen onscreen" (Shinkle "Corporealis Ergo Sum" 29). The image captured by the camera is also displayed onscreen, so that the player can view their own movements as they play, and this representation of the player is overlaid with graphical objects with which the player interacts.

By using the player's own body movements as the source of control over videogame events the experience of playing *EyeToy: Play 3* feels more natural in a phenomenological sense and more direct than the usual case where those movements are translated through some sort of physical and mechanical input device. The player does not need to learn the complex and often arbitrary control sets conventional videogames use, but rather can get straight into actually playing the mini-games (Polaine 156). This accessibility would seem to be the basis for a definite sense of immediacy in the player's interaction with the videogame, as the simplicity of the body based controls allows the player to focus on the activity of play in a more freeform and less teleological manner, and as Polaine points out with relation to *EyeToy* "a large part of the entertainment comes from the act of playing the videogame, much more so

than the winning" (Polaine 156). Yet, at the same time there is a certain stiltedness to the experience after the initial novelty of the motion based videogame play dissipates – not that the various mini-games lose their enjoyable qualities, but rather that the promise of free movement and direct access to the activities of play is not completely matched by what *EyeToy: Play 3* offers as the player becomes increasingly aware that their movements do not always have the desired effect within the game-space – the *EyeToy* interface retains the intermediary role of videogame interfaces more generally and thus exerts an influence on the player's experience of videogame play. This is not meant as an evaluation of the technical capacity of the *EyeToy* system, but rather to highlight that despite the more direct sense of interaction and involvement it offers it none the less still constrains the player and their movements within a computational logic. To understand these particular constraints on the experience of playing *EyeToy: Play 3* we need to examine the videogame in terms of its interface, that is, the particular relation between player and videogame it facilitates which enables that experience. By thinking about how the aspects identified by Shinkle that we are considering as relational pairings, namely input and output, hardware and software, and physical and graphical, contribute to the broader relation between the player and videogame we can unpack the complexity of the *EyeToy* interface.

Input and Output

In the case of *EyeToy: Play 3* the physical output differs little from conventional videogames, in that it uses graphics and sounds to depict the ongoing action of the videogame, though the player's movements are now represented onscreen. However, given that the input aspect of the interface is not present in its usual form, as there are none of the controllers or joysticks with which this aspect is generally identified with, it is worth asking what actually constitutes the input or the input device in the context of *EyeToy: Play 3*. The camera itself does provide the input for the videogame system, and though the player doesn't physically manipulate the

camera as they would a controller, but rather is observed by it, it none the less puts the player into relation with the videogame by transferring the player's movements into the game-space. Yet, if input is based on movement, and an input device is simply a question of tracking the player's movement, the difference between the *EyeToy* camera and a conventional controller is minimal at a conceptual level, after all, a controller measures the movement of the player's body no less than the *EyeToy* through the displacement of the button in the case of the former, and through the player's displacement in space in the case of the latter. Yet, there is something that doesn't feel quite right with this comparison, in that there is something qualitatively different between manipulating a controller held in the hands and moving in front of a camera, as the latter doesn't feel so much like direct discrete control as it does a ubiquitous scrutiny, your bodily movement being tracked incessantly during the course of play. At a simple level, there is the difference between the fine motor control focused in the hands required by conventional videogame controllers and the more broadly based gross control of the body required by the *EyeToy* system. More significantly, the ubiquitous scrutiny of the player by the camera changes the nature of the player's agency within the videogame. Suddenly, what would be incidental and largely inconsequential movements by the player using a more conventional controller, such as a stray movement of the arm, or even another person moving through the camera's field of view, can have an unintended effect on the course of play. Indeed while playing *EyeToy*: *Play 3*, I often inadvertently select a menu option while moving within the view of the camera, such as in moving towards it to adjust the focus of the camera, or moving out of the frame to attend to some non-game related activity. Whilst active, the *EyeToy* camera renders all movement of the players within its view as ludic movements, the space which the players inhabit is no longer just the space in which they are located during the course of play, but rather is explicitly part of the videogame environment.

Of course, at a technical level, the *EyeToy* camera should be considered as the input device, as

it is via the camera that the player controls the videogame. Yet, speaking of the experience of playing videogames utilising the *EyeToy* system, there isn't a sense of interacting with the camera in the way in which the player would manipulate a videogame controller, but rather a much more direct sense of interacting with what is displayed onscreen, not just the graphical aspects but also, and importantly so, the representation of the player back to themselves, a sense of interaction with the image captured by the camera. This is due to the use of the player's body to control the videogame, as our body is generally ready-to-hand to us, for as Merleau-Ponty puts it "my body itself I move directly, I do not find it at one point of objective space and transfer it to another, I have no need to look for it, it is already with me" (Merleau-Ponty Phenomenology of Perception 108). Is it then in the form of the player's own body then that we find the elusive input aspect of interface of the *EyeToy* system? It is through the movement of the player's body, particularly of the arms, that the player plays? Yet, if the camera is not working correctly, or even if it is not properly placed so that it frames the player in the manner in which it is designed, the player's bodily movements may have unexpected or even no effects within the game-space. This is particularly notable in mini-games which require movements that correspond to the extremities of what is displayed onscreen – occasionally the player's movement, despite seeming to be appropriate, does not trigger the in-game action expected, and the link between the player's movement in real-world space and its representation within the videogame environment is momentarily broken.

Clearly, neither the camera's ubiquitous scrutiny, nor the player's movement in themselves are sufficient to control the videogame, as both are necessary to the other, in fact in keeping with their relational nature they are the consequence of the other. Keeping in mind what was argued earlier for the concept of an interface not being the entities involved but rather the relation between them, it is unsurprising that the player and the *EyeToy* camera are reciprocal parties that require each other if the videogame is to be played. As such it is neither the

player's movements nor what the camera sees in themselves that are important, but rather which of the player's movements the camera can 'see'. At a trivial level the basis of this relationship is given away by one of the two LED bulbs on the front of the *EyeToy* camera's housing. Whilst the blue LED on the right side of the housing illuminates to indicate that the camera is properly plugged in and working, the red LED on the left side illuminates only when the camera detects that there is not enough light available in the room for the camera to operate effectively. That is to say, that the in-between of the player's body and the *EyeToy* camera, the interface between them, is at a physical level based upon the camera's ability to effectively 'see' the player, the interface is a relation based on the visibility of the player's movements to the EyeToy camera. Therefore, it is the space between the player and the camera, the space in which the player explicitly moves and is observed by the camera, which provides the input aspect of the interface between player and videogame.

However this does not account for the totality of the relation between the player and the videogame, for by 'seeing' here I mean not only the ability for the camera to capture the player and their movements as input into the videogame environment, but also for the *EyeToy* system, which includes both the camera itself as well as the PlayStation console to which it is connected, to 'understand' the player's movements, that is, to figure the player's movements as game relevant actions through parsing those movements into commands within the software code. A wave of the hand at a certain point in space becomes, for instance, the command to select a particular onscreen option, or clapping hands at another point becomes popping a balloon. I have already noted how occasionally a movement performed by the player does not have the desired effect, and in my own experience this leads me to alter my movements to find the 'sweet spot' where my actions are properly 'understood' by the camera. In other words the player alters their movements in the real-world space in which they inhabit so that the image of themselves which is displayed onscreen achieves the outcomes actually desired by the player – their movements are constrained by the limits and

logic of the *EyeToy* system, as the game-space begins to take a primacy over the player's immediate environment.

Physical and Graphical

Thus the privileging of vision that Shinkle argues against reasserts itself, however this time in the form of computer vision, and the player, despite the pretence of free movement, must once again take part in the homogenisation of gesture. This is to say that between the player's movements in their immediate environment and the associated movements within the game-space there is a relation of control, but rather than simply being a unidirectional flow of control into the videogame environment this control is bi-directional, as the player alters their immediate movements to make them more effective. This requirement on the player, to fit their movement to the needs of the game-space, raises the question of which body the player is actually controlling, is it their own immediate physical body or the one represented back to them as their own, onscreen, over which the videogame exerts its influence? On the face of it this question may seem absurd, for in our general experience our control of our own movement is automatic. However, if we consider this in relation to the ready-to-hand, where:

> The peculiarity of what is proximally ready-to-hand is that, in its readiness-to-hand, it must, as it were, withdraw in order to be ready-to-hand quite authentically. That with which our everyday dealings proximally dwell is not the tools themselves. On the contrary, that which we concern ourselves primarily is the work—that which is to be produced at the time; (Heidegger 358)

We see that whilst the body is the equipment we use to play our immediate body withdraws from our attention, which turns instead towards the represented body onscreen which accomplishes the 'work' of the play activity and as a result the player's proximal body, their immediate physical body, becomes subordinated to the requirements of the primary represented body to complete its 'work', the intentional concern towards which the player is directed. This is not to say the body becomes invisible, as the player is of course still quite aware of their own movement, but rather that the immediate body becomes subsumed within the extended sense of embodied being that arises from the bodily incorporation of the

represented body onscreen, and the resulting extension of the player's intentionality into the world of the videogame, and as such the immediate body withdraws into the background of the player's experience. This does not exclude its reassertion though, for we have already noted the importance of affective dimensions raised by Shinkle to the experience of playing videogames, where in the case of *EyeToy: Play 3* extended play will lead to an important part of the affective intensity of the videogame, the intrusion of the body into the experience again due to physical exertion and tiredness. It is possible that the mini-game structure of *EyeToy: Play 3*, which partitions what Newman describes as online engagement, the actual ludic and interactive elements, into relatively short and discrete chunks, is in part an acknowledgement of the sometimes intense physicality of the videogame which might render longer play sections as too exhausting for what is intended as a casual play experience.

Figure Three: *EyeToy: Play 3* 'screenshot' depicting the 'Maestro' mini-game.[19] (Image copyright Sony Computer Entertainment Inc, reproduced with permission).

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[19] Note that it is actually a digitally doctored, rather than authentic screenshot, as the player's actual surroundings have been removed, and the player's representation is suspiciously bright and clear for a 640X480 webcam.

We may very well ask why *EyeToy* videogames feature the particular aspect of the player being represented onscreen as themselves rather than in the form of a fictional avatar which are used in more conventional videogames. Whether it is the more common situation where the entire background of the videogame is constituted by the space behind the player in a mirror type of effect as in Figure Four, or whether the scene captured by the camera shrinks to represent the player within the virtualised game-space, as in Figure Five, the player is explicitly represented on-screen as themselves, rather than indirectly through an avatar that provides them with a specific role within the videogame. There are certainly practical reasons why the player needs to be represented onscreen, as the overlaying of the graphical interface on the representation of the player and their physical surroundings means that the player must adapt themselves to this videogame space – the onscreen buttons they need to push are relative to the orientation of the camera, not of the player, and as such the player needs the representation of themselves onscreen to be able to re-orientate their real-world body to the game-space. Without it the player's interaction with the videogame would be haphazard, and as such the bodily representation onscreen forms a vital part of the cybernetic circuit linking player and videogame.

The onscreen representation of the player's body, therefore, forms part of the graphical interface as a type of output which enables the player to meaningful co-ordinate their movement in actual space with their movement within the graphical interface. Yet, at the same time, this represented body also interacts with the other elements of the graphical interface, and it is through this represented body that the player interacts with the game-space towards which the player is intentionally concerned. This is to say that the represented body simultaneously functions as a type of input within the graphical interface, as well as providing on the output side feedback for the player, that it is at once that which provides the player access to the action of the videogame and that with which the player can track the course of

their involvement in the action of the videogame. Is it possible then to even consider the input and output aspects of the graphically represented body as separate entities, as terms in relation? Indeed, it seems difficult to even speak of the onscreen body as a representational visual object if that represented body becomes incorporated into the player's bodily schema as a ready-to-hand extension of that schema, when as Heidegger argues "No matter how sharply we just *look* at the 'outward appearance' of Things in whatever form this takes, we cannot discover anything ready-to-hand" (Heidegger 357, emphasis in original). It follows that to interact with the videogame through the onscreen represented body requires the incorporation of that body into the player's bodily being, and as such we should recognise that the represented body is not a thing simply viewed by the player but imbued with their intentionality. Our question then is how to resolve the player's experience of a sense of control over the represented body arises, and more importantly through that body to interact with the videogame, if not through simply visual co-ordination of the motion of the two bodies?

The player's representation of themselves is always orientated in a mirror like fashion, even in two player mini-games where logically the players should be facing each other, such as in two player games of volleyball. In part this is simply a practical requirement of using the camera, as it cannot capture that which is not facing it, yet at the same time it draws upon our familiarity with our reflected image, thus when I raise my right arm I perceive the representation on screen as me raising my right arm, rather than another person raising their left arm, which in absolute terms is actually the case. This mirroring also draws on our awareness, and the orientating effect of that awareness, of our immediate surroundings, the lounge behind me, the kitchen door behind my right shoulder, the coffee table to my left, these borders to my physical play space appear on screen as a visual background against which I move as part of a gestalt of figure-ground. This reflection of my immediate

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environment and the familiarity with my reflected image enables my phenomenal body, the one where "there is not a perception followed by a movement, both form a system which varies as a whole" (Merleau-Ponty Phenomenology of Perception 127), to be extended into my represented body which is thus incorporated into my phenomenological body, moving as I move without needing me to posit and reflectively translate my immediate motility into that required in the game-space. As Merleau-Ponty argues, "Consciousness is in the first place not a matter of 'I think that' but of 'I can'" (Merleau-Ponty Phenomenology of Perception 159), which is to say that what concerns the player is not the abstracted and conscious appraisal of their options within the game-space but rather the more immediate potentials for actions towards their intentional concern that are made available by the extension of their body through the incorporation of the represented body.

Indeed, it is difficult to account for the general sense of immediate and direct control over the represented body without this sense of bodily extension, for as Merleau-Ponty argues "It is never our objective body that we move, but our phenomenal body, and there is no mystery in that, since our body, as the potentiality of this and that part of the world, surges towards objects to be grasped and perceives them" (Merleau-Ponty Phenomenology of Perception 121). The extension of the player's body brings the game-space of *EyeToy: Play 3* into the reach of the player as a space of potential, as a space of 'I can', yet this extension itself depends on the assistance of the interface, for as Wirman and Leino note, the interface makes the game-space available to the player in a way "which the meatspace senses cannot necessarily grasp from the mere diegetic representation" (Wirman and Leino 461). The camera's potentialising of the immediate space around the player expands the potentiality of the player's intentionality into the world of the videogame and thus to move it from an detached and abstracted sense of 'I possibly could' into the more engaged and concrete sense of 'I potentially can'.[20]

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[20] Though in everyday language the distinction between 'possible' and 'potential' is not large, here we

Thus, rather than the represented body merely being a visual object for the player it becomes an extension of their body schema, that total and immediate sense of our body and its movement which Merleau-Ponty describes as "a way of stating that my body is in-the-world" (Merleau-Ponty <u>Phenomenology of Perception</u> 115), suggesting that the videogame environment is reciprocally incorporated into our immediate environment through our body's ability to merge the physical and the graphical environment it simultaneously inhabits. Yet, as we have seen, this sense of increased potential does not always eventuate, and accompanying this shortfall is a loss in the sense of bodily extension into the game-space – the familiarity with, and extension into the player's reflected body remains, but falls short of incorporating the graphical environment fully into their physical environment. And this incorporation is of course not static, but dynamically changing as the player begins to understand and incorporate into their conduct the peculiarities of the *EyeToy* camera's abilities to 'see' their movement, thus negotiating a path between the potentiality suggested by their familiarity with their reflected and own body, and how the videogame engine parses their movements.

The inherent contingency of this sense of bodily extension, and the incorporation of graphical space into the player's immediate space, and hence the importance of the habitual familiarity of the mirror image, is underlined by one of the minor mini-games included in *EyeToy: Play 3*. This mini-game is used primarily in multiplayer tournaments, and consists of two stages, firstly a series of rotations and inversions of the screen in various directions and along different axes, and a second stage requiring each player to wave their hand over an area highlighted corresponding to each player before their opponent can. The immediate effect of the rotation and inversion is a strange one in that you experience a strong sense of bodily

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are employing the terms as defined by Massumi, for whom the "forward projection of perception into latent action-choice is its possiblization. To possibilize is to stretch perception down the continuum in the direction of only-thought." Brian Massumi, <u>Parables for the Virtual</u>, Post-Contemporary Interventions, eds. Stanley Fish and Fedric Jameson (Durham: Duke University Press, 2002) 92. Thus, "The possible is not just an active selection of potential, but a systematic simplification of it," in that it abstracts individual potential actions into a set of possible actions "determined as alternatives to one another." Massumi, <u>Parables for the Virtual</u> 93, 91.

disorientation, almost dizziness, as the effortless connection that previously existed between your immediate and represented body is, quite literally, turned upside down and back to front, causing the incorporation of the represented body into the player's extended bodily schema to be disrupted. Rather than simply moving their body in the intended direction, the players are forced to fall back to objectively perceiving the environment represented onscreen, using positional cues within their immediate environment to objectively re-orientate their represented body and their immediate one.

Figure Four: Screenshot from the 'Volleyball' mini-game, where the player is represented within a smaller frame.[21] (Image copyright Sony Computer Entertainment Inc, reproduced with permission.)

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[21] Please note, that like Figure Three, this screenshot also appears to be doctored.

Thus, despite *EyeToy's* marketing claims of simple and direct bodily involvement in the mini-games it is apparent that something much more complex is happening at a phenomenological level. Whilst the representation of the player's body on screen moves simultaneously as the player moves as if it were a mirror-like image, there is still a strange sense of disconnection, a feeling that the person on screen is 'I', but at the same time 'not I', an external visual object or perhaps a more usual sort of videogame avatar. Perhaps this has something to do with the way in which the represented body is visually available in a way the player's immediate body is not, for as Merleau-Ponty argues "I observe external objects with my body, I handle them, examine them, walk round them, but my body itself is a thing which I do not observe: in order to be able to do so, I should need the use of a second body which itself would be unobservable" (Merleau-Ponty Phenomenology of Perception 104). Yet, as we have already seen, the player can experience a sense of bodily extension that incorporates what should logically be the observed external object, the represented body onscreen, into the player's body schema. Paradoxically, we have a situation where the body we observe, and the immediate body with which we observe it that should itself be unobservable, coexist within the player's experience, simultaneously both visible and invisible. Or rather, we have the situation Merleau-Ponty describes, where "the mirror arises upon the open circuit [that goes] from seeing body to visible body. [. . .] I feel [. . .] not only where my fingers are but also in those ghostlike fingers, those merely visible fingers inside the mirror" (Merleau-Ponty "Eye and Mind" 168). Taking these two arguments from Merleau-Ponty together, it would seem that the represented body the player observes on screen is in fact not observed at all, in as far as it is incorporated into the player's bodily being – as Macke observes the representation of my body "does not operate as one [a representation] if my proprioceptive focus remains on the object in the mirror" (Macke 26). Beyond the surface of this representation lies a deeper, bodily connection that goes further than what is objectively visible. It is not a case of me consciously associating the visible image of myself, and my movements on screen, with the

sense of movement of my immediate body by some kind of reflexive accordance that compares the two bodies and thus identifies a similarity after the fact, but rather an immediate and pervasive familiarity – it could be stated that the player's represented body is not so much 'seen' as it is 'felt'. Yet the player's image is still visible onscreen, and as we have already noted its visibility is a practical requirement to enable the player to be able to orientate their body to the game-space, so if it is not 'observed', how is this image to be understood?

The question of how to resolve this problem might be answered by contending that the represented body is what Massumi describes as a part-subject which "catalyses the play as a whole but is not itself a whole. It attracts and arrays the players, defining their effective role in the videogame and defining the overall state of the videogame, at any given moment, by the potential movement of the players with respect to it" (Massumi <u>Parables for the Virtual</u> 73). Massumi uses a soccer ball as an example of what he means by a part subject, stating that "The ball, as a thing, is the object-marker of the subject [. . .] the ball as a substantial term doubles the subject of play, which is itself invisible and nonsubstantial" (Massumi <u>Parables for the Virtual</u> 73), the ball becomes the focal point of the unfolding of the course of the game as "the subject of the play is the displacements of the ball and the continual modifications of the field of potential those displacements effect" (Massumi <u>Parables for the Virtual</u> 73). Like the soccer ball, the player's represented body could be thought of in terms of the part subject, as the subject of the various mini-games that comprise *EyeToy: Play 3* is seemingly the displacement of the player's represented body and the changing fields of potential that this movement effects. But importantly this represented body as part subject also stands in as the visible 'object marker' for the player's extended phenomenological body, for as Wirman and Leino argue "the true subject body is that which is constructed by enhancing the physical body's abilities into the virtual through the interface" (Wirman and Leino 463). The movement of this phenomenological body is doubled into forms that both player and

videogame can parse and understand, giving that which is 'invisible and nonsubstantial', the player's own proprioceptive sense of movement and action, a visible and substantial form through rendering it into discrete videogame actions, and as such defining the role of the player in respect to the videogame, and the state of the videogame by the potential movement of the player as the player of the videogame.

Thus, in *EyeToy: Play 3* the represented body onscreen performs a similar role to the ball in a game of soccer in that it substantialises the actual subject of play, catalysing the interaction between player and videogame and body and avatar by extending the player's body into the game-space through the incorporation of their represented body within their phenomenological body. However, the situation is somewhat more complex as the represented body is itself insubstantial, an onscreen image that relies on its proprioceptive incorporation into the player's body schema to merge the gap between the substantial world in which the player's body is embedded and the insubstantial world of the videogame. This can be seen most simply in one of *EyeToy: Play 3's* 'Laboratory' mini-games, a category of 'software toys' without the ludic elements of the 'Games' category, called 'Copy Cat', which remediates the children's mimicry game of repeating another's words and gestures immediately after they do.[22] Unlike all other interaction with *EyeToy: Play 3*, 'Copy Cat's' representation of the player onscreen lags a few seconds behind the player's own movements, emphasising the separation between the player and their representation onscreen. Without the spontaneous replication of the player's own movement by their onscreen representation the 'not I' of the representation is thrown into sharp relief, the imageness of the avatar is made plain, it is no longer the conjoined body that can be both observed as an object and employed

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[22] Interestingly this activity often seems to be performed with the intention of annoying the other party, something in which from experience seems quite often effective. Whilst it is speculative and beyond the bounds of the discussion here, it is interesting to ponder whether the power of this simple game derives from an ability to disrupt the target's sense of self, that the mimicry in some way renders the target observable to themselves and thus an object.

as equipment. It no longer seems to be a reflection or replication of the player's body but rather merely a shadow that trails after it, it is still my body but not in the immediate sense of the lived body, but rather a part subject which no longer doubles the subject of play, the players proprioceptive experience of movement.

The strangeness of the player's relation to this part subject in *EyeToy: Play 3* is further underlined by the experience of observing play, rather than partaking in it. Shinkle remarks that "Watching somebody play with the *Eye Toy* is a bit like watching somebody dancing to music that you can't hear: their performance is marked by strangely discordant gestures, originating in one domain, but meaningful in another" (Shinkle "Corporealis Ergo Sum" 29-30). The strangeness of the gestures by which one plays *EyeToy: Play 3* is reinforced with snapshots of the player's actions presented to them at the conclusion of some mini-games. Take, for example, the American football based 'Touch Down', where as the name suggests, the player is required to score touch downs, firstly by taking the role of the quarter-back and throwing the ball to a receiver, where the player is then switched to the role of the receiver, and must avoid opposition players by fending them off. I find that the most effective way to deal with the running to the endzone portion of 'Touch Down' is to constantly punch both to the left and right whilst running on the spot, and unsurprisingly, when this posture is captured by one of the aforementioned snap shops I look absolutely ridiculous. Yet, at the time of actually performing these actions these images were still present to my awareness as they were represented onscreen yet did not seem ridiculous, though they did indeed seem foolish and amusing. As we have seen, the movements of the player attends to the logic of the game-space in which they have an effect and towards which they are intentionally directed, it matters little to me that during the course of play that my movements bear little resemblance to actually running with a football, as the domain in which my movements are judged, in which they find their meaning, is on the screen in the world of *EyeToy: Play 3*.

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Software and Hardware

If the player's intentionality is directed towards the game-space of *EyeToy: Play 3* as it is displayed onscreen, it would seem that the wider focus on the graphical interface within the field of game studies whilst limited is not completely unwarranted. After all, when playing *EyeToy: Play 3* it is on the screen that we find the buttons and sensitive areas with which we interact with to play. It is on the screen that our movements in space are put into their context as videogame playing actions, and it is on the screen that we receive feedback about the outcomes and effects of those actions. Indeed, as was noted earlier in Chapter Two, when we discuss videogame play we are generally speaking about what happens onscreen, or more correctly, how the outcomes of our actions are displayed onscreen. Of course, the graphical interface becomes the intentional focus of the player not only due to the images onscreen that we perceive, for if this was the case we would be unable to say that we interact with them beyond comprehending their meaning as with any other type of visual image, rather than specifically as a videogame. However, if we recall that what is presented onscreen is often described as output, we can identify what is onscreen as the output of both software's computational processes and the player's own actions. More specifically, the output is the result of the interaction of these two elements, for as Leino argues when taking action in a videogame "I subject them to be evaluated by the game, which can in turn, decide on the consequences my choices will have" (Leino "Understanding Games as Played: Sketch for a First-Person Perspective for Computer Game Analysis" 11). Though the two elements of player action and computational processes are in effect intertwined in actual videogame output, for the purposes of investigating the software and hardware aspects of the interface of *EyeToy: Play 3* we will keep them somewhat separate to focus on what the interaction between the player and the videogame system can tell us about the interface.

When we interact with the graphical interface, what we are also actually indirectly interacting with is the underlying software which it represents. Between the player's movement of their body in their immediate environment, and their perception of the representation of their body's movement onscreen, lies a series of implicit stages of computational processes that first renders the player's movements captured by the camera into the logic of the software code before further rendering the videogame state into the graphical display represented onscreen. It would seem that between the physical and graphical aspects of the interface we find the reassertion of the classic input-process-output model of computing, yet importantly that output feeds back again in the action of the player in the characteristic cybernetic loop of videogame play. This underlines the insufficient nature of the terms 'physical' and 'graphical' when applied to the interface, for in a way the output from the screen is both physical and graphical, in that "the sensory stimuli originating in the virtual reaches its presentation through rays of light reflecting on the retinae" (Wirman and Leino 462). More importantly, as Kücklich points out "the player does not interact with the code during gameplay, but solely with the interface" (Kücklich "Perspectives of Computer Game Philology" 4-5). In the experience of the player what we are actually talking about is not a transition from analogue to digital and back to analogue – a change from continually variable movement to discrete positioning and back again – for that transition takes place inside the hardware and is inaccessible to the player.

Here the issue of intentionality arises, specifically the question of where or what the player is intentionally directed towards and that with which they are concerned with.[23] Given that the

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[23]It should be noted that the following discussion covers similar ground relating to intentionality to the postphenomenological work originating from Ihde's notion of technological artifacts and their implications for our intentional relation to the world, which Verbeek outlines as generally relating to the mediation of human intentionality by technological devices (Verbeek 389). This work is not dealt with in detail here for several reasons, generally relating to how this line of theoretical development introduces ontological issues beyond the concerns of this thesis. For instance, the degree to which technological artifacts comprise the alteration or even production of new kinds of human subjects (such as the figure of the cyborg that Verbeek draws upon) which, while both important and interesting, is not seen as necessarily relevant in understanding the mundane or everyday experience

graphical interface is important to the player insofar as it represents the processes taking place within the software code that runs the videogame and towards which they are intentionally directed, is the experience of interacting with the *EyeToy* interface then one of actually interacting, albeit indirectly, with a movement processor through it? More specifically we could ask if it is the processing in itself with which we are intentionally directed, or if it is rather the movements which are processed, our own movements, that are the focus of our concern? When a player alters their movement to accord with the internal logic of the videogame are they directed towards the processing of their movement as it is displayed onscreen, or is their concern focused on their movement in itself. This distinction and its implications can be seen in the relation between the physical and the graphical interface of *EyeToy: Play 3*, particularly in regards to spatiality. Though the player is able to move in three dimensional space, *EyeToy: Play 3* can process movements in only two axes – vertical and horizontal. Generally, at the start of each mini-game, a silhouette indicates to the player the appropriate distance to position themselves from the screen to be able to properly interact with the videogame during the course of play so that they can effectively trigger the various onscreen buttons effectively. However, not all the mini-games contained within *EyeToy: Play 3* contain on-screen buttons or other elements with which the player must interact, for instance 'Touch Down' switches the player's representation between different framings within a graphical representation of a football field to indicate the current role. This mini-game involves several different activities, each controlled through different movements. For instance, the player is required to fend of or avoid tacklers through punching to the left or

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of videogame play. Furthermore, while consideration of how videogames and in particular interfaces may be thought of in terms of the different kinds of human technology relations Ihde identifies is definitely a valuable area for further research, as Leino's work in this area indicates (c.f Leino "Emotions in Play" 166-77), his point regarding the necessity of resolving the exact ontological position of videogame worlds in undertaking such work similarly goes beyond the concerns of this thesis, which is content with describing how the space if videogames are experienced as 'worlds' due to the player's bodily involvement with and presence in those worlds. Finally, it is felt that the central important contribution of this work, namely the mediation and influence of human intentionality by technological artifacts, is for the purposes of this research sufficiently covered by the theoretical work drawn upon, for example the substantial explication of Heidegger's notion of equipment draws heavily of the processes by which we come to incorporate the 'in-order-to' of particular equipment into our conduct.

right, ducking out of the frame, or 'jumping' by moving their hands in an upward motion. In all these cases there is not a specific button or highlighted hotspot onscreen to indicate to the player the appropriate area for their movement, though there are arrows indicating in which direction they must move. As a result, the player's movements are sometimes not recognised by the *EyeToy* system, for example, despite physically ducking down as instructed by on-screen arrows the player's represented body may not follow suit, and as a result the player is tackled. In these cases, while there are not explicitly specified areas onscreen with which the player must interact, there remains the requirement that the player position themselves in a certain way within the frame so that the *EyeToy* camera can properly parse their movement. The player has moved, but this movement has not been processed as such by the videogame.

The smaller frame used by the 'Touch Down' mini-game is also used in several other mini-games, such as 'Volleyball' and 'Boot Camp'. In each of these mini-games the player is placed within a more traditional graphical game-world, representing beach volleyball fields and obstacle courses respectively. Interestingly, the player's representation can often move in three dimensions within these mini-games, giving these game-worlds a sense of depth, even though the player themselves must remain a certain distance from the screen, and are as such constrained to movements in only the vertical and horizontal planes. For instance, in the 'Touch Down' mini-game, the player is at times called upon to tackle an opposition player, who generally is located some distance from the player's onscreen representation. To close the gap, represented through three dimensional depth effects such as relative size and linear perspective, the player must run on the spot, and the *EyeToy* system interprets the vertical movement of the player's body up and down into forward movement within the game-world. A similar running on the spot movement is used to make the player's onscreen representation traverse space in other mini-games that feature a three-dimensional graphical environment, but what is of interest to us is the connection the player makes between running on the spot in

one sense, yet moving through space, albeit graphical space, in another. As Massumi notes in relation to word processing software "what is processed inside the computer is code, not words. The words *appear* on screen, in being read" (Massumi <u>Parables for the Virtual</u> 138, emphasis in original). Similarly, the player's movement onscreen appears to the player when they are engaged in the experience of playing *EyeToy: Play 3* and it is through that experience that they understand their movement.

If we consider the software and the processes it executes as part of the interface, and as such part of the equipment used to play, we can begin to see how this question elucidates our earlier question about whether the player is directed towards the processing of their movement as displayed on-screen, or on their movement in itself. This notion of equipment is both relational and intentional in character, in that for Heidegger "Equipment is essentially 'something in-order-to' [. . .] In the 'in-order-to' as a structure there lies an *assignment* or *reference* of something to something" (Heidegger 356, emphasis in original). Taking software as the something in-order-to, the question then is to the second something or somethings to which it is assigned and this is not straightforward as "The assignments themselves are not observed; they are rather 'there' when we concernfully submit ourselves to them. *But when an assignment has been disturbed*—when something is unusable for some purpose—then the assignment becomes explicit" (Heidegger 360, emphasis in original). In the example of the player altering their movement to accord with the internal logic of the videogame the assignment becomes visible and we see that their movement is directed towards the game-space as displayed on screen, and thus indirectly they are directed towards the processing of their movement, rather than their movement in itself. The software aspect of the interface as such becomes something in-order-to process the movement of the player's body and to output back to them the outcome of their movements in terms of its meaning within the game-space and enabling them to play E*yeToy: Play 3*.

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However, the player cannot interact directly with this processing which occurs within the internal world of the computer and as a result requires the hardware aspect of the interface, which is both something in-order-to run the software and in-order-to provide the software with input and represent its output. So far in our treatment of *EyeToy: Play 3* we have not examined what constitutes the hardware aspect of the interface, but rather left it implicit in our discussion of cameras and screens, particularly as the technical means by which the interface operates as a transition point between the analogue and the digital, between the player's world and the game-world. As the border between the exterior world of the player and the interior world of the videogame, the hardware aspect of the interface also sits in relation to the player, in-order-to enable the player to interact with the game-world. Yet, we have already described the player's body earlier in terms of equipment, so how does an intentional conceptualisation of equipment apply to the player's body? The player uses their body in-order-to play the videogame, and we have already noted earlier in this chapter that the player and videogame form a cybernetic circuit of which both are integral parts. Furthermore, in both this chapter and in Chapter Two we have argued that the ready-to-hand becomes an extension of our bodily being, and as such we should speak not of cameras and screens in isolation but body-camera and screen-body conjunctions as well to account for these elements of the interface being taken up by the player as ready-to-hand extensions of their body. In fact, we should go further and speak of how the player simultaneously inhabits both their immediate environment as well as the videogame environment, and as Merleau-Ponty evocatively argues "In the action of the hand which is raised towards an object is contained a reference to the object, not as an object represented, but as that highly specific thing towards which we project ourselves, near which we are, in anticipation, and which we haunt" (Merleau-Ponty Phenomenology of Perception 159). This sense of haunting, given the greyed out and low resolution image which represents the player in-game, is perhaps a quite

appropriate term to apply to the experience of playing *EyeToy: Play 3*, which involves a sense of presence within the game-space, despite the player and the videogame being based in different types of ontical existence as we have noted earlier in this chapter. As Wirman and Leino argue "to inhabit a computer game the player has to be able to perform their embodied intentionality, or, motility, in the game. The most important thing that the game interface can facilitate is this particular inhabitance of a computer game player within a new information environment" (Wirman and Leino 461). In the case of *EyeToy: Play 3* this sense of particular inhabitance takes on a ethereal nature, that lingering sense of a disconnection where the body onscreen is 'I' but also 'not I'. What the player sees onscreen is not their reflection or a mirror image of themselves and their movements but the incorporation of their body and their movements into the game-space, processed and evaluated by the logic of the game-space. Whilst in the short term the body movement based interface of *EyeToy: Play 3* might increase the ease with which it can be taken up as ready-to-hand, in the longer term over the course of play the experience provides evidence to Wirman and Leino's claim that:

> The temptations of games with 'transparent interfaces' are aimed at those who refuse the enhanced sensory repertoire. These games do no make use of the full range of capabilities of the computer game medium and seem to resemble interactive narratives instead of simulations. [. . .] In games with so-called 'transparent interfaces' the player is forced to suspend her disbelief and accept that the diegesis consists of representations which, when compared to the meatspace, are crude regardless of the state-of-the art technology involved. Even with disbelief suspended, the player can only act 'as if' it was her own unique body that was reaching towards 'the world'; the universe into which we can plunge through 'transparent interfaces' is more fictional than virtual. (Wirman and Leino 463)

Of course, as underlined by the example of the rotating image mini-game mentioned earlier, our ability to successfully experience a sense of inhabiting the game-world of *EyeToy: Play 3* is reliant on our habituation to its representational address, for "Habit expresses our power of dilating our being-in-the-world, or changing our existence by appropriating fresh instruments" (Merleau-Ponty <u>Phenomenology of Perception</u> 166). Again, it is appropriate that in this quote

Merleau-Ponty speaks of instruments in the plural, for as we have seen it is difficult to set out the interface as simply a singular instrument as our relation to it is in actuality a complex of multiple relations. Again, it should be noted that the interface itself forms the basis of our relation to the videogame, it is something 'in-order-to' play those videogames with, yet it is also important to remember that the activity of play does not take place in an interface, and as such we would do well to acknowledge the essential embeddedness of the interface within the particular circumstance of our lived world. The space in which *EyeToy: Play 3* is most likely to be played, for example the family living room, is an important part of the context of play, as it is a private yet shared space of relaxation, leisure, and entertainment, as opposed to the more public context of *[giantJoystick]* in Chapter Two. Furthermore, the family living room furnishes much of the equipment besides the specialised console equipment required to play the videogame but which are generally overlooked and not considered part of the wider context when considering more conventional videogames, from the floor on which the player's stand and move, to the ability to control light levels through curtains and ceiling lights, and of course the television on which the camera sits, and the player views.

At one level this point might seem overly simplified, as the importance of the room as a room, that is with floor, walls, and roof, to the activity of playing *EyeToy: Play 3* seems to require little more to be said about them. And, indeed, this is true once their physical qualities, such as the height of the ceiling or the amount of floor space available,[24] are taken into consideration. These physical qualities seem to have little relevance – we are after all concerned with the experience of videogame play here, which doesn't often concern itself with the vagaries of domestic architecture. Yet, if we recall Heidegger's points about the withdrawal of the ready-to-hand from our immediate experience, and the way in which a

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[24] As someone who lives in a flat with an excessively low hanging light fixture in the living room, such considerations, particularly as they relate to my health and wellbeing, are not to be taken lightly whilst playing *EyeToy: Play 3*.

disturbance of the assignment of the in-order-to brings that assignment into our explicit awareness (Heidegger 358, 60), we can understand not only how videogames employ our embodied experience of our habituated space, but also how they broaden our embodied experience of those spaces through disruptions to our established relations to those spaces. During the experience of playing *EyeToy: Play 3* our habituated spaces, particularly the normally 'dead' space between lounge and television, take on new life as not only spaces of play, but play space in itself – active spaces of movement. The room which supports the player during the course of their movement could then rightly be considered part of the wider physical interface, as it itself enables that movement and as such enables the player to play.

Conclusion

This chapter has explored the question of what an interface is by applying that question to a specific example, *EyeToy: Play 3*, and through this consideration of what constitutes the interface between player and videogame, unpacking the complexity of the interface by considering the different parts or aspects of which it is composed. In this example we have uncovered many different aspects that could be considered as part of the interface, such as the player's body, the represented image, the internal software processes, and even the room in which the activity of play takes place. Importantly, the concept of the interface developed here extends beyond the more limited technical definitions generally associated with the term within the field of videogame studies to demonstrate its relational nature, particularly its role as the site or surface which brings into relation player and videogame by providing the means for these two parties that exist in different kinds of reality to communicate and interact. Such an approach leads to a richer and more varied understanding of the interface by taking into account the complexity of the player's embodied relation to the interface as the facilitator of their experience of videogame play which when taken up as a ready-to-hand extension of their

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bodily schema enables a particular form of inhabitance or presence within the game-space. Yet at the same time the interface becomes more ambiguous, more difficult to pin down as a separate thing or object, for in being relational in nature its borders necessarily are not fixed or determinate, and it permeates the experience of videogame play whilst being also somewhat outside of that experience. For instance, when its physical aspect is taken up as a ready-to-hand extension of the player's bodily schema and thus incorporated into their bodily schema it withdraws from the player's intentional concern and becomes something acted through rather than upon. For this reason the following two chapters continue to consider the interface, and in particular its role in the experience of videogame play. This is done by focusing more closely on the player's relation to the interface in both the physical world the player inhabits, and the digital world of the game-space towards which they are intentionally directed, to attempt to articulate the role of the interface in the experience of videogame play given its being as tangible and intangible, representational and affective, part of the videogame and of the player. Firstly, we will turn towards the physical aspects of the interface, which we will highlight by taking for our example tangible interface videogames that bring the physicality of the interface more firmly to the centre of the experience of videogame play. This will be followed by Chapter Five which considers how the more intangible levels of the interface, such as the avatars and characters used onscreen to act within the game-space, can be theorised in terms of the player's embodied relation to the interface and their presence within the game-space.

CHAPTER 4:

THE PHYSICAL INTERFACE

AND VIDEOGAME PLAY

In the preceding chapter we asked the question of what and where an interface is, arguing that it was the site of the relation between player and videogame, which facilitates the circular interaction loop between player and videogame that is characteristic of the experience of playing videogames. Further, we saw that the interface was itself comprised of a set of relations, between input and output, physical and digital, and software and hardware which were used to consider the nature of the interface in *EyeToy: Play 3*. This indicated that the interface, considered as a site of relations rather than more simply as a device or technique, was nebulous and extensible due to the way in which it was incorporated into the player's bodily schema and thus made complex the distinction between the player's immediate physical environment and the game environment. Consequently, it was argued that to arrive at a better understanding of the videogame interface required further investigation that was sensitive to its heterogeneous and embodied nature, an articulation that could express its being as tangible and intangible,[25] representational and affective, part of the videogame and of the player. This chapter seeks to undertake the first step of this task by focusing on the most immediate part of the player's experience of the interface, the physical devices which afford them the ability to input their intentions into the world of the videogame.

Therefore, this chapter will focus on examples of videogames where the physicality of their interface is emphasised, videogames that rely to an extent on the physical presence of their interfaces to elicit a particular experience from their users, where rather than being fully incorporated into the body schema of the user and being taken up as a ready-to-hand extension of their body, there is a sense of the users acting *upon* the controller as a key part of the interactional process, rather than *through* it to the interactional processes abstracted onscreen. That is to say interfaces that are both the equipment used for the task of videogame

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[25] Whilst the concept behind the word 'tangible' has a range of connotations, it is used here primarily to refer to that which has a physical, touchable presence in the world, in keeping with the concerns raised by the research work around tangible user interfaces referenced later in the chapter.

play, thus ready-to-hand, yet at the same time an entity for the player, thus also present-at-hand. This is in keeping with our choice of examples thus far, for as with the scale of *[giantJoystick]* bringing back to awareness the fundamentally embodied relation between the player and the interface, and with the explicit use of the player's body in *EyeToy: Play 3* as an element of the interface highlighting the complex of relations between player and videogame that the interface facilitates. Whilst the examples to be employed within this chapter diverge somewhat from more conventional videogame interfaces, by focusing on videogames that foreground the physicality of their interfaces, we similarly make visible the importance of that physicality in the player's experience of videogame play, something equally important to the more conventional interface yet not visible to us in the normal course of the experience of videogame play.

It is for this reason that here we turn towards the concept of tangible interfaces. At first this might seem disingenuous, for surely the most immediate aspect of the player's experience of the interface is that part of it which provides the player with the feedback that represents the ongoing action of the videogame, predominately the screen which presents the unfolding of events within the game-world. Yet, as we have seen in the previous analysis of *EyeToy: Play 3* and *[giantJoystick]* this audio-visual feedback is consequential to the player's sense of actively taking part in this unfolding of events only insofar as they have incorporated the physical interface into their bodily being, and are thus able to extend their intentionality into the game-space without consciously needing to transcribe their desired outcomes into a series of actions upon the physical interface. They no longer act upon the physical aspect of the interface as a physical device but rather through it as part of the broader interface used to play. The two previous examples contrasted in that *EyeToy: Play 3* showed how this process of bodily incorporation can be made relatively straight forward by relying on the player's own sense of bodily familiarity and proprioceptive awareness, effectively employing the player's

own body as the physical interface, whilst *[giantJoystick]* demonstrated the importance of the process of bodily incorporation by simply increasing the size of the classic Atari 2600 joystick to such an extent that a player's familiarity with the original on which it was based would have little bearing, even though the basic concept of a joystick with two axes and a single button remained unchanged. For this reason in this chapter we will focus on the player's experience of the physical aspect of the interface, those objects which we can touch and with which we interact with in our immediate 'real' reality to take action within the world of the videogame. To undertake this investigation of the physical aspect of the interface we will consider examples of videogames, particularly *The Eye of Judgement* and *A Game of Marbles*, in which the physical aspect is fore-grounded in the player's experience due to the nature of the player's engagement with the interface during the course of play.

Dourish and Tangible Computing

Currently within the field of videogame studies issues relating to notions of tangibility are in general absent from contemporary debates, though as both this subsection and the one that follows it demonstrates such issues are definitely emerging, often clustered around specific types of gaming practices, or conversely developments in interface modalities such as haptic interfaces. Given this state of affairs, we need to situate what we mean here by making reference to the tangible and its relation to computation and interfaces to identify the types of videogame artefacts and the experiences of playing them that we are addressing – in short defining the category of tangible interface games. Once again, Dourish offers a useful starting point in this regard due to his work in this area, and also due to the fact that a substantial proportion of previous research on videogames and tangibility locates itself within the field of HCI. The following section considers the applicability of Dourish's notion of tangible computing to the domain of videogames.

The historical model of interaction put forward by Dourish, that was referred to in Chapter Three, extends beyond the graphical paradigm to consider emerging paradigms within HCI, one of which Dourish terms tangible computing. This is an umbrella term that incorporates the related developments of ubiquitous computing and augmented reality (Dourish 15, 211). Dourish identifies several trends within this emerging paradigm, but the two that interest us here, in that they have the most direct relevance to videogame interfaces, are firstly, a trend towards "augment[ing] the everyday world with computational power, so that pieces of paper, cups, pens, ornaments, and toys can be made active entities that respond to their environment and people's activities" (Dourish 15), and secondly, approaches "in which we interact directly towards physical artifacts rather than traditional graphical interfaces and interface devices such as mice" (Dourish 16). According to Dourish, the basis of tangible computing "is exploring how to get the computer 'out of the way' and provide people with a much more direct—tangible—interaction experience" (Dourish 16). To paraphrase this statement with regard to interfaces, we could say that it is exploring how to position the interface as somehow outside the computational processes it controls, which would in turn provide people with a more direct and tangible experience of interaction by removing those computational processes from the immediate concern of the user.

Dourish notes several common features that arise out of the variety of tangible computing projects he surveys, and we would do well to consider these recurring features in detail. Firstly, Dourish notes that often "in tangible computing, there is no single point of control or interaction. [. . .] there is not even a single device that is the object of interaction" (Dourish 50-51). This diverges from conventional computer interfaces, which "have a single center of interaction, or at least a small number. Only one window has the 'focus' at any given moment; the cursor is always in exactly one place, and that place defines where my actions

will be carried out' (Dourish 50). This distribution of points of control over the process of interaction helps facilitate the second recurring feature identified by Dourish, namely a movement away from the sequential ordering of activities in conventional systems "used both to manage the interface and simplify system development" (Dourish 51), towards a more freeform style as "there is no way to tell quite what I might do next, because there are many different ways in which I might map my task onto the features of the environment" (Dourish 51). Though these first two points paint a picture of a chaotic and complex form of interaction, this is somewhat abated for as "in tangible design, we use physical properties of the interface to suggest its use" (Dourish 52). In effect, this third feature acts to curb the chaos suggested by the first two for "Taking this approach, designers can create artifacts that lead users through the process of using them, with each stage leading naturally to the next through the ways in which the physical configuration at each moment suggests the appropriate action to take" (Dourish 52). Gaver's concept of 'sequential affordances' provides a good example of such guided interaction, for example when applied to a common door with a horizontal door handle which rotates to a vertical position, for as a result of the user's manipulation the "new configuration [of the door handle] is one from which pulling is natural. [. . .] When grasping the vertical bar, the hands and arm are in a configuration from which it is easy to pull" (Gaver 80-81). Furthermore, as Gaver points out, exploration of the physical configuration of the artefact "leads to discovery of the system" (Gaver 82), it is something learnt through actual doing.

Given that the examples on which Dourish bases these recurring features could largely be described as utilitarian, for instance aids to dealing with urban planning problems, or work desks that afford more direct interaction with the objects and materials being worked with, it is important to query the relevance of these features to the context of videogames. For, "Videogames are not used instrumentally to accomplish another task, as use of a word

processor is instrumental to the composition of a legal brief" (Bardzell et al. 3663), and as such it is not clear whether an approach largely developed for instrumental tasks is applicable to activities where the system's "'use' is the experience it affords" (Bardzell et al. 3663). In other words, the experience of videogame play is to an extent an end in itself. However, though tangible computing is still a relatively emergent form of interface design, several tangible interface videogames have been created, mostly within universities and other research institutions, but also including commercially developed videogames such as *The Eye of Judgement*. Many of these tangible interface videogames aim to augment table-top style games with computational elements, "To unite the advantages of computer games with the social advantages of board games" (Bakker et al. 151), and as such "eliminate the gap between the interaction with a natural environment and the interaction with a computer system" (Ulbricht and Schmalstieg 1). For instance, *The Eye of Judgment* is essentially a turn based card battle game, yet the cards themselves can be read by the PlayStation Eye camera device, and the moves made by the players are processed by the game console, which keeps score and provides graphical embellishments such as scenes of battles between opposing creatures. Another approach is well represented by the *Entertaible*, a flexible videogame platform that comprises of an LCD panel mounted horizontally in a table top and a multi-touch detection system such that the player interacts with it either through direct touching or game pieces (van Loenen et al. 16-17). Whilst not all tangible interface videogames are based around table tops, for instance some utilise wearable Radio Frequency Identification tags (RFID), the majority seem to require some sort of flat, table like surface, if only to provide a stable area on which to place the physical game pieces and house the technical apparatus to provide what could generally be considered a digital game board. For this reason, we will focus primarily on table based tangible interface games when considering the relevance of the features identified by Dourish to the context of videogames, though other types of tangible interface videogames will be mentioned where relevant, as many videogames that resonate

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with Dourish's conception of tangible computing are often labelled under largely synonymous terms.

The first feature, the distribution and multiplication of points of control and interaction, is a significant move away from the conventional desktop model of computing where the user's point of access is centralised. An example of this movement of computing into the environment is *The Ambient Room*, "a small office cubicle that has been augmented with a variety of 'ambient displays,' designed to provide peripheral, background information to the occupant of the room" (Dourish 47). 'Displays' is in a way a misnomer for "Examples of ambient displays include projected light patterns, non-speech sounds, and objects that respond to changes in air flow" (Dourish 47), onto which various kinds of information can be mapped, "typically information about activities in either physical or virtual space, such as the presence or activity of others, e-mails arriving, people logging in and out, and so forth" (Dourish 47). Similarly, the distribution and multiplication of points of interaction is clearly something that conventional videogame systems lack, as each player's point of control is generally fixed in a certain location, the control pad, joystick, or other input device, and their ability to act within the game-world itself is usually centred in some kind of avatar, such as a character or even a simple mouse pointer. Surprisingly, many tangible interface videogames similarly have singular points of control for each player centred in a single game piece, even though the general adaptability of the game-table style of tangible interface videogames would afford the multiple points of control exhibited by many traditional board games such as chess or backgammon. Though this situation could arise for many reasons, for instance the desire to design multiplayer games yet having limited input channels, or even more simply the relative newness of the game table model leading to less ambitious projects than what might be possible with further development, more broadly speaking, the interactive game table approach is bound to limit the players' points of control to the sensible part of the table and

the play pieces used, leading to a situation where individual points of control may be distributed, but distributed within a finite zone of focus upon the table top.

Moving beyond the table-top approach, examples of distributed points of control do arise, such as *Real-Life Sims*, where "a player performs common, everyday activities that implicitly control an avatar living in a virtual home. Objects around the player's home or office are tagged with RFID tags, and the player wears a wireless RFID reader" (Medynskiy et al. 47), sensing and replicating the player's actions in the real home within the virtual home. A more extreme example of distributed points of control would be those games that are variously called pervasive, ubiquitous, or alternate reality games (ARG), the common feature being "that they break the boundary between the game and the ordinary world" (Stenros et al. 122). For example, the ARG *The Beast* featured "plot developments and evidence that circulated mostly through web sites and emails, but also through phone calls, faxes, television and newspaper ads, as well as occasional real-time and offline events" (McGonigal 117). Unlike the game tables mentioned above, in ARGs play activities are not organised around a specific site of play, but rather distributed through the world, including through communications technologies, not necessarily through imbuing everyday objects with computational potential, but rather in taking up the computational potential already existent in our technologically mediated style of living, for instance the near ubiquity of the mobile phone, to overlay our everyday world with play activities and thus rendering it in part a game-space.

Montola notes that the concept of pervasive games contains two distinct approaches, "one discussing *games based on pervasive computing applications* and the other looking at *games with pervasive gameplay*" (Montola 179, emphasis in original). This is a difference in focus between the technology used to play and the conception of space in which play takes place. These are not necessarily mutually exclusive approaches, but a similar tendency can be

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identified in Dourish's treatment of tangible computing, with the latter sense of pervasive games described by Montola as something of a corollary to what Dourish addresses as ubiquitous computing. In any case, it seems that to a degree the terminological problem that arises from these overlapping yet distinct approaches within game studies has fortuitously settled to generally describing games that predominately focus on pervasive computing *techniques* as tangible games, perhaps as short hand for tangible interface videogames, whilst the broader second approach mentioned by Montola is usually described as pervasive, ubiquitous or ARG games, the main distinction being that "in the latter category the game has to pervade everyday life in some way" (Montola 179). These pervasive games raise certain problems if we wish to focus on videogames, for arguably they are not videogames in the traditional sense, but rather share more in common with traditions of live action role-play (LARP), orienteering, and the genre of assassin style games mentioned by Montola (Montola 180). Indeed, within the field of game studies these styles of pervasive games are already addressed substantially in what appears to be developing as a specialist area with concerns that diverge to a significant degree from theorists that focus on more conventional videogames. Therefore, such pervasive games will not be addressed in detail here as they diverge from the specific concerns of the role of the tangible interface in the experience of videogame play.

The second feature identified by Dourish as characteristic of tangible computing, the move away from sequential and structured interaction with the interface to a more freeform style of interaction, is related to the dispersion of interface points of control, and can again be demonstrated by the example of *The Ambient Room*. As the user has several streams of information available and accessible with minimum effort there is no way to know when the user might begin to attend to one or more of the ambient streams and incorporate that information into their current activity, indeed the user may even begin to attend to one or

more of the informational streams subconsciously. The move towards a more freeform style of interaction is arguably present within some tangible videogames, yet a more important question to address is whether this situation actually represents a meaningful difference from the situation with more conventional videogames. Though many videogames could be described as being constructed around linear progression, whether by narrative advancement or simply through the succession of different levels, or stages, or required actions, each of which must be completed in turn, outside of this overall structure the actions of the player at any individual moment could proceed in many ways. And this is not even to take into account so-called open-world or sandbox style videogames, where the player has a wide range of activities and actions to take up at any time, and is left largely free to choose between these activities and actions. Furthermore, as we have already noted, a videogame is not necessarily teleological in that its 'use' can be "the experience it affords" (Bardzell et al. 3663).

While interface points of control are generally centralised in conventional videogames, the experience of videogame play in general already seems to be highly chaotic, and this indeterminacy underlines one of the problems with attempting to apply theoretical insights from a HCI context to one of videogame play without due consideration to the important differences between the two situations. Though the situation is beginning to change, for example through "a call to move from thinking about activity to thinking about experience" (Bardzell et al. 3663), and from there to particular subsets of experience, as noted earlier HCI research and theory has traditionally been focused on productive activities, evidenced in a way by the centrality of concepts such as workflow. Yet videogame play is an activity often taken up for what it offers in itself, whether this be entertainment, diversion, or simply the challenges of game-play, "its ostensible content is often almost incidental" (Bardzell et al. 3663). As a result, the focus is not so much on the end result of interaction with the interface but rather on the moment of that interaction itself during the course of videogame play, how it

unfolds and the player's response to that unfolding, where contingency and the dynamic turn of events is favoured over predictable and structured outcomes. Videogame play already heavily features the move away from structured and sequential interaction that Dourish identifies as a key feature of tangible computing. Indeed, a consequence of this is that videogames may provide the ideal conditions with which to study more freeform styles of workplace interaction, simply because the greater focus on the unfolding of events makes that unfolding more accessible as a process to be studied.

Whilst a tangible approach to videogames may magnify this tendency towards unpredictability, particularly through an elevation of the physical sites of interaction to the forefront of the player's attention, the essence of Dourish's second feature, "that there is no way to tell quite what I might do next" (Dourish 51), does not seem to be a meaningful point of differentiation between tangible videogames and more conventional videogames in general. If we retain the importance that Dourish places on the distribution of points of control across multiple physical devices in our application of this second tendency, which to an extent relies upon this distribution to undermine the sequential nature of more conventional interface modalities (Dourish 51), many of the existent works that would fall into the category of tangible games would not meet this criteria if it is robustly applied. For instance, as mentioned earlier in the chapter the majority of projects that are described as tangible or tangible interface games tend towards a table top style, essentially digitally remediated board games, and as a result tend to concentrate their points of control within a well bordered area, even when multiple game pieces are used. Describing such a spatial organisation of interface points of control as distributing "activity across many different computational devices" (Dourish 51), would mean that the conventional keyboard and mouse combination used for PC first-person shooters could equally be described as employing multiple points of control, though neither case would accord with the situation Dourish describes. Thus, it would seem that the second

feature that Dourish describes has little bearing on conventional videogames, or tangible videogames for that matter. However, this combination between the first and second features Dourish discusses quite clearly has implications for other game forms that do disperse interaction with the wider computational system used to play throughout the physical environment, particularly for ARGs, which as noted above make use of various communication technologies, physical objects, and spaces both physical and digital. Indeed, given the puzzle based nature of many ARGs and the multitude of ways those puzzles can be discovered and solved in such games, a large part of the attraction for players would seem to be that they themselves are not quite sure what they might, or even need, to do next.

The third of Dourish's features of tangible computing, the way in which the physical properties of the objects used in interaction can be employed to suggest the way in which they are meant to be used, similarly offers few points of differentiation between tangible and more conventional videogames, at least at a superficial level. As Dourish himself argues "This is nothing new; arguably, it is what product design or other forms of physical design are all about" (Dourish 52). Yet, as we noted in Chapter Three the majority of videogame interface devices are standardised by the platform for which they are designed. The PlayStation Dual Shock controller, for instance, might have superficial design cues such as ergonomic features to indicate how the controller is best held in the hands, or even more simply that the buttons, by virtue of their buttoness, are for pushing. But deeper levels of integration between form and function are generally absent – there is no apparent indication why one button achieves one action and not another, or even why that particular action is mapped to that button at all.

Given the general purpose nature of these controllers this should not surprise us, but if we move our consideration towards controllers designed specifically for particular videogames or style of videogames the importance of Dourish's observations about the physical design of

interfaces becomes apparent. The guitar controller for the popular *Guitar Hero* series is a useful case in point, as the locations of the buttons and other controls are modelled on an abstracted version of how an actual guitar is played. As such, the player's left hand operates a series of buttons on the neck of the guitar that roughly accord with the concept of specific notes, whilst the right hand operates the strum bar, a two-way, clickable switch which draws upon the idea of plucking or strumming particular strings to create sounds.[26] Furthermore, the use of the guitar form suggests that the videogame is meant not merely to be played, but is also an act of performance in itself, it may be a toy musical instrument, but it is a musical instrument all the same. It would then seem that it is in the actual tangibility of the interfaces of videogames that we find the most relevance for Dourish's concept of tangible computing, and thus we will now turn to focusing on the notion of tangible videogame interfaces.

Tangible Interfaces

As the preceding analysis of the relevance of Dourish's features of tangible computing should show, their relevance for videogames is hard to pin down in an exact way. This is somewhat due to the inclusion within the category of a range of closely associated trends including ubiquitous computing, pervasive computing, and tangible interfaces, which, despite sharing a common thread of investigating "the relationship between computers on the desktop and the world in which they (and we) operate" (Dourish 27), nonetheless explore this in somewhat divergent directions. Indeed, this is reflected by the examples with which we have investigated their relevance, which in their own way participate in this investigation of the relationship between computing and the wider world in which it takes place. After all, an ARG such as *I Love Bees* presents a vastly different kind of design approach, and subsequently experience of play, than *The Eye of Judgement*, which in turn is also quite different, but perhaps to a lesser extent, to *Guitar Hero*, yet all could be said to be

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[26] Of course, left handed guitar players might object to this analysis.

interventions into a wider conversation over the forms which videogame interfaces can take. Clearly, we need to narrow the focus somewhat if we are to investigate the concept of tangibility at a detailed level, and in accordance with this need, and with the specific focus of the thesis, a concentration on tangible interfaces rather than the broader terms of Dourish's conception of tangible computing is of value, as it aligns most closely with the problem of videogame interfaces. This focus on tangible interfaces lessens the relevance of the first two of Dourish's features, for while it is true that points of control can still be distributed and interaction with those points unstructured within a focus on tangible interfaces, the tangibility of the interfaces themselves comes to the fore as a key concern when the interface itself is our central concern.

This focus on the physical aspects of the interface employed in tangible interfaces systems becomes clear when we look at Ullmer and Ishii's definition of tangible interfaces as giving:

> physical form to digital information, employing physical artifacts both as *representations* and *controls* for computational media. TUIs couple physical representations (e.g., spatially manipulable physical objects) with digital representations (e.g., graphics and audio), yielding interactive systems that are computational mediated but generally not identifiable as "computers" per se. (Ullmer and Ishii 581, emphasis in original)[27]

The key point of this quote is the dual functioning of the physical artefacts as both controller and representation, for this is what distinguishes Ullmer and Ishii's concept of tangible interfaces from traditional user interface devices which are themselves physical artefacts (Ullmer and Ishii 581). This coupling or integration of control and representation presents an important divergence from conventional computer systems, which "make a fundamental distinction between 'input devices,' [. . .] and graphical 'output devices'" (Ullmer and Ishii

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[27] Note that the acronym TUI stands for Tangible User Interface. Tangible interface is preferred as terminology here, partly as the user is assumed anyway, but also due to the wider sense of the concept of the interface developed in the preceding chapter, which goes beyond the usual sense of the 'user interface'.

579-80). Conversely, "Tangible interfaces, [. . .] explore the conceptual space opened by the elimination of this distinction" (Ullmer and Ishii 580). This does not mean that output is absent, for "digital representations—especially graphics and audio—often present much of the dynamic information processed by the underlying computational systems" (Ullmer and Ishii 585), only that the physical artefacts through which the user controls the system also represents information about the system, as "The physical state of interface artifacts partially embodies the digital state of the system. [. . .] TUI artifacts frequently may be 'read' by both people and computers by their *physical state*, with their physical configurations tightly coupled to the digital state of the systems they represent" (Ullmer and Ishii 585, emphasis in original).

Before considering the implications of Ullmer and Ishii's work on tangible interfaces for tangible interface videogames, we would do well to contextualise just what we are considering through the use of examples, especially given the somewhat amorphous use of the notions of tangible and ubiquitous computing noted in relation to Dourish. Here we will draw upon two examples which emphasise different aspects of the trends and features grouped within the concept. The first example, *Siftables*, were "inspired by observing the skill that humans have at sifting, sorting, and otherwise manipulating large numbers of small physical objects" (Merrill, Kalanithi and Maes 75). *Siftables* is a multipurpose tangible interface platform[28] consisting of physical blocks that are "compact devices with sensing, graphical display, and wireless communication" (Merrill, Kalanithi and Maes 75). The graphical display is used to represent particular bits of data, such as individual photos, whilst the physical devices themselves include a range of sensing technologies including an accelerometer,

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[28] Whilst the project's creators describe it as a subset of tangible interfaces called Sensor Network User Interfaces (SNUIs), this more fine grained classification goes beyond the concerns being addressed here, though it is interesting to note that according to the creators the "usage implies that the sensor network *is* the user interface itself." David Merrill, Jeevan Kalanithi and Pattie Maes, "Siftables: Towards Sensor Network User Interfaces," Proceedings of the 1st international conference on Tangible and embedded interaction (Baton Rouge, Louisiana: ACM, 2007), 75fn.

infrared transceivers, and a radio, which afford the user's interaction with the individual *Siftables*, and via the interaction between the individual units, interaction with the entire set (Merrill, Kalanithi and Maes 78). The use of multiple communicating devices means that the *Siftables* platform is highly distributed, with points of control over the system as a whole arising over the user's manipulation of individual units and the interaction between these individual units. For instance, in a photo sorting task each S*iftable* represents a particular image, conveyed by a thumbnail image on the digital display. These images can then be sorted into groups by placing individual S*iftables* into piles, as the "devices will sense these movements and impacts using their accelerometers, and will use their radios to share information about these events amongst each other" (Merrill, Kalanithi and Maes 79). This sorting task demonstrates one of the key points of Ullmer and Ishii's approach to tangible interfaces, as the physical collections of S*iftables* upon the work space will correspond to the digital groupings of the photos established by the sorting activity, the individual *Siftables* both represent digital media and can be used to manipulate that digital media.

Our second example, and one of the key examples used by both Dourish, and Ullmer and Ishii, is *Urp*, "an urban planning workbench in which physical models of buildings are combined with electronic simulations of features such as air flows, cast shadows, reflectance, and so forth" (Dourish 48). The system combines both physical and digital aspects combined into the one workspace, such that "The interface combines a series of physical building models and interactive tools with an integrated projector/camera/computer node called the 'I/O Bulb'" (Ullmer and Ishii 580). Two sets of physical controls are used to interact with *Urp*, firstly, the building models themselves, which when placed on the workbench surface are tracked by the I/O Bulb system in real time, which then projects an image onto the workbench such that "the user can obtain a visualization of the shadows that the buildings will cast, or the wind patterns around them" (Dourish 48-50). The second set of physical controls

function as tools to change variables such as wind speed and direction, time of day, and even "A 'material wand' [that] can be used to bind alternate material properties to individual buildings" (Ullmer and Ishii 580), that have different properties, "so that the computed reflectance patterns will simulate buildings clad in brick or glass" (Dourish 50).

Urp exhibits many of the key features of tangible interface systems that were detailed earlier in our discussion of both Dourish's, and Ullmer and Ishii's, work on tangible computing and tangible user interfaces. For instance, the controls for the system are distributed through the physical control objects, though to a lesser extent than exhibited by the *Siftables* platform, which subsequently means that there is not a strict sequential ordering of the user's interaction with the system as any of the various tasks the system can perform can be accessed at any time. Furthermore, the physical controls are designed in such a way that they indicate to the user what they are and how they are used, for example the time of day control, where "The position of the sun can be controlled by turning the physical hands of a clock tool" (Ullmer and Ishii 580). This provides a degree of functional specificity lacked by the more general purpose *Siftables*. Importantly, the physical controls act not only as controls but also as representations of the underlying simulation – the placement and orientation of the building models not only controls the shadows that are cast, but simultaneously represent the digital modelling of the placement and orientation of the building objects within the simulation software.

It is at this crucial point of the combination of control and representation that some videogame interface systems, which would seem to be included within the concept of tangible interfaces, come unstuck. The Nintendo WiiMote motion sensitive controller is one such case, as the physical controller does not in itself represent the simulation system underlying the videogame. Haptic interfaces, such as those used for the touch screen based videogames

prominent on the iPod touch, iPhone, and iPad, similarly fall outside the concept of tangible interfaces, for the physical controls, in this case the player's finger, also do not generally fulfil any representational role. This is not to say that such interface systems are in any way conventional videogame interfaces, but simply that they depart from convention in different ways than tangible interface videogames do. Having now considered the key elements of tangible interfaces and tangible computing more generally, we can turn towards a more in-depth analysis of videogames that do employ a tangible interface. In line with this movement, we will now turn our attention towards *The Eye of Judgement*, and consider how its use of a tangible interface may impact on the experience of those who play it.

Tangible Interfaces and *The Eye of Judgement*

At first glance, *The Eye of Judgement* seemingly presents a good example of a tangible interface videogame in that it uses physical cards as its primary set of controls, and these same cards are also representative of specific creatures that can be summoned by the player. The player interacts with the underlying videogame system through placing these cards, either faced down or face up, within defined squares on a three by three grid play mat, by moving previously placed cards to another square, or by turning over face down cards, with the goal of occupying a majority (five) of the squares. As physical representations of different summoned creatures, the cards are coupled to a digital representations of these same creatures, as the PlayStation 3 Eye camera reads specially encoded symbols on each card to track which cards have been played and where, and as such presenting a stylised version of the play field including animated digital representations of the creatures represented by the cards onscreen, as seen in Figure Five. Furthermore, the players can interact directly with the digital representations of the creatures through what is called the profile mode. In this mode a single card is held before the camera, and upon the card a digital representation of the creature

is displayed on-screen, which can be interacted with through hand gestures, such as poking the on-screen creature with the player's on-screen hand to trigger the creature's attack animation, as can be seen in Figure Six. This mode can also be used to display the various statistics possessed by the creature, hence its being named the profile mode, yet this information is in a way redundant, as this information is itself presented directly on the physical card itself.

This use of the physical cards as both representations of, and control over the in-game creatures accords with Ullmer and Ishii's assertion that the physical artefacts employed in tangible interface systems can be read as they are in their physical state, not to mention that the state of the videogame itself is partially represented by the physical representations without recourse to the digital representation, as the positioning of each player's cards on the play field and their status as either being face up or face down provides a substantial indication of the current game state. While the physical representation may lack some of the dynamic information handled exclusively by the digital representation, such as the current health of battle damaged creatures, extra physical artefacts created by fans of battle card games that either don't wish to go to the expense of buying a PlayStation3 system, or perhaps to play the game even when mains electricity is not available, mean that the game can be played entirely without the need for the digital representations.[29] Through the use of tokens, counters, and two-sided tiles, in addition to the provided cards and play mat, *The Eye of Judgement* can be played as simply a physical card game, as opposed to a tangible interface videogame.

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[29] An example of these 3rd party efforts is Tyler Tinsley's *Eye Of Judgment Printable Tabletop Players* kit, which contains physical representations for all the dynamically affected digital representations from the original game. See http://tylertinsley.com/2007/12/11/eye-of-judgment-printable-tabletop-players-kit/#more-143

Figure Five: Digital representation of the play field of *The Eye of Judgement*, showing creatures summoned and their location. (source: Sony Computer Entertainment Inc.)
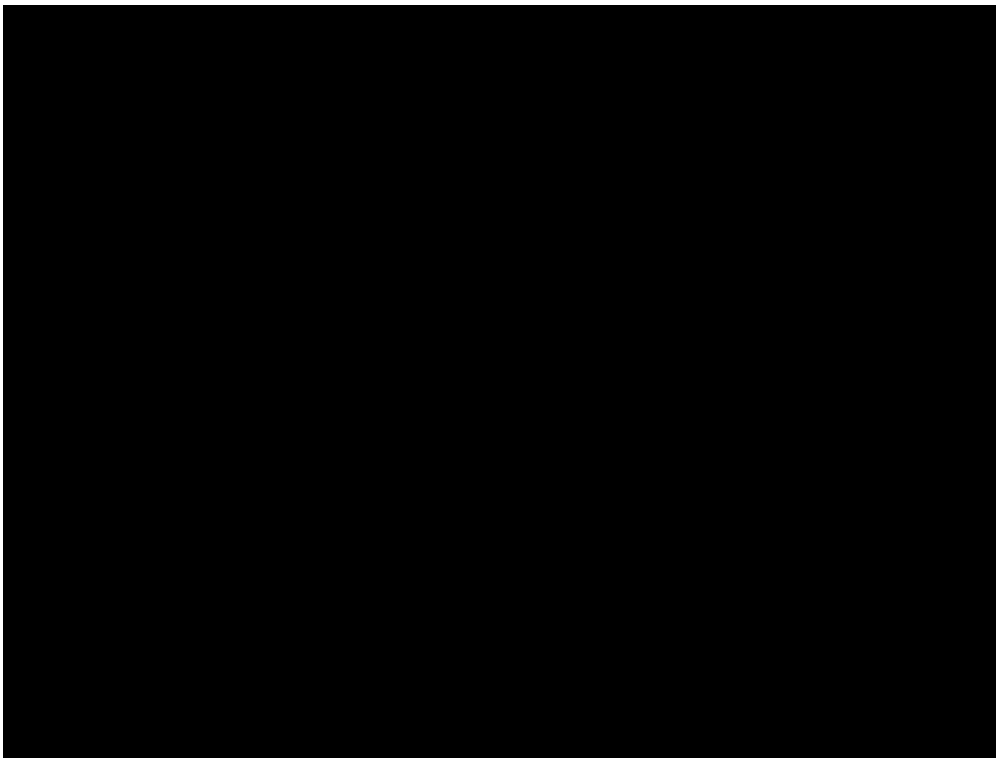

Figure Six: Interacting with the digital representation in the profile mode. (source: Sony Computer Entertainment Inc.)

What then does the digital representation component of *The Eye of Judgement* contribute to

the experience of play if it can be so easily done away with? Firstly, and perhaps most importantly, is the contribution of what underlies the digital representations, which is the dynamic processing of the course of the videogame state during play as we saw in Chapter Three. Though these automated processes could easily be accomplished by the players if they so desire, there is obviously an attraction to being able to get these tasks out of the way, and instead concentrate on the next possible move, rather than calculating the effects of the last, and thus speeding up the experience of play and making it more immediate. Secondly, and perhaps more complexly, is the nature of the digital representations themselves, which presents a fictional world of fantasy battle as an overlay to the numerical and logical basis of the cards. This fictional context is to an extent present without the digital representations, as the cards feature illustrations of the creatures they represent, but the dynamically generated digital representations, particularly through the battle animations in which encounters between opposing creatures are resolved, arguably provides a richer, at least in terms of the audio-visual representations if not experientially, presentation of *The Eye of Judgement's* fictional world. More pragmatically, perhaps even cynically, it could be argued that the graphical embellishments are necessary for *The Eye of Judgement* to be considered a videogame at all. In fact, due to its use of videogame conventions such as the aforementioned battle animations, *The Eye of Judgement* has much in common with the turn-based tactical battle mechanics and style of presentation found in some more conventional videogames. Indeed, it would not be difficult to imagine *The Eye of Judgement* as a more conventional videogame, with its physical representations done away with entirely, and played using only the digital representations along with a more conventional physical interface.

In short, it is difficult to see *The Eye of Judgement* as simply either a card game with graphical embellishments, or a videogame controlled through cards, when it seems to be a hybrid of the two – a video/card game that draws on the conventions of both. Interestingly,

The Eye of Judgement is at present one of the few mainstream tangible interface videogames commercially available, though as has been noted earlier there are a range of smaller scale tangible projects being produced in various research laboratories and by independent developers. This is reflective of one of Dourish's observations about tangible computing more generally, namely that it has been developed in a largely ad-hoc fashion, "driven as much by the availability of sensor technology and the emergence of new control devices as by a reasoned understanding of the role of physicality in interaction" (Dourish 52).[30] What then is the role of this physicality of the interface, in the player's experience of playing *The Eye of Judgement*? Most simply, it affords co-located two player games, for if the videogame relied only on digital representations, each player would be able to see what cards the other player held in their hand onscreen, decreasing the scope for tactical play based upon secrecy and surprise. In addition, it alters the nature of the relation between the players from what is the case in conventional videogames, for as Mandryk, Maranan, and Inkpen note "When players gather together around these consoles the players generally sit side-by-side and interact with the screen, not directly with each other" (Mandryk, Maranan and Inkpen 640). Similarly to the players of *[giantJoystick]* in Chapter Two, players of *The Eye of Judgement* are orientated and organised around the physical play field, as shown in Figure Six, providing both the basis and the support for their experience of play, both with the videogame and with each other.

However, the physical play field and the physical cards placed on it are not the only foci of the players' attention and interaction, for while the physical aspect of the videogame provides partial information to the player about the game state, for a full understanding the players must attend to the information that appears on-screen through the digital representations, introducing a sense of 'output' that suggests that *The Eye of Judgement* does not necessarily achieve the elimination of the distinction between input and output that Ullmer and Ishii set so

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[30] It is for this reason that we have included several more examples in this chapter than in previous ones.

much store by. Unlike the *Entertaible* and other tangible tables mentioned earlier, which overlay the physical and digital representations onto the one play space, *The Eye of Judgement* keeps them separated spatially, even if conceptually the physical and digital representations are coupled, and so a question arises about the nature of the conceptual space opened up between input and output in a videogame like *The Eye of Judgement*. This question arises not by the elimination of the distinction entirely, but by the unusual relation between them where the distinction seems to remain in a vestigial physical form.

Simply put, a videogame like *The Eye of Judgement* elicits the question of where is the videogame actually taking place? This question should be distinguished from the seemingly similar question we asked of *EyeToy: Play3* in Chapter Three, for it is no longer a question of simply where the interface in itself is located, but rather one concerning the activity through which the interface is accessed. If it is taking place within the physical play space through the physical representations, then how do we understand the digital representations and the role played by them? Conversely, if the videogame fundamentally takes place within the digital play space, are the physical representations little more than a gimmick, or do they entail something more significant about the nature of the players' relationship to the interface used to play? Given that it is possible to play *The Eye of Judgement* entirely outside of the digital play space it could be argued that it is not so much a videogame but rather a card game with an additional digital layer that does little more than relieve the players of the responsibility of keeping track of the rules and score whilst providing a graphical spectacle. Thus, to explore these issues we will examine another example of a tangible interface videogame that shares much in common with *The Eye of Judgement*, but which further complicates the point due to its increased reliance on the dynamic computation that is embodied in the digital representations of its function as a videogame. This art videogame, *A Game of Marbles*, will be explored in the next section to address the questions that have so far arisen concerning

videogames and the tangible.

Tangible Interfaces and *A Game of Marbles*

The digital videogame installation *A Game of Marbles* (Devine and Mason), exhibited at the Next Wave festival of 2006 in Melbourne Australia, presents an interesting case study into the dynamics of the videogame interface due to its design, in particular its novel use of physical objects as control surfaces. Like *The Eye of* Judgment and the videogames analysed in the preceding chapters A *Game of Marbles*, through making the familiar conventions of videogames strange, makes them more visible. The installation consists of two elements, firstly, the physical play space consisting of a roped off ring where players take turns flicking their marbles much like in a traditional game of marbles. The second element is that which is simultaneously displayed digitally on screen, where the position and movement of the marbles is captured by a video camera and computationally processed similarly to *The Eye of Judgement*, then depicted as stylised soldier avatars within a rocky arena. When two or more marbles enter within a particular distance of each other in the physical play space, this is in turn represented on-screen through an exchange of fire between the avatars. In addition, there are a range of special moves, dependent on the movement of the player's marble as shown in Figure Seven. These movements, such as passing between two other marbles, or completing a full circumnavigation around the interior limit of the rope ring, activate power-ups familiar to the average videogame player, such as restoring health, or causing other players to sustain extra damage. Thus, as the players take turns flicking their marbles around the ring the movements of these marbles are depicted as stylised combat onscreen, their avatars deal, endure, and heal damage until one player has reached a winning score of ten kills.
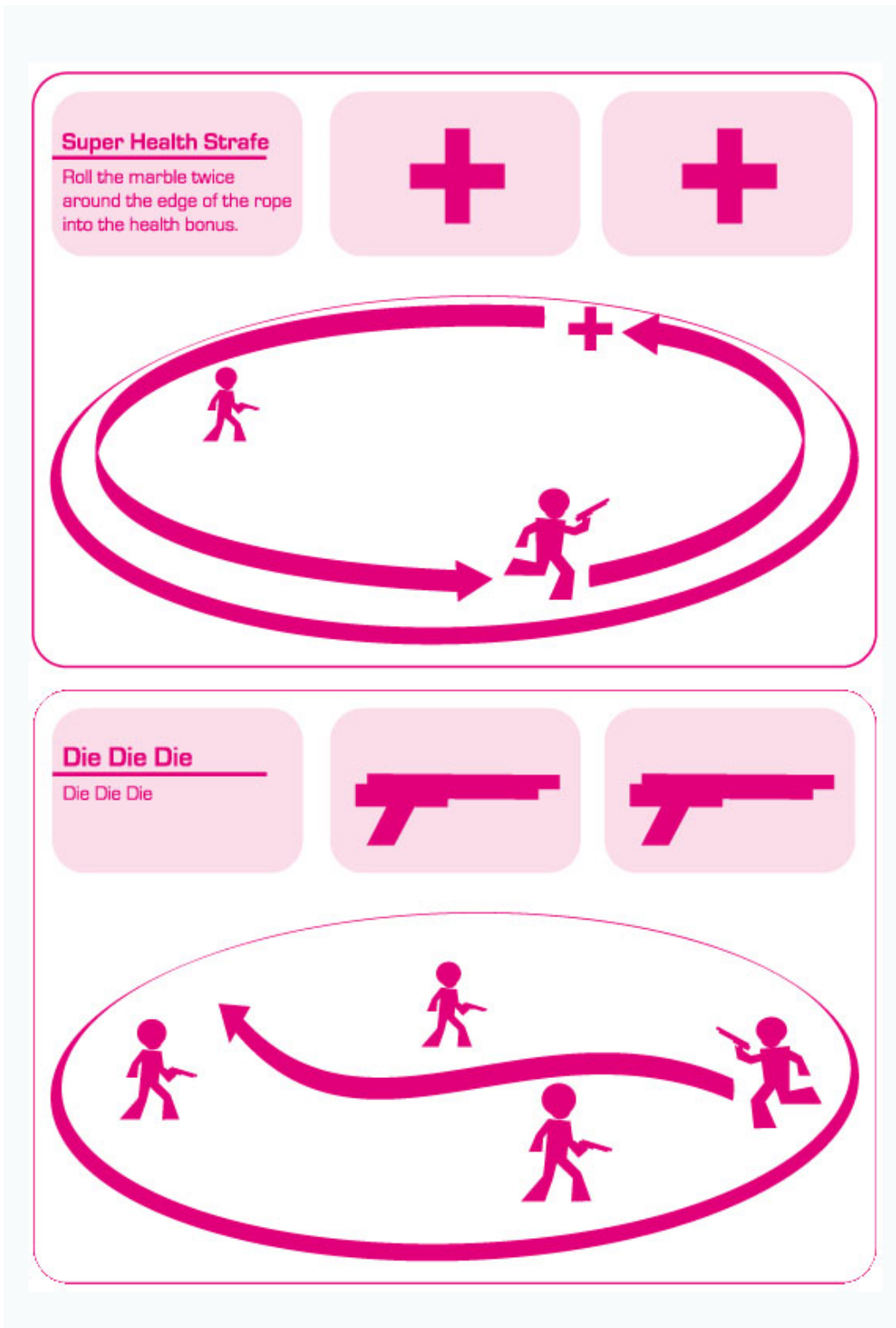
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Figure Seven: Two different 'special moves' from *A Game of Marbles* (Image copyright Devine and Mason, reproduced with permission).

The installation problematises the question of where the videogame is taking place – is it in

the physical ring, or the digital battlefield? Which space is of primary importance to the players? Where are the players' attention and intention directed – are the players participants in the digital battlefield or only observers? *A Game of Marbles* raises these questions because it brings into focus an aspect of videogames that is often forgotten in the rhetoric of virtuality and the arrival of the 'digital age' – the essential physicality of videogames as both a medium and an experience. By foregrounding the tangibility of its interface *A Game of Marbles* brings the physicality of the experience of videogame play back to our attention, while also calling into question the relation of the virtual to the tangible in wider contexts. Similarly, artists such as Jonah Brucker-Cohen have interrogated the trend towards valorising the virtual with works such as *Alerting Infrastructure* which seeks "to amplify the concern that physical spaces are slowly losing ground to their virtual counterparts" (Brucker-Cohen and Doyle 5). *Alerting Infrastructures* is an installation piece that uses a pneumatic drill suspended in the air but in contact with the gallery wall, and controlled by a computer that tracks 'hits' to the exhibition's website, so that "With each new virtual hit, the jackhammer slowly destroys the wall of the physical building" (Brucker-Cohen and Doyle 5). Though Brucker-Cohen makes the point in a playful manner, in the context of virtuality more generally we would do well to remember the inherent physicality of the technological sub-structure that enables our experience of videogame play. From the control surface to display monitor, including even the software that exists as an array of magnetic polarities or plastic peaks and troughs, a videogame has an existence in physical reality. While, as players, we may not be particularly aware of these tangible factors during the course of play, they are none-the-less an important part of the experience as part of the technical support that enables that experience, which becomes most apparent when one or more of these physical supports ceases to work it its intended manner, disrupting and even ceasing the course of play.

While *A Game of Marbles* is quite obviously a very particular case, it shares many similarities

with other videogame genres and styles. Firstly, there is the turn-based, one player at a time interaction style that *A Game of Marbles* shares with many videogames, particularly turn-based strategy videogames, not to mention games more widely such as many card and board games, and of course games of marbles. Secondly, the players have discontinuous control during their turn, as they have no control of their marble after they have set it in motion, a characteristic shared by videogames such as the ballistics based *Scorched Earth* (Hicken) and *Worms*, as well as turn-based strategy videogames, and non-digital games such as snooker and lawn bowls. Finally, *A Game of Marbles* is a physically co-located multiplayer videogame, meaning that it has a stronger connection to similarly co-located video- and non-video games than to online videogames where players are generally physically distant. What primarily differentiates *A Game of Marbles* from conventionally designed videogames is the way in which it makes its tangible interface a focus of attention separate from the output feedback being presented via the display screen and audio speakers. Like *The Eye of Judgement*, the game-state is knowable not only from these feedback channels, but also partially via the position of the marbles within the physical play space, and what distinguishes these two separate presentations are the extra layers of representation provided by the onscreen representation, namely a thematic context of combat, dynamic score keeping through the dealing of damage, and spectacle through the audio-visual apparatus.

Like *The Eye of Judgement*, these extra layers need not be digital, as it would be possible to implement the thematic context and score keeping in a set up akin to a table-top war game, though the process would admittedly be much more cumbersome. The final extra layer of spectacle would be conceivably much harder though not impossible to accomplish in the physical play space in a similar manner as is achieved in the digital game-space of *A Game of Marbles*. I raise this rather unlikely situation of a completely non-digital version of *A Game of Marbles* to emphasise that "while digital and physical media might be *informationally*

equivalent, they are not *interactionally* equivalent" (Dourish 44, emphasis in original). Though the digital elements could be, at least hypothetically, achieved within the physical play space, by contrast the digital representation presents no means for the player to control the movement of their avatar – *A Game of Marbles* is, after all, a game of marbles that takes place in the physical play space through the players taking action by flicking their marbles around the ring. The digital representation is just that, a representation of the computationally processed action and events of each turn of the game. Though the digital representation is doubtlessly an important part of the design of the installation as an artwork and of its experience, as part of the ludic game it is secondary to the physical play space where the player takes action. This situation is seemingly unlike that of a conventional videogame where, as the only source of feedback, the digital representation regardless of its form as visual, audible, or haptic information appears to be an integral and crucial part of the experience of videogame play. The computer may be running the videogame, processing information about player input and presenting complex output through screens and speakers, but the videogame play itself takes place in our world, through the actions, intentions, and experiences of the players.[31] Without the players there is a technological system that can support the playing of the videogame, but no experience of videogame play, as it is only when the technological system is taken up by the players in the course of play that the experience of actual videogame play can come into being in the individual experience of the players.

This is not to discount the general importance of the technological system, as the rules and the technical manner in which the videogame action is presented fulfils a vital role in helping to structure the actions and intentions of the players (Järvinen 70). The rules of *A Game of Marbles* give the players' activities a teleological purpose, they are not merely rolling marbles

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[31] This situation is reminiscent of Massumi's argument that "The processing may be digital – but the analog is the process." For example, digital sound which, though stored in digital code, only becomes audible when transformed into analogue sound waves Massumi, <u>Parables for the Virtual</u> 142, 38.

around a ring, but doing so to gain advantage within a competitive context with the theme of to-the-death conflict. The particular details of the rules, such as the special moves shown in Figure Seven, suggest likely moves the player could make in any particular turn given the arrangement of the marbles. In this sense, the videogame does exist independently from the activity of play as a set of abstracted potentials, as a static state of what might be likely to happen next and why, resting on the logical structure of the rules. Though rules give a videogame its structure, if we are interested in videogame play as an activity undertaken by players the focus should be on how the players act within, and beyond, that structure – on play as a material, experienced activity.[32] The raw potentialities presented by the rule structure thus become part of the experience of videogame play only when they are taken up and pursued by the player.

Ullmer and Ishii's description of tangible interfaces as giving "physical form to digital information" (Ullmer and Ishii 581), offers one potential way of understanding the dynamics of *A Game of Marbles* by considering the installation in terms of Ullmer and Ishii's model-control-representation (physical and digital) interaction framework and how it understands the integration between representation and control within tangible interfaces. According to this model, the perceptual coupling between the physical representations and the digital representations of the interface indirectly relies on a computational coupling between the physical interface with the underlying software code that runs the videogame (Ullmer and Ishii 585). In terms of *A Game of Marbles*, the perceptual coupling between the coloured marbles and the on-screen avatars relies upon the computational coupling between the

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[32] Again, Massumi is helpful here, as he argues "structure is the place where nothing ever happens, the explanatory heaven in which all eventual permutations are prefigured in a self-consistent set of invariant generative rules." Massumi, <u>Parables for the Virtual</u> 27. For instance, using the rule structure of Noughts and Crosses (known in some regions as Tic Tac Toe), Juul is able to calculate the number of different ways in which any instance of the game could take. Jesper Juul, <u>Half-Real: Video Games between Real Rules and Fictional Worlds</u> (Cambridge, Massachusetts: MIT Press, 2005) 38. Yet, this tells us very little about the actual experience of playing Noughts and Crosses, or why the players' make certain moves but not others.

physical marbles and the installation's software code. The digital representations are thus used to dynamically present information to the players about the computational process, for instance the percentages that show the health level of individual avatars to indicate how much damage each has sustained so far. The marbles, though lacking some of the information that is handled digitally, such as avatar health level, still partially indicate the game state through their position within the physical play space and importantly serve as the tangible interface of the videogame. Furthermore, *A Game of Marbles* employs what Ullmer and Ishii describe as a spatial approach, where "the spatial configurations of physical objects are directly interpreted and augmented by the underlying system" (Ullmer and Ishii 585). Thus the initial position, movement, and proximity to other marbles of the currently active marble during a turn is processed by the videogame software and represented digitally to the player as movement and conflict between the onscreen avatars. Hence, it is the dynamic changes in the physical location and proximity of the marbles over the course of the videogame that determines the actual outcome of the videogame, rather than the representation and contextualisation of these changes that occurs on screen.

Though Ullmer and Ishii's model allows us to address *A Game of Marbles* in terms of how physical objects can be employed to control and represent computational processes, we can go a step further and consider the inverse form of this relationship where computation, rather than being primary, takes a supporting role to the physical components. Dourish describes this approach to HCI as the augmented reality approach, where "The site of interaction is the world of the user, not that of the system" (Dourish 38). Such a view seems more fitting for a videogame-like system like *A Game of Marbles* where the activity is undertaken for its own sake, rather than to accomplish a particular task. From this perspective, the site of interaction is the game itself, rather than what is represented onscreen as the game-space. Such a tangible interaction understanding is suggested by the online festival listing for *A Game of Marbles*,

which describes the marbles as representing the avatars (Next Wave Festival). Conversely, a newspaper report on the videogame describes the avatars as representing the marbles (Karena), and though it may be no more than a trivial divergence of wording between the two differing descriptions, it does suggest that the question of primacy between the digital and physical that Dourish's notion of the augmented reality approach addresses may not necessarily tend towards the physical in the case of *A Game of Marbles*. The representational relationship between the physical marbles and the digital avatars is necessarily a bi-directional transformation, and as such the physical and digital representations are relatively informationally equivalent, as mentioned earlier. However, from the perspective of the players the case of the digital avatars representing the marbles would arguably be the most likely perspective taken, after all, in terms of the videogame, it is more interesting to watch computer animated avatars do battle rather than marbles rolling around in a ring, and it is also within the digital game-space that the winner is ultimately determined.

A Game of Marbles complicates this likely preference towards the digital game-space by forcing an awareness of the disconnection between the stages of input and feedback that a conventional videogame seeks to conflate through a variety of measures, such as attempting to make the tangible interface relatively intuitive by using logical and physical constraints, or by utilising conventional layouts that many players may already be familiar with (Norman 82-87) and thus easier to take up as ready-to-hand. A sufficiently competent player of a conventional videogame would eventually pay little attention to the tangible interface, being engaged in the activity of playing the videogame rather than using the tangible interface, or as Dourish puts it, "as we act through technology that has become ready-to-hand, the technology itself disappears from our immediate concerns. We are caught up in the performance of the work; our mode of being is one of 'absorbed coping'" (Dourish 109). The tangible interface becomes incorporated into the player's body schema, as the player becomes increasingly

familiar with its workings, and as a result it must "withdraw in order to be ready-to-hand quite authentically" (Heidegger 358). As we have seen in Chapter Three with regards to the experience of playing *EyeToy: Play 3*, the result of this withdrawal of the immediate physical interface is the flow of the player's intentional concern into the game-space, as the player becomes directed not towards the movement of their own immediate bodies, but rather towards their represented bodies onscreen that interact with the game-space.

As the players of *A Game of Marbles* have to split their attention between the physical ring and onscreen battlefield, it is hard to see how their intentional concern could move in the manner described by Dourish for they must look away from the screen towards the tangible interface to take action within the game-space. To further elucidate this point, let us consider a hypothetical modified version of *A Game of Marbles* that uses a billiards table as its play space, and a pool cue as the means of moving the balls and compare this to the Billiards mini-game from the *Wii Play* compilation (Nintendo Wii Play), where the players use the WiiMote as if it were a cue. In the *Wii Play* version the players' actions from moment to moment are captured by the accelerometers in the WiiMote and represented on screen as a moving pool cue and there is no need for the player to split their attention between the digital game-space and their own immediate physical space. The player does not need to focus their attention on the WiiMote, which rather, in much the same way as someone playing a real world game of billiards engages with their cue, becomes incorporated into the player's bodily schema as a ready-to-hand extension. The situation is quite different in the adapted *A Game of Marbles* version, where the players would need to focus on the physical play space whilst taking their move, before watching the action on the screen take place. Even those players that possess a high level of skill at either conventional marbles or billiards, such that the marbles or pool cues themselves are already *ready-to-hand*, would still be faced with this situation of a split or separation of their attention between the physical game-space and the digital game-space.

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A Game of Marbles Instructions

*Each marble represents a character on screen.

When a marble is close enough to another the characters will start attacking.

When a player dies the player whose turn it was gets a point, or points if more than one character dies.

First to 10 kills wins.
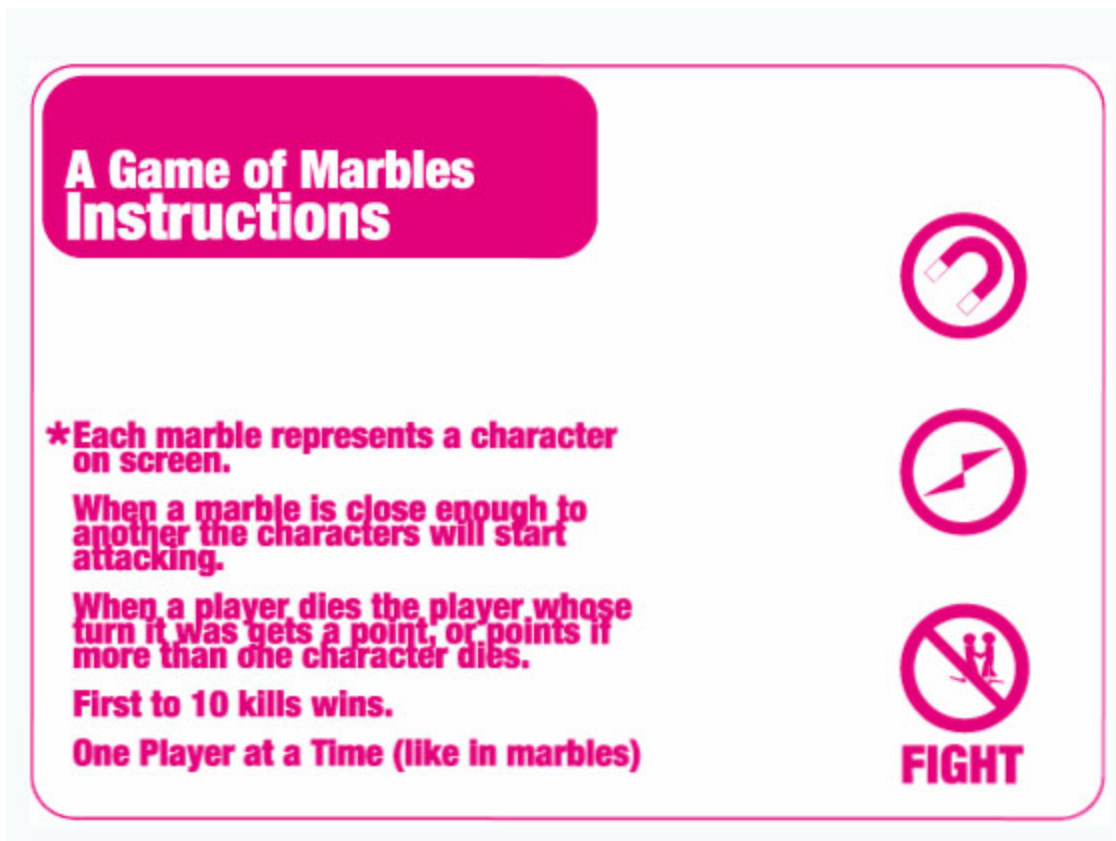
One Player at a Time (like in marbles)

FIGHT

Figure Eight: Rules for *A Game of Marbles* (Image copyright Devine and Mason, reproduced with permission).

All of this of course assumes that the players are playing in the manner intended by its designers, following the rules and trying to win. Watching other gallery-goers using *A Game of Marbles*, one observation made was that few people were actually playing it as a videogame, but rather playing with it as an audio-visual installation, largely ignoring the rules such as 'One Player at a Time' as shown in Figure Eight. Players would move multiple marbles simultaneously, focusing most often on the screen displaying constant movement, violence, and gore with only momentary glances downwards to locate marbles that could be moved. The marbles were not moved tactically as ludic actions directed towards the game-space, but simply set in motion. Though these observations were based only on one short visit one afternoon in a quite busy gallery, it is possible to identify this observed use of *A Game of Marbles* as an example of what Williams, Kabisch, and Dourish describe as instrumental

interaction, as the participants were "not focused on the physical objects themselves, but on the effects that they engender [. . .] using them as controllers of a digital system" (Williams, Kabisch and Dourish 10). In a way this point contradicts our earlier argument that videogames are generally not instrumental, in that the experience of videogame play is an end in itself rather than being directed towards some concern beyond the experience of videogame play. This would suggest that the observed use of *A Game of Marbles* indicates that those playing were not approaching the installation as a videogame at all, but rather as an interactive multimedia work, leading to expectations about its purpose and intended use outside of the ludic concerns of the experience of videogame play we have been focused upon.

Of course, this is not meant to suggest that the observed use of *A Game of Marbles* was instrumental in the sense of being directed towards some specific utility. For instance, in explaining what they mean by instrumental interaction, Williams, Kabisch and Dourish refer to their own observations on another interactive digital media installation, *SignalPlay*, noting that "users took advantage of the ways in which the musical sounds were influenced by manipulation of the object, treating it similarly to a musical instrument" (Williams, Kabisch and Dourish 9). This playful employment of the installation is similar to that observed with *A Game of Marbles*, perhaps as a result of their common social setting within a gallery space, for as Williams, Kabisch and Dourish note in relation to *SignalPlay*, the gallery imbued "meaning to the technology, as something to be explored and understood, but not necessarily to be used as a tool" (Williams, Kabisch and Dourish 11). Along with these contextual cues, there are also the effects engendered by the two installations, namely responsive audio and/or visual outputs, which lend themselves to more playful, unstructured interaction than we might generally associate with the word 'instrumental'. This instrumental use of *A Game of Marbles* relied on what Williams, Kabisch, and Dourish would describe as the iconic and intrinsic properties of the marbles (Williams, Kabisch and Dourish 9). Iconic, as the marbles

represented the on screen avatars, whilst the intrinsic ability of the marbles to roll, and the delimitation of the physical play space with a roped off ring, further suggested how the installation could be used – recalling Dourish's third recurrent feature of tangible computing, which is the use of the physical properties of the interface to suggest its use. This in part may explain the particular use of *A Game of Marbles* described above, as while there were rules governing the taking of turns, these rules were not intrinsically part of the physical play space, nor enforced by the underlying software model, so giving the participants considerable scope to use the installation in unintended ways such as simply generating interesting events on screen to observe. Here again we see that the particular experience of videogame play that an individual player will experience arises not so much from the features of the way in which that videogame is designed, but rather in the way in which that player takes up the videogame within a particular intentional concern, even if that concern goes beyond or outside of the purported purpose that videogame was designed for.

Conclusion

In this chapter we have inquired into the role of the player's embodied relation to the interface in the player's experience of videogame play, focusing particularly on exploring the concepts of tangible computing and tangible interfaces within the context of videogames through a consideration of an emergent trend of tangible interface videogames that seek to employ the physicality of their interfaces more firmly in their players' experience of videogame play. It was argued that in relation to the examples analysed, notably *The Eye of Judgment* and *A Game of Marbles*, that this focus on the physical was at times problematic, with the relation between the physical and digital aspects of their respective interfaces existing in some tension as both vied for the attention of the player. While this could be put down simply to the teething problems that could be expected at the relatively early stages of the use of tangible

interfaces in videogames, we also saw that this tension was not necessarily based upon direct conflict between the physical and digital aspects of the interface, but rather a tension that arises from a more fundamental phenomenon that arises from the nature of the player's experience of videogame play, in particular their embodied relation to the interface. In taking up the interface as a ready-to-hand extension of their body the interface withdraws from the player's immediate concern, and their intentionality flows into the game-space, leading to the player's split attention between the physical and digital aspects of the interface.

The question we posed earlier in regards to *The Eye of Judgement* seems equally germane to *A Game of Marbles* – what is the role played by the physical interface in the player's experience of videogame play? Again, similar to *The Eye of Judgement*, there is a tension between the physical and the digital aspects of the interface as the player's concern is required to shift spatially during the course of play, firstly down at the ring and its marbles to take their turn, then up to view the results their actions have within the context of the game-space. This tension disrupts the sense of bodily extension arising from the interface being taken up as ready-to-hand relied upon by more conventional videogames to give players a sense of involvement in, and control over, the events unfolding onscreen. Perhaps this goes some way to explaining the observed use of the installation, for if we understand the actions of the players as arising from not having had an experience of being invested with the events on screen due to their intentional concern not being extended into the game-space, and as a result no strong feelings of connection with the eventual outcome of the videogame taking place, the use of the installation of simply setting it in motion to enjoy the spectacle on-screen would seem entirely reasonable.

This possible lack of connection and its effects makes the question of whether *A Game of Marbles* as a videogame takes place in the physical or digital game-space somewhat difficult.

For, whilst the observed users were indeed playing with the installation in a broad sense, if that play was not experienced by our erstwhile players as videogame play, and here we are referring to the distinction made between free form paidia-style play and the more structured and rule bound sense of ludus (Caillois 130), pinning down the locus of the videogame between the physical and the digital game-spaces would prove difficult. In the end it may simply show that the question that prompted the investigation of *A Game of Marbles* was mistaken as it raises a more significant point about the nature of the player's embodied relation to the interface. In an interview about the installation its designer, Tim Devine, ponders whether "marbles are as satisfying as the blood and guts (or) are people happy with marbles [. . .] Is it necessary to have all this other stuff?" (Karena). Some might contend that gallery-goers are unlikely to be satisfied with simply playing marbles, ostensibly a children's game,[33] and though we can only speculate it would be interesting to consider what the effect would be if those gallery-goers' use of *A Game of Marbles* was more heavily constrained by the rules such that the consequence of their actions within the context of the game-space was more forceful to their concern, so that the ludic outcomes of their actions become significant to their experience of play, for example.

This is to suggest that the players' experience of where the videogame takes place is influenced not only by the design and implementation of the physical and digital aspects of videogames but also by the players' intentional orientation towards it, for after all many videogames afford their player's the scope to act in a way that is not necessarily teleologically based but rather aimed towards the pleasures of creative chaos. This recalls the point made earlier with regards to the second of Dourish's common features of tangible interface systems, where we saw that the increased openness of interaction and unpredictability of user behaviour is something already prevalent in videogames, including those that utilise

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[33] Of course, children's play is often intensely serious to those involved.

conventional interfaces as well as tangible interfaces. It might seem a obvious point to make, but it is something that needs to be stressed – videogame play is by its very nature an inherently playful activity and experience, and even if the player does have a fixed set of goals, such as winning, the moment to moment task of moving towards that goal is not necessarily the linear structure that underlies more utilitarian interaction with computers but an open structure where the player fulfils their momentary fancy.

The importance of the player's intentional orientation towards the activity of videogame play in affecting their experience of where that play takes place suggests that the question we should be asking is not where the videogame takes place, but rather where the player experiences their play as taking place. Given that videogame play is an embodied experience, we are faced with a situation similar to that encountered in Chapter Three's consideration of *EyeToy: Play 3*, namely how to reconcile the player's experience of their own immediate physical environment with the flow of the player's intentionality into the computational system that supports the videogame play, and the extension of the player's body into the game-space that accompanies this flow of intentionality as the interface is incorporated into their bodily schema. Though videogame play takes place in the immediate physical environment of the player it is hard to deny that in some way it is experienced as also taking place on screen, or even that it is experienced as taking place primarily within the game-space depicted on screen. As was argued in Chapter Three in regards to the player's embodied relation to the interface, part of the experience of taking up the interface as ready-to-hand is the withdrawal of the interface from the player's immediate concern, and thus perhaps the significance of tangible interface videogames in relation to videogames more widely is specifically that they refocus our attention on the interface, highlighting our immediate experience of the physicality of videogame play and embodiment of the interface that is usually subsumed by the wider experience of videogame play.

Given this subsumption, where the player's experience of videogame play becomes focused on the action onscreen, it seems appropriate to move beyond the immediate physicality of the interface and the player's relation to it that has so far be at the forefront of our concerns to consider the concept of the interface, and the player's embodied relation to it, more widely, particularly so if our investigations are to have relevance to the more conventional experiences of videogame play. This would suggest a move into the game-space, much like that of the player's intentionality, through an investigation of how the phenomenological notion of embodiment affects the player's relationship with the more abstracted layers of the interface through employing the understanding of the experience of videogame play that has been developed thus far. To this end, the next chapter will consider the nature of the relationship between the player and their representative within the game-space, the avatar or character, in terms of embodiment.

CHAPTER FIVE:

CHARACTERS, AVATARS, AND PLAYERS

In the preceding chapter we inquired into the role of the player's embodied relation to the interface for the player's experience of videogame play, focusing particularly on exploring the concepts of tangible computing, and tangible interfaces, within the context of videogames. This was done through a consideration of an emergent trend of tangible interface videogames that seek to employ the physicality of their interfaces more firmly in their players' experience of videogame play. It was argued that in relation to the examples analysed, notably *The Eye of Judgment* and *A Game of Marbles*, that this focus on the physical was at times problematic, with the relation between the physical and digital aspects of their respective interfaces existing in some tension as both vied for the attention of the player. While this could be put down simply to the teething problems that could be expected at the relatively early stages of the use of tangible interfaces in videogames, it was further argued that this tension was not necessarily one of conflict, but rather an underlying and more fundamental phenomenon that arises from the nature of the player's experience of videogame play, in particular the player's embodied relation to the interface. As we have seen in previous chapters, the sufficiently competent player acts not so much *upon* the interface as *through* the interface, taking up the interface as a ready-to-hand extension of their body and their body's potential to act within the world, resulting in the interface withdrawing from the immediate concern of the player.

It is this tension within tangible interface videogames, the tension that would have their players attend to the physical interface, yet also act through that interface in a way that draws their attention away from the physical interface towards what is done with that interface, that we argued was the insightful aspect about the experience of playing tangible interface videogames such as *The Eye of Judgment* and *A Game of Marbles*. As an art videogame *A Game of Marbles* is arguably an effort to explore this tension, however it could be that a tangible interface videogame that avoids this tension between Heidegger's categories of the present-at-hand and ready-to-hand is impossible. Possibly, the two examples used were in a

way not 'tangible enough', but rather transitional videogame-tangible interface game hybrids that may lead to more advanced projects in the future. What they do demonstrate however is the process by which the flow of the player's intentional concern into the game-space of videogames operates by making visible the importance of the player taking up the physical interface as a ready-to-hand extension of the body, something subsumed within the wider experience of playing conventional videogames, and highlighting the importance of what we might term the 'software' layer of the interface to the player's experience of videogame play.

In this chapter the terms avatar and character will be investigated to show how each refers to different aspects of the player's embodied relationship to the 'software' layer of the interface, and consequently the videogame they are playing. Drawing upon the understanding of how the player takes up the physical interface as a ready-to-hand extension developed over preceding chapters, it is argued that the player's embodied relation to the 'software' layer of the interface is similarly based upon the incorporation of the interface into the player's body schema. This focus on the player's in-game presence is taken as a result of the conclusion of the previous chapter, where it was argued that in moving beyond the immediate physical interface we would be better able to consider the deeper, more abstracted layers of the interface where the player's intentional concern begins to move towards the activity of videogame play in itself. The issue of the player's intentional orientation towards the activity of videogame play is then developed from this discussion to capture and highlight an important diversity in what the activity of videogame play is directed towards, the different concerns in which it is taken up as in-order-to. Finally, there is a discussion on the experience of being-in-the-game-world that questions the assumption that the experience of being-in-the-game-world is a simple movement of immersion into the world of the videogame, but rather argues that the experience is not only mediated through particular embodied relationships with the avatars and characters that are used to play, but also that the sense of involvement in

the action taking place in a videogame can take many divergent forms depending on the attitude of the player towards the experience of videogame play.

Before starting on the main body of this chapter however there is a note on terminology that needs to be raised. The term 'locus of manipulation' is used here to describe the in-game position of the player's ability to assert control over the game-space, whether this is a visible character, an implied avatar, or a graphical user interface cursor (Game Ontology Project). This term is used in preference to the more usual nomenclature of either avatars or characters for three main reasons. Firstly, as part of this chapter aims at establishing a meaningful difference between what the terms 'avatar' and 'character' refer to, it is deemed necessary to have a third term that encapsulates both and thus reduce confusion. Secondly, the term locus of manipulation has a wider scope and more inclusive nature than either character or avatar, recognising that "at any given moment of play, the player exerts control over some game entity or entities, but not over others" (Game Ontology Project). The flexibility of the wording 'entities or entities' means that it can cover modes of player control within the game-space such as cursors, non-anthropomorphic objects, and text based interfaces that are not so easily described as either a character or avatar in the sense in which these terms are often used – simply put "A games [sic] locus of manipulation is where the players [sic] ability to control and influence the game is located" (Game Ontology Project). Finally, the literal focus on the player's point of control implied in the term locus of manipulation reduces some of the loaded meanings often implicit in the general use of the terms character and avatar, though as will be addressed below, these additional meanings can provide insights when acknowledged and considered. Articulating the different connotations of the implicit meanings of avatar and character while at the same time keeping them somewhat unified within the broader 'container' term of the locus of manipulation thus allows us to address the complex nature of

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the player's relation to their locus of manipulation within the game-space.[34]

It should also be noted that both the avatar and the character have been addressed in previous research within the field of videogame studies in ways that bear some resonance with the approach taken within this thesis, though building from somewhat different theoretical underpinnings, which leads the nature of the arguments and conclusions arrived at in a somewhat divergent direction to the concerns of this thesis. For example, Wilhelmsson articulates what he describes as the 'Game Ego' as an alternative to the concept of the avatar,[35] which includes acknowledgement of the importance of bodily experience, as he argues that "The tactile motor/kinesthetic link between a game player and a Game Ego is the primary basis for identification with the Game Ego" (Wilhelmsson 251). While this position is largely in keeping with the argument developed in this chapter, Wilhelmsson's key theoretical grounding of cognitive theory leads him to different kinds of concerns and terminology, such as the notion of 'identification', that approach the issues raised in this chapter from different direction than that taken here. Similarly, Klevjer's treatment of the relationship between the player and their locus of manipulation has an even stronger resonance with the arguments raised in this chapter, as he makes use of some of the same points from Merleau-Ponty to describes how "the body-subject learns to perceive and act as the avatar, directly into projected space, via the invisible hardware interface of screen, speakers and control devices" (Klevjer 125). Despite this strong similarity however, Klevjer's broader project also moves in a different direction from that taken within this thesis, as Klevjer seems to focus more on the task of identifying and defining different 'versions' of the avatar and thus 'genres' of videogames, whereas the approach taken in this chapter is focused more on articulating the

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[34] Klevjer makes a similar point, noting that for the purposes of analysis that there is "a lot to gain from keeping'character' and 'avatar' distinct" (Klevjer 116).

[35] Interestingly, part of Wilhelmsson's reason for replacing the term 'avatar' (167) is the wider implications of the word that this chapter makes use of in articulating the simultaneous yet different kinds of relation the player has with their locus of manipulation during the course of play.

experience of the relation between the player and their locus of manipulation, and as such the notion of the avatar is employed here as part of this broader notion of the player's point of agency or presence within the game-space

Characters and Avatars

The terms avatar and character are often used interchangeably in the field of videogame studies to describe the player's locus of manipulation, but if we take into account their wider or everyday connotations each term can be used to articulate a different type of relationship between the player and their locus of manipulation that arises from the interplay between embodiment as a state of being and embodying as an act. To consider the locus of manipulation as a character is to conceive it as a entity in its own right with a back story and persona, an entity constituted separately from the player (Klevjer 116). The character has a status that in a way is analogous to the player's state of embodiment, as for the character like the player, meaning is constituted in a world where meaning is always-already present in the sense of an immanent meaning which as Dourish puts it "is to be found in the world in which we act, and which acts upon us" (Dourish 116). Like the player, the character is intrinsically embedded within its world, in this case the game-space, and it is the character's potential to act within that game-space that constitutes the meaning of that space for the character. For the player this immanent meaning arises from their embodied state, for as Merleau-Ponty argues "Bodily experiences forces us to acknowledge an imposition of meaning which is not the work of a universal constituting consciousness, [nor] a meaning which clings to certain contents" (Merleau-Ponty Phenomenology of Perception 170), but rather an emergent meaning that arises out of lived experience and actions in the world. That is to say a phenomenological understanding of meaning, where:

> The body is our general medium for having a world. Sometimes it is
> restricted to the actions necessary for the conservation of life, and

accordingly it posits around us a biological world; at other times, elaborating upon these primary actions and moving from their literal to a figurative meaning, it manifests through them a core of new significance: this is true of motor habits such as dancing. Sometimes, finally, the meaning aimed at cannot be achieved by the body's natural means; it must then build itself an instrument, and it projects thereby around itself a cultural world. (Merleau-Ponty <u>Phenomenology of Perception</u> 169)

In the case of the character this relation between action and meaning in the world is more explicit than it is for the player controlling them, as both the character and the game-space that they inhabit are explicitly designed as parts of a greater integrated system, which limits the extent to which we can regard them as embodied entities as it is not capable of positing worlds around itself beyond one open to the potential for particular actions. Simply put, both the character and the game-space in which they operate are deliberately designed things, created to fulfil the specific purpose of affording an experience of videogame play to the player, and it is through the character's potential for particular actions in their world that the parameters of that design are established. From an evaluative standpoint we could ask how well integrated the design of these two objects are – does the character perform in a way that is consistent with the environment in which they operate, and conversely does the environment present a consistent space for the character to act within? Such consistency or its lack will affect the player's ability to understand the videogame and thus their ability to take meaningful actions in the course of their experience of play. Poole's example of doors that don't open, but look identical to doors that do is a good example of poor integration between the character and the game-world,[36] while his example of the relationship between Lara Croft and the functionally consistent, albeit blocky, cookie cutter style game-world of *Tomb Raider* (Core Design), is one of effective integration as the game-space of *Tomb Raider* is

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[36] Aarseth, observing the same lack of visual distinction between functional and decorative doors, argues that this is instead a conscious design choice, as "For every virtual door, an additional room must be created behind it" (Aarseth "Doors and Perception" 3). Furthermore, he notes that *Half Life 2* successfully negotiates this trade of between consistency and development resources, as these inconsistencies are hardly noticed by the player. While this is definitely an appropriate point, it is a level of analysis (i.e. player focused rather than character focused) above our focus at this particular point.

constructed in 'Lara Units', where gaps between platforms are either standing jump or running jump distances, or otherwise impassable (Poole 223). To put it another way, the game-space of *Tomb Raider* is designed so as to offer affordances that fit the locomotive abilities of Lara Croft, and therefore provides a spatially meaningful game-space that highlights Gibson's sense of an affordance as a relationship which "is equally a fact of the environment and a fact of behaviour" (Gibson 129).

Furthermore, the idea of character necessarily entails a sense of characterisation, even if this is as simple as a back story that combines the title *River Raid* (Activision) of the Atari 2600 videogame with an in-game airplane icon that operates as the player's locus of manipulation, in a game-space that depicts a two dimensional, overhead view of a river environment. In this case the character is implied, a pilot who is raiding a river for some reason or other that is not deemed particularly important enough to warrant further exposition for the understanding of the player. In other videogames characterisation is much more complex, particularly in cases like those noted by Newman where characters such as Mario or Lara Croft transcend their originating medium into intertextuality (Newman <u>Videogames</u> 128), but more commonly through cut scenes and other techniques of narrative presentation within the videogames themselves. These non-interactive, or off-line sequences,[37] present the player's locus of manipulation as fully independent beings that "can run around, engage in action, and even speak with autonomy from the audience" (Newman <u>Videogames</u> 130).[38] Some videogames intentionally highlight the relative independence and individuality of their characters, even if only for humorous effect. For instance in *Earthworm Jim* (Shiny Entertainment), if no player input is provided after a length of time, the titular character will perform a variety of

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[37] Newman uses the terms off-line and on-line to distinguish between non-interactive and interactive sections of videogames respectively. Though the terms could cause confusion, they are used at this point as the argument raised is following Newman. Newman, J. 2004. The Myth of the Ergodic Videogame. Game Studies, *2* (1) (July 2002).

[38] Newman's use of 'audience', as opposed to 'player', is perhaps telling.

animations that display impatience – playing with a yo-yo, tapping its feet with arms crossed, and so on. Such elements may have little to no effect on the experience of videogame play from a strictly ludic perspective, yet their inclusion none-the-less reinforces that the character is a thing in its own right, rather than simply a conduit for direct action by the player within the game-space.

Despite this limited independence, during interactive or on-line sequences the locus of manipulation is controlled by the player, which is to say that the locus of manipulation embodies the intentions of the player at least to the degree that the character affords. In this inflection, the term avatar better describes the way in which the locus of manipulation operates as a tool that extends the player's ability to realise potentials within the game-space (Hirose 291). In its original meaning, the term avatar refers to "The descent of a deity to the earth in an incarnate form" (OED), and despite the fact that this suggests that videogame players have a rather inflated sense of self importance (and chat logs of multiplayer first-person shooter videogames would suggest that in some cases this is true, not to mention the genre of 'god games') the important implication is that it suggests an intrusion from one dimension into a subordinate one. While this emphasises the control the player wields over their videogame avatar, it also makes prominent the limitations that this relationship of surrogacy imposes on the player. As Polaine points out, Lara Croft is not able to "stop and negotiate with her enemies instead of shooting them" (Polaine 152). These limitations highlight that the avatar is also a character, that is, an entity constituted separately from the player. In a way, the character has its own limited agency and intentionality, in that its suite of potential actions proscribe a certain type of directedness towards the game-space onto the player, not to mention the fictional personality that can reinforce that suite of potential actions, as well as providing sources of contextualisation and motivation for the player's with which to make sense of the game-space and their actions in it. On the other hand, it is through

the locus of manipulation as avatar that the player is able to take those actions, and through those actions make sense of the game-space. Given the proscription entailed by the locus of manipulation as character, to understand how the locus of manipulation as avatar can embody the intentions of the player we need to move away from thinking about player intention simply flowing through the avatar into the game-space towards how these intentions are mediated by what the avatar can do in the game-space.

This is to consider the avatar, as Newman puts it, as a type of vehicle (Newman "The Myth of the Ergodic Videogame" 9). Such a perspective focuses on how the locus of manipulation is functionally embodied as a set of capabilities and limitations, rather than as a personality or through a narrative back story, is of primary importance to the player. For example, "Lara Croft is defined less by appearance than by the fact that 'she' allows the player to jump distance x" (Newman "The Myth of the Ergodic Videogame" 9, emphasis in orignal). A similar point is made by Aarseth, as he observes that the bodily dimensions of Lara Croft "are irrelevant to me as a player, because a different looking body would not make me play differently." (Aarseth "Genre Trouble" 46) This does not preclude the relevance of representational or characterisation elements to the locus of manipulation, for Newman's arguments not only relate to what he describes as the 'on-line' character, but also that representational and other character traits are often used to communicate to players the abilities of their avatars (Newman "The Myth of the Ergodic Videogame" 9-10), after all a sports car announces its capacity to reach high speeds through its shape long before the ignition key is turned. However, whilst various traits of the character may communicate the capacities and limitations of the locus of manipulation to an extent, this tells us little about how the player takes up and employs the locus of manipulation. For instance, whilst driving a car approaching a corner we know that we need to slow down to negotiate the corner safely, and we also know that we need to begin braking at a certain distance from the corner to attain

a suitable speed. Yet for the experienced driver these actions, and the evaluations from which they flow, are seemingly natural largely because they have internalised the limitations of the vehicle they are driving, or in terms of embodiment, that the vehicle as a tool has become a functional extension of the driver's body (Hirose 291). The various control surfaces, whether steering wheel or brake pedal, have become ready-to-hand. For the novice driver however, such concerns are constantly present, and the vehicle's controls thus present-at-hand – even changing into first gear from neutral entails the harrowing experience of negotiating with the clutch pedal. As Richardson argues "Within the material shape and capacities of the car, we adjust our physical deportment, spatial orientation, and our entire physical relationship with the world" (Richardson 206). Even when this novice driver becomes fairly proficient, a change to an unfamiliar vehicle, particularly one that has significantly different characteristics such as increased weight or a different type of drive-train is likely to again require a conscious focus on the specific details of the activity of driving that particular car, rather than on the activity of driving itself.

A way to further develop the relationship between the player and their locus of manipulation is to return to Heidegger's notion of equipment that we employed in Chapter Three, equipment as "something in-order-to" (Heidegger 356). Within Heidegger's conceptualisation, the equipment itself is not central to our intentional concern for when we use equipment "our concern subordinates itself to the 'in-order-to' which is constitutive for the equipment we are employing at the time" (Heidegger 357), thus the equipment itself becomes ready-to-hand and withdrawn. Yet this subordination of equipment to the task at hand would seem to contradict our insistence on considering the locus of manipulation as in some way a character that proscribes or limits the potential actions the player can employ them for. For if the locus of manipulation is an avatar conceived of as Heidegger does equipment, then the locus of manipulation logically should disappear from the awareness of

the player, for if the locus of manipulation is to operate as a ready-to-hand avatar, it must "withdraw in order to be ready-to-hand quite authentically" (Heidegger 358). We seem to find ourselves in a situation where the locus of manipulation, in its aspect as an avatar, should be withdrawn from the immediate concern of the player that has taken it up as ready-to-hand, yet somehow still present, in its aspect as a character, and influencing the way in which the player acts within the game-space.

Indeed, Newman makes a similar claim when he argues that "The 'characterisation', individuality and distinctiveness of Snake[39] comes not from his appearance On-Line [sic] [. . .] but rather in the Off-Line [sic] cut-scenes and contextualizing narratives of the introductory sequences. On-Line, there is no Snake" (Newman "The Myth of the Ergodic Videogame" 10). However, we have defined characters as possessing not only a narrative back story and personality, but also as that set of capabilities and limitations, the way in which the character is embodied as an entity separate from the player. This part of our definition of the character is essentially identical to Newman's own definition of the On-Line characters, so when the player takes up the locus of manipulation as a ready-to-hand avatar these capabilities and limitations of the character should withdraw from the awareness of the player as fully as the narrative context of characterization does.

Yet these capabilities and limitations none the less limit what the player can and can't do within the game-space, and as such it could be argued that they must in some form remain present, yet internalised, to the awareness of the player for the player to have any effective sense of agency. Here Hirose's distinction between the state of embodiment and the act of embodying becomes useful, as it explains how in the dynamic taking up of the equipment towards a particular end equipment becomes incorporated into the player's body, recognising

[39] The central protagonist of the *Metal Gear* series.

"that the boundary of the body is [not] fixed at the surface of the skin. The boundary is, in fact, changeable and can be extended by tools" (Hirose 291). This is to say that the player's awareness of the capabilities and limitations of the locus of manipulation is not a kind of knowledge based on conscious content, but rather what we referred to in Chapter Three as "praktognosia", or practical knowledge (Merleau-Ponty Phenomenology of Perception 163), a "knowledge in the hands, which is forthcoming only when bodily effort is made, [. . .] a knowledge bred of familiarity" (Merleau-Ponty Phenomenology of Perception 166). It is through this familiarity that the player can experience an effective sense of agency, through being at a bodily and immediate level aware of the capabilities and limitations of the locus of manipulation as a character and thus able to take up the locus of manipulation as an avatar with which to act within the game-space. This notion of familiarity is important to keep in mind, as it invokes the personal history of the player's experience of videogame play, with the implicit implication that the type of 'practical knowledge' we are arguing for has an inherent temporal quality, it is learnt. The question is then how this practical knowledge of the locus of manipulation, the player's bodily familiarity with the character's limited suite of potential actions that restricts their freedom to act through the avatar within the game-space, is learnt, as establishing this sense of familiarity is no less a part of the player's experience of videogame play. As Leino notes in relation to the unique possibilities of Fire Engines in *Grand Theft Auto: San Andreas*, "The vehicle as a virtual fire engine is important to my emotions only to the extent I experience it as a virtual fire engine" (Leino "Emotions About the Deniable/Undeniable: Sketch for a Classification of Game Content as Experienced" 115).

It is important to keep in mind that the player is not primarily concerned with the suite of potential actions embodied by the character in the abstract, for as Hirose argues, citing Smitsman, the tool:

> plays a central role in extending the user's effectivities to realize

affordances of the environment. Consequently, tool use involves the task to detect affordances not of the tool itself, but of functional relations between the tool and the environment (Hirose 291).

This is in keeping with thinking about the locus of manipulation in terms of Heidegger's notion of equipment, given the central role played by intentionality in Heidegger's notion of equipment as something 'in-order-to'. Even in taking up equipment as something 'in-order-to' we can discover it as an object present-at-hand, "as something unusable, not properly adapted for the use we have decided upon" (Heidegger 359). In terms of the locus of manipulation, this is to say that we can take it up as an avatar towards a particular intentional concern within the game-space, only to find that the suite of potential actions embodied by the locus of manipulation as character does not afford us a way of pursuing that intentional concern. For example, returning to Polaine's observation that there is no way to use Lara Croft to negotiate with her enemies, the player that attempts to employ Lara Croft as an avatar in such a manner finds that Lara Croft as a character becomes apparent as a present-at-hand entity which cannot be used 'in-order-to' negotiate. Importantly, the player becomes aware of the unusability of a particular avatar for a particular 'in-order-to' "not by looking at it and establishing its properties, but rather by the circumspection of the dealings in which we use it. When its unusability is thus discovered, equipment becomes conspicuous" (Heidegger 359). This is to say that our experience of and understanding of equipment in-itself is not only reflexive in nature rather than proactive, but that also what we attend to is not the equipment itself but rather the end to which we are employing it towards. When the player realises that Lara Croft cannot negotiate with her enemies, she becomes not a 'character that cannot do this' but rather a 'character with who I cannot do this' – she is unusable for that concern. The player approaches Lara as character not simply as an object with certain abstract properties such as 'can jump x units' but rather one that always extends to the player a range of possible actions that derive from those properties with which to act in the game-space towards a particular

intentional concern. It is not so much a question of how far she can jump as it is a question of why the player wants to be able to jump that far – even as a present-at-hand character Lara continues to be equipment, and the player's interest will be her potential to be taken up as ready-to-hand for a particular 'in-order-to'.

It is arguably through the player's negotiation of this dynamic between the locus of manipulation as ready-to-hand equipment, and as present-at-hand object that the player comes to learn of the particular things their avatar can be used 'in-order-to', particularly by learning what it is unusable for. This is not to suggest a simple process of trial and error, for as Heidegger argues:

> When equipment cannot be used, this implies that the constitutive assignment of the 'in-order-to' to a 'towards-this' has been disturbed. The assignments themselves are not observed; they are rather 'there' when we concernfully submit ourselves to them. But *when an assignment has been disturbed*—when something is unusable for some purpose—then the assignment becomes explicit. (Heidegger 360, emphasis in original)

If we return to the example of Lara Croft, we can see that the reason why she cannot resolve conflict through negotiation is that it is not possible for the player to constitute her as an assignment between an 'in-order-to' negotiate with to a 'towards-this' of an enemy. To paraphrase from the quote above, the negotiating concern has come up against something unusable, and thus the assignment has been disturbed, which is to say that the intention that the player had towards the videogame has been thwarted. As Lara Croft is the only equipment the player has available within the bounds of the *Tomb Raider* game-space the player must employ her capabilities as best they can, and Lara Croft cannot be taken up for the concern of negotiating with her enemies, she is 'un-ready-to-hand' for such a concern. It could even be argued that effective or successful play on the part of the player derives from their ability to get the best out of Lara, so to speak, by aligning their intentionality with the full range of what

she is most effectively 'in-order-to' through developing a deep familiarity with the capabilities and limitations of Lara as a character. But if the learning process by which the competent player arrives at this mastery is not simply a question of trial and error as we are arguing, how then does the player acquire this more holistic practical knowledge of Lara as character that is ready-to-hand?

If we consider the nature of the negotiating intention more deeply, we can see that the intention to negotiate is merely the proximal appearance of a deeper concern, namely, that of progressing through the game, of which the enemy presents as simply the immediate obstacle to that concern. And it is this failure of the attempt to have Lara negotiate with her enemies that opens up the nature of this deeper assignment of the 'in-order-to' to the player. With the disturbance of the assignment between the 'in-order-to' and the 'towards-this' the player becomes aware not only of the assignment itself but the greater context in which that assignment operates, as "When an assignment to some particular 'towards-this' has been thus circumspectively aroused, we catch sight of the 'towards-this' itself, and along with it everything connected with the work—the whole 'workshop'—as that wherein concern always dwells" (Heidegger 360). Though the workshop metaphor Heidegger employs may confuse the point, simply the context within which the assignment and the concern it serves dwells is not simply a conceptual or geographic space, but rather a context of equipment, for "Taken strictly, there 'is' no such thing as *an* equipment. To the being of any equipment there always belongs a totality of equipment, in which it can be this equipment that it is" (Heidegger 356, emphasis in original). Lara Croft as equipment 'in-order-to' play within the game-space of *Tomb Raider*, is in a sense composed or constituted by more specific types of equipment, equipment 'in-order-to' climb onto ledges, equipment 'in-order-to' jump across chasms, and equipment 'in-order-to' negotiate the obstacles that appear as enemies, only not in the literal sense of the word. And again it is not within the equipment in itself, not even within Lara as a

totality of equipment, where the player's intentional concern dwells but rather the 'workshop' within which the 'in-order-to' of Lara as equipment has meaning – the game-space.

With the disturbance of the player's initial assignment "The context of equipment is lit up, not as something never seen before, but as a totality constantly sighted beforehand in circumspection" (Heidegger 360). The second part of this statement should give us pause, for if the totality of the context of equipment is not something new to the player, indeed already something known to the player before the disturbance of the assignment that putatively put it into their view, then we have something of a paradox of circular reasoning. However, this paradox occurs only if we consider the player and their actions in playing *Tomb Raider* as occurring in some sort of vacuum devoid of previous experience and context, rather than a situated player, for as Heidegger argues "Any concern is already as it is, because of some familiarity with the world" (Heidegger 361). In the case of Lara Croft, though it is easy to agree that she cannot negotiate with her enemies, it is unlikely that many of us would have learnt this through the process just described, as we would have drawn on cultural conventions about the action-adventure genre to which *Tomb Raider* belongs, not to mention the connotations raised by the word 'raider', and as such would not expect to be able to negotiate in the first place. However, perhaps our hypothetical player has been exposed only to certain types of role playing games, such as *Baldur's Gate* (BioWare), where negotiating with NPC characters is a common way of interacting with them. Perhaps they've not even played any videogames before, nor been exposed to breathless media reports about their overly violent nature, and has simply transposed from their real life experience, where talking to, and co-operating with, other people encountered in remote or dangerous situations is a much more common, not to mention sensible, behaviour than shooting at them.

If we continue with the workshop metaphor employed by Heidegger, we can see that there are

different kinds of workshops, for instance carpenter's workshops, metalwork shops, or automotive mechanics, which each have a particular equipment context within the greater totality of equipment, but each also has its own totality of equipment within its own equipment context, which limits the kinds of concerns for which it is usable. If I go to a blacksmith's with a collection of timber beams I would be able to very easily reduce them to ash, but I would have a hard time building a wardrobe. Similarly, videogames each have their own equipment context at the specific game level, as well as a more general context at a genre level, and perhaps even at the level of the medium of the videogame itself. We could even say that Malaby's criticism of the normative bias inherent in the play concept we raised in Chapter One is at basis a criticism of the equipment context of videogame, those uses that are conventionally determined to be 'in-order-to'. However, with each of these shrinking 'workshop' contexts of medium, genre, and specific videogame the totality of equipment within that context also shrinks, there are things the equipment can't be used for that we might expect in a less constrained environment. And so Lara Croft, at least the version from the videogame, cannot negotiate, she also cannot build structures, give orders to troops, or kick a soccer ball. She can however run, jump, climb up ledges, and fire weapons – this is the totality of her equipment context.

Thus, as the intentions of the player are mediated by the restrictions implicit with the use of an avatarial stand-in, over time these restrictions in turn become embodied in the intentions and actions of the player who has come to realise the limits to their agency via the avatar. The result is a feedback loop between the embodied player embodying the avatar whose perceived limitations and capabilities are then embodied in the conduct of the player, a process that could be posited as one basis of the learning that the player undertakes to improve their performance in the videogame.[40] Over time the player will become better aware of what the

[40] It should be noted that the feedback the player incorporates into their conduct raises the question of the extent of the influence or even control of the player's intentional concerns by the character.

capabilities and limitations of their avatar are, and thus have a better understanding of the possibilities offered by their avatar as a ready-to-hand extension of their body to act within the game-space. Thus the avatarial relationship "disregards representational traits in favour of the constitution of characters as sets of capabilities, potentials and techniques offered to the player. The player utilises and embodies the character in the game-world" (Newman "The Myth of the Ergodic Videogame" 8). Rather than the player internalising the logic and rules of the game, in Friedman's well known terms, coming to "think like a computer" (Friedman 2), the player through their experience of the process of embodying their avatar as a form of equipment establishes an immediate and phenomenological understanding of the potential of locus of manipulation to act in its environment, which is then reflected in their conduct during the course of play. This incorporation of the locus of manipulation as a ready-to-hand extension of the player's body facilitates the flow of the player's intentionality into the game-space, and it is now towards that game-space that we turn to consider, at a wider level, the particular intentional concerns the player may be directed towards within that game-space, or in other words what the locus of manipulation is employed 'in-order-to'.

Playing Through/With/As

The relationship between the player and their locus of manipulation becomes increasingly complex if we acknowledge that for each player the experience of videogame play will be different as a result of individual preferences for styles of play and videogame activities, for as Flynn puts it "it is a mistake to think that there is only one type of player experience or form of engagement" (Flynn 52). Though it is difficult to do justice to this wide range of

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Giddings and Kennedy approach this question from quite a different direction than is generally held within the field of videogame studies, critiquing the notion of player's gaining 'mastery' over the videogame to argue instead that player's must conform to the logic and requirements of the videogame they are playing, i.e. that in the end it is the game that controls the player (Giddings & Kennedy). While this is indeed an interesting perspective, I would argue that the playing with position developed in this chapter would suggest that the unexpected and unanticipated uses that players make of videogames demonstrates the primacy of the player's agency over that of the game's.

experience it is none-the-less possible to establish some broad categories to describe prominent points of difference by conceiving of model players that are suggested by particular qualities of the videogames they are playing "created by certain features of the game such as the level of difficulty" (Kücklich "Perspectives of Computer Game Philology" 7). Perron provides a useful starting point by identifying three broad types of users of movie games[41] – gamers, players, and gameplayers – based upon different attitudes towards the kind of experiences that are provided (Perron 240). "The gamer goes for the challenge," that is the gamer engages in ludic activities such as puzzle solving and exploration of the game-world towards the purpose of solving or completing the movie-game (Perron 242-44). By contrast, the player of the movie game is an observer disengaged from the game-space – "The role of the player is to react to story episodes, not to enact them" (Perron 246). Perron's final type, the gameplayer, engages in a kind of metaplay that seeks to take the movie game to its limits and to uncover and exploit its inner workings, "to win a challenge that they have set for themselves of their own free will" (Perron 253). Though Perron's types are derived specifically from a consideration of movie games, it is clear through his reference to specific videogames, such as *Grand Theft Auto III* (DMA Design Limited), that the distinctions he introduces between different attitudes and activities during the course of gameplay could be extended to videogames more generally. In fact, we can take Perron's types further, using them as a basis for considering how each relates to a particular relation between the player and their locus of manipulation in terms of embodiment and embodying as described above, based around the intentional concerns a particular player may take up the locus of manipulation 'in-order-to'. What follows is a discussion of these different positions of playing *through*, playing *as*, and playing *with* the locus of manipulation.

The position of playing *through* the locus of manipulation highlights the player's own

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[41] Perron uses the term in preference to the more common terminology of interactive movies.

embodiment outside of the game-space and indicates a pragmatic attitude towards the locus of manipulation, and by extension, the game-space more generally. The locus of manipulation is figured more as an avatar than a character, since the player has little interest in it apart from being the transducer with which their intentions and actions can be implemented within the game-space. This position of playing *through* the locus of manipulation is similar to Perron's gamer type, as the player is primarily engaged with the ludic activities such as problem solving, exploration and competition. Juul would describe this in terms of the game contract, where the player's behaviour is relatively shaped or influenced by the necessity of completing or beating the game (Juul "The Open and Closed: Games of Emergence and Games of Progression"). Recalling Newman, the locus of manipulation is employed simply as equipment with which to play the videogame, which of course still entails the process of embodying the avatar.

Playing *as* the locus of manipulation represents quite a different type of engagement with a videogame which focuses more on the narrative and fictional possibilities presented by the character, rather than the ludic activities and interests that occupy the position of playing *through* the locus of manipulation. Here the relationship between the player and their locus of manipulation becomes more complex, as depending on a range of factors, such as the visual perspective the videogame is presented in, the genre of the videogame being played, and the social context in which it is played, the locus of manipulation can tend towards functioning as either avatar or character – although more correctly both aspects will be involved to some degree. For example, first person shooter videogames may tend more towards an avatarial relationship between the player and their locus of manipulation, in part because the first person perspective eliminates many of the visual cues often used in characterisation, and in part because narrative and characterisation are often secondary to the ludic aspects of the genre. Consequently, an avatar based playing *as* relationship relies on the player to play a

secondary game of make-believe in the form of role-play. In contrast, party based role playing videogames such as the *Final Fantasy* series more strongly supports a character based playing *as* relationship, due to the focus on characterisation and narrative in such videogames. Finally, there is the situation where the relationship between the player and locus of manipulation could be conceived of as being both avatarial and character-based. For example, many role playing videogames give their players considerable scope to create and develop their locus of manipulation, in effect making characterisation a central aspect in the experience of videogame play. The process of developing the locus of manipulation during such videogames could be considered as a process of the player developing the character that they then embody as an avatar, in effect "answering the question 'who am I?' as a character within the game world" (Lindley 12). Of course, the player could also simply utilise this process of characterisation for the completely functional end of making their locus of manipulation as powerful as possible, playing *through*, rather than playing *as*.[42]

Playing *with* the locus of manipulation is similar to Perron's notion of the gameplayer, where the player engages with the videogame more systematically by using the locus of manipulation as an explicit point of access to play with the space and rules of the videogame in a more free form manner. Whereas playing *through* or *as* the locus of manipulation could be described as playing the videogame, playing *with* the locus of manipulation is in a sense playing with the videogame – of engaging with a videogame as "an irreducible complex of locations, scenarios and types of action" (Newman <u>Videogames</u> 138), similar to the way players of *A Game of Marbles* used it not so much as a videogame but as an interactive audio-visual work. An example of playing *with* the locus of manipulation is given by Jakobsson and Pargman's case study on subversive player strategies in the massively multiplayer online

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[42] In fact there is even a term for this approach 'min-maxing', where the player tries to maximise their avatar's skills in the areas they think are important by strongly cutting back on skills considered not relevant.

videogame (MMO) *Project Entropia*. These strategies attempt to subvert the developer's 'pay-to-play' micropayment income model, where any in-game currency earned by a player will fall short of the costs of maintaining the tools that afford that income (Jakobsson and Pargman 3). The player's strategies identified by Jakobsson and Pargman to circumvent this business model range from simple tactics exploiting programming flaws in enemy AI, through to complex undertakings which they describe as research projects that seek to "open the blackbox" and understand the algorithms running the game (Jakobsson and Pargman 4). An extreme example of such research projects is provided by an external simulation program that estimates, much like an economic model, the best return on investment for different player strategies (Jakobsson and Pargman),[43] that player's can use to maximise their returns.

A different style of playing *with* the locus of manipulation arises in what are often described as sandbox videogames, where there are no prescribed winning conditions, or at least no requirement to attend to them. This style of free-play, or paidia as it is often described, can take many forms, and can occur even within videogames that were not designed specifically with this type of activity in mind. Warthog jumping, the activity of using grenades and other explosive devices on the indestructible warthog vehicles from *Halo: Combat Evolved* (Bungie Studios) to launch them high into the air is one example, as is the actions of the player of *Gran Turismo* (Polyphony Digital), who, becoming bored with racing, decides rather to do burnouts or drive the wrong way around the racetrack to cause accidents. Though these two examples might seem quite dissimilar, at their core both demonstrate common dynamic – the player's intentional orientation has moved beyond the ludic sphere of winning or progressing within the game to instead make use of the potential of the locus of manipulation for their own purposes. Such free use of a videogame as a manipulable system strongly suggests

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[43] Another MMO, Eve Online, is sometimes jokingly referred to as 'spreadsheet' or 'excel' online, due to the extensive logistical efforts required of committed players of the game to build and maintain multi-group alliances.

Eskelinen's description of playing videogames as a configurative practice (Eskelinen), a practice that arguably extends to related, but non game playing activities, such as amateur level design and game modification. Though there is a clear relationship between the positions of playing *through* and *with,* as both rely on the use of a locus of manipulation as equipment that supports a particular activity, the difference is primarily one of degree. Playing *with* the locus of manipulation entails a wider view of what a particular videogame can be used for, in effect a more sophisticated understanding of the affordances of that videogame beyond its ludic potentials and employing the locus of manipulation towards intentional concerns beyond simply 'playing the game'.

These distinctions are presented here not to claim that these attitudes are mutually exclusive nor that each individual player could be categorised as one type or another, but rather to articulate how differences in the relationship between the player and their locus of manipulation can underpin different attitudes to the activity of playing a videogame, and how different intentional concerns underpin varying experiences of videogame play. The particular nature of the relationship between the player and their locus of manipulation is decided by the player themselves, according to their particular attitudes, intentions, and motivations at the time. Take, for instance, the analysis of avatar relations by Linderoth that identified a complex relationship between the players observed in his study and their loci of manipulation. These relationships frequently shifted between that of the player taking on the character as a role to play, as a tool that extends the players' agency, and as a prop for self presentation (Linderoth 9). Though taking on the character as role is quite similar to what is described here as playing *as,* and the use of the character as a tool is similarly comparable to playing *through,* the use of the locus of manipulation for self presentation could be associated with both positions dependent on the particular nature of presentation, for instance presentations of skill or of fictional personas. Social context can be an important determinate of the choice between an

avatarial or character-based relationship, as evidenced by the existence of both standard servers and 'role-playing' servers for online games such a *World of Warcraft* (Blizzard Entertainment), where the former is primarily focused on ludic activities, whilst the latter focuses more on role-playing in a more literal sense. Both types of servers 'serve' different, though not entirely unrelated, intentional concerns, and similarly the way in which player's embody their locus of manipulations by incorporating them as a ready-to-hand extension of their bodily schema would also be different.

Being-in-the-Game-World

Given the relationship between the embodied player and their locus of manipulation – considered to be co-temporously a character embodied by its own constitution as well as an avatar that embodies the intentions and actions of the player – and the consideration of the player's intentional concerns and the fluidity with which they can shift, it is possible to describe how the player of a videogame can experience a sense of being-in-the-game-world. This is "a phenomenological impression of immersion in the gamescape" (King and Krzywinska 114), or sense of being present within the game-space. To consider to what degree an 'impression' of immersion is experienced by the player requires a reflection of what is meant by the term 'immersion', particularly with reference to associated terms such as presence and engagement. The concept of immersion has had a problematic employment within the field of videogame studies, in part because different researchers have used the word to describe similar but distinct phenomena, and in part due to the wider connotations the word brings into play, as Calleja argues the notion of immersion "places a hard division between the represented environment on one side of the screen and the human operator on the other, which gives rise to an equally problematic implication of the operator's plunge into the environment" (Calleja 254). In consequence Calleja proposes that the metaphor of immersion

be replaced with what he describes as that of incorporation, "a double metaphor: incorporating (in the sense of assimilation or internalization) the environment while reincorporating (in the sense of corporeal embodiment) the player through the avatar in that environment" (Calleja 255). While Calleja's notion of 'incorporation' successfully acknowledges the importance of both the bodily dimensions of the phenomena of experiencing a sense of presence within the game-space and of the role of the avatar or character as providing a locus for that sense of presence, the word incorporation itself has some limitations for the phenomenological approach being developed here. Specifically, it lacks a sense of communicating the nature of experience itself, the feeling of presence within the game-space, such that while being insightful as a analytical tool it lacks the descriptive power to invoke the experience itself.

A common shortcoming with the notion of immersion is the tendency to understand it as emerging from or contingent upon the properties of particular videogames in themselves. For example, for King and Kryzwinska, immersion seems to be simply associated with sensation, leading to conclusions that are ostensibly commonsense, yet fail to stand up to scrutiny. Their example of virtual reality, where the experience is thought to be more immersive simply because the user's visual field is surrounded by computer generated images, is perhaps the clearest case of such sense based assumptions. As Ermi and Mäyrä point out "It is often taken for granted that a bigger screen and better quality audio equal greater immersion" (Ermi and Mäyrä 4). Similar assumptions, based upon degrees of visual realism, underwrite King and Krzywinska's claims that first person perspective videogames are inherently more immersive than third person perspective videogames, or that three dimensions are always superior to two in terms of immersion (King and Krzywinska 114-17). For instance, King and Krzywinska argue that "Distinctions between degrees of presence are closely correlated with differences in the visual perspective provided on the game-world" (King and Krzywinska 113), without

actually providing any evidence which verifies the claim. King and Krzywinska's claims are qualified to an extent by their recognition that three dimensional first person games with a high degree of visual reality still contain non-immersive features such as health bars and the like, or that there are other factors such as "Compelling and well balanced gameplay activities, [. . .] the degree of consistency with which the game-world is constructed and how the player can act in and act on the virtual environment" that also contribute to an impression of immersion (King and Krzywinska 116-17). However, the time and detail they spend in discussing impressions of immersion based on sensation alone as opposed to the limited treatment given to arising from other sources suggests an underlying tendency to assume a primacy of sensation, particularly visual sensation, suggesting again an overly occularist understanding of the experience of videogame play in terms of immersion.

As King and Krzywinska do not explicitly state what they mean by 'sensation', we can only assume that they are using the term in the everyday sense where it describes the process through which we become passively aware of the basic qualities of things in the world, and this is perhaps where the shortcoming of their approach to the phenomenon of experiencing a sense of presence in the game-space arises from. By separating sense experience from the wider phenomenological experience of videogame play as a whole, King and Krzywinska overlook the constituting role played by the player in establishing a sense of presence in the game-world. As Merleau-Ponty argues, "Sense experience, [. . .] invests the quality with vital value, grasping it first in its meaning for us, for that heavy mass which is our body, whence it comes about that it always involves a reference to the body" (Merleau-Ponty <u>Phenomenology of Perception</u> 61). Thus the player's sense experience in their experience of videogame play is more than simply a reception of higher or lower levels of visual realism presented on screen but something that projects the player into an active relation to that which is sensed and what it means for the player in the context of their experience of videogame play, "It is the

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intentional tissue which the effort to know will try to take apart" (Merleau-Ponty Phenomenology of Perception 61). It is this sense of active engagement through sense experience in the unfolding course of videogame play that is lacking in King and Krzywinska's approach, for "Sense experience, thus detached from the affective and motor functions, became the mere reception of a quality" (Merleau-Ponty Phenomenology of Perception 64). This approach assumes a player who uncritically experiences the depicted game-space as in some way real and unmediated purely on the extent of its visual verisimilitude, and presumes that the primary value of playing a videogame arises from an impression of being transported into the world of the videogame. King and Krzywinska seem to adhere to a vague model of 'suspension of disbelief' of players' experience within videogame play, further suggested by their description of the phenomenon they discuss as "The illusion of presence or immersion" (King and Krzywinska 117), an approach that Salen and Zimmerman have rightly criticised as the 'immersive fallacy' of garden variety escapism (Salen and Zimmerman Rules of Play 450). While there is no doubt that many players play as a diversion from the stresses and worries of everyday life, it seems unlikely that the departure sought from their everyday concerns is realised simply through a type of immersive experience based primarily on the visual qualities of the videogame being played, and very little on their ability to act towards the intentional concerns within the space of that videogame with which they have taken it up 'in-order-to'.

To demonstrate the shortcomings of focusing too heavily on visual verisimilitude let us take as an example the videogame *Command Aces of the Deep* (Dynamix), a submarine warfare simulator set in the North Atlantic area during World War Two. Various visual perspectives are used within the videogame for particular tasks, for example the periscope quite obviously employs a first person perspective, while what could be interpreted as a first person perspective is used to portray the strangely empty control room where players can click on

different areas to access different tasks. An overhead nautical-style map view is also used to provide the player information on their location and the location of nearby ships in real-time, whilst schematics and other non-diegetic views are used to operate systems such as damage control and torpedo loading. In my own experience of playing the videogame, sailing along looking through the periscope is definitely an engaging experience, but the moments of most intensive engagement occur when my access to the game-space is restricted purely to the interior of the ship, particularly the map, all of which is presented in a two-dimensional and often non-first person perspective – the very situation that King and Krzywinska argue should be the most distancing, as it should fall far "short of being truly immersive in terms of sensory perceptions" (King and Krzywinska 117). This situation arises when immersed deep below the surface to try and escape pursuing warships, and thus deprived of use of the periscope, the player's only sources of dynamic information on the likely death about to rain down on them is the map screen and the insistent sonar pings with which the enemy ships are trying to locate them. In this situation the player is at a disadvantage in many ways, for instance they are often outnumbered, the pursuing warships are much faster than the player's submarine, and the warships are more powerfully armed. Thus the situation is something like a cat and mouse game where the player must manoeuvre carefully and astutely to survive.

Though the inherent difficulty of such moments accounts for some of the intense sense of presence it engenders, there is also an eerie sense of being-there, in that what is provided by the videogame is not dissimilar to what would have been available to an actual U-boat commander, not withstanding a map that updates itself in real-time.[44] However, in the moment to moment unfolding of experience in such situations, it is the whole-hearted attempt to escape the pursuing warships through the actions taken that is at the core of the experience of 'being-there', despite the low level of visual verisimilitude even with its vague sense of

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[44] It could be argued perhaps that the real-time map is an abstraction or approximation of what a sonar operator and navigator could have provided, but that is beyond the point being made here.

accordance between the situation present in the videogame and the historical situation it simulates. The player's sensory experiences involved in their experience of playing *Command Aces of the Deep* is significant not simply for the reception of the qualities of the game-space they make present to the player but rather for the way in which they make the game-space available to the player as a space in which to take action towards their intentional concerns, making those qualities meaningful for the player within the context of the experience of videogame play. The relatively limited amount of visual information available to the player combined with the complex tactical manoeuvres during their attempt to escape the pursuing warship requires a focused engagement on the part of the player where sensory experience is but a part of the wider experience of play.

This is not to argue the relative merits of different kinds of 'realism', whether based on sensory perception or historically consistent situations, but merely to demonstrate that the heavy emphasis on visual perception that imbues King and Krzywinska's approach to understanding the experience of feeling present within the game-space does not stand up to scrutiny, and thus falls short of accounting for the experience of a videogame as it is experienced. Whilst it seems commonsense to assume that higher levels of visual acuity that more closely resemble our natural perception of the world would naturally lead to a higher degree of that feeling of being-there, what we have uncovered is a more complicated nexus between player and videogame that relies on the player being willing, or even feeling compelled, to take up the experience of videogame play as something more than something simply happening on screen that they are watching but rather an activity with which they are fully engaged in. In other words, it requires the player to take up the locus of manipulation as something 'in-order-to' experience a sense of being present in the game-space.[45] It is precisely

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[45] Despite the criticism of King and Krzywinska's focus on visual sensation as the basis of the experience of being-in-the-game-world, the slightly more nuanced position that increased visual verisimilitude might increase the likelihood of a player taking up the locus of manipulation as something in-order-to have that experience, may have some merit.

the lack of detailed or 'realistic' visual information that makes the experience, in my own case at least, of the situation in *Command Aces of the Deep* described above imbued with a strong sense of presence, of being-in-the-game-world, "a phenomenological impression of immersion in the gamescape" (King and Krzywinska 114). It may not be a fully three dimensional first person perspective videogame at all times, yet it provides a first-person experience. However, I would not expect everyone to experience the same sense of being-in-the-game-world for the intricate tactics needed to escape the pursuing warships may not engage other players as it engages me. Nor for that matter are other aspects of *Command Aces of the Deep* as compelling – after all the North Atlantic Ocean is a rather large place, and spending half an hour of my real time, though that may translate into hours if not days within the game-space, fruitlessly searching for convoys can be rather boring and disappointing.

Given that sensory experience alone cannot account for the experience of being-in-the-game-world we must turn to conceptualisations of the experience that take a more holistic approach. McMahan's definition of immersion presents a more robust understanding that identifies three key features of an impression of immersion – "(1) the user's expectations of the game or environment must match the environment's conventions fairly closely; (2) the user's actions must have a non-trivial impact on the environment; and (3) The conventions of the world must be consistent" (McMahan 68-69). The conditions that McMahan establishes suggest that the type of immersion she is describing generally accords to the position of playing *as* the locus of manipulation described earlier, that is, of regarding the environment in which the videogame is played as a internally consistent world, regardless of the technical manner in which it is presented. Whilst McMahan's conditions explicitly relate to virtual reality and three dimensional video games (McMahan 68), the conditions themselves suggest that the scope is in fact much broader, for example they could be applied to a child's game of make believe, or even to the many institutions and rituals that Huizinga identified as having a play-

like basis, where the restrictions imposed upon the activity are accepted as part of its experience (Huizinga). Importantly, McMahan identifies immersion as a narrative phenomenon, associated with the player's involvement with the diegetic level of a videogame. In fact there is very little in McMahan's conditions to give a sense of gameness, of challenge and competition, at all. Rather, she accords these element to the experience of engagement, which is "the level of gaining points, devising winning (or at least spectacular) strategy, and showing off their [the player's] prowess to other players during the game and afterward" (McMahan 69). There is clearly a link here to what has been described above as playing *through* the locus of manipulation, as the player is concerned primarily with the ludic qualities of the videogame being played, rather than with the narrative content or the possibility of taking up a role in a world of make believe.

McMahan describes these experiences of immersion and engagement as aspects of a third term, presence, which she defines as the sense of experiencing mediated space as unmediated (McMahan 79, 72). A more detailed definition is given by Steuer, who distinguishes between presence and telepresence (Steuer 75-76).[46] Presence describes the sense of the experience of one's environment, based on the perception of that environment rather than the environment as it objectively exists, while telepresence refers to "the experience of presence in an environment by means of a communication medium" (Steuer 75-76). McMahan discards this differentiation between the perceptually and communicatively mediated senses of being within an environment due to the latter being used mostly in discussions of teleoperation applications such as endoscopic surgery and other contexts of utility (McMahan 72, 77). While there is some merit to this position, for our purpose here, addressing as we are the

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[46] It should be noted that in some contexts 'telepresence' is used to refer to situations where human communication is mediated, such as in the case of a telephone conversation, which is one of the examples used by Steuer. In the context of this thesis however focuses on the usage of the term that causes McMahan to reject the differentiation between the presence and telepresence, specifically the use of the later in contexts regarding teleoperation applications.

communicatively mediated experience of presence within the game-space, discarding the distinction that articulates the difference between two related but clearly distinct experiences may lead to unnecessary confusion. As such, both terms will be retained here to differentiate between the player's sense of being within their own world, and any sense of their being-in-the-game-world. It is considered particularly important, given that telepresence is described by Steuer in terms that suggest that is a sort of perceptual illusion (Steuer 76), to retain the term to emphasize that a sense of presence in general is a subjective, perceptually and/or communicatively mediated experience – reinforcing the distinction made earlier between the player's own embodiment and their act of embodying the character, and being embodied by the avatar, in their relation to the locus of manipulation.

What then determines the player's experience of being-in-the-game-world, or of experiencing a sense of telepresence? Steuer describes three main factors that may affect the experience of telepresence – vividness, and interactivity, which refer to properties of the communication medium, and the personality of individual users of that communication medium (Steuer 80). Vividness refers to the sensory quality, both in terms of the quality and variety of sensory stimuli, while interactivity "refers to the degree to which users of a medium can influence the form or content of the mediated environment" (Steuer 81,84). Though the formal properties of a particular videogame and its underlying technological platform doubtlessly has some effect on the player's experience, as the earlier discussion on how the player's conduct comes to embody, over time, the limitations of their locus of manipulation, it is arguably the player's own preferences and attitudes that are the most prominent determinate of their experience of videogame play, including any sense of telepresence. As Leino argues, "The acceptance of the existence of these structures as something delineating a subjective experience, does not force one to accept that they all are identical to all players of the same game or to one player's each separate playing of one game" (Leino "Feeling So Real - a Phenomenological Exploration

into the Realities of Emotions in Play" 7). Given that different players can have different value judgments about the same videogame, or even enjoy different types of experience during play of the same videogame, this would suggest that all else being equal, in the end it is the player's particular preferences that will determine whether they experience a sense of telepresence, of being-in-the-game-world, during the course of their play of a particular videogame. As it is the player's experience of play that we are primarily focused on, we should now turn to investigating the role played by the preferences and personalities of different players on their experience of videogame play. Importantly, the preferences and personality of a particular player will have implications for the intentional concerns with which they take up the experience of videogame play, in the terminology of Heidegger what they take up the videogame as 'in-order-to'.

If the player's own preferences are important as contended here, it is valid to ask the nature of these preferences, specifically, whether these preferences are fixed or dynamic, and if dynamic how they may be affected by a range of different factors acting on the player's motivations. Bartle was perhaps the earliest researcher to consider what motivates players, distinguishing four types, and though such a broad typology cannot completely account for the range of individual player preferences, for our purposes they can serve as categories suggesting the different intentional concerns that underlie these motivations. The four types Bartle describes are those that play for achievement within the ludic context (achievers), those that explore the game (explorers),[47] those that play for the social aspect (socialisers), and those that play to prey on other players (killers) (Bartle). Though his thoughts arose out of observation of and discussion with players of multi-user dungeon, as Aarseth argues "his model works well with other types of games, and even beyond, with phenomena such as web

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[47] It should be noted that this doesn't just mean the geography of the game-world, but also those who search for bugs, exploits, and interesting rule interactions, congruent with what we earlier described as playing with the locus of manipulation.

portals" (Aarseth "Playing Research: Methodological Approaches to Game Analysis" 4).[48]

According to Bartle:

> Naturally, these areas cross over, and players will often drift between all four, depending on their mood or current playing style. However, my experience having observed players in the light of this research suggests that many (if not most) players do have a primary style, and will only switch to other styles as a (deliberate or subconscious) means to advance their main interest. (Bartle)

Though it would seem commonsense that players have a general primary motivation to play videogames, it does not necessarily follow that recourse to other styles is in fact subordinate to their primary motivation at a deeper level – perhaps a explorer just wants to hang out and chat, or has had a bad day and feels like letting off some steam by attacking some other players, or perhaps they have just gotten bored of freeform exploration and want to undertake some more structured achievement type activities? Furthermore, there is no underlying reason for there to be only four types, for as Yee points out "There is no reason why people would fall naturally into 4, 8 or even 16 buckets, and there is no reason why someone should be excluded from the Achiever bucket just because they fall into the Socializer bucket" (Yee). In fact, after performing quantitative research into player motivation, Yee arrived at six statistically significant factors, or clusters of statements on motivation, which interestingly didn't include the exploration motivations of Bartle's original model (Yee).

However, Yee's results are only of limited relevance to the model developed by this thesis, in part because of Yee's focus on massively multiplayer online games (MMOs). MMOs, arguably, tend to emphasise different types of motivations than single player or smaller scale multiplayer videogames due to their more complex social dynamics, but more importantly Yee's study was focused more on the link between motivation and demographics than the

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[48] Indeed, Bartle's model has been influential enough to spawn its own online personality test, The Bartle Test of Gamer Psychology - http://www.gamerdna.com/quizzes/bartle-test-of-gamer-psychology.

relation between player and their locus of manipulation that we have focused on here. Linderoth's insights, which we have already mentioned briefly in discussing the different ways in which players relate to their locus of manipulation, provides a perspective more relevant to our interests here, relying as it does on the different ways in which players frame their relation to their locus of manipulation. Importantly, these frames were not fixed over the entire course of the play sessions Linderoth observed, but rather changed from moment to moment to deal with and express different kinds of experience that arose during the course of play. Indeed, Linderoth notes that certain statements made by the observed players "can only be understood if we have parallel frames at work" (Linderoth 7). This is particularly clear in one passage noted by Linderoth where one of the players "makes the statement that she is dead and when she realize [sic] that it is not possible to make a comment about your own death when you are dead, the situation becomes comical" (Linderoth 7). In this example we find a player who is, through the phenomena of telepresence, experiencing a sense of being-in-the-game-world only to realise this in retrospect when she becomes aware of the ontological paradox her statement has created.

However, as with Yee's study of player motivations, the usefulness of Linderoth's observations for our purposes are limited by his particular focus, namely showing that the relationship between player and locus of manipulation is more complex than simply a process of identification, that "Avatars can have a role in identity formation, not in the mystified sense of being 'alternate' personalities, but rather as a potential resource for the child's presentation of the self in the social context at hand" (Linderoth 1). As this concern diverges to a degree from our interest here in the experience of being-in-the-game-world, though there is some useful points we can take from it, we must draw upon research that is more closely aligned to our present concerns, in other words the relation between the player and their locus of manipulation. Carr et al note that in their research into the activities of players of the

Oddworld:

> Broad examples of 'personal agency' were found in users' non-instrumental practices that, rather than being goal-orientated, focus on embodying, 'being' and acting out the repertoires of behaviours attached to primal, alien characters. Personal agency was also found in examples of how users pause and take full advantage of the interactive environment created by developers, rather than seeing it as a means to an end — choosing to exist within it. (Carr et al. 28)

There is a strong resonance in the above quote to the positions of playing *as* and playing *with*, respectively, that we put forward earlier. This resonance is only emphasised by their observations of different player responses to *Final Fantasy VII*, describing how "each player tended to 'make sense' of the game world according to their own competencies and preferences, and the 'affordances' of the game-as-text" (Carr et al. 22). This included such contrasting sense making as strong narrative immersion, a disregard for the story presumably in favour of ludic activities, as an interesting environment to be explored, and of a custodial relationship with the characters that make up the party that the player has control over (Carr et al. 22). This range of responses touches on the three relationships between the player and their locus of manipulation mentioned earlier, from playing *through* to enjoying the combat and exploration activities provided by the particular game, playing *as* the locus of manipulation to experience the videogame as a narrative, or playing *with* by using the videogame as simply a space to be explored regardless of other ludic or narrative activities. What is striking about these comments by Carr et al is the multitude of ways in which players of each videogame responded to them and took them up as different types of activities. These observations strongly support the argument made here that any sense of being-in-the-game-world relies primarily not on the videogame being played, but rather on the attitudes and the expectations of the player. Hence, it would seem that more powerful than a first person perspective is a feeling of first hand participation, where the sense of being-in-the-game-world arises from the player's ability to control the locus of manipulation (Newman "The Myth of the Ergodic

Videogame" 6), and by extension their experience of the game, rather than the emphasis on sensory immersion within the game-world that King and Krzywinska focus on.

Conclusion

In this chapter we have argued that a phenomenological experience of presence in the game-space experienced by the player during the course of videogame play is not simply a case of 'suspension of disbelief' style immersion, but rather a multi-faceted phenomenon that is affected not only by the formal properties of the videogame being played, such as its representational quality or degree of interactivity, but also on the particular attitude and personality of the player. Importantly, it was argued that the player's attitude was not fixed but varied, therefore the experience of being-in-the-game-world for any particular player depends predominately on the intentional orientation they take towards the activities a specific videogame affords, and from how that intentional orientation is influenced, in turn, by the limitations of the locus of manipulation. Furthermore, though the sense of 'being there' may seem to be a direct experience of the game-space for the sufficiently competent player, it is intrinsically mediated by the complex relationship between the player and their locus of manipulation, a relationship that can be articulated through the distinction between embodiment as a state of being and embodying as an act, as it applies to both player and their locus of manipulation. The locus of manipulation concurrently embodies the player's intentions as their avatar within the game-space, and limits the possible actions to the suite of characteristics, functions, and narrative background that constitutes them as a separately embodied character. This is to say that the player's experience of 'being there' is an experience of telepresence, a communicatively mediated sense of being present in the game-space, that is mediated not only through the technical apparatus, but also through the abilities and limitations of their locus of manipulation which the player embodies within the game-

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space. The reason the sufficiently competent player is not consciously aware of this mediation during the course of play is due to the locus of manipulation being taken up as a ready-to-hand extension of the player's body schema, and thus withdrawn from the player's immediate concern, through a learning process that negotiates the two aspects of the locus of manipulation, namely the avatar and the character.

Thus, the player's relationship with their locus of manipulation cannot be characterized as simply the unidirectional flow of the player's intentionality into the game-space with the locus of manipulation acting as a mute conduit, but rather as a process of feedback, adjustment, and adaptation between the player's intentional concern and the limitations of the locus of manipulation, where the player internalises the restriction of the character into their own conduct. To put it another way, as they begin to embody the limitations of the character in their own conduct they refine their intentional concern. Yet, crucial to this process, is the intent with which the player takes up the locus of manipulation, or in the terminology of Heidegger, what does the player take up the locus of manipulation 'in-order-to'? The player's embodied relationship with their locus of manipulation expressed by this assignment of an 'in-order-to' to a 'towards-this' thus suggests the direction in which their videogame play experience will tend. An orientation towards the avatar aspect of the locus of manipulation, an assignment of the locus of manipulation as 'in-order-to' play the game, would tend towards a ludic focus on goals and achievement, whereas an orientation towards character, where the locus of manipulation is assigned as 'in-order-to' experience the game-world's story, would tend towards a fictive focus on narrative and character development, whether this is by taking up a prefigured character or by developing one. Of course, these tendencies shouldn't be thought of as an either/or polarity, as the experience of videogame play for many players is likely to draw upon both, at least at different times, if not to differing degrees, concurrently. In fact, they are interdependent to a degree, as the videogame must be played to access the

story, whilst the story provides a supporting context to make sense of the action that occurs during the playing of the videogame – a particular player may have an overriding individual preference for one or the other, but neither can be completely eluded, and so the locus of manipulation maintains its complex nature as part avatar, part character. A third tendency, disengaged from either the fictive or ludic aspects of a videogame, is engaged with the videogame as an interactive object that can be exploited for a range of possible uses. This suggests a more pragmatic attitude on behalf of the player, one that approaches the videogame as an open scenario. This third tendency seems to be intentionally aimed towards the game-space itself as much as the locus of manipulation, and concerns itself with how the locus of manipulation can be used to push the bounds of the game-world, to discover the game-world by discovering what can be done within it.

In this chapter we have considered the player's relation to the locus of manipulation as an interface as it operates within the game-space. We have examined how the player's relation to their locus of manipulation, in particular the different types of relation between the figures of the avatar and the character, as well as the broad intentional concerns the player adopts towards the locus of manipulation 'in-order-to' within the game-space, can be employed to describe and articulate the experience of videogame play. The next chapter aims to take these insights, along with those that arose with regards to the tangible interface in Chapter Four and interfaces more generally in Chapter Three, to consider the experience of videogame play as an experiential whole, rather than focusing upon particular aspects of that experience as we have done. Of particular concern is the process of embodiment through which the player incorporates the interface as a ready-to-hand extension of their bodily schema, extending their body and intentionality into the game-space, and as a consequence experiencing a sense of being present within the game-world. To examine this we turn towards a phenomenon of the experience of videogame not yet addressed, though we have mentioned it in passing – that

strange sensation of actual bodily movement that can arise as part of the experience of videogame play.

CHAPTER SIX:

MOVEMENT, MOTILITY, AND PRESENCE

Over the last several chapters we have sought to investigate the player's phenomenological experience of videogame play through a close examination of their relation to the interface. In Chapter Three we asked the questions of what and where is the interface, and in exploring these questions developed an understanding which goes beyond the common and limited view of the interface as simply the physical devices such as keyboards and screens and the representational elements of the graphical user interface, such as onscreen menus or buttons. Instead, we developed a deeper understanding of the concept of the interface as the site of a complex embodied relation between player and videogame, and thus central to the player's experience of videogame play. We argued that the location and nature of the interface is ambiguous, in that the player's bodily incorporation of the interface, by taking it up as ready-to-hand, blurs the boundary between player and interface to the extent that it becomes difficult to posit a separation between them during the course of play, as experientially the interface withdraws from the player's immediate concern and becomes something they act through rather than upon. Furthermore, the incorporation of the interface into the player's bodily schema and its resultant withdrawal from the player's immediate concern necessarily leads to the extension of the player's body through the interface into the world of the videogame.

Chapters Four and Five explored the implications of this alternative concept of the interface, the former demonstrating that though central to the player's experience the physical aspects of the interface withdraws from the player's immediate concern as it becomes ready-to-hand, and that the consequence of this withdrawal is the flow of the player's intentional concern into the game-world through the interface such that the player experiences a sense of direct interaction with the action on-screen, even though it is mediated by the physical aspects of the interface. Chapter Five argued that the flow of the player's intentional concerns into the game-space that accompanies the withdrawal of the physical aspects of the interface becomes centred in, and thus further mediated by, a deeper level of the interface which was described

as the player's locus of manipulation, which, like the physical interface, can be taken up by the player as equipment that is ready-to-hand. That is to say, that the player embodies the locus of manipulation in that it becomes an extension of the player's body, while concurrently the player also comes to embody the limitations of the locus of manipulation in their own conduct as the locus of manipulation is taken up as equipment as something 'in-order-to'. Thus, the player's intentional concern flows into the game-space, and the interaction of the player's intentional concerns with the potentials and limitations of action that the locus of manipulation affords the player in the game-space leads to the embodiment of those potentials and limitations in the intentional concern of the player as they learn, over time, the range of uses the locus of manipulation can be used 'in-order-to'. This process of adjustment of the player's intentional concern was described as making up part of what we termed a process of mutual embodiment between the player, and the locus of manipulation, as it operates largely at a preconscious corporeal level, which furthermore makes it possible for the player to experience a sense of directly acting within the game-space, and as such experiencing a sense of presence within the game-space.

Our concern in this chapter is two-fold. Firstly, whether this process of mutual embodiment of the interface into the body, and the extension of the body into the game-space through the locus of manipulation, can account for the experience of play in all its richness and variety, that is, as an experiential whole? In a sense this question is intended not merely to set up an activity of verifying our conclusions so far, but rather to bring these conclusions together to help account for the richness of the experience of videogame play, to broaden the discussion beyond the physical and software elements of the interface we have previously focused upon towards the wider experience in which the interface is involved. Our second concern extends from this and deals with the implications of the conclusions developed over the previous two chapters. If the player experiences a sense of presence within the game-space, in a way

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experiencing a sense of actually being there, how does this affect the player's experience of videogame play, or in other words what are the implications of this experience of being-in-the-game-world for the player's experience of videogame play as a whole? In dealing with this concern our first task is to establish the nature of the player's relation to the game-space at the immediate level, a task the following section addresses.

The Experience of Game-Space

Given that the experience of presence in the game-space arises through the player's co-embodiment of their locus of manipulation through the incorporation of that locus of manipulation into the player's bodily schema and the resultant extension of the player's body into the game-space, a logical starting point for understanding the nature of the player's experience of presence in the game-space is in how the locus of manipulation mediates the player's experience of the game-space. As we have seen in Chapter Five, the limited suite of particular actions and abilities with which the locus of manipulation is granted to act within the game-space becomes embodied in the player's intentions as the player begins to take up the locus of manipulation as ready-to-hand equipment in-order-to play the videogame. This incorporation of the locus of manipulation into the bodily schema of the player affords the player an experience of presence in the game-space as their intentional concern moves beyond the now withdrawn locus of manipulation to focus upon the game-world itself. The question thus becomes one of considering the nature of the relation the player has to the game-space, mediated as it is through the locus of manipulation, or to put it another way, towards what is the player's intentional concern directed towards within the game-space at the most immediate level of the player's experience of the space of the videogame?

The importance of the game-space to videogame play has long been recognised by the field of

game studies, for instance Aarseth argues that "The defining element in computer games is spatiality. Computer games are essentially concerned with spatial representation and negotiation, and therefore a classification of computer games can be based on how they represent - or, perhaps, *implement* –space" (Aarseth "Allegories of Space" 154, emphasis in original). Generally speaking, the most common approach within the field to understanding the implementation of space in a particular videogame's is to consider it in terms of how it may support a particular type of videogame play experience for the player (cf. Aarseth "Allegories of Space", Adams, Van Looy). One recent and representative example of such an approach is McGregor's work on recurring patterns of spatial use, such as what she labels 'challenge space' "where the environment directly challenges the player" (McGregor 539), or 'codified space' which is not 'space' in the normal sense of the word but rather something that "explicitly represents something other than itself," such as a barracks building in a real-time strategy which "is not a place to house soldiers but an object that creates soldiers" (McGregor 542). What is interesting about McGregor's approach is her explicit statement of the link between our real everyday spaces and the spaces of videogames, noting that "screen mediated game space is dependent on the conventions of real space and our experiences in it" (McGregor 538). There is an implicit acknowledgement of the importance of the phenomenological aspect of the experience of videogame play in McGregor's argument, in that the conventionalised spaces of videogames are familiar and habituated spaces for the player because they draw upon the player's experience of everyday spaces. Thus, the pattern of challenge space is based upon our already existing understandings of "playgrounds, obstacle courses and racetracks [which are] specifically designed for physical challenge" (McGregor 539), whilst contested spaces find their basis in "war zones, disputes over water rights to rivers, football fields and cricket pitches" (McGregor 540). Unsurprisingly, this link between real spatial situations and their virtual counterparts can be easily seen in the vast number of videogames explicitly based around real-life competitions or historical war

scenarios, yet, as we will see, the dependence of videogame space on the phenomenological experiences of the player go beyond the conventions of spatial configurations to the player's more immediate embodied experience of being in space.

Apart from McGregor, several other scholars within the field of videogame studies have similarly identified the link between real spaces and game-spaces, though generally with slight differences in emphasis. For instance, Aarseth focuses on questions of how space is represented in videogames, arguing that game-spaces "are constituted of signs and are therefore already dependent on our bodily experience in, and of, real space to be 'hallucinated' as space" (Aarseth "Allegories of Space" 162). On the other hand, Adams compares virtual architecture to real-world architecture, arguing that despite practical differences both "are based in a profound aesthetic instinct: the urge to create dramatic and meaningful spaces" (Adams 18) – though it is arguably because such spaces evoke our familiar experiences in a phenomenological sense that they become dramatic and meaningful. Similarly, Van Looy's analysis of the videogame *Head over Heels* provides a useful example for how these approaches can enrich our understanding of game-spaces as objects, for instance in noting how the videogame employs various types of spatial puzzles along with adversarial non-player characters to establish a combined challenge and contest based pattern of spatial use, or that the bright colours of the visual design of the videogame's space create a certain aesthetic effect, and how the use of familiar features such as rooms with doors makes the represented space understandable to the player (van Looy 4,6,2).

However, where these approaches fall short in their consideration of game-space is their focus on them as objects. For instance, Aarseth's argument that "the fact that they [game-spaces] are not real space but objects and places is the only reason we can perceive them at all. If they had not been objects, but real space, (somehow) computer mediated, then we would not have

been able to tell them apart from real space unmediated" (Aarseth "Allegories of Space" 162), tells us little about the player's phenomenological experience of the game-space – not as an objective thing in the world but as something experienced as part of the world. This movement marks a substantial departure away Aarseth's position of objective space being a central aspect of videogames, and from the third-person perspective on game-space more generally. From a phenomenological perspective, the objective space of the videogame is important to the player only in so far as it is constituted through their experience as the subjective world in which the unfolding of their experience of videogame play takes place, and towards which their intentional concern is directed. It is such an understanding of the first-person experience of game-worlds that we are aiming for here.

We have already noted the importance of the locus of manipulation in mediating the player's experience of videogame play and thus their experience of the game-space, and as such the relation between the locus of manipulation and game-space enters our concern. To understand the nature of the relation between the locus of manipulation and the game-space we must recognise that it is not only that the locus of manipulation is constituted as a particular suite of possible actions within the game-space, but that those actions are intrinsically related to the spatiality of the game-space with which they are intended to take place, such as how Poole describes the game-space of *Tomb Raider* to be constructed in 'Lara Units', based on her ability to jump certain distances (Poole 223).[49] Another example, where the relation between the locus of manipulation and the game-space is evident, is the example of *Head over Heels*, where an important part of the videogame design is the employment of two separate characters, each having a distinct suite of action potentials (van Looy 3). Importantly, these

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[49] Though it could be argued that 'Lara Units' are a concious or self-reflexive description of the player's immediate experience of play, as was argued previously in Chapter Five, the process of mutual embodiment between the player and their locus of manipulation leads to the player incorporating the limitations of the character into their intentional orientation and embodied conduct. In a way, this is an example of the issue raised in footnote 8 on page 51 regarding the inherent addition of some level of abstraction or reflection in the attempt to fix experience in language through description.

differentiations between the characters primarily relate to the spatial potentials of each character, for instance in how far they can jump or how quickly they can move, illustrating the importance of the spatiality of the game-space in the experience of playing *Head Over Heels*. We can extend this observation to the experience of videogame play more generally. The player's experience of the spatiality of the game-space is based not so much simply on how a particular videogame represents or implements space in its design, but rather on how the player's embodied and experiential understandings of the game-space and its specific spatiality interacts with the particular spatial configuration implemented within that game-space during the unfolding of the experience of videogame play. In other words, what concerns us in understanding the player's experience of the game-space is less of a question of how space is represented than it is one of how it becomes experienced by the player as spatial.

To understand the player's experience of the spatiality of a videogame we need to foreground the player that experiences those game-spaces in our approach, rather than focusing on the game-space itself as a thing or object, or even how the locus of manipulation is constituted as a suite of potential actions. As Flynn argues "the spatial cannot be reduced only to questions of representation, narrative models or configurative interventions, but needs to include a broader notion of spatiality that takes into account the participatory and embodied positions of the player" (Flynn 52), which is to say that understanding the spatiality of videogames intrinsically requires an exploration of the phenomenological aspect of how the player experiences that spatiality.[50] In recovering this sense of the player as an embodied participant in the spatiality of the videogame we implicitly move our focus towards the player's

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[50] Klevjer addresses this issue at length, though at times in a slightly divergent direction than that developed in this chapter. In broad terms however there is deep resonances with the argument developed here due to their common starting point in the work of Merleau-Ponty. For instance, Klevjer similarly notes the important ways in which the experience of game-space relies upon our pre-existing habituated experiences of real space (147), and the fundamental significance of the interrelation between perception and action, as he notes: "Vicarious action follows from vicarious perception, and vice versa; the 'I' that acts is the 'I' that perceives" (148).

phenomenological experience of the game-space, and in this move we discover that the link between 'real' space and game-space is not simply incidental or arbitrary, but rather that the link arises from the player's embodied relation to both videogame spaces and real worlds. For instance, Flynn draws upon Merleau-Ponty's notion of an experience of space based in intentionality, that is an understanding of space "not as a spatiality of position, but as a spatiality of situation" (Flynn 57), to build an understanding of the player's spatial experience of the game-space. This moves beyond thinking of the game-space as a set of discrete spatial points that the player finds themselves located within towards a lived experience of the space of the game-space based on the player's embodied relation to it. This is to say that the player's body is actively involved in their experience of the virtual spatiality of game-spaces, and it is particularly the role played by the player's experience of movement in their engagement with the videogame that has important implications for their experience of the spatiality of the game-space, for as Flynn argues:

> Merleau-Ponty's descriptions of spatial engagement were written to describe the body's perception of physical space, [but] they also speak clearly to the body's position in computer games. In game space, bodily motility reflects physical bodily experience, histories of being in the world and subjective points of view. So playing the game is conditioned by the player's lived in bodily experience as well as the player's subjective viewpoint. (Flynn 57)

There are two important points in this quote from Flynn that have direct relevance to our concern of understanding the player's experience of the spatiality of game-spaces, the first being her focus on the bodily motility of the player, and the second on what bodily motility reflects in game-space, namely the player's physical bodily experience, their histories of being-in-the-world, and their subjective points of view. Given our focus on the immediate and corporeal experience of embodied being and the importance of embodiment to the experience of videogame play, the player's own immediate phenomenological experience of their body and the movement of that body obviously becomes our primary interest in dealing with their

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experience of the spatiality of the game-space. However, this is not to discount the importance of the other two reflections Flynn notes, for the player's histories of being-in-the-world relate to their experience of the socialised and cultural patterns of spatiality, which remain important to the player's experience of game-space, whilst their subjective points of view reminds us to consider the variability and diversity of the experience of videogame play.

In regards to the player's bodily motility, Flynn notes the importance of movement to the experience of videogame space and of videogame play more generally, as "games are not only watched but also moved in, between and around" (Flynn 55). Thus the player's experience of the game-space via their movement within it becomes an important consideration, for the player does not merely survey the game-space as a static landscape but actively experiences it through a "bodily kinaesthetic engagement" (Flynn 57), and the trajectory of these movements "from one stable point in space to another create a particular type of aesthetic immersion that generates individualised styles of agency" (Flynn 55). Though the use of the term 'trajectory' may imply a sense of a pre-determined path through the game-space, it is clear that such a meaning is not meant by Flynn, who adapts the term from de Certeau. In the moment to moment unfolding of the experience of videogame play the player's movement proceeds in accordance with their intentionality, which Merleau-Ponty describes as "a vector mobile in all directions like a searchlight, one through which we can direct ourselves towards anything, in or outside ourselves" (Merleau-Ponty Phenomenology of Perception 156-7). This concept of the vector does not imply an already established and determinate course, for whilst at any particular point in time the vector will have to be at such and such a position and face such and such a heading and be moving at such and such a velocity what is more important is that there is the possibility and potential for change. It's possible trajectory is implied by a particular heading at a particular point of time, but it is not fixed, and the sense of the moment by moment dynamic unfolding of the passage or movement through space remains at the

forefront of our concern.

Thus we can retain a sense of the agency and the intentionality of the player, who at any time can change their direction, both in a specifically literal sense related to their actual movement, but also in the sense of what that movement is directed towards – their intentional ends. By considering the player's movements within the game-space in this way we also emphasise both the moment to moment unfolding of the experience of that movement, and the sense of a spatiality of situation, a spatiality that takes into account "the situation of the body in the face of its tasks" (Merleau-Ponty Phenomenology of Perception 115), in other words "an attitude directed towards a certain existing or possible task" (Flynn 57), a spatiality that foregrounds the way in which the player can engage with the game-space not as a Cartesian space but as an experienced space. The importance of including both a sense of intentionality and of the dynamic unfolding of the experience of videogame play can be seen if we consider a particular moment in time of the player's experience of the game-space. For instance, even if the player remains still, in both their immediate physical body and in the avatar they embody within the game-space, observing the game-space without apparent movement, movement still resides in the forefront of the player's experience of the spatiality of the game-space. This is due to the intentional nature of the player's being-in-the-world, as the player's intentional concerns must always project a potential movement through the game-space in order to accomplish those concerns. The player's interest in the game-space can only ever be realised via the potential actions that they can take, and whilst the player can consciously sit back and weigh up their options, at some point these thoughts must be translated into actual action within the videogame and thus such thoughts concerning potential movement must always be realised through action. For example, for the player the game-space of *Tomb Raider* presents many spatial puzzles that the player must negotiate through moving Lara Croft in particular ways such as various types of jumps. When remaining stationary and observing the game-

space, the player views it not as simply a representation of space but rather as a space for potential action, in particular the specific movements required to traverse the terrain and advance through the videogame. This process of consideration of the required movements is not some form of abstract pure logic discrete from actual movement, as it is embedded within the potential for movement within the game-space – it is a potential movement which at a later moment will be enacted through actual movement.

In this way the movement of the player, both actual and potential, through the space of the game comes to be the basis of their overall experience of that game-space, and as such this movement presents itself as a key factor with which to explore the player's wider experience of videogame play. The following section seeks to further this exploration of the player's experience of movement within the game-space and its wider implications for the experience of videogame play by turning to a reflection and articulation on my own experience of movement within videogames, my subjective viewpoint as Flynn would put it, drawing upon and employing the conclusions reached over the last several chapters. Of course, Leino's observation that "phenomenology is not interested in the idiosyncratic experience, but in the experience's 'invariant structures'" (Leino "Understanding Games as Played: Sketch for a First-Person Perspective for Computer Game Analysis" 6), should be kept in mind, as it is what is common across 'idiosyncratic experience' that we have been concerned with, and that will continue to be investigated in the remainder of this chapter through the experience of movement within the game-space.

The Experience of Movement in the Game-World

When I move in videogame worlds I often experience a sense of actual movement, in that the game-world seems to move around me as I move through it. How can this be? For physically

I barely move at all except for the movement of my hands and fingers through actions upon the physical interface, or occasionally leaning forward to get a closer look. Yet, still there is a sense of movement. I press the appropriate button or key to walk forward and I experience walking forward, moving into the depth of the game-world. Or perhaps I push the duck button to drop behind some form of cover and it feels like I have ducked, in that my vantage point is lower and my view of the game-world changed, and furthermore with this action there is also the feeling that I'm somewhat more protected, that I present less of a target. In my experience of videogame play this sense of movement within the game-world comprises a substantial element of the experience of the game-space as it is through this movement that I come to experience the game-world. This is not simply in the sense of exploration, though that can be an important part of the experience in-itself, but more widely in the way in which my movements in the game-world opens it up to my experience of videogame play. In the most basic sense this is perhaps due to the need to move through the game-world to progress in the videogame, and even at this very immediate level we see that my movement in the game-world is imbued with and directed by my intentional concern within that game-world. For instance, that I need a particular item from a particular location which is then used somewhere else to move into a new area or level of the videogame. Yet, in a wider sense this experience of moving through the game-world seems more fundamental to the experience of play, in that it constitutes a large part of what I actually do in the course of play, not merely as a requirement of playing the videogame, but rather in the sense that as one of its central elements it perhaps constitutes videogame play. Finally, this experience of a sense of actual movement within the game-world brings with it the sense that I am in some way present within the environment of the game-world, not merely looking at it on-screen but inhabiting it. I experience it as a three dimensional space (certainly in the case of three dimensional game-worlds) though as we shall later see an experience of movement and presence in two dimensional game-worlds remains possible. In the case of three dimensional game-worlds,

whilst the screen may only show me my forward view, there is a sense of the game-world continuing beyond the borders of the screen to my left and right and even behind me – when a shot flies by from over my shoulder there is a definite and immediate impulse to look back and identify the source of danger. In one sense I follow this impulse, yet in another I do not, I look around but I do not turn my head.

We should be clear here that the experience of actual movement which I am discussing is that which most often arises during videogames that utilise three dimensional space. Thus, during the course of this chapter 'game-worlds' refers specifically to three-dimensional game-space, rather than the environments of two-dimensional videogames, which do not possess the same sense of 'world-ness',[51] and which are often referred to as videogame levels or stages. Following Klevjer, this distinction is due not to the dimensionality of these game-spaces in themselves, but rather as he argues how the player is positioned as a bodily subject through the limitations and possibilities of their locus of manipulation, in particular how what he describes as subjective avatar which "appropriates a navigable point of view as an apparatus of prosthetic perception, giving the player not just an extended fictional body, but also a re-centred perceptual subject-position" (Klevjer 146). This is not to argue that even two dimensional videogames, such as classic platformers *Super Mario Bros.* (Nintendo <u>Super Mario Bros.</u>) or *Sonic the Hedgehog* (Sonic Team), don't involve some sense of movement within their game-spaces, just that their simplified spatiality and third-person, side-on perspective, seems to work against such an experience of actual movement. After all, a central attraction of the experience of playing *Sonic the Hedgehog* is the rapid movement through its particular game-space that it affords, a highly affective experience of movement which

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[51] It should be noted that Leino (<u>Emotions in Play</u>) makes an extensive critique of the way in which the term 'game-world' has been used within the field of videogame studies, in particular the notion that they can somehow 'exist' objectively outside of the experience of players (cf 189). It should also be noted that while 'worldness' here is being used in a somewhat intuitive sense, Leino extensively unpacks the term, in particular drawing upon the notion of 'facticity' (cf Chapter 5, <u>Emotions in Play</u>)

requires a focus and intensity on the part of the player if they are to avoid the obstacles within the game-space towards which they hurtle at high speeds. Indeed, the pace at which the videogame is played indicates that the player would need to have incorporated the locus of manipulation into their bodily schema and the immediacy of their movement within the game-space to have any chance of keeping up. And, whilst the limitation of only two dimensions would entail that that sense of depth of three dimensional videogames, that sense of moving into the game-world and of being enveloped by it, would be unlikely, the same types of physical bodily experiences of movement are involved, for instance in that there is a sense of up and down and left and right, but more importantly this experience remains one of moving directly within the game-space, I do not instruct or direct Sonic or Mario to move to a certain point within the game-space but move there 'myself'.

Clearly, there is a lot going on in this experience of movement in the game-world, so let us further examine my initial statement, that when I move in videogame worlds I often experience a sense of actual movement. In a closer reading there is an assumption that I actually move in the game-world, and given this assumption, it is not surprising then that there is an experience of movement. I move, therefore I experience movement. Yet by 'I', am I in fact inferring the locus of that movement not directly to myself but rather to my locus of manipulation, that is the character or avatar, through which I interact with the game-world? For surely it is my proxy within the game-world that in fact moves within the game-world, albeit under my direction? Objectively, this may be true, for indeed it is my locus of manipulation, whether it is a human character, a vehicle, or even a mouse cursor which moves onscreen, but phenomenologically speaking this answer falls short in describing the experience of actual movement within the game-world as my experience, rather than that of moving an object separate from me from one point to another within the game-world, is experienced as my own movement. It should be stressed that this experience of actual

movement is not that sense of flow that has been discussed by several scholars in relation to the experience of videogame play, for whilst there is a similar sense of effortless engagement or of "being 'in the zone'" (Järvinen, Heliö and Mäyrä 22), it is not primarily a conscious experience but a bodily one – it is an experience of movement.

For instance, when playing a first person shooter such as *SWAT 4* (Irrational Games), there is a definite character through which I act, the leader of a SWAT assault team, who functions as my proxy within the game-world. As I move this character through the game-world of *SWAT 4*, a game-world broken up into discrete levels, I do not experience a sense of ordering or directing the character to move to certain locations, but of directly moving through the game-world. In contrast, the more tactical aspects of playing *SWAT 4*, involving leading the squad of characters that follow and support my own locus of manipulation, can provide such an experience of ordering the characters to move to certain locations and carry out certain actions as the videogame includes as part of its on-screen element a system for issuing commands to other squad members. Given that this command system already exists within the game it is interesting to speculate about how its application to my own locus of manipulation would change my experience of movement in the game-world. Most obviously, it would introduce a sense of distance between myself and my locus of manipulation, for no longer am I directly moving through the world, pushing buttons for forward or backwards movement, or turning left or right through moving the mouse, but rather simply pointing with the mouse at a certain location and using an on-screen menu saying 'go there'. My character thus becomes semi-autonomous, in that once given the order they would move to that location, finding their own path through the game-world, much like the other squad members do in the actual version of *SWAT 4*, and whilst I direct that movement, the movement itself I would not experience as my own movement.

At this point it is arguable whether this semi-autonomous character is my locus of manipulation, after all I would not consider the other squad members as part of my locus of manipulation, and the relation I have with my character in this speculative version of *SWAT 4* is similar to my relation with the other characters in the actual version, namely that they are under my control to an extent yet separate and discrete from my own sense of moving in the game-world. Presumably, I would still have some sort of locus of manipulation in the game-world, perhaps as a disembodied point of view that is not centred in any particular character, but free to move in the game-world, focused around the mouse cursor and menu system that comprises the order system of the actual game, and it would be the movement of this disembodied locus of manipulation that I would experience as my own movement within the game-world of this hypothetical adaptation of *SWAT 4*. Thus, it is the locus of manipulation, rather than the character in which it is embedded, that forms the core of my experience of moving within the game-world.

Therefore, there must be some relation between the movement of the locus of manipulation in the game-world and my own experience of movement in the game-world. What then is the nature of this relation? Returning to my original statement, the use of 'I' to describe who moves in the game-world suggests that the nature of the relation is such that the locus of manipulation becomes, in a sense, part of my own sense of phenomenal self, or rather that it, much like the example of the ready-to-hand hammer employed by Heidegger, is taken up and incorporated into my own sense of bodily being due to my embodied relation to my locus of manipulation which thus becomes an extension of my bodily schema. This begins to account for my experience of movement within the game-world, for in some way I identify with my locus of manipulation's movement in the game-world – they are moving and I am moving them, so in that sense it is also my movement. But this still suggests a detached engagement where I perceive my locus of manipulation as a separate entity, hardly conducive to

articulating the sense of movement in the game-world that I experience. My actions in moving the locus of manipulation do not possess a conscious or self-aware nature, it is not a case of consciously thinking of moving my character to one location or another, "Movement is not thought about movement" (Merleau-Ponty Phenomenology of Perception 159), as Merleau-Ponty argues, but something rather more fluid, an experience characterised by its immediacy, and similar to the experience of moving my own body unconsciously. As Merleau-Ponty argues, "my body itself I move directly, I do not find it in one point of objective space and transfer it to another, I have no need to look for it, it is already with me - I do not need to lead it towards the movement's completion, it is in contact with it from the start and propels itself towards that end" (Merleau-Ponty Phenomenology of Perception 108).

This immediacy of the experience of movement within the game-world is aided by the way in which the locus of manipulation's movements are abstracted in a manner that accords to our experience of moving our own bodies. This can be demonstrated by comparing a hypothetical control system for a first person shooter such as *SWAT 4*, where each limb of the avatar's body is controlled separately through the interface controller, to the more conventional circumstance where the movement of the legs is abstracted into locomotive movement. In the conventional system the player simply moves the body of the avatar directly, whereas in the hypothetical scheme the player would need to attend to the mechanics of moving the avatar's body. Such a system would seem strange to interact with, as it would require a focus on the intricacies of the moment to moment movement of the body that, as Merleau-Ponty argues, are generally outside of our own experience of moving our bodies, and its unusualness both in this sense, and in the sense that it would be an unconventional and thus unfamiliar control system, would lead to the avatar's body becoming an object in the experience of the player. This is not to say that such an unconventional control scheme could not in time become sufficiently familiar and thus ready-to-hand for the player, as videogames have more often

than not employed controls systems unfamiliar to the bodily experience of novice players - these abstractions must be learnt and habituated by the player before the interface can be taken up as ready-to-hand. Yet the focus on the minutiae of movement from moment to moment that would be required for the hypothetical control system for *SWAT 4* would likely alter the nature of the experience of play in that it would require more effort, both in terms of practice and use, to become habituated to the scheme and thus able to take up the locus of manipulation as ready-to-hand.

Whilst this system of controlling the avatar's individual limbs remains hypothetical as we have discussed it so far, in another sense we have already considered the experience of playing a particular videogame which does in fact involve the player controlling each limb of the avatar in our examination of the interface of *EyeToy: Play 3* system in Chapter 3. By employing a representation of the player's own body onscreen as their locus of manipulation, in a manner not dissimilar to a mirror reflection the player's movement of the individual limbs of their body, both their immediate physical body and that represented back to them onscreen explicitly serves as the manner in which the player interacts with the videogame. Yet, in the general course of playing *EyeToy: Play 3* I do not experience controlling my locus of manipulation as one of interacting with a discrete and disjointed object, its movement within the game-world and that of my own immediate body share the same sense of immediacy which Merleau-Ponty describes. Beyond the surface of the onscreen representation lies a deeper, bodily connection that goes further than what is objectively visible. It is not a case of me consciously associating the visible image of myself, and my movements on screen, with the sense of movement of my immediate body by some kind of reflexive accordance that compares the two bodies and thus identifies a similarity after the fact, but rather an immediate and pervasive familiarity – it could be stated that my represented body is not so much 'seen' as it is 'felt'. And whilst this is my general experience of playing *EyeToy: Play 3*, there does

arise moments when this sense of close connection is lost, specifically when the movement of my body fails to have its intended effect within the game-world. Instructively, in such cases it is not the movement of the body onscreen on which I reflect and make myself aware of as objective movement, but rather that of my immediate physical body, which is adapted to conform to the requirements of the game.

This would suggest that the relation of mutual embodiment I have with my locus of manipulation has bearing on my experience of moving in game-worlds, for phenomenologically that experience of movement is characterised by its bodily nature. Flynn notes that the player's movement in the game-world reflects the player's physical bodily experience, the experience of having and being a body embedded in the physical world. This physical experience of embodiment spills over into the player's experience of videogame play, for as Flynn notes during the course of play "there is an embodied self manifested in breath, body, fingers and visceral sensations as players attempt to weave, dodge and attack opponents" (Flynn 57). Thus, in a very real sense, there is an aspect of bodily involvement in my experience of movement in the game-world. It is not only my locus of manipulation that weaves and ducks, but also my own body, through my incorporation of the locus of manipulation into my bodily schema, as it registers the affective dimensions of movement within the game-world. At the most basic level of affective experience we find that it becomes pointless to insist on a sense of separation between the movement of the locus of manipulation, and the movement of the player, for in the experience of the player they form part of a greater experiential whole, they are experienced as the same movement, for they are both the movement of the one combined gestalt of the phenomenological body based on the mutual embodiment of the player and their locus of manipulation.

It is within these affective dimensions that arise out of moving in the game-world that we find

the first glimmer of the wider experience of videogame play, an instance of those "phenomenological or *affective* dimensions which cannot be programmed into a game, but which are nonetheless vital for gameplay" (Shinkle "Corporealis Ergo Sum" 22, emphasis in original). In other words, those aspects of the experience of videogame play which arise out of the player's engagement with the videogame through the act of play, both through the way in which the player moves within the game-world and the way in which that game-world affords that movement, or otherwise. The importance of the player's own engagement to the experience of videogame play would suggest that the player's experience of movement within the game-world to an extent derives from the way in which they take up the videogame, that is to say their intentional orientation towards it, much like we demonstrated in relation to the player's intentional orientation towards their locus of manipulation in Chapter Five. Yet Flynn's description of the affective dimensions of videogame play that we have employed arises out of her consideration of a particular game, *Half-Life*, where the player's movement is characterised by what Flynn describes as "An accelerated form of spatial engagement [which] is evident in first-person shooters" (Flynn 57). Though Flynn explicitly recognises that the player's movement in the game-world "is always an individualised engagement in the game-world" (Flynn 57), the implication that there is something about the genre of first-person shooters generally, and *Half-Life* in particular, that tends to lead towards a particular kind of engagement and thus phenomenological experience for the player would seem to contradict the approach we have generally adopted in this thesis. So far we have understood and attempted to articulate the experience of play as being not determined simply by the particular features of a specific videogame, but rather arising out of the way in which the intentional orientation the player takes towards the videogame interacts with the ways in which that videogame, through its interface, including the locus of manipulation, either affords or frustrates the player's intentional concern. A process of negotiation within which we find the moment to moment unfolding of the experience of videogame play.

Furthermore, the resemblance of the player's intentional orientation towards the videogame to their intentional orientation towards the locus of manipulation we described in Chapter Five is not incidental but a continuation and extension of the same intentional concern into the game-world. Similarly, it is also through the locus of manipulation that the videogame asserts in part its contribution to the experience of play through the limitations the locus of manipulation puts upon the player's agency, and as such we need to consider how the locus of manipulation relates to the player's experience of movement within the game-world. In my own experience, moving through the game-world of a first-person shooter such as *S.T.A.L.K.E.R.* (GSC Game World), invokes not so much an accelerated form of spatial engagement, but rather one that generally takes on a much more cautious and measured aspect, largely as an attempt to negotiate the hostile nature of the game-world. This is not to say that the game-worlds of other first-person shooters aren't themselves also hostile environments, but rather that the vulnerability of the locus of manipulation requires the player to take a more cautious approach, or, to go further, that the locus of manipulation and its relation to the game-world encourages a particular affective response from the player that could be described as bordering on a sense of constant unease. Unlike many other first-person shooters, the locus of manipulation's bodily being in *S.T.A.L.K.E.R.* is simulated to a degree beyond simply the abstracted notion of 'health', the locus of manipulation being constituted by several kinds of 'measures' of bodily health, including physical injury, hunger, exhaustion, and radiation exposure, and even rate of blood loss. Furthermore, the locus of manipulation possesses a somewhat more realistic set of attributes, such as weight restrictions and a sense of encumbrance when carrying excessive weight, though what concerns us here is not so much whether *S.T.A.L.K.E.R.* employs a more 'realistic' sense of bodily being than other first-person shooters, but rather how the particular suite of potential actions that the player will come to embody in their conduct effects the player's experience of moving within the game-

world. Arguably, the experience of playing *S.T.A.L.K.E.R.* revolves to a significant extent around the player's management of the limitations of their locus of manipulation.

For example, the player will often find themselves having to back track over long distances, whether to return to a safe area to trade for supplies for the requirements of a particular mission, or just in the course of their general exploration of the game-world. In my own experience, the moment of realisation that such a long distance will need to be traversed arouses a sense of reluctance or aversion, sometimes to the point of a bodily reaction of dread. Such a reaction arises not so much out of the distance to be covered itself, for if it were only a question of distance then mere annoyance would be a more likely response, but rather the realisation that to actually cover that distance will involve a tense and cautious movement through the game-world, constantly scanning ahead so as not to be ambushed by enemies, and attempting to negotiate my way through environmental hazards, including invisible hazards such as pockets of high radiation. If I am carrying too much weight, and this is often the case if I am returning to a safe area to sell equipment scavenged from the game-world, my movement becomes even more cautious, for if I do encounter substantial trouble, perhaps the situation when *S.T.A.L.K.E.R.* is most likely to engender a sense of accelerated spatial engagement, my ability to run away is curtailed through my locus of manipulation becoming fatigued much more rapidly.

Yet, despite these limitations of the locus of manipulation and the way in which those limitations influence the player's experience of movement within the game-world, there is no need for the player to stay within these particular parameters of action, for indeed, at other times when playing *S.T.A.L.K.E.R.* I abandon this sense of apprehension and the careful movement it engenders, throwing caution to wind so to speak, and impulsively move myself into danger. For example, consider a situation which arose in the course of my own play

where I came across a heavily guarded strong point that restricted access to the game-world beyond it which previously had engendered a sense of aversion due to the probability of my locus of manipulation being killed or at least badly wounded if directly assaulted. My only other option to gaining access to the game-world beyond involved the prospect of taking the long way around which involved many more, though admittedly less dangerous, obstacles of the environmental hazard sort. Feeling impatient, I attacked the guard post head on despite being out-numbered and out-gunned, not really expecting to be successful but desiring the experience of intensity and immediacy that the fire-fight would bring, and as such exposed my locus of manipulation to significant danger. Surprisingly, in this particular case what was essentially something of a diversion from my more committed engagement with the videogame payed off, and apart from opening a path to an area to which I wished to move, I had also significantly upgraded my arsenal of weapons and other equipment. While this improvement in my locus of manipulation's potential to act in the game-world, in the immediate sense, inherently changed my experience of movement through the game-world as I was better equipped to defend myself, in a subtler and more pervasive sense the overall experience of unease and tension lifted to a degree, the game-world of *S.T.A.L.K.E.R.* just felt generally less dangerous. As such my movement through the game-world became somewhat more unfettered and accelerated, at least until I encountered another group of enemies not so much further into the game-world that demonstrated the potential folly of my new cavalier attitude.

The important point here is that the player's experience of movement within the game-world is variable and dynamic, it is not just that each particular player experiences an individualised sense of movement but more fundamentally their experience of movement can have different qualities over the course of play, the implications of which go beyond the experience of movement in itself to the experience of play more generally. Returning to the example of

Half-Life, though it could be generally said that it does tend towards experiences of accelerated movement, in such a generalisation we lose sight of the nuance and richness of the player's overall experience of movement, for *Half-Life* can also afford other experiences of movement. For instance, during the course of play when I encounter a particularly difficult obstacle, my sense of movement within the game-world slows down, particularly if several attempts are required through reloading a saved game before that obstacle is overcome. Whilst in an immediate sense my experience of movement remains one that could be characterised as accelerated, as my locus of manipulation retains the suite of potential actions and still moves at the same speed, in a wider sense my movement within the game-world begins to slow down and even stall, as I repeatedly attempt to move past that particular obstacle.

Thus, the relation between the locus of manipulation, specifically the way in which it is constituted as a suite of potential actions, and the game-world, as a space for those potential actions, impacts upon our experience of movement within that game-world. But given that the locus of manipulation is taken up as an extension and incorporated into the player's bodily schema, we need to also consider the impact of the player's physical bodily experience at a deeper level. Our first point arises from the observation made earlier about the intentional nature of the player's movement, and concerns the relation between the player's motility and their perception, which should not be considered as discrete moments in the experience of the player but as an experiential whole, for as Merleau-Ponty notes "there is not a perception followed by a movement, for both form a system which varies as a whole" (Merleau-Ponty Phenomenology of Perception 127). Or indeed as Massumi argues "perceptions *are* its [the individual's] actions–in their latent state. *Perceptions are possible actions*" (Massumi Parables for the Virtual 91, emphasis in original), hence the importance of this link between perception and movement, or perception and action more generally. This can be demonstrated

through the art games *Second Person Shooter* (Oliver Second Person Shooter) and its sequel *2ndPS2* (Oliver 2ndps2) by Julian Oliver, which as their names implies places the player in a second-person perspective rather than the first-person perspective with which we are used to. The first is a prototype of the premise and similar to a regular first person shooter except that the player's point of view is switched with the artificial intelligence bot that is their enemy, whilst *2ndPS2* is a further development of this idea for two players, where the two players swap their point of view with each other. As a result there is a mismatch of perception and movement, the players cannot see where they are going unless their enemy's locus of manipulation can see them, and also likely shoot at them, so in effect the player is watching themselves be hunted down. Whilst some commentators on *Second Person Shooter* have framed it in terms of an existential crisis that arises out of this confusion of agency and vision (Cannon), what interests us here is the difficulty the player faces in trying to play when the close connection between perception and movement of their physical bodily experience is broken through the design of the game. As Oliver notes "Naturally this makes action difficult when you aren't within the bot's field of view" (Oliver "Adventures in the Second Person").

Interestingly, for the two player *2ndPS2*, Oliver has to a degree sought to avert this difficultly through employing several measures. At first an on-screen map which indicated the location of the players' locus of manipulation, and the direction in which their opponent was directing their point of view, was implemented to make it more playable by reducing confusion about the relative position of the two players in the game-world. However, Oliver found this problematic as it meant the players could "avoid engaging with a primary dislocation of perspective as an active part of the interface", and eventually removed the map feature (Oliver "2ndps2: Second Person Shooter for Two Players."). Thus this early version of *2ndPs2* re-established a connection between the player's motility and perception through the use of another type of spatial experience, one beyond the player's physical bodily experience but not

necessarily their experience of space – the representation of space in the form of a map. That the addition of a map can avoid the 'dislocation of perspective' effected by the second person perspective through the employment of a type of third person perspective that makes available to the player both the location of their locus of manipulation, and the direction of their point of view, is in itself noteworthy, as it demonstrates that the player's motility and perception within the game-world does not need to be situated within a singular entity, such as a specific character, to be effectively connected. In the case of some players this may be aided by a pre-existing familiarity with overhead 2D perspectives from other videogames,[52] yet even so it shows the flexibility of the player's bodily schema, in that it is possible to incorporate into it a locus of manipulation whose motility and perception is dislocated in space when provided with the means to overcome this spatial dislocation and reintroduce for the player an intentional agency.

In place of the map a sound based system was later implemented in *2ndPS2* which indicated to the player where their locus of manipulation was in relation to their perspective though different audio cues that made use of the body's ability to localise sounds (Oliver "2ndps2: Second Person Shooter for Two Players."). This suggests a second implication for the reflection of the player's physical bodily experience in their movement in the game world, namely that it brings into play our everyday ways of orientating ourselves based on our individual relation to things in the world and articulated through distinctions such as front or back and left or right. As Merleau-Ponty notes, "the self-evidence of top and bottom, right and left, for the person who has his being in space, prevents us from treating all these distinctions as nonsense, and suggests to us that we should look beneath the explicit meanings of definitions for the latent meaning of experience" (Merleau-Ponty <u>Phenomenology of</u>

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[52] Indeed, game designer Jean Paul LeBreton argues that many of the qualities of the experience of playing *Doom* has more in common with earlier 2D shooting games than later first person-shooters, to the point that it can be played in an overhead 'map mode'. Jean Paul LeBreton, "Coelacanth: Lessons from Doom," <u>Vector Poem</u> (2010), 23 March 2010 <http://vectorpoem.com/news/?p=74>.

Perception 116). For example, Mylov, in discussing the role of bodily orientation in immersive virtual reality, notes that not only are there asymmetries in the body, such that "Head and feet unite to form one of the principal dimensions or body-axes while the face and the attachment and functioning of the limbs define the other," but also that there are "certain regularities in the physical world", such as gravity with which we orientate ourselves in the world (Mylov 48). Thus our understanding and perception of space and our movement through it is based upon our bodily being even in the most basic senses of distinctions between top and bottom, front and back, or left and right, and it is these orientating distinctions that the sound based system of the revised version of *2ndPS2* draws upon to aid the players' ability to meaningfully move through its game-world.

The importance of these orientating distinctions to our bodily experience of space carries across into the player's experience of movement within game-worlds, such that their sense of orientation within the game-world is based in these bodily scales of up and down, front and back, and left or right. To demonstrate we can return to the specific example of *Head Over Heels*, where we can quite clearly see these distinctions of direction in operation, from the isometric viewpoint that is understood by the player as looking down into the game-world, that the locus of manipulation walks along the floor rather than falling through it, or walks up the walls, and also that they walk in the direction they are facing. It can further be illustrated through a comparison between first person shooters where the player controls a human locus of manipulation such as *Half-Life*, and another first person shooter such as *Descent* (Parallax Software), whose unique feature is that the player controls a type of flying craft in a zero gravity environment. Whilst the game-worlds of both videogames feature complex mazes in which the player can experience a sense of becoming lost or disorientated, in the case of *Descent* this sense of disorientation is felt more affectively, as it can become a bodily sense of disorientation. The player not only becomes lost with regards to where they are

geographically located within the game-world, but also to their sense of physical orientation within the game-world which becomes dislocated, an experience that could be characterised as feeling upside down or rather not knowing which way *is* up. Without the orientating distinction of top and bottom that arises phenomenologically out of the player's own vertical orientation, which is simulated in first-person shooters such as *Half-Life*, the player must rely on other environmental features to regain a sense of orientation, either a familiar part of the game-world or some object in the game world that is orientated in the 'correct' way.

Thus, it is the combination of the player's incorporation of the locus of manipulation into their bodily schema and, as Flynn argues, the way that movement within the game-world accords to previous physical bodily experiences of movement that contributes to a sense of actual movement within the game-world. However, in many ways this accordance between the players physical bodily experience of movement and their experience of movement within the game-world is incomplete, for instance it does not involve the same level of physical exertion (Adams 4), and in some cases could even be discordant, such as when a third person perspective is used and the player can see their own movement within the game-world. That these 'shortcomings' can exist yet the player still experiences a sense of actual movement suggests that we examine them to ascertain what implications they can yield to our understanding of the player's experience of movement within the game-world. In a general sense what these shortcomings suggest is that the affective experience of the player is in a way a response to these shortcomings, a way of bridging the gap between those aspects of physical bodily experience that are simulated by the videogame and those that are not. This is implied by Shinkle's argument that these affective dimensions cannot be directly programmed into the videogame (Shinkle "Corporealis Ergo Sum" 22). In this way it is within the inadequacy of the relation between the perception and the action of the player, specifically between their intentional concern within the game-world and potential for fulfilling that

concern, that we see the affective dimensions of the experience of videogame play arise to bridge this gap, fleshing out the difference between the player's physical bodily experience and their experience of embodying the locus of manipulation by engaging their proprioceptive sense of their body in the experience of videogame play.

The question then is whether these shortcomings play a role in the player's experience of movement within the game-world, for instance the difference between the physical exertion that accompanies movement of the player's physical body and the lack of similar physical effort required when moving within the game-world. Recalling the earlier example of my experience of traversing large distances when playing *S.T.A.L.K.E.R.* it was noted that outside of the dangers within the game-world to be moved through, that the distance in itself elicits only a sense of annoyance. This is perhaps not surprising as traversing that distance requires no significant physical exertion on my part, for the movement required of my own physical body is minute, simply pressing down a single button on the keyboard causes my locus of manipulation to move forward within the game-world. Yet my own physical bodily experience of moving in the world generally contains some element of physical exertion, definitely so when carrying a substantial weight of equipment often at a jogging or faster pace as the locus of manipulation does in *S.T.A.L.K.E.R.*. Despite this lack of correspondence of my physical bodily experience of the exertion required of movement, my experience of movement within the game-world still arises. How then do I experience a sense of movement within the game-world when my experience of my physical body diverges in this way from the movement of my locus of manipulation, which I experience as my own movement?

Clearly the issue here is with the nature of the players bodily relation to the physical interface that is taken up as a ready-to-hand extension of the player's body, which as a result becomes withdrawn from the player's immediate awareness. If we consider the implications of the

introduction of a sense of actual physical exertion into the experience of playing while moving within the game-world of *S.T.A.L.K.E.R.*, though by what hypothetical technical means is neither obviously clear nor particularly important for our purposes here,[53] we can see that the inclusion of this particular aspect of physical bodily experience into the overall experience of play may in fact lead to a differing experience of actually moving within the game-world. We noted in Chapter Two that the increased size of *[giantJoystick]* necessarily introduces a sense of physical exertion into the experience of playing classic Atari 2600 videogames that would make them more difficult to play simply because of the increased level of effort required. In Chapter Three we demonstrated however that it was not just that physical effort required in some of *EyeToy: Play 3*'s mini-games alone that would change the nature of the experience, but rather the way in which that effort changes the nature of the player's embodied relation to the interface, because in the course of the player taking up of the physical interface as ready-to-hand the physical interfaces "must, as it were, withdraw in order to be ready-to-hand quite authentically" (Heidegger 358). Yet the fatigue of continued physical exertion of playing *EyeToy: Play 3*, even though in general the level of physical exertion required was not overly onerous, we argued would lead to the reassertion of the player's own physical body during the course of play, and with this reassertion of the player's immediate body the relation between the player and the interface of being ready-to-hand would become strained. The physical interface, comprised in part of the player's own body, would not be entirely withdrawn from their immediate intentional concern and thus the flow of the player's intentionality into the game-world through their locus of manipulation would be inhibited.

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[53] Perhaps the most basic setup would be to require the player to stand up whilst playing, don a backpack containing a similar amount of weight to what their locus of manipulation, and requiring them to run on the spot when they move their locus of manipulation, perhaps by having the move forward key trigger a treadmill upon which the player stands, or conversely having the players rate of movement on the treadmill trigger the appropriate speed of movement within the game-world.

Of course this is not to discount the possibility that our hypothetical interface for *S.T.A.L.K.E.R.*, which introduces physical exertion and fatigue into the player's experience of videogame play, would simply lead to the player changing the way they played in order to avoid reaching a level of exhaustion and thus disturbing their ready-to-hand relationship to the interface, and consequently the locus of manipulation. Indeed, it is possible that it might lead to an experience of videogame play where the experience of physical exertion and movement is an integral part, such as is evidenced by *Dance Dance Revolution* or the emerging genre of exergames, without completely breaking the player's sense of immediate engagement with the events within the game-world, for as we saw in Chapter Four even videogames that explicitly employ the tangible nature of their interface as an important part of their experience of play there is still a sense of that play as taking part within the game-world. Yet arguably, the experience of videogame play would be different, particularly in relation to our topic of movement, for after all, whilst *Dance Dance Revolution* is heavily centred within the experience of movement this movement takes place within the player's immediate physical environment and no type of movement within the game-world is present. Much like our earlier hypothetical example of an individual limb movement interface system for *SWAT 4*, this exertion system for *S.T.A.L.K.E.R.* would bring some level of attention back to the player's own bodily movements in the course of play. By contrast, the minimal exertion required of conventional interfaces means that once they are habituated, and incorporated into the body as ready-to-hand, less effort is required by the player to maintain the extension of their body and intentional concern into the game-world. The affective dimensions of the experience of videogame play bridges the gap between the exertion present in the player's physical bodily experience of movement and its lack in their experience of their movement within the game-world through engaging the player's preconscious proprioceptive experience of movement and exertion.

Of course, bodily exertion is not the only aspect of the experience of the physical bodily experience of movement that is absent in the experience of moving within the game-world. For instance, as Adams notes, though many videogames simulate elements of physical reality, such as gravity, this simulation is often imperfect, such as in videogames where "the player's avatar can change its direction of motion while flying though [sic] mid-air, violating Newton's law of the conservation of momentum" (Adams 5).[54] Whilst the divergence from realistic momentum is in some genres of videogames, particularly platform games, a long established convention of game design what concerns us here is the physical bodily experience of momentum which is absent in simulation videogames. For instance, *IL-2 Sturmovik* (1C:Maddox Games), a flight simulator set during the Second World War, involves tight manoeuvring of a range of different aircraft in which an actual pilot would experience high g-forces, or the experience of inertial forces during the course of rapid changes in direction, for example when pulling out of a steep dive or banking sharply. Obviously, to replicate such a bodily experience during the course of play would require a substantial apparatus which would more than likely make involving this aspect of bodily experience in videogame play infeasible, yet *IL-2 Sturmovik*, like many other flight simulators, attempts to simulate the experience of g-force loadings on the body via graphical means so that they have an effect on the experience of play.

For instance, g-force loadings when pulling out of a steep dive in real flight drives blood away from the head and brain of those on board, leading to an experience of tunnel vision, gradual loss of sight, and eventually loss of consciousness. *IL-2 Sturmovik* simulates this through gradually darkening the screen until it is more or less opaquely black. In my own experience of playing *IL-2 Sturmovik*, this visual simulation of bodily experience of g-force loading does

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[54] Presumably Adams is using 'avatar' here in the very narrow sense of a humanoid character, and by 'flying through mid-air' means in the course of jumping, as our next example pertains to a type of avatar that quite realistically changes direction mid-air – an aeroplane.

not engender any great degree of bodily experience of the effects of inertia and momentum, though it certainly has an effect on the experience of play, as blacking out is not particularly conducive to avoiding being shot down or crashing into the ground. Yet, despite this shortcoming, in the general course of playing *IL-2 Sturmovik* an experience of actual movement remains, I fly past another aircraft and there is a sense of them being behind me,[55] whilst steep high speed dives prompt an experience of visceral thrill, despite the lack of a physical bodily experience of momentum that it should entail. That is not to say that there is not an affective experience of momentum to some degree, particularly in cases where I narrowly avoid colliding with another aircraft or crashing into the ground, simply that the experience is not as intense as it could perhaps be, more akin to the more mundane experience of momentum when driving a car than the more analogous experience of riding a roller coaster. Tellingly, these experiences of a limited sense of momentum arise during an experience of movement in the game-world where that movement is movement relative to other entities in the game-world, movement relative to another aircraft or to the ground, which indicates that these experiences of momentum derive from my bodily ability to perceive changes in the relative position between my locus of manipulation and other entities in the game-world rather than movement in itself. Again, we find the affective dimensions of the experience of videogame play bridging this gap, engaging the player's proprioceptive experience of momentum from their experience of physical movement and bringing it into the experience of movement within the game-world.

One aspect of the physical bodily experience of movement so far not mentioned is that associated with our visual experience, for as we move in the world other objects around us become closer or change in shape as we view them from a slightly different vantage point – an experience simulated by some first-person shooters through the addition of head bob as the

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[55] Particularly when they open fire and tracer rounds pass just overhead.

locus of manipulation moves. Tellingly, in the above example of visual blackout in *IL-2 Sturmovik*, once the screen reaches its maximum opacity my experience of movement within the game-world is curiously suspended, replaced with a sort of floating sensation. Without the physical sensation of momentum that characterises actual flight my experience of movement in *IL-2 Sturmovik* seems to rely to a substantial degree on my visual perception of movement,[56] and when this is removed through my locus of manipulation blacking out I no longer experience a sense of movement within the game-world, even though my locus of manipulation continues on. And it is not only at the level of the visual representation of the software that visual perception can have an effect on my experience of movement in the game-world, for substantial pieces of stationary dust on the surface of the monitor similarly affect my sense of immediate and unconscious movement within the game-world to the extent that fine control of the aircraft becomes more difficult and less intuitive, as if the dust was functioning as a form of visual static to my experience of movement, drawing my attention away from the actions depicted within the game-world to the screen as a surface of my attention.

Thus, clearly there is a visual aspect to the experience of movement within the game-world, and arguably we are privileging the visual to an extent when we make the argument that the visual aspects of movement are vital for the experience of movement, as our example above regarding *IL-2 Sturmovik* could be interpreted. Yet it must be acknowledged that by convention the experience of playing videogames is generally regarded as focusing primarily on the visual, they are called videogames rather than audiogames for a reason after all. Given that we have repeatedly criticised the bias within the field of videogame studies, that gives primacy to the experience of visual perception in isolation from phenomenological experience

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[56] Sound plays a part as well, for through the changing amplitude of other aircrafts' engines as they move closer or farther away. Though again this draws upon relative differences in position, rather than an experience of movement in itself, and in any case can be difficult to hear over the player's aircraft's own engine.

more widely, we need to articulate the difference between this position and the one put forward here that recognises the importance of visual perception to the phenomenological experience of movement in the course of videogame play. In essence, this position follows the argument of Shinkle that the images perceived on screen are not simply visual content, in that "We do not simply 'see' images" (Shinkle "Corporealis Ergo Sum" 25), but rather that what we perceive visually is experienced phenomenologically as only part of our broader embodied experience of the world, where "Embodiment and hapticity, [. . .] are crucial in generating what appears to be an exclusively visual experience" (Shinkle "Corporealis Ergo Sum" 25). The visual cues that aid the phenomenological experience of movement find their effectiveness through the way they draw upon and incorporate bodily experience, an experience that registers visual experience not in isolation but as part of a wider synaesthesic experience of the world that interlaces the visual with the other senses, including the haptic and the proprioceptive.[57]

This can be demonstrated by returning to the issue of visual perspective and its effect on the experience of play that we considered in Chapter Five in relation to the experience of feeling present within the game-world. So far in this chapter we have employed as examples videogames which employ a first-person perspective in our examination of the experience of movement within the game-world, but does having the locus of manipulation visible onscreen change the nature of that experience? The roleplaying videogame *Morrowind* (Bethesda Softworks) defaults to first-person perspective, but it is also possible to play using a third-person perspective, and as such it presents a useful example for answering this question. In my experience playing in either mode involves an experience of movement within the game-world, yet, as we saw in Chapter Five, King and Krzywinska argue that the experience should

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[57] There is some resonance here with Giddings and Kennedy's notion of 'recombinatory aesthesis', which describes the "The cybernetic processes allow moments for amplification of affect and effect within the game – generating extraordinary moments of visual and kinaesthetic pleasure" (Giddings and Kennedy 20).

be different in the case of third-person perspective videogames for while:

> At times, players might experience a strong sense of being invested in, bound to or in synch with the character, but they never fully step into the character's shoes, entirely present in the gamescape. The player is not positioned as the direct agent of action in the game-world, a key factor distinguishing the degree to which an impression of presence is created in third- and first-person games. (King and Krzywinska 115)

It follows that this lesser degree of presence that King and Krzywinska accord to third-person perspective videogames would also entail a lesser degree of an experience of movement in the game-world, for if I cannot fully take up the locus of manipulation as a ready-to-hand extension of my bodily schema I cannot experience a sense of movement within the game-world. However, I would contend that whilst there are some qualitative differences in the experience of movement in the game-world between first- and third-person perspectives, the framing of differences in the stark terms of direct agency not only overlooks the point that either perspective can involve an experience of movement within the game-world, and therefore the involvement of some sense of direct agency, but more importantly it denies the role played by the player's intentional concern towards the videogame in their own engagement with the videogame and thus their experience of play.

Though King and Krzywinska acknowledge that the experience of playing third-person perspective videogames can involve "an impression of continuous movement through navigable space" (King and Krzywinska 114), and that this use of perspective can facilitate the ease of movement, for example providing a better view of the "landscape to perform a precise jumping maneuver [sic]" (King and Krzywinska 114), both of these acknowledgments seemingly arise out of the same reason that they argue for a lesser sense of presence or direct agency for the player of the third person videogame. This reason relates generally to the visual aspect of the videogame, namely what can be seen on screen, for the apparent problem with third-person perspectives for the player's direct sense of involvement is that "the player-

character can be seen, as an entity clearly separate from the player" (King and Krzywinska 14). In Chapter Three we addressed a situation in the experience of playing *EyeToy: Play 3* where an image of the player's own body is presented on-screen, finding that the represented body was not experienced as a separate entity but as an extension of the players phenomenological body, even though visible to the player. Though we have already demonstrated the importance of visual perception to the player's experience of movement in the game-world more generally, visual perception is but one aspect that contributes to the experience in its entirety, for we have also demonstrated, in Chapter Five, that the player takes up the locus of manipulation as a ready-to-hand extension of their bodily schema such that they are no longer separate entities. Furthermore, if the locus of manipulation has become ready-to-hand for the player, then it must "withdraw in order to be ready-to-hand quite authentically. That with which our everyday dealings proximally dwell is not the tools themselves. On the contrary, that which we concern ourselves primarily is the work" (Heidegger 358). Thus, with the locus of manipulation being in a relation of ready-to-hand the player's intentional concern rests not upon the control of their locus of manipulation, but rather flows through the locus of manipulation into the game-world. The locus of manipulation may well be present on screen and visible for those who care to see, but the player who has taken it up as ready-to-hand in effect sees past it as their intentional concerns lies within the game-world, and it is used as a tool in-order-to enact those intentional concerns.

Yet, this is not to argue that there isn't some qualitative difference in the experience of movement within the game-world between first person and third person perspectives, but rather that such difference does not simply arise from the visual perspective itself but from the way in which the different visual perspectives entail different potentials for movement within the game-world. For instance, though I primarily use the first-person perspective when

playing *Morrowind*, in part simply because it is the default setting and as such that which I am more accustomed, and in part because it is more useful at most moments and for most purposes, there does arise during the course of play times where the third-person perspective is preferable. Such incidents generally concern attempts to negotiate more difficult terrain where my locus of manipulation tends to get 'stuck', and as such my focus becomes more concentrated on the ground immediately around my locus of manipulation, such that I end up looking more or less straight down, which becomes problematic. As Adams notes, the visual field of a standard computer monitor is significantly less than that of visual perception (Adams 3), therefore my view onto the game-world becomes limited to only the small space in front of me and I become disorientated. This is in contrast to my immediate physical body where I can simply lower my eyes slightly to ascertain the terrain around me whilst still retaining some forward vision of where I am actually headed, however in *Morrowind* I must in effect look directly down at my feet constantly, whilst moving forward blind to the wider environment around me. Furthermore, this situation is not helped by fact that the only part of my locus of manipulation's body represented on screen are the arms and hands, a situation Hutchison notes is not uncommon in first-person perspective videogames (Hutchison 105). Knowing where you stand, so to speak, can often be important during the course of play, and whereas "In the real world, with our real bodies, [. . .] We could feel the edge with our toes/feet, or just look down to see our feet's position" (Hutchison 105), neither option is possible in the first-person perspective of *Morrowind*. Conversely, as the third-person perspective makes visible the entirety of my locus of manipulation's body, this view is more conducive to moving freely within the game-world, and thus experiencing a sense of movement within the game-world in such circumstances. When my concern is traversing difficult terrain, the third person perspective becomes more conducive to incorporating my locus of manipulation as ready-to-hand and thus extending both my body and my intentional concern into the game-world, as the potentials for movement the third person perspective

provides accords more closely with the nature of the intentional concern with which I am dealing with through my locus of interaction

The over emphasis on visual mimesis, and the wider bias about the primacy of the visual in the experience of videogame play that Shinkle identifies as widespread within the field of videogame studies (Shinkle "Corporealis Ergo Sum" 21), obscures our awareness of the other factors involved in the greater whole of the experience of movement within the game-world. While, as we have noted, the visual is an important aspect of the experience of play it is not the only or even primary aspect, for as Shinkle notes "Image perception is *Synaesthetic*" (Shinkle "Corporealis Ergo Sum" 25, emphasis in original), in that it incorporates and in turn is also incorporated by other sensory modalities, particularly the proprioceptive sense of bodily movement that affords the experience of actual movement during the course of videogame play. Indeed, we have previously noted on several occasions the close connection between visual perception and movement, drawing upon Merleau-Ponty's argument that "there is not a perception followed by a movement, for both form a system which varies as a whole" (Merleau-Ponty Phenomenology of Perception 127). In regards to the particular experience of movement within the game-world, which we have been addressing in this section, isolating perception, particularly visual perception, from the player's experience of movement prevents us from forming a phenomenological understanding of that experience of movement which is experienced as an experiential whole, rather than as a set of discrete elements or moments.

Conclusion

The experience of movement that arises during the course of videogame play that we have described in this chapter is not simply some form of sensory illusion or hallucination that

arises out of the flow of images but something inherently derived from our embodiment that draws upon our everyday experience of movement, in particular the close connection of different sensory modalities, particularly the affective engagement of the proprioceptive experience of movement, that work together to produce that experience of movement. When I experience a sense of actually moving within the game-world, though the movement of my own immediate physical body is minute, that movement in the game-world is experienced as actual movement for phenomenologically it is, in that it is a bodily experience of movement based within my experience of being embodied and moving within space. As the locus of interaction becomes incorporated into my body, as a ready-to-hand extension of my own body into the game-world, the movement of the locus of manipulation becomes my own. I do not direct or instruct the locus of manipulation to move from one point to another but rather carry out that movement myself in the same way I would walk across the room – I move.

This experience of movement in the game-world does not mirror the totality of my experience of movement in the actual world, for some aspects such as the experience of momentum are not included within the design of the videogame. Some videogames employ visual elements to simulate these lacking elements of the experience of movement, such as in the case of 'blacking out' in *IL-2 Sturmovik*, or the use of speed blurs employed by some racing videogames. Despite this, the experience of movement within the game-world does not simply arise from visual experience, but rather involves the player's body affectively, through engaging their sensory experience more holistically, particularly the proprioceptive experience of movement, to bridge the gap between the physical bodily experience of movement and the experience of movement in game-worlds. From a standpoint of evaluating videogame design, we could propose that the ability of a particular videogame to elicit such a sense of phenomenological engagement is a measure of its success, as affording the player an experience of 'good' videogame play from a phenomenological point of view would ensure

drawing the player wholly into the experience of play. Yet, more deeply, the way in which the experience of movement within the game-world demonstrates the phenomenological and bodily aspects of the wider experience of videogame play reinforces the argument that has been made over the course of this thesis, namely that the experience of videogame play in its immediacy, and moment to moment action, draws heavily upon the player's experience of embodiment, which is to say that the experience of videogame play is inherently an embodied experience. Addressing this fundamentally embodied nature of videogame play opens up the experience of videogame play in its complexity and richness as a particular sort of experience, rather than abstracting the nature of this experience into some sort of theory or framework based in cognitive processes, ocular centrism, or other reductive approaches, which while no doubt useful for certain other endeavours are unlikely to articulate and elucidate the experience of videogame play as it is experienced.

CONCLUSION:

THE EMBODIED EXPERIENCE

OF VIDEOGAME PLAY

This thesis has sought to describe and analyse the experience of videogame play by focusing on the body's role and involvement in that experience through the employment of phenomenological concepts. This focus acknowledges the fundamentally embodied nature of our experience, and brings to our attention features and aspects of the experience of videogame play often overlooked within the field of videogame studies. These aspects include the centrality of the player's embodied relation to the interface, the complex nature of the player's relation to the interface incorporated as a ready-to-hand extension of their body, that the intentional concern of the player flows into the game-world through the player's embodied relation to the physical aspects interface, that the player's intentional concern comes to dwell in the game-world through a process of co-embodiment between the player and their locus of manipulation, and the importance of the player's habitual ways of being-in-the-world to the player's experience of being-in-the-game-world. Taken all together, these aspects demonstrate the deep involvement of the body in the player's experience of videogame play which has been our overall focus during the course of this thesis, and thus demonstrates the importance of taking into account the bodily dimensions of the experience of videogame play if we are to understand that experience as it is experienced. These outcomes, though developed within this thesis only to the extent of demonstrating the important role of the player's body in their experience of videogame play, do suggest a point of departure for the field of videogame studies to investigate and understand the experience of videogame play that moves beyond trying to capture that experience within abstracted and rationalised structures, derived in some cases from a conceptual separation between mind and body, to instead opening up the richness of the experience of videogame play in all its variability and ambiguity.

Videogame Play as it is Experienced

Play can sometimes be an ambiguous concept within the field of videogame studies, yet as

Malaby identifies it is most often associated with normative assumptions of 'fun' and 'enjoyment', and thus trivial to and outside of the serious concerns of life. While Malaby critiques this and calls for the recuperation of play as a concept beyond the simple dichotomy of work and play, in his own way he seems to abandon this undertaking in favour of focusing on games themselves rather than the experience of playing them, arguing that play is not an activity but rather a mode of experience. Yet there is no reason why it cannot be both a particular way of engaging the world, in a playful manner as Malaby argues, and also an activity in the sense of an actual individual experience of play, for in common language the word is used in both senses – for example when we 'play' a musical instrument or when someone 'plays' the fool. When we apply this dual sense of play to the experience of playing a videogame, we can see that Malaby's wider sense of play as a mode of experience arises from the embodied practices of the player engaged in the activity of play – that is to say that play is something the player both does and experiences. This brings the actions of the player, and by player here we specifically mean an individual engaged in the activity of playing a videogame, into focus, something that necessitates a re-thinking of the way in which we understand and approach the experience of play, as most current approaches are insufficient in dealing with, or accounting for, how the experience of videogame play arises from the actions of players playing.

The majority of current approaches that deal with the actual experience of videogame play are reductive and abstract in their approaches and outcomes and often in effect produce theories of the passive experience of videogame play. Such approaches end up focusing on how videogames produce experiences for players, instead of the actions of the players themselves which constitute the experience of videogame play, and as a result it is not the experience of videogame play as it is experienced that is addressed, but rather the focus becomes the various formal properties of particular videogames (Leino "Feeling So Real - a Phenomenological

Exploration into the Realities of Emotions in Play" 1). Indicative of such reductive and abstracted approaches is the equating of the interactivity offered by videogames with 'meaningful choices', where choice becomes a broad notion referring to things that seem to have little to do with choice at all, such as "intuitive physical action" or the "random throw of a die" (Salen and Zimmerman Rules of Play 61). The complexity of the actions of the player are reduced in such work to simply decision trees by the player, to choose either one option or another at a particular juncture in what is the often fast-paced and hectic unfolding moment to moment of videogame play. In addition, many approaches fall prey to the normative assumptions warned of by Malaby by answering the question of what makes videogames fun and enjoyable, by simply equating enjoyment to play. The questions of why the player experiences a sense of enjoyment with a particular videogame, whilst another player may not, or what exactly is meant by 'enjoyment', when experiences such as frustration or determination are arguably also present in the experience of videogame play, or of even why both players may experience the same videogame in different ways at different times during the course of play, are overlooked in favour of showing that particular ludic structures or other elements of videogame design 'produce' more or less 'fun' for the player. The sense of experience of videogame play in itself, as it is experienced by the player, and a description and articulation of the experience as it unfolds in the course of play is lacking in these approaches. A focus on what Lanigan describes as the 'order of experience' or experience as it is experienced (Lanigan 2), that foregrounds the phenomenological experience of play, allows us to begin to approach the kinds of questions posited above, and also allows us to move beyond the limited notion of 'fun' in videogame play to consider the experience of videogame play in all its complexity and ambiguity. It is through approaching the experience of videogame play in this manner, and articulating in careful detail its unfolding, that we discover the permeation of the embodied relation the player has with the interface throughout their experience of videogame play.

This approach to the experience of videogame play builds upon the work of Shinkle, who argues that within the field of videogame studies "interactivity still tends to be understood as a predominately visual and semiotic activity," leading her to turn to what she describes as the affective dimensions of the experience of videogame play, "a way of describing the 'feel' or intensity of a game" (Shinkle "Corporealis Ergo Sum" 22). By affect Shinkle refers to the richness and depth of the experience of play, "those phenomenological aspects of interactivity that are difficult to describe and to model theoretically, but which nonetheless make a game come alive" (Shinkle "Corporealis Ergo Sum" 22-23). Notably, Shinkle also introduces the importance of the player's body into the experience of videogame play, noting that their perception of the images on screen are not simply seen but experienced, and that this is accomplished through the involvement of the body in the unfolding of what is generally regarded as a purely visual phenomenon (Shinkle "Corporealis Ergo Sum" 25). Thus, this central role played by the body becomes an important concern in articulating the experience of videogame play as it is experienced by the player, and again underlines the need to develop a new understanding of that experience that is sensitive to the embodied nature of videogame play.

To establish this new understanding of the fundamentally embodied nature of videogame play we have adapted Dourish's notion of embodied interaction, which he describes as not only "a form of interaction that is embodied, but rather that it is an approach to the design and analysis of interaction that takes embodiment to be central to, even constitutive of, the whole phenomenon" (Dourish 102). In taking up Dourish's approach, the new understanding of videogame play that has been developed has implications not only for how the field of videogame studies can investigate videogame play, but also for the design of videogames, an implication particularly salient at a time when the mainstream industry is developing ways of

playing videogames that foreground their embodied nature through interface modalities centred on movement and gesture. More generally, the focus on embodiment developed in this thesis achieves several outcomes in relation to understanding the experience of videogame play through the adaptation of aspects of the work of phenomenologists Merleau-Ponty and Heidegger in which Dourish's approach is partially based. Firstly, it recognises the central importance of the player's actions, and implicitly the perceptions with which those actions are intrinsically tied, that constitute the experience of videogame play and which derive from the player's direction of their intentional concern towards videogame play. Secondly, by bringing us closer to the experience of videogame play as it is experienced we can move away from the abstracted models currently used to analyse those experiences, which render them as deriving from the features of videogame design. And finally, it affords us a viable level of focus with which to approach the experience of videogame play effectively – the notion of an embodied player experiencing videogame play through the course of that play. It is at this level of the particular, individual, and embodied player that we begin to articulate and understand the unfolding of the experience of videogame play as it is experienced.

The implications of understanding videogame play as fundamentally embodied extend beyond the player's immediate physical presence, for embodiment is a broad concept. Following Dourish, we can see that embodiment refers not only to "simply physical reality, although that is often one way in which it appears. Embodiment, instead, denotes a form of participative status. Embodiment is about the fact that things are embedded in the world, and the ways in which their reality depends on being embedded" (Dourish 18). This fundamentally situated nature of the embodied player, something that has increasingly attracted the attention of videogame scholars as we saw with the 'situated play' theme of the 2007 DiGRA conference, has implications for how we understand the experience of videogame play. The embodied

player does not exist in some kind of ontological or epistemological vacuum, but enters into the activity of play as an individual with a phenomenological history of being-in-the-world, upon which is built an understanding of certain cultural conventions and/or beliefs, pre-existing skills, and expectations – when we refer to an embodied player we are arguing not only that that the player's body plays a role in a simply physical sense, but in the wider sense employed by Merleau-Ponty that their embodiment is their basis for being-in-the-world (Merleau-Ponty Phenomenology of Perception 169), and thus permeates their entire experience of videogame play. The implication of this is that we must take into account the circumstances of the player, and be concerned with what bearing that circumstance may have on their experience of videogame play. Of particular importance is the embodied player's previous experience of play, for someone who has little experience of the videogame they are playing, or indeed videogames in general, will have an experience quite different to that of someone who already possesses that familiarity. Importantly, this sense of familiarity arises at various levels in the experience of videogame play, from the player's immediate use of the physical interface to their experience of the spatiality of videogame worlds.

This is not to overlook the importance of the embodied player's immediate bodily experience, for it is from this immediate sense of embodiment that the player's experience of the more complex aspects of videogames arise. Importantly, the player's body should not be considered as only a fixed entity with easily definable boundaries, as the body is extensible through the bodily incorporation of tools or equipment that extend the player's potential to act in the world, both in their immediate physical world and the game-space, specifically to take up the activity of videogame play. The player's immediate physical relation to the interface, quite simply holding it in their hands, opens up the potential for videogame play through a movement of the player's intentional concern from the proximal physical interface to the distal events shown on-screen. Thus, the interface becomes a central concern in understanding

the experience of videogame play as it is experienced. The player's relation to the interface is complex, it is not consciously in the awareness of the player during the course of play as an activity, yet remains central to the unfolding of the experience of videogame play as mode of experience, withdrawn yet ever present. In describing the nature of this complex relation between the player and the interface and its role in the experience of videogame play we can begin to articulate and understand the experience of videogame play as it is experienced.

The Interface and the Body: A Complex Relation

The importance of the relation between the player and the interface used to play videogames, and its embodied nature, has been demonstrated throughout the course of this thesis and its mediating role in the player's experience of videogame play has been discussed at several levels. In Chapter Two the large size of the physical interface of *[giantJoystick]* demonstrated the importance of the physical bodily relation between player and interface, as the increased scale changed the nature of that relation and as a result the player's experience of videogame play. The process whereby the interface is taken up and incorporated into the player's body as a ready-to-hand extension of their body was introduced in Chapter Three. This expanded the concept of the interface to account for the way that, once it has become ready-to-hand, the interface withdraws from the player's immediate concern. This process of withdrawal, where the interface becomes a tool directed by the player towards an intentional in-order-to, was shown in Chapters Four and Five to afford the player's intentional concern to flow into the game-space, which thus becomes the focus of their concern. This conception of the interface includes the player's locus of manipulation through which they act within the game-space in its aspect as an avatar, whilst concurrently the locus of manipulation in its aspect as a character confines the player's intentional concern within the particular potentials for action in the game-space which constitute the character. In negotiating these two aspects of the locus

of manipulation the player enters into a process of co-embodiment with it, where over time the player comes to embody the limitations of the character aspect of the locus of manipulation in their conduct through the process of taking up the avatar aspect of the locus of manipulation as ready-to-hand equipment. We are employing 'equipment' here in Heidegger's sense, where equipment has an intentional assignment towards a particular 'in-order-to', and it is through reconciling their intentional concern with what the character as equipment can be taken up in-order-to that the player is able to incorporate the locus of manipulation as a ready-to-hand avatar with which to act within the game-space. Finally, in Chapter Six we saw how this process of the incorporation of the interface into the player's body, and the resultant flow of their intentionality into the game-space, can afford the player an experience of presence in and movement within that game-space as the player moves the locus of manipulation directly as if it were their own body. Thus, understanding the nature of this relation between the player and the interface used to play becomes important to understanding the experience of videogame play as it is experienced, and from it extends an understanding of that experience which shows that the deeper levels of the experience of videogame play arise out of this, the immediate embodied relation between player and interface.

The first implication of dealing with the relation between player and interface explains why the interface, despite its importance to the player's experience of videogame play, seems strangely absent both from that experience and outside of the player's immediate concern and awareness during the course of play, and in theoretical writing about videogames generally. The interface becomes ready-to-hand equipment during the course of play, that is to say that it is taken up as an extension of the player's body and incorporated into the player's bodily schema, much like the experienced typist "incorporates the key-bank space into his bodily space" (Merleau-Ponty Phenomenology of Perception 167). The player's familiarity with the

interface is of great importance to their experience of videogame play, for it is through this familiarity that the player can take up the interface as equipment ready-to-hand, something in-order-to do something else rather than being the immediate end of the player's concern. Thus, as Heidegger argues in relation to equipment generally, for the interface to be genuinely ready-to-hand it must be withdrawn from the player's immediate awareness and subordinated to that which it is used in-order-to (Heidegger 360), specifically the activity of playing the videogame.

The implication of this withdrawal of the interface from the immediate attention of the player produces the ambiguity of the boundary of the interface, the question of what and where it is. In being taken up as an extension of the player's body the interface becomes much more complex than what a limited, technically based understanding of the interface accounts for. More than simply the physical devices, or on-screen buttons and other elements, with which the interface is generally understood as constituting, the incorporation of the interface into the player's body schema instead suggests that the interface is central to the experience of videogame play, and extends into the world of the game itself, and as it is incorporated into the player's body, similarly extends the player's body into the game world. In the case of *EyeToy: Play 3* this extension is quite literal, as the player's body and their movements are represented on-screen, and though *EyeToy: Play 3* utilises a unique camera based interface it demonstrates aspects of the experience of videogame play applicable more widely. The movement of the player's intentional concern into the world of the videogame that accompanies the withdrawal of the interface from the player's immediate concern, where the player isn't simply moving in front of a camera but directing that movement to achieve particular effects and outcomes within the game-space, underlines the importance of the incorporation of the interface into the player's body in the experience of videogame play – though it may not be present to the player's awareness in the course of play, it is none-the-less

an important basis for that experience. It is through the incorporation of the interface and its withdrawal from the player's immediate intentional concern that the player is able to experience a sense of direct engagement with the course of events within the game-space and experience that game-space as part of the experience of videogame play.

This movement of the player's intentionality into the game-space leads to the question of where videogame play takes place, the 'where' of the effect of the player's actions and the experience of those actions. Even in the case of videogames that foreground the tangibility of their interfaces there seems to be a tendency for the player to orientate themselves towards the activity on-screen, rather than their immediate physical environment. Given the importance of the withdrawal of the ready-to-hand interface, and the corresponding movement of the player's intentionality, this is not surprising, for as Susi and Rambusch point out, the players are not only "physically situated through their bodies; [. . .] they are *simultaneously situated within the game's virtual world*; the activity of controlling a game's character places the player in the virtual game world" (Susi and Rambusch 733-34, emphasis in original). Thus the character, or in-game avatar, which the player controls, is an extension of the immediate physical interface, suggesting new ways of understanding the player's relation to that character based upon the embodied nature of the experience of videogame play that go beyond positing some mechanism of identification between the player and character, to recognise instead that the character or avatar serves as the location of the player's bodily presence within the game-space.

In the case of *EyeToy: Play 3* the game character is a representation of the player's own body, such that the player is presented with a sort of mirror image, their movements in the real-world represented and re-interpreted within the context of the game on-screen. Thus the question of which 'body' the player is primarily focused on controlling arises, is it their own

immediate physical body, or the represented body that interacts with the on-screen interface? Given the phenomenologically natural form of interaction required of the player of *EyeToy: Play 3*, which is simply movement, the answer to this question would seem straight forward, but as we saw it was possible to disrupt the player's sense of connection with their on-screen representation through rotation and inversion of the on-screen image, causing the player to experience a sense of bodily disorientation, and requiring the player to re-establish a sense of familiarity with their on-screen representation. The fragility of the player's bodily incorporation of the interface, and the effort required to maintain it, underlines the limitations of acting through an avatarial stand-in within the game-space, and that embodiment is not simply the fundamental state of being of the player but is also an active and fluid process. This act of embodying the character entails that the player's body extends into the game-space through an incorporation of the character into the player's bodily schema, whilst at the same time the player embodies in their conduct the limitations of the character that relate to the players potential to act within the game-space

Thus the player's bodily extension into the game-space means that they can experience it as an habitable space, not something merely displayed on-screen but as an environment in which to act and to be. Yet it is not only simply through the successful incorporation of the avatar into the player's bodily schema that affords the player a sense of presence within the game-space, but also the way in which videogames make use of the player's already familiar natural and learnt experiences of space. Whilst this is most clear in relation to three dimensional first-person based games that locate the player within a virtual body, it applies to other types of videogames as well, such as the way many strategy games rely on the player's topological understanding of space to facilitate the experience of being-in-the-game-world. This is a departure from the usual definition of immersion employed by the field of videogame studies, as rather than a sense of the player 'suspending their disbelief' it suggests an active role for

the player of establishing their own sense of being-in-the-game-world through their taking up of the interface as an extension of the body through their actions within the game-space. The player experiences a sense of bodily presence in the game-space as they are able to project their intentional concern into that space through the interface and as such their experience of videogame play comes to dwell within the game-space through the direct bodily experience of that space. In understanding how the player's experience of being-in-the-game-world extends from their embodied relation to the interface we can understand why videogame systems, such as the Wii, that employ a more phenomenologically natural interface enjoys such popularity as they reduce the barriers to entry for inexperienced players into the game-space by facilitating the incorporation of the interface into the player's body, without relying on the player having extensive experience of the complex controllers that have long been dominant in the videogames industry. Rather, the player can easily take up the interface and get down to what they have taken up that interface for – to experience videogame play.

Future Work

This thesis has presented only a starting point in understanding the experience of videogame play as experienced, dealing as it does with the most immediate and general implications for re-thinking the experience of play as it is experienced. As such several areas of future, more detailed implications are suggested. Firstly, something that has been implicit in our conclusions, but not addressed explicitly, is the social aspect of the experience of videogame play. Several suggestions for dealing with the social aspect of videogame play arise out of the conclusions reached here, specifically in how the bodies of players are present to each other and form the basis of an interpersonal and social relation that constitute them as collaborator or competitor. This thesis has shied away from dealing with this social aspect, as it is an area of sufficient complexity to warrant a separate research project focusing specifically on that

area alone. This would extend beyond the immediate physical sense of the player's embodiment to consider the innumerable practices associated with videogame play that form a cultural basis for that inter-personal interaction, a sense of the habitual ways of being-in-the-world associated with or considered part of a wider culture of playing videogames, and how these shared understandings are established and applied, how they change over time, and how they might impact upon or influence the experience of videogame play.

There is also further work to do in advancing the articulation of the experience of videogame play through expanding the phenomenological framework used here and thus opening up the experience of videogame play through employing a range of different positions of phenomenological thought. This thesis has not sought to engage with the philosophical discipline of phenomenology in itself, for it is after all a thesis arising out of the field of videogame studies which has taken the experience of videogame play as its focus, rather than how the experience of videogame play might contribute to phenomenological theory. As such, much of the wider richness of phenomenology, including the interpersonal and social aspects already mentioned, offer scope for further research. Possible projects that would build upon the outcomes of this thesis could include the formulation of a sort of phenomenological typology of videogames based upon the particular kinds of experiences of videogame play they tend towards affording, and more in depth engagement with debates concerning some of the phenomenological concepts employed such as intentionality and embodiment, particularly how these more specific debates may shed further light onto the experience of videogame play and thus further open it up to our exploration, articulation, and understanding.

One substantial avenue for further research along these lines would be through close playings of specific videogames, employing the phenomenological approach developed here, to elucidate the phenomenological experience of playing particular videogames and

incorporating more phenomenological theory as warranted by the concerns of the analysis. Whilst they are not entirely absent from the field of videogame studies, close playings of particular videogames, with no greater objective then attempting to articulate and thus understand the experience of playing that particular videogame, are somewhat thin on the ground, as more commonly examinations of particular videogames are employed to build more general theories about the nature of videogames concerning their formal structures, their place amongst wider social practices, or various aspects of videogame design. Close studies of individual videogames employing the phenomenological perspective developed in this thesis offer the possibility of opening up and identifying points of tension or contradiction within this tendency towards generalised theories concerning videogames, suggesting ways in which such theories may need to be adapted or indeed highlighting their limitations. The aspect of personal experience of a phenomenological approach also offers the possibility of bringing into the field of videogame studies a way of answering Flynn's argument that we "need to develop further research into the cultural specificity of players and the precise patterns of embodied engagement" (Flynn 59-60). Videogame studies is presently characterised by a significant proportion of its cohort of researchers belonging to that loose social grouping colloquially called 'gamers'. Whilst in many ways this familiarity is undoubtedly an advantage in the study of videogames it can also be disadvantageous if we fail to reflect on how this familiarity informs our understanding of, and assumptions about, the experience of videogame play. When we consider 'players' we need to include a more diverse and heterogeneous understanding, not simply taking into account various factors such as genders, cultures, ages, and so on but rather considering how the experience of videogame play in all its variations might be affected by and implicated in these factors.

A final potential area for future work is the application of the ideas developed within this thesis, and those contained within phenomenological theory more generally, in the design and

production of videogames and other related interactive media. Through developing new interface modalities, in reworking current genres, and using design practices that are phenomenologically informed, there is the potential to further explore the role of the body in the experience of videogame play as it is experienced. As was noted in Chapter One, the nature of our engagement with videogames is seemingly becoming more performative and physically active, and as such the issue of embodiment in the experience of videogame play will likely continue, making ever more plain the central contention of this thesis that embodiment is inherent to the experience of videogame play. Thus, the way in which we think about and understand the experience of videogame play, whether we are playing them or creating them, is likely to change quite significantly in the coming years – the field of videogame studies, if it engages with this change, may find itself well placed to assist and consult with the videogames industry on adapting to this change, not simply though theoretical concepts, but rather through being able to describe and articulate the experience of videogame play as it is experienced.

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