VIDEO GAME PLAY AND APPARATUS

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ABSTRACT

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Cinematic Apparatus Theory contends that the technological and ideological machine of “the cinema” acts on spectators in advance of and in addition to their engagement with film. This approach allows apparatus theorists to consider the effects and mechanisms of the cinematic machine more broadly than content driven analysis permits. This project seeks to employ elements of apparatus theory and determine if and how these theoretical models can be applied to the study of video games as a medium. In particular, this thesis examines the experiences and player positions opened and encouraged by the technologies of video game play.

What this thesis demonstrates is the viability and potential usefulness of an apparatus theory of video games. Specifically, this work explores the nature of video game technologies which combine to provide users an experience of play and interactivity. This is facilitated by a set of technologies: code, computers, and interfaces which both allow users to engage the “text” of a game while simultaneously, partially structuring this engagement. What this approach reveals is that an attention to apparatus as a crucial element of play allows for a more complete understanding of video game use, user experience, and the structures of the medium.
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INTRODUCTION

As a medium, video games are complex. Numerous and distinct technologies, genre conventions, aesthetics, and modes of engagement mean that a general theory of “video games” or even a theoretical discussion of particular aspects of the “video game” medium is difficult. In comparison to media like film or television, whose specific technologies (the screen) and modes of reception (spectatorship) are relatively uniform, the medium of the video game differs significantly between genres and platforms (the technology on which the game is played), and continues to change over time. A brief look at the development of video game technologies over the past few decades demonstrates how complicated the state of the medium is. Gamers play games in a multiplicity of ways—on computers, dedicated consoles, handheld devices, smartphones, arcade machines—each of these with their own specific interfaces and content. The games that they play may require a minimal amount of input, pressing a single button or tapping a screen at the proper moment, or they may demand a significant degree of embodiment, habituation, and manipulation; the recent trend in motion control serves is an example of this.

So, rather than reduce video games to a limited set of user practices, a specific technology, or a unified aesthetic, the defining feature of video games has remained the ambiguous and often contested concepts of “interactivity” and “play.” That is, the identifying characteristic of the video game is not the technology of the medium or the narrative space of the video game text; rather, it is the mode in which users/players engage the text, in a playful, interactive way, which often defines the medium.

The difficulty of these two terms, play and interactivity, is that they are not easily or universally defined. The definition of interactivity from which I will operate in this thesis is the one provided by Michael Nitsche in *Video Game Spaces*, “The player in a video game is both a
reader (of the computer’s output) and the producer (via input) of events. For video game spaces, this means that the player not only enters the game worlds but also changes them and their elements. These event-shaping features separate interactive access from the experience of traditional media and pushes interactive game worlds beyond Barthes’s *readerly* and *writerly* texts” (Nitsche 2008, 31). This model of interactivity is useful, as it recognizes both the role of the user and the textual machine in the process of play. While a very simple definition, Nitsche’s concept of interactivity therefore provides us with a general framework to begin to conceptualize video games as a medium and to begin to think about a video game “apparatus.” The player exists on one side of this relationship and on the other the virtual interactive game world; the interaction between the two is mediated by the technology of the computer and interface. An apparatus theory of games begins in this middle ground, focusing on the technology which facilitates and contextualizes this interactivity.

While the medium of the video game is difficult to define in technologically specific terms, the concepts of interactivity and play (although equally difficult to pin down) serve as a means to group and to begin to theorize the nature of this medium. So, while recognizing the generality of Nitsche’s definition, this concept of interactivity as a unifying characteristic of video game play makes it possible to consider the implications of more specific aspects of video games. In particular, the experience of subjectivity relative to video games achieved, at least in part, via the technology of the medium. That is, if the mode of usership (play and interactivity) is the unifying characteristic of video games, then the question raised by apparatus theory asks how technology, be it a dedicated console or a personal computer, facilitates this interactivity. In the process we must also ask how this technology functions in the production of an ‘ideal’ playing position for gamers. What this seeks to do is move the question of the medium and the question
of video game play away from these poles of “user” and “text”, and instead towards a materialist study of the technological process of play. This apparatic model sees video game play as a relationship contingent on users and virtual worlds but mediated by a specific collection of technologies which both facilitate and structure play. The theoretical underpinnings of this question have a long history in the study of visual media. Specifically, this thesis applies the questions posed by cinematic apparatus theory to a model of video games in order to investigate how the technology of video game play positions the user/player in advance of their experience of the video game text, as well as how the technology relates to this text.

Research Questions

Apparatus theory, which has its origins in poststructuralist, Marxist and Psychoanalytic film critique, seeks to identify the ways in which the materiality of a medium produces and ideologically positions subjects before they experience a text. For apparatus theorists the cinema/film is an ideologically loaded social machine; a film’s production, its structure, and the technology of its exhibition generate a particular, meaningful position for the spectator in relationship to the text. In a similar sense, the guiding question in this project is how the video game apparatus has developed and been applied, and how these technologies, in turn, both contextualize and structure an experience with video games as texts?

This is a difficult task as changes to hardware, interface technologies, content delivery media, and production techniques render the video game apparatus in a state of perpetual evolution. Despite this apparatic flux, it is possible to point to a number of essential, analogous, features of the video game apparatus which define the medium and make interactive play feasible. Although players play a variety of different types of games on a number of different
devices, general technologies of code, computational hardware, interface, and mediated output offer a means to connect and theorize a video game apparatus. So, although controllers, consoles, proprietary software, chips, screens, etc. are hugely varied in their design and application, they depend on a similar set of core technologies that allow the user to interact with a game’s textual space, and that in turn allow the text to “respond.” Thus, before an apparatus theory becomes feasible, it is necessary to develop, at minimum a, general concept of this apparatus in terms of its essential components.

From this technological definition of the components of a video game apparatus is possible to explore the function of the medium, and more precisely the apparatus itself. The apparatus associated with video game play offers users a specific experience; more than simply a means to play, the apparatus structures and shapes “play” in a number of particular ways. We have already categorized this loosely as interactivity, but what this thesis considers is the construction and promise of interactivity and the way that apparatuses of play and interface fit within a larger experience of game use. What this thesis examines is, in addition to their immediate technical functions, the ways in which these technologies come together alongside user subjectivity and game content to produce an experience of play. Cumulatively, the apparatus represents a promise to the user. If film apparatus produces an illusion of looking into another, real or complete world, the video game grants its user the capacity to affect this world and the apparatus is essential in producing an experience with this power.

It is here that an apparatus theory of video games becomes particularly salient. As noted the video game is defined by its interactivity, unlike film or literature where texts are understood to be “closed,” this question or quality of interactivity implies openness. The video game is understood as a text open to user input: the power to affect the virtual world of the game and
develop a unique narrative trajectory. What an apparatus theory of video games recognizes is that this power to affect and engage virtual space is a construction; it is only made possible by a particular combination of code, hardware, interface, and textual configurations. The narrative and semiotic textuality of the video game produces this experience in a number of ways, but the apparatus is also crucial in this. Algorithms and code allow the game to “respond” to user inputs, controllers and interfaces connect the real, physical space of the user to the game world, computational hardware mediates code and input and projects it via a virtual window, generally the screen. In this sense the apparatus is crucial to a video game’s interactivity. However, despite its centrality to play, the apparatus easily goes unremarked. In film apparatus theory it has been suggested that at the moment of spectatorship the entire technological apparatus recedes and the spectator has the sense of looking through a window into the world on screen. The apparatus of video game play takes on a similar function, receding for the sake of a larger illusion. This illusion, however, is not simply a cohesive virtual plane, it is also the capacity to affect this space--it is playful and interactive in the sense that the user experiences presence and agency there. The technology of control/interaction disappears as the user experiences an illusion of embodiment in the game which facilitates this experience of power.

As with cinema, this total apparatus is complicated. Certain elements are always invisible. The spectator never sees production and editing, celluloid film and the projector are hidden. However, the screen and theater are much more visible. Similarly, the video game apparatus is composed of elements which address the player and elements which always remain hidden and abstracted. Code and the internal computational processes of play are obscured behind the screen and interface which immediately address the player. In this way, particular aspects of the apparatus become apparent as a means of obscuring or denying the broader context
of a video game’s production and play. However, in an ideal moment of interactivity, play, and immersion, all of the apparatus recedes facilitating the illusion of a more perfect embodiment.

The total video game apparatus functions to offer its user the illusion of the power to affect and experience presence in the game. By first obscuring or mediating the broader context of a game’s production, and subsequently disappearing itself, the video game apparatus presents its users with the promise of both immersion and control, the power to affect the text. It is here that the video game apparatus differentiates itself from other media and proposes a strategy of engagement which stands as distinct. More than simply looking into a world, the video game promises its user the capacity to affect action in this world. Users are not simply spectators in relationship to the game, they interact with virtual spaces and they initiate actions within them. This is the ideal position of play for the user, a body connected to a virtual plane capable of producing virtual actions within it. The technology employed by the video game apparatus thus becomes the means to an experience of interactivity, in which the video game apparatus positions the user relative to the text. Before the content of any particular game narrative acts upon the user, the entire experience has already been mediated by the technology of the apparatus, which structures the act of playing.

In this light, apparatus theory as a mode of critique is compelling in that it seeks to interrogate the (admittedly diverse) function of the medium itself as a social technology rather than focusing only on the social significance of particular games based on their narrative or thematic content. Popular critiques of video games as textually empty or socially destructive based on questions of content are tertiary to this discussion. Instead, an analysis of video games focused on what unifies them as a medium in material terms allows us to think about the subjectivities and positions of identification promoted in a moment of play. Therefore, rather
than engaging in a literary study of video game content associated with the narratology school of game studies this thesis approaches game studies in the spirit of the school of Ludology in the sense that it similarly understands video games to be governed and limited by their code and structure despite their illusion of entirely open-ended interactivity. At the same time, though, this thesis also diverges from the ludology/narratology debates altogether, in that it argues that instead of seeing games only as texts based around narrative or else experiences structured by the rules of a programmed space, they can also be understood as a medium experienced in a technologically particular way. Gameplay is structured by a physical, technical apparatus which affects how a user comes to and engages with a video game and this technological, apparatic component is partially distinct from ludological and narrative structures.

Obviously, this model runs the risk of appearing technologically deterministic. Indeed cinematic apparatus theory is often critiqued for its assumptions regarding the degree of control that it grants to the cinematic apparatus in terms of its ability to shape spectatorial practice. While this is clearly unproductive, a model of usership which sees game play as entirely open-ended is equally problematic for game studies. My intention in applying apparatus theory, to video games is therefore to shift the analysis towards a consideration of which elements of play remain open and which are necessarily bracketed by the material structures of the technology. Thus, technology does not become totally deterministic under this model of apparatus theory; instead the task is to recognize the distinct importance of technology in the facilitation of play and the production of a particular, ideal playing position relative to the semiotic and narrative elements of a game.

This apparatic approach focuses on the experience of play mediated by a particular set of technologies. In a very specific way the user is positioned before the apparatus. Generally,
holding a controller and looking into a virtual window, the user interacts with the video game written as code and rendered by some sort of computational hardware. This apparatus defines an ideal mode of engagement with the video game as text. However, the critical import of this approach goes beyond simply articulating playing positions encouraged by the technology of the video game. An apparatic critique also demands a re-consideration of the nature of interactivity and thus the nature of the medium. In exploring the positions encouraged by the apparatus and the structures it implies we must recognize that the video game is not truly or fully open. Put another way, while the video game allows the user to interact with a virtual space in creative ways, this interaction is limited by structures of the technology and code of the game. The shape, scope, and properties of the virtual world and the means by which a user can affect this world are scripted in the code meaning that interactivity is only as powerful as the game text allows. In this regard, an apparatic critique shifts discourses around the video game and demands an acknowledgement of the limitations to interactivity. This is not to say that the technology determines play but that the extent of a user’s power in an experience of interactivity is limited.

This final caveat begins to explain the critical import of an apparatic analysis of the video game. Although this model focuses on the structural functions of the technology and their facilitation of an ideal user experience, their shape and limitations affect game play much more deeply. What we find is that the apparatus of the video game is closely linked to the textual properties of the game. The same apparatus which mediates the relationship between user and text also partially structures the potential narrative and textual scope of the game. In other words, what we ultimately find in an interrogation of apparatus is that the technology of the medium also influences the semiotic and narrative techniques available in the construction of the video
game. Cumulatively, this means that an interpretation of video game play without an articulation of apparatic structures misses a significant element of both the experience of game play but also a significant factor in the nature and shape of the medium more broadly.

Chapter Overview

The introductory chapter of my thesis begins with an overview of apparatus theory as it has been applied to the cinema. Although I have briefly discussed film apparatus theory here, my first chapter explores the seminal theoretical works in this field in greater detail and considers the ways in which these theories can be applied to video games. Specifically, I am concerned with the theoretical frameworks applied in the study of media apparatus and the experiential and positional implications of these technologies which apparatus theory can reveal. In this section I also explore the potential limitations of cinematic apparatus theory; elements of technological determinism and universalizing understandings of the spectator/subject which undermine the critical applicability of apparatus. From here I begin to theorize how an apparatus theory of game play could take shape. This entails identifying the elements of cinematic apparatus theory which can be applied to video games while accounting for and circumventing those frameworks which are less useful. In particular, this means forgoing broader psychoanalytic frameworks and general models of social and political ideology in favor of a focused, technical apparatus theory. In addition to a re-reading of some cinematic apparatus theory, this project of developing a theory of game apparatus next considers places where an apparatus theory of video games would overlap with existing scholarship in game studies. The second half of this chapter explores contemporary scholarship on video game play with the intention of identifying what approaches taken in game studies are salient to this thesis. This also means identifying the gaps in video
game theory which an apparatus critique could fill. What this reveals is a lack of scholarship directed at the material elements of the video game which affect both the experience of play and the means by which video games are rendered engage-able.

This chapter concludes with a very broad outline of the video game apparatus’s function. In particular the apparatus becomes a means to the video game, structuring the way players come to and experience play and interactivity. Although this is explored in much more detail in subsequent chapters, Chapter 1 describes a very general theory of the video game apparatus in terms of its function, appeal, and promise to players as well as its structural and technical function relative to the game text. That the video game apparatus both positions the player in advance of the game while simultaneously affecting and shaping what a game text, the virtual properties of the game, can do.

Having outlined the theoretical structure of an apparatus theory of video games in Chapter One, Chapter Two serves as a survey of video game apparatuses. In particular, this chapter explores the development of game apparatuses in terms of technologies of code, computation, interface, and control. Video game technology has evolved significantly, due in a large part to the development of telecommunications and digital technology; however, this evolution has also both responded to and catered to the demands of players. The result is a diverse history of video game apparatuses, some of which have been commercially successful or influential in the further development of video game apparatus, while others have failed. This chapter explores this development within the context of the promise of greater immersion, more detailed representations, or a more responsive experience, as well as examining the multiple permutations of apparatuses that this promise has inspired.
What this survey of apparatus reveals is that the technology of play structures the medium in a particular way. We find that the technologies associated with game play influence how players experience the game but also what games themselves are capable of. Specifically, the code of the game generates a virtual space that can be interacted with and affected by the user while simultaneously defining the extent and limit of a user’s power over the text. Computational hardware renders the code as a meaningful virtual space but also determines the number and complexity of processes which can be computed, thus limiting the potential algorithmic complexity of a game. In similar fashion, the screen represents the game world to the player but frames and limits this view bounding and often failing to account for user’s stereoscopic vision. Finally, the controller, which stands as the user’s means of empowerment and virtual embodiment, the device which allows the user to affect virtual space, is limited by abstraction and its potential functions. That is, the controller allows the user to affect the game but also functionally distinguishes virtual space form real space; it abstracts physical actions as virtual and in doing so marks a separation between the player and the game. The controller, or any physical interface, is also limited by the potential inputs it allows, there are only so many ways that a user can interact with a game using the controller. What all of this implies is that the apparatus is central to play both in structuring user engagements but also, to a degree, structuring the textual potential of the game.

Building on this survey of video game apparatus in technologically/materially specific terms, Chapter Three seeks to apply apparatus theory to an analysis of play. This section explores the applicability of apparatus theory as a means of interrogating specific instances of video game play. This chapter focuses on three gaming moments in three different games in which the relationship between the apparatus and elements of player-subjectivity, game
narrative, and semiotics becomes apparent. In exploring the relationship between apparatus, narrative, and player position, the importance and centrality of the apparatus becomes apparent. What this demonstrates is that the apparatus is never fully distinct from these elements of play nor fully deterministic of them. What we see here is a complicated connection between these elements. For example, in a particular *StarCraft 2* (Blizzard 2010) match, a disrupted apparatus influences the strategies applied by the player, MarineKingPrime. As a counter point, this chapter also explores instances of the apparatus taking on narrative significance of its own either above the virtual space of the game, as in *QWOP* (Foddy 2008), or as an object of the narrative, as seen in *Metal Gear Solid* (Konami 1998). Cumulatively, this chapter suggests an essential relationship between apparatus, narrative, semiotics, and players in the production of “play,” demonstrating the importance of considering apparatus as a foundational component of the video game as a medium.
CHAPTER ONE: THEORIZING A VIDEO GAME APPARATUS

Part 1: Theoretical Foundations

The theoretical basis for this inquiry into the ways in which video game technologies affect players’ engagements with video game texts is heavily indebted to the school of film theory known as cinematic apparatus theory or simply, apparatus theory. Thus, before exploring the feasibility of a theory of video game apparatus, it will be most useful to explore the theoretical framework implied by “apparatus theory” and to identify which aspects of this theory I intend to draw upon in formulating an apparatus theory of video games.

Although the cinematic apparatus, the technology of the cinematic medium, received scrutiny from academic theorists early in its development, (for example, Dziga Vertov and Walter Benjamin both produced famous works which explore the implications and potential properties of the medium at the level of its technology) cinematic apparatus theory, as a distinct theory of the relationship between the technology of the cinema and cinema spectatorship emerges in the 1970s, building on Marxist and psychoanalytic theoretical models, and developing alongside theories of post-structuralism and post-modernity. What distinguished this perspective on the medium of cinema from other theoretical approaches was that it recognized the mechanism of the cinema itself as always, already politically or ideologically loaded. So, while aspects of Vertov and (more specifically) Walter Benjamin’s work address cinema from perspectives which compliment apparatus theory, it was not until post-68, poststructuralist critiques of cinema appeared in the 1970s that apparatus theory, in its contemporary form developed. In 1970, Jean-Louis Baudry authored “The Ideological Effects of the Basic Cinematic Apparatus” wherein Baudry, drawing from the works of Derrida, Freud, and Althusser, applies

1 Walter Benjamin’s “The Work of Art in the Age of Mechanical Reproduction” (1936) and, to a lesser degree, Dziga Vertov’s “Kinoks” (1922) both deal tangentially with the technical possibilities of the apparatus.
models of psychoanalytic and ideological criticism to a discussion of cinematic technology in order to make the assertion that in both the moment of its technological production and in the moment of its reception, the cinematic apparatus is inherently ideological (Baudry 1970). Essentially, Baudry proposes that the cinema is ideological in its construction of a particular subject position (more than politically or socially ideological). The structure of the apparatus allows the spectator to see themselves and their viewing position as central. The camera and projector allow the spectator the illusion of a world organized for their scopic desires. This assertion functions as the underlying context for virtually all models of apparatus theory which follow and which will also form the basis for my discussion of video games in terms of apparatus.

In this essay Baudry poses the question “do the instruments (the technical base) produce specific ideological effects, and are these effects themselves determined by the dominant ideology” (Baudry 1970, 288)? In doing so, he proposes a theoretical model that recognizes the ideological function of the material technology itself. Significantly, Baudry’s argument recognizes the cinematic apparatus as ideologically distinct from narrative content. That is, the content of a film-- its narrative, mise-en-scène, adherence to genre conventions, and/or its explicit political or social message--is seen as an ideological project distinct from the ideological construction and application of film technologies themselves. However, in the context in which Baudry is speaking, the techniques which make the film readable,--editing, framing, the semiotic construction and organization of signs into a text-- are also seen as distinct. Thus, Baudry’s model undermines the totality or unity of film as medium and instead sees it as the product of a number of converging ideological processes. The most obvious and most scrutinized is the level of narrative. Following this is the semiotic level of the film, the cinematographic techniques that
Finally, there is the level of apparatus, the technologies that facilitate the construction and projection of the text and also mediate the relationship between spectator and text. (The cinematic apparatus can be further divided into the components necessary for production and the components necessary for projection, but this distinction is less immediate to Baudry's discussion.)

In conceptualizing film in this way, it is important to register two caveats not acknowledged by Baudry. First, while Baudry and the apparatus theorists who follow him differentiate between narrative, cinematographic techniques, and apparatus, this distinction does not imply that the three are divided or functionally discrete. To the contrary, the three levels are closely linked in terms of responding to and catering to the spectator's desire for representation. Indeed, the narrative level of a film is influenced significantly by the semiotic aspects of its construction, as well as the technology of its production and exhibition. For example, in “Machines of the Visible” (Comolli 1971, trans. 1980), Jean-Louis Comolli explores the use of specific lens technology to achieve effects of deep and shallow focus. Comolli's study is explicitly an analysis of the productive apparatus, the lens of the camera; however this has implications for both the cinematographic techniques available to directors/cinematographers as well as for the narratives that they are able to construct using these techniques. Comolli sees changing lens technology as a means to change spectatorial vision. Rather than using shallow focus to achieve a visual effect similar to the focal depth of human eyesight deep focus is used to generate a “theatrical,” pleasurable image.

Similarly, Laura Mulvey's essay “Visual Pleasure and Narrative Cinema” (Mulvey 1975) functions explicitly as a critique of the cinema's construction and satisfaction of a masculine, scopophilic gaze. This critique engages the physical apparatus of the theater as the formative site
of this gaze but also implicates the narrative conventions and character tropes of Hollywood cinema in this process. Thus, even for apparatus theory, the layers of a film’s construction and signification (apparatus, semiotics, narrative) are not fully distinct.

The second caveat, perhaps partially implied by the first, is that apparatus theory seeks to avoid technological determinism. Although apparatus theorists contend that the specific technologies of cinema’s production and presentation have particular ideological histories, functions, and meanings that influence both the ways in which film is produced and received, these technologies are generally not seen as totalizing. Although within apparatus theory there is no unified understanding of either the origin or ultimate ideological purpose/function of the cinematic apparatus, it is generally seen as a development out of a larger system of ideology, science, and economics. Stephen Heath makes this point in “The Cinematic Apparatus: Technology as historical and Cultural Form,” when he proposes that rather than narrativize the development of a fixed or uniform cinematic apparatus, theorists have recognized that the origins and permutations of the apparatus are diffuse and thus need to be studied for their effects rather than their inherent ideological origin (Heath 1980, 6). Following this logic, Comolli argues that “the historical variation of cinematic techniques, their appearance-disappearance, their phases of convergence, their periods of dominance and decline seem to me to depend not on a rational-linear order of technological perfectibility nor an autonomous instance of scientific progress, but much rather on the offsettings, adjustments, arrangements carried out by a social configuration in order to represent itself, that is, at once to grasp itself, identify itself and itself produce itself in representation” (Comolli 1980, 121). This is significant for two reasons. First, it does not take the cinematic apparatus as stable; for Comolli the cinematic machine is a construction produced out of a number of technologies in response to various, particular social desires for
representation. This illuminates the second point: that, at least for Comolli, the formative ideological impetus for the cinematic apparatus is social. Thus, the apparatus only becomes technologically deterministic to the degree that it is itself determined by broader ideological, economic, social interests.

Cumulatively, this model of apparatus theory sees the physical technology of the cinema as a response to a broader set of influences, which is designed to facilitate the creation of or engagement with the semiotic and narrative elements of a film text. From this basic foundation, apparatus theorists have developed much more specific studies of the cinematic that speak to the larger set of social demands which produce and assign meaning to film texts, as well as to the medium of cinema itself.

Mulvey’s “Visual Pleasure and Narrative Cinema” (1975) is instructive within this context. While explicitly a psychoanalytic critique of the privileged masculine look associated with the cinema based on an analysis of classical Hollywood narrative tropes, Mulvey’s argument is indebted to apparatus theory through its consideration of the cinematic space as a formative site of the voyeuristic gaze of the spectator. For example, Mulvey argues that “the extreme contrast between the darkness in the auditorium (which also isolates the spectators from one another) and the brilliance of the shifting patterns of light and shade on the screen helps to promote the illusion of voyeuristic separation” (Mulvey 1975, 201). Here Mulvey addresses the role of a particular component of the cinematic apparatus, the darkened theater and the projected image-on-screen, in order to theorize a specific subject position produced by the theater-space. So, while the totality of her argument extends well beyond the scope of apparatus theory, the consideration of the apparatus itself becomes essential to her suggestion that spectators are interpolated within a structure that produces a masculine/voyeuristic mode of spectatorship.
Such an analysis demonstrates the usefulness of a consideration of apparatus when theorizing the broader social/ideological functions of a medium (or a body of works within a medium, in this case Hollywood film). Simultaneously, though, Mulvey’s analysis, which incorporates aspects of semiotic and narrative critique, demonstrates the complexity of the relationship between the technologies of the apparatus, the semiotic techniques employed within a genre of texts, and the particular narrative tropes that accompany them. Thus, for Mulvey, the cinema, as a site of voyeuristic power and pleasure that institutes a mode of spectatorship predicated upon masculine ways of seeing, is a product of a set of ideological structures (of which apparatus is just one) organized in response to more wide reaching cultural discourses.

The difficulty then, in developing an apparatus theory of video games, is to first differentiate the narrative and semiotic levels of game play from the physical apparatus of play. For Mulvey, the cinematic apparatus precedes the narrative and semiotic structures that shape film spectatorship but the ideological significance of Hollywood cinema only becomes identifiable (in Mulvey’s terms) when considered as a whole. Similarly, existing discussions of video game play in the field of game studies recognize the video game apparatus as significant in the development of particular subject positions for players; however, apparatus is often only addressed in terms of its function in the broader structure of gameplay rather than as a significant element in itself. In order to formulate an apparatus theory of game technologies, a focused analysis of the physical and technical qualities of the apparatus is also necessary. What this apparatus theory of games will suggest, much like film apparatus has proposed, is that the structure of the apparatus corresponds to and structures the textual techniques available to the medium. This reading of videogame apparatus is not unlike Comolli’s discussion of depth-of-field which sees deep focus as semiotic tools available to film which is first and primarily a
function of the technical tools available to the filmmaker. By seeing the apparatus as a structuring element of the video game its significance becomes apparent.

To return to our excavation of cinematic apparatus theory, it bears noting that although cinematic apparatus theory is always materially grounded, it also is adopted as part of a psychoanalytic analysis of the medium. This produces a number of significant problems, which will be made apparent momentarily. However, in addition to being theoretically problematic this tendency towards psychoanalysis also generates a division in the implications of apparatic readings of the cinema. For example, a psychoanalytic application of apparatus theory may imagine the psychological consequence of the cinematic apparatus and its production of a specific spectatorial position. While a more general critique looks at the structures of the apparatus more plainly, considering what individual components do and how this shapes the medium. We see the psychoanalytic model in Laura Mulvey’s, “Visual Pleasure and Narrative Cinema.” Drawing heavily from Lacan as well as Baudry and Christian Metz, Mulvey suggests that the apparatus allows the viewer to experience an identification with the on-screen protagonist as a child would his reflection in Lacan’s mirror stage. Mulvey argues that this identification allows the spectator to experience gratification as the protagonist’s desires are realized. In making this argument Mulvey is restating an argument often posed in apparatus theory, first by Baudry in “Ideological Effects of the Basic Cinematographic Apparatus” (1970), and later by Metz in *The Imaginary Signifier* (Metz, Trans. 1982). What this implies is that the spectatorial position is defined by a universal psychology, ultimately, this has less to do with the apparatus and medium and more to do with the identity of the viewer. By contrast, Comolli extends his discussion in “Machines of the Visible” to an analysis of depth of field. Rather than an understanding based on psychoanalysis, Comolli considers the use of lens technology to
generate an image that resembles a “theatrical” vision, thereby allowing the spectator the ability to further invest himself the illusion of immersion. Comolli’s discussion hinges less on psychoanalysis and rather on a general understanding of the physical functions of human eye and the particular visual technique of a shallow focus. Likewise, in “The Silence of Voice” (Trans, 1986), Pascal Bonitzer examines voiceover or voice-off technologies in terms of their ideological authority relative to the text. That is, based on the voice’s relationship to the on screen image (as in the narration of a documentary), the voice takes on an ideological significance, one of omniscience or power. In both Comolli and Bonitzer’s works the focus is less a universal model of the subject and more the specific technologies of the cinema and the narrative and semiotic tools these provide.

This is subtle but crucial distinction. In much of apparatus theory the application of psychoanalytic models results in a reading of the cinematic apparatus as a womb or as a means of replicating the Lacanian mirror stage. This allows psychoanalytically inclined models of apparatus to explore the identity of the subject but only in a universalizing way. Often, however, this is at the expense of a more focused exploration of the individual functions of particular technologies. Conversely, what we see in Comolli and Bonitzer’s more general apparatus theories are a focus on specific components of the apparatus which allows these models to more thoroughly explore the function of apparatus in relationship to the textual elements of film as a medium.

Finally, despite the theoretical division in the application of apparatus theory that these works demonstrate, in each of these approaches the focus remains oriented towards the influence exerted over the medium and the spectator by the apparatus. Both the psychoanalytic and more general ideologically inclined readings of the apparatus see it as powerful structure, essential to
the shape and scope of the medium. Whether the cinematic apparatus operates to position the spectator relative to the text, gratifying them with the power of the gaze, or shapes the semiotic structure of the text through the use of deep focus (as opposed to the realism of shallow focus), or takes ideological power over the visuals on-screen through the authority of the voice-off, the apparatus is always central to both the experience of the spectator and nature and capabilities of medium. This is perhaps the final, crucial consideration offered by apparatus theory; that the apparatus functions as a means to the text. It both facilitates the text and shapes an experience with it.

For example, in Mulvey’s model of spectatorship, the spectator begins by experiencing a voyeuristic pleasure of “looking into a private world.” However, this voyeuristic window is distinct from an experience of identification; the spectator is still separated from the world of the film. The identification facilitated by the cinematic gaze changes this. In a narcissistic turn, the spectator identifies with the subject position of characters on screen, in particular that of the masculine protagonist through whom the viewer’s desire for scopophilic pleasure is realized. Through semiotic/cinematographic techniques, the spectator’s look becomes aligned with the perspective of the camera, and more importantly the gaze of the masculine protagonist whose point-of-view is framed through the camera. Through this identification with the male protagonist’s gaze, facilitated by the camera’s framing, the spectator experiences a kind of pleasurable immersion in the filmic narrative. Similarly, Comolli argues that lens technology used to produce deep focus may not more closely approximate real human vision, but the added illusion of depth of field makes for a more complete, cinematic, or theatrical image, which in turn more completely addresses the spectator. In either of these instances the apparatus affects the semiotic structure of film but also becomes a means to immersion or experience with the film.
text. It is here that the applicability of apparatus theory to video games becomes most significant in terms of what it can reveal about the intersections between the technological components of the game, the player’s immersion in the narrative world of the game during gameplay, and the semiotic and narrative structures of “the game”. Specifically, these questions of technology and immersion (more than the particular questions of Marxist, psychoanalytic, or semiotic critique) seem essential to an analysis of video game technologies. They allow apparatus theory to move beyond the theoretical limitations of a strictly textual critique in favor of more comprehensive theoretical models. In recognizing the usefulness of these nuanced or directed lines of critique, I intend that this study focus first on the distinct function of specific apparatic elements as a means of then exploring the experiences and textual strategies that these technologies encourage.

Part 2: Critiquing Apparatus Theory

Before turning to a more detailed discussion of the application of apparatus theory to video games, it is also necessary to acknowledge the critiques and potential pitfalls of cinematic apparatus theory. In large part because of its over-determination of spectator practices, apparatus theory has been superseded within the field of film studies by analyses of audience reception, which do not see audience reactions to film as identical or universally determined by technology in the way that cinematic apparatus theory has been wont to do. At the same time, the psychoanalytic approach to spectatorship in which early cinematic apparatus theory was grounded, has more recently been superseded by the neoformalist approach (rooted in cognition and neuroscience) advanced most notably by David Bordwell, Kristen Thompson, and Nöel Carroll, as well as affect theory.

What I would like to propose here is that while these critiques may point to problems in the way that apparatus theory has been applied within specific scholarly analyses of the cinema,
these problems are not necessarily essential to the foundational principals of apparatus theory itself. That is, the idea that the mechanical or technical materiality of a film’s production and reception takes on an interpolating function prior to (or in addition to) the narrative and semiotic effects of the film on its spectator is not necessarily rendered irrelevant by the tendency to attribute a technological determinism to this function in much early cinematic apparatus theory. Indeed, I would like to suggest that this conceptual approach to the materiality of media technologies can yet prove useful in theorizing the subject positions facilitated by these technologies, always allowing, of course, for the interaction between apparatus and viewer (in the case of cinema) or player (in the case of video games), rather than a model in which the apparatus is invested with the absolute power to entirely determine the engagement of the viewer/player with the movie/game. As the following chapters will demonstrate, the suggestion that the material technologies of media can be understood as contextually significant in the broader experience with any media from opens a level of critique and analysis that is largely distinct from narrative and semiotic textual critique. As such, when it comes to game studies, a general apparatus theory, oriented towards an understanding of video game technologies themselves (and stripped of more limited psychoanalytic or ideological objectives), potentially opens up new avenues for conceptualizing interactivity, as well as the interaction between the player and the game during game play.

Let us take, for example, Christian Metz’s *The Imaginary Signifier*, which stands as a seminal text in cinematic apparatus theory. It incorporates a careful examination of the structural and technical components of “the cinema,” but reads these components and their functions through the lens of Freudian and Lacanian psychoanalytic theory. This is a turn that, while potentially useful in illuminating the psychic processes through which audiences engage with
film texts, undermines the materialist framework in which apparatus theory is grounded by shifting Metz’s argument towards what has been criticized as theoretical abstraction. In other words, while the understanding of cinema as a material object in Metz’s work is compelling, his reading of its effect on audiences through the lenses of semiotics and psychoanalysis undermines its critical usefulness. His argument that the cinematic apparatus structures spectatorship in ways that favor particular viewing positions is helpful in theorizing both the appeal of the cinema and its power. However, by limiting his analysis to questions of the psychoanalytic function of the cinematic apparatus, he forecloses consideration of the other functions it may serve, as well as the other types of power that may be exercised through it or the other types of appeal it may hold for spectators.

Significantly, it is only after considering the specific technologies through which the cinematic apparatus addresses the spectator that Metz is able to articulate the subjectivity producing/shaping effects of this apparatus in terms of psychoanalytic theory. In doing so, Metz engages a question that apparatus theorists from Baudry to Mulvey have contended with: how does the spectator experience the film as a result of the apparatus and, more particularly, where or how does the spectator identify? The conclusion that these authors propose is that the film projected onto the screen functions like a mirror appearing to reflect the real world. Metz complicates this discussion by adding that, as in the Lacanian mirror stage, the spectator must identify with something, but that to suggest an onscreen body as the site of identification is problematic as not all films feature bodies with which to identify. Instead, Metz proposes that the spectator identifies with himself as a spectator, immersed in and willfully worked upon by the cinema. Based on this proposition, that the spectator’s identification with film goes beyond simply the pleasure of seeing the real reflected via cinema or the identification with the body on
screen, Metz explores the symbolic/psychoanalytic relationship between spectator and the cinema as a much more complex, deeply psychological process.

At the same time, though, Metz’s theory assumes that spectators’ experiences with cinema are universally determined by the apparatus of the cinema (in whichever way that apparatus is ultimately defined), and further that those experiences are limited to psychic processes. The issue with this model is not that the cinematic apparatus does not facilitate the spectator’s psychic engagement with the film text, but rather that in theorizing this engagement Metz does not allow for alternate, personal, or incomplete engagements that refuse the viewing position encouraged by the cinematic apparatus. Thus, what Metz omits are, for example, engagements with a film where the spectator fails to be immersed or successfully addressed by narrative/semiotics/apparatus and thus never enters into an experience with the film as mirror; or, perhaps where the spectator is only partially immersed, or develops an alternate relationship to the film text.

In this regard, I would suggest that the problem with Metz’s theory of cinema spectatorship has less to do with his understanding of the operation of the cinematic apparatus and more to do with the theoretical models made available by psychoanalytic theory, which seek to generalize (or over-determine) the spectator’s engagement with the film. Indeed, while the psychoanalytic components of Metz’s model prove to be problematic, what remains theoretically interesting in his work, and in apparatus theory more generally, is the complicated relationship between man and machine that the underlying concepts in his theory of spectatorship bring to light.

Within this context, it is worth noting that Alain J.-J. Cohen’s “Virtual Hollywood and the Genealogy of its Hyper-Spectator” provides a somewhat more useful application of apparatus
theory in terms of theorizing this relationship between the technologies of the cinema and the experience of film spectatorship (Cohen 2001). In this essay Cohen, explores the relationship between the spectator and the cinema in a moment where the “cinema” as traditionally defined by apparatus theorists has been displaced by the proliferation of spaces and technologies for the distribution and exhibition of film. According to Cohen, the traditional cinema and its associated spectator (as theorized by Metz) have been divided by “the virtualization of Hollywood,” as well as the emergence of home video, cable TV, and the rapid proliferation of video-on-demand technologies, with the result that the model of spectatorship proposed by Metz and other apparatus theorists have been at least partially undermined by the de-centering of traditional cinematic technologies and modes of film consumption.

In seeking to theorize a model of contemporary spectatorship in response to these shifts, Cohen proposes a theory of the “hyper-spectator,” who “surfs’ ‘hyper-films’ (moving cross-referentially from film to film, from one director to another, or from genre to genre, and into trans-national cinemas) with the same ease as we presently surf ‘hypertexts’ cross-referentially on the Net” (161). What we see here is a deviation in Cohen’s model of the spectator when compared to psychoanalytic readings of spectatorship proposed by traditional apparatus theorists. Notably, the spectator’s response or position in relationship to contemporary film is not simply reducible to the function of a totalizing apparatus; rather, the relationship is the product of a self-aware or curated experience with film. In other words, rather than functioning as a passive subject, Cohen’s spectator is actively involved in a meta-experience with the cinema that transcends the space of the theater in favor of a wider consumption of all things Hollywood.

In proposing “a new mind model wherein the spectatorial subject actively helps to create the simulative world of ‘virtual’ Hollywood, as well as being created by it” (153), what Cohen
is suggesting is a kind of update to Metz’s work, only one where both the apparatus and the subject position of the spectator is denaturalized, complicated by a complexity of technologies and subjectivities. Also notable is the multi-directional relationship between the spectator and the cinema; rather than the technology acting on or producing the spectator’s identification with a film, Cohen’s model proposes to recognize an interaction between subject and cinema in the production of viewing positions. It is useful to address Cohen’s work in connection with Metz’s as both Metz and Cohen seek to explore the subject positions made available via specific technologies of film spectatorship. