Notes Toward a Sense of Embodied Gameplay

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ABSTRACT

Despite the increasing maturity of the field of videogame studies, central concepts such as gameplay remain underdeveloped, implicit in many theories yet without clear investigation of the underlying assumptions informing approaches to understanding it. Understanding gameplay as a particular form of interactivity, the approach taken here focuses on the notion of embodiment, drawing on Dourish's work concerning embodied interaction. The implication of this approach is a focus on the concept of interface, which is developed here beyond the meanings adapted from design and production contexts towards a more generalised yet more powerful understanding that sees it as a particular site or space of interaction between two parties - the player and the game. An exploratory theoretical model of embodied gameplay is developed through a synthesis of Dourish's application of various phenomenological theories to interactivity,[1] Gibson's ecological approach to perception, and Järvinen et al's approach to the concept of flow.

Author Keywords
Embodiment, Interface, gameplay, videogames

INTRODUCTION

The current moves in the study of videogames away from abstract treatments of formal mechanisms such as their narrative content or their ludological function towards the socio-cultural context in which they emerge is welcome, but in this movement something more fundamental underlying this context is over-looked – an understanding of the activity of gameplay as an embodied phenomenon. The matter of interest in this paper is simply how does one play a videogame? This is one of those disarmingly straight forward questions which none-the-less conceals a great depth of complex considerations, ranging from socio-cultural contexts of location, availability, competency, and motivation through to the physical act of turning something on and taking up the controls. An approach is developed here that focuses on a point between these two poles – the emergence of gameplay.

The activity of gameplay is often considered to take place in a virtual realm, the player transported from their corporeal reality into a world of polygons, abstract temporality, and arbitrary rule structures. The approach taken here suggests an opposite movement, that rather the videogame is drawn out from its existence as static software code into the world we inhabit by the actions upon it by a player. This is to say that gameplay is an embodied phenomenon, one that can only exist as experienced by the player situated in the particular context of their own experience. This context comprises of many different social, cultural, and personal considerations mentioned earlier, but what will be focused on here is how these contextual factors might affect the player's experience of gameplay, looking not so much at what games they may play, or why they do, but rather examining in detail how gameplay emerges. Such a focus necessarily involves zeroing in on the interface used to play.

The notion of the interface to be used here progresses beyond the sense in which it is often used, particularly in context of the design and production of videogames, as a property of the game-system itself. A sense of the term will be developed that understands the interface as a particular site or space where the interaction between the player and the game results in the particular experience we call gameplay. The unique position of the interface as the middle term between the player and the game provides many advantages to considering the issue of gameplay as an embodied experience. Firstly, as the aspect of the videogame medium through which the player experiences play, it provides a perspective on the deeper levels such as rule-structure and pacing from an embodied rather than abstract view. Secondly, as the aspect through which the game-system communicates with its player, it is possible to infer from a range of design choices in both the software and hardware categories the likely audience group or subgroup of particular games. Before considering these

[1] Please note that the use of the 'phenomenology' in this paper attempts to follow Dourish in pragmatically applying aspects of differing approaches to the term. Though it is noted that there are significant arguments overlooked by this usage, it is felt that a more substantial investigation of these differences in regard to gameplay constitutes a research project broader than what can be dealt with in the limited space here.

Situated Play, Proceedings of DiGRA 2007 Conference

issues in more detail, we need to unpack the concept of gameplay, and consider the nature of the experience.

THE EXPERIENCE OF GAMEPLAY

Gameplay is something of an indeterminate term, with a variety of different meanings, not to mention alternative spellings. The compounding of game with play can be addressed in several ways, firstly and perhaps most prominently, through Caillois' differentiation between paidia and ludus [3]. In this light, gameplay suggests an activity which is simultaneously free and rule-bound, a meaning perhaps well suited for the type of activity videogames offer their player. Another approach is to look at the two separate terms as belonging to different orders or dimensions. In this sense, we can follow Aarseth's observation that games are at once both object and process [1]. That is, they exist as both static conditions for play, formalised by their rule-set, as well as a dynamic activity when these rules are applied to organise the behaviour of players into consistently meaningful 'moves'. In other contexts, notably that of the production and consumption of videogames, 'gameplay' often refers to a property of the game itself, namely the nature of the experience that it offers the player, sometimes expressed simply as the amount of time that the game will provide meaningful experiences. Such a definition is given by Rouse – "A game's gameplay is the degree and nature of the interactivity that the game includes, i.e. how the players are able to interact with the game-world and how that game-world reacts to the choices player make." [14] Though the actions of the player is implicit in Rouse's definition due to the focus on interactivity, given that a videogame none-the-less requires a player for it to function in the manner to which it was designed, the importance of the player should be explicitly acknowledged.

Salen & Zimmerman's definition is similar to Rouse's, yet it more effectively captures these varied meanings mentioned previously, describing gameplay as "the formalized interaction that occurs when players follow the rules of a game and experience its system through play." [17] The interplay between paidia and ludus is acknowledged by the fact that the player, though relatively a free agent, follows the rules of the game. The dimensional duality of Aarseth similarly so by the fact that the experience comes to pass by the player following the rules through play. Finally, the sense of gameplay as a property of the game is more clearly articulated as the player's experience of the game-system through play, a more apt way of putting it in any case. After all, the nature of the experience that a game will provide can only be partly and indirectly designed [17, 18].

Interestingly, both the Rouse and the Salen & Zimmerman definitions of gameplay describe the phenomena as a type of interactivity which, consequently, brings yet another level of indeterminacy due to the abuse 'interactivity' has suffered over the last decade or so. Fortunately the term seems to be on its way to a slow recovery, with a variety of theorists setting their critical sights on it. Though there are many definitions of 'interactive' that could be explored here, there really isn't the space or time. Instead we will focus on one approach, Salen & Zimmerman's typological model, which identifies four varieties of interactivity or engagement: cognitive/interpretive, functional/utilitarian, explicit/participatory, and cultural [17].[2] What is useful about this definition is that the different types correspond to different kinds of engagement on the part of the player or user [17], and thus lend themselves to the layered model of the interface that I will discuss shortly.

One serious problem with Salen & Zimmerman's conception of interactivity is the assumption that it consists of a series of meaningful choices by the player [16]. 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 & Zimmerman 'choice' seems to stand in for a much more complex process involving intentionality, skill, and physical limitations such as reaction time [17], which are all involved in taking action within 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 & Zimmerman [17]. Their choice of "choice", rather than the more appropriate "action>outcome unit" they also describe is a surprising one, and perhaps the legacy of hypertext theories of interactivity, or of overly cognitivist assumptions about the experience of gameplay.

As Heaton notes, "A decision in a sense is nothing … It is a change in the state of the overall intent of the player[.]" [7] – good intentions won't get you through a boss level. Heaton moves from the abstract notion of choice to the more concrete idea of skills, differentiating between analytical and implementation skills [7], similar to the evaluation and execution stages of Norman's model of the action cycle [12], which the circular model of gameplay developed by Heaton also resembles. The example given by Heaton of his cycle at work in a hypothetical situation in *Burnout 3* is telling – given the fast pace of the game the player's "assessment of the risk and reward will be incomplete" [7]. Arguably it is the aporia-epiphany structure first identified by Aarseth [2], which is more central to the experience of playing *Burnout 3* than the ability to make meaningful choices. Perhaps both elements, as well as a gamut of others such as aesthetic appeal, narrative content, and intensity all contribute to the

[2] Ryan puts forward a model based on intentionality that has much in common with Salen and Zimmerman's. [15]. Ryan, M.-L. *Narrative as Virtual Reality: Immersion and Interactivity in Literature and Electronic Media*. John Hopkins University Press, Baltimore, 2001.

emergence of gameplay in differing degrees depending on the particular game and the particular player.

Even still, the breadth of Salen and Zimmerman's notion of choice provide a less nuanced understanding than Heaton's analyse-implement skill based approach. Consider a game of chess for instance – the player's choice about which move to play next will be drastically altered if they perceive, rightly or wrongly, that their opponent is attempting to set up a trap. Furthermore the actual material conditions and manner in which the player implements their choices inherently fold back into the experience of playing. For example, does the player make quick, but confident moves in an attempt to intimidate their opponent, are they distracted by background noise, or losing focus because they are bored with the game? Is the game being played on such a large board that moving pieces requires a significant physical investment? Does the player 'accidentally' knock the board over, so as to prevent the inevitable defeat towards which they are headed?

Such factors which may be considered extra-gamic in a strictly formal sense are none-the-less an integral part of the experience of gameplay, and thus any examination of the phenomena requires that attention be paid to the material aspects of the game-system from which interaction emerges – the interface, the site where the player takes action and reviews its outcome. It must be emphasised that 'interface' is used here more broadly then in its usual sense as a property of the 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 interaction between the player and the game, extending beyond the formal characteristics towards a consideration of the different potential uses that a videogame, via the interface, presents to the player. Before going into more detail about the nature of this relationship between the player, interface, and gameplay there is a need to detail the expanded sense in which the term 'interface' will be used hereafter.

INTERFACE AS LAYERED SITE OF INTERACTION

Within the term 'interface' there are two dimensions that I wish to tease out here. The first is the functional separation between the input and output aspects of the interface, where the player's actions into the game-system are considered the input aspect, and the game-system's responses are fed back to the player through the output channels such as the monitor or speakers. Though we could flip this terminology around, and consider the player's actions as output, and the game-system's feedback as the input, the former denotation will be used here, partially for the sake of simplicity, but more importantly for what it implies. Though the circular model of interactivity has long replaced the linear, batch-processing paradigm, input seems to hold a latent primacy over output, such that it, and by extension the player, is given a more prominent role in the interaction.[3] Secondly, it places the game-system as the centre of the process, which counter-intuitively brings benefits as well. The game-system, existing as software code, is the somewhat more invariant of the two parties, providing a stable grounding for consideration of the more indeterminate figure of 'the player'. Despite all the differences between platforms, genres, and formats that make up the field of videogames, their commonality is still far greater than that of the vast range of individual experience of any set or subset of players.

The second dimension concerns how the input and output aspects operate at three hierarchical layers – the material, software, and conceptual layers of the interface. These layers are experienced as a integrated system during gameplay, yet each engages the player in the different types of interactivity identified by Salen and Zimmerman [17]. The material layer is fairly straight forward, consisting of control surfaces such as mice, keyboards, touch-screens, and the like on the input side, and output devices such as monitors and audio speakers, that engage the player in functional interactivity. Scant attention has been paid to the place of this layer of the interface in the emergence of gameplay, perhaps due to the relatively homogenous design of controllers, such as the analogue sticks, face buttons and shoulder buttons design introduced by the Nintendo N64 and popularised by Sony's Dual Shock Controller. Though the emphasis on graphical representational ability has been a dominant factor in the development of the videogame medium [19], the emphasis has increasingly seemed to be on the aesthetic, rather than functional aspects of material output interface. The recent introduction of motion sensitive controls in the Nintendo Wii and Playstation 3 suggests that there are none-the-less important considerations arising from this layer, given that in this hierarchical model the properties and characteristics of the lower levels necessarily flow upwards. In any case this is the central consideration of this layer, not so much its properties as an isolated system, but rather how these properties map into the higher layers.

The software interface is where the properties of the material layer are transformed into meaningful chunks of action and information engaging the player in explicit interactivity, best described through the example of graphical user interface (GUI). The real-time strategy (RTS) genre often includes GUI elements in the form of the mouse pointer that can accomplish a wide variety of actions depending on context. For instance, clicking on a unit production building and selecting a unit to build utilise the

[3] Consider the importance given to the action>outcome unit, "the heart of interactive meaning" by Salen and Zimmerman 16. Salen, K. and Zimmerman, E. *Rules of Play: Game Design Fundamentals*. MIT Press, Cambridge, Massachusetts, 2004.

same basic actions upon the control surface, differentiated by information fed back to the player through the monitor of what is being clicked on. There are often keyboard shortcuts as well which allow the sufficiently competent player to input their actions more efficiently, which illustrates that the software layer can also function without visual cues. Though it is tempting to differentiate between the material and software layers through an analogy to the difference between form (or functionality) and content respectively, this is somewhat misleading. Though they might exist this way to the novice player still getting to grips with the game, a more competent player will likely not differentiate between the two, for reasons that will be discussed later on.

The conceptual layer of the interface is perhaps more difficult to articulate than the other two layers, partially because it exists as a more ephemeral notion of the player's awareness of the various potentials inherent in the videogame they are playing, and partially because it tends towards Salen and Zimmerman's idea of cognitive interactivity. The conceptual layer of the interface suggests the communicative aspect of the interface, the flow backwards and forwards between the player and the game-system of action-response-counter-action and so forth. Furthermore, it is not directly observable, but rather implicit in the actions and events at the material and software layers. In a sense this layer is concerned with the rules of the game, and in particular the implicit rules that can only be learned over time through play, for instance the range of potential actions within the game, the relationships between various game objects, or the underlying rationale for the valuation of differing game-states [8]. It goes beyond this however, to what Norman describes as the conceptual design model, that is, the designers' model of how the videogame operates [12]. Implicit in this model are all kinds of design conventions, cultural values, and ways of doing things that the player will interact with albeit indirectly. The point here is not so much that gameplay is a communicative activity, but rather that there are a series of different layers of communication during the process.

GAMEPLAY AS AN EMBODIED PHENOMENA

The Object of My Affections

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. This ability of digital games to elicit such affective responses from their players is a widely known aspect of their appeal, perhaps because of 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" [3]. We might append 'and the body' to that sentence, but more on that later. These affective experiences of the player are often treated in terms of immersion with the game being played, in the sense that the player in some way feels present within the world of the game they are playing, drawing upon the idea of the suspension of disbelief. The approach developed here suggests that the movement is in fact inverted.

Arguably, the most predominant theory of the player's experience of videogames is that of Flow Theory, which has been adapted to videogame studies by various authors. Unlike more naive accounts of immersion, which as Salen & Zimmerman point out are all too apt to fall into what they term the 'immersive fallacy' of garden variety escapism [17], the flow experience is instead better understood as a type of engagement, specifically an effortless type of investment of attention to the activity of playing, which as Järvinen et al point out, engages all aspects of the interface [9]. While one of the key elements is a loss of self consciousness, an aspect shared with the concept of immersion, there are some 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 [9]. This is hardly the 'suspension of disbelief' found in immersion, but rather the meta-communicative sense of play that Salen & Zimmerman develop, which they describe as similar to the process of remediation described by Bolter & Grunsin, whereby media forms simultaneously draw an audience into their fiction whilst reminding them that it is fabricated (in both senses) [17].

Under the flow model, rather than the player being transported into the world of the game, the game itself is instead is drawn out into the player's. Dourish describes the former as the "virtual reality" approach, where "[t]he world of interaction is the world of the computer[.]", which he contrasts with the concept of ubiquitous computing or augmented reality where "[t]he site of interaction is the world of the user… the world may imbued with computation, but the computer itself takes a back seat[.]" [4]. As Shinkle observes "[f]rom a phenomenological standpoint, however, 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[.]" [18]. Again the flow model: action and awareness merge, specifically "they [the person experiencing the flow state] stop being aware of themselves as separate from the actions they are performing." [9]. While augment reality (AR) and pervasive games, the videogame equivalents of Dourish's ubiquitous computing may be in their early days, the world around the player of more conventional videogames is none-the-less filled with computation during gameplay due to their focus and involvement with the action that is unfolding.

Embodiment and Action

Shinkle's version of the embodied nature of gameplay, what she terms the 'affective dimension' still does not capture the entirety of the phenomenological experience of gameplay, despite the valuable move away from the privileging of vision towards a more synaesthetic sense of perception [18]. 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 on the joy of watching someone else play rather than that of playing herself [18]. It is helpful to identify and differentiate between two aspects of embodied gameplay, terming the affective responses of the player to the action of the game reactive embodiment, while conversely terming the actions of the player expressed through the control surface enactive embodiment. Experientially the two types are closely linked, perhaps even indistinguishable [4], a feedback loop where perception guides action, whilst action guides perception [6]. The distinction presented here should be thought of more as a heuristic aid to thinking through the complex phenomenon of gameplay, rather than as an actual, functional separation of the player's activity during it. In any case, what is actually at stake here is from which side we approach the experience of gameplay. Shinkle herself notes "[O]n its own, vision is a passive sensory modality; it can only measure possible actions on things[.]" [18], it is therefore a focus on enactive embodiment and its implications that I am primarily aiming for here. Specifically I am paraphrasing from Dourish's definition of embodiment interaction – not that it is a particular from of gameplay that is embodied, but instead it is an approach to gameplay that sees embodiment as a central, and essential part of the wider phenomenon [4].

Videogames seem to be becoming more performative, a process that perhaps started with *Dance Dance Revolution*, continuing on with the *EyeToy* 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. Gameplay of course has always consisted of embodied action; it's just that previously the player's actions were minute, small movements of the hands and fingers on buttons, d-pads and analogue sticks. It is an oversight limited not just theorists and other observers though. 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 awareness merge, or as Dourish describes it, the controls move from being present-at-hand to being ready-to-hand [4]. These concepts, borrowed 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 [4].

Asking for Directions

There are many implications to this relation that can only be briefly mentioned here, for example it is consistent with Järvinen et al's suggestion that difficulty issues associated with controllers can affect the concentration of the player during gameplay, thus breaking the flow experience [9]. What I want to focus on here is the concept of mapping, that is, the relationship between the player's actions, the control surface, and the results in the software layer of the interface. Recently I was playing an older PC flight simulator from the early 1990's without the manual. I spent the first half hour or so pressing random buttons on the keyboard to find the 'engine on' button, then the 'wheel-brakes off' button, and finally the 'increase throttle' button. Hurtling across the tarmac I could find the rudder buttons, but the expected use of the arrow keys as the pitch and yaw controls proved mistaken, and my ability to fly over, rather than into, the trees at the end of the run-way elusive. The problem – essentially the mappings between the control surface and software layer were arbitrary, and while some where easier to discover than others due to an adherence to genre conventions, others were simply perplexing.

Eventually I discovered that the mouse controlled the simulated aircraft's pitch and yaw and prepared to take off. Pulling back on the "stick", the plane's nose lifted, only too quickly, and to one side. Overcorrecting, I successfully landed my plane upside down in a ball of flame. The problem in this case wasn't the mapping between the control surface and software layer, which follows the concept of actual aeroplane controls, but rather between my actions and the control surface. Simply put, a computer mouse is too sensitive, at least in my experience, to give the player the type of fine-grained control needed to play a flight simulator whilst maintaining control. The logical thing to have done, of course, would be to play with a joystick, which has a mapping that is both conceptually and functionally close to that which it seeks to emulate. That is, as Norman would put it, the mappings are natural [12]. It is important to remember that Norman's natural mappings include cultural conventions as well as physical analogies [12], and this cultural aspect introduces another consideration – the audience of potential players. For instance, a sufficiently competent player of first person shooters (FPS) on the PC platform is going to be able to pick up and play most games within the genre, whilst those new to the particular genre-platform constellation are likely to be initially confused by the conventions of mapping, at both the functional and conceptual levels.

Gameplay You Can Afford

It is unfeasible of course to model the full range of possible actions into a videogame, if only because the transformation moves from the continuously variable dimension of the analogue into the determinate dimension of the digital. For this reason the relationships I've been discussing in terms of mappings also need to be thought of in terms the potential actions they make available – their affordances. The

concept of affordances has already been introduced to videogame studies by Mateas, who distinguishes between material and formal affordances [11], and more generally in design theory by Norman [12], who focuses on perceived affordances – how affordances are made visible [13]. Here however we'll focus on Gibson's version of the concept, partially because it is more flexible than the later adaptations of it, but primarily because the underlying ecological approach shares much with the phenomenological and embodied approaches to action already drawn upon. For example, the invariant nature of affordances in Gibson's view [6], is conceptually quite similar to Dourish's summary of the phenomenological theories that form the basis of his sense of embodied interaction, which have in turn been adapted here to describe a sense of embodied gameplay – "[T]his 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." [4]

Whereas both Norman and Mateas see affordances as a property of the object being used, whether it be a door handle or a videogame, for Gibson affordances exist more as a type of relationship – "[I]t is equally a fact of the environment and a fact of behaviour." [6]. At first this reading may seem problematic, since Gibson also contends that as the affordances of a particular thing are invariant, they are there to be perceived regardless of the attention of an observer [6]. An example of player ingenuity will help to clear this up, the tactic of rocket-jumping pioneered by *Quake* death-match players. This ability, the result of a rule interaction between the characteristics of the rocket launcher weapon and the player's avatar [10], was not consciously designed into the game, but none-the-less was present in latent form. It is only when the player becomes aware of the possibilities afforded by the particular rule interaction and makes use of it that it becomes apparent. Again this leads us back to the issue of competency – what might be an affordance for the sufficiently competent player will not feature in the experience of the novice. Essentially put, affordances are contextual and situated "properties of things taken with reference to an observer" [6], "a three-way relationship between the environment, the organism, and an activity." [4]

Though I have been primarily focusing on the enacted aspects of embodied gameplay, the reactive aspects, through the player's perception of the videogame's feedback channels that present perceived affordances [13], are still an essential part in the player-game circuit, and resultantly need to be fitted into the model being developed here. One approach, deriving from the close relationship between perception and action noted earlier, is to consider them both as belonging to the same dimension of embodied skills. Again we are following Dourish, who draws upon the distinction made by Polanyi between proximate and distal phenomena and how they relate to the performance of tacit skills [4]. During gameplay, the sufficiently competent player, acting through the proximate controller which has become ready-to-hand, none-the-less has their sights set on the distal phenomena – the action taking place on screen, or more explicitly, the gameplay taking place which is displayed upon the screen as well as through the other output channels. The player's attention moves outwards, "[T]he meaning we associate with proximal phenomena is actually that of their distal characteristics." [4] Arguably the underlying game system itself becomes ready-to-hand in the second order for the sufficiently competent player, as Friedman notes, part of the enjoyment of gameplay comes from internalising the logic of the game's rules, thinking like a computer [5].

CONCLUSION

Taken together, the concepts of affordances and mapping are effective tools for understanding and describing the player's relationship to the control surface, the control surface to the software layer of the interface, the software layer to the underlying conceptual model of the game system, and ultimately to the emergence of gameplay itself. The functional aspects of the control surface afford particular possibilities to the player depending on the type and number of controls present. In turn these controls map onto commands within the software layer that afford the player the ability to take action within the world of the game, what Mateas terms as functional affordances [11]. Finally, these software actions map onto the underlying conceptual model of the game, which provides a meaningful framework for these action, what Mateas calls formal affordances [11]. For example, in Gran Turismo the player is not merely pressing buttons to steer, accelerate and brake, but doing these things within a racing context. However, a button does not operate in the same way as an accelerator, nor does an analogue stick have the same level of control as a steering wheel. Admittedly, the shoulder buttons do map quite closely to 'paddle' style transmissions, but then I always let the game shift gears for me in any case.

Simply put, the more natural the mappings between affordances at each level are, the easier it will be for the player to pick up the game and play. Easy here is not meant in the sense of having no challenge, but simply that the player will be able to form a functionally accurate understanding of the controls and deeper levels of the game without spending too much time adjusting to what Shinkle calls "the homogenisation of gesture." [18]. There are always going to be some-degree of learning curves in videogames, but forms of enactive embodied gameplay, where appropriate, will not only lessen the effect that this barrier might have to the player's enjoyment, but also add another dimension that will likely increase the likelihood and intensity of the game flow experience. The implications of an embodied understanding gameplay extend far beyond the difficulty issues inherent videogame controls surfaces, feasibly creating a basis for new kinds of gameplay experiences. The work presented here however is an exploratory and far from definitive approach to the issue of embodiment and gameplay, which doubtlessly requires improvement in the future.

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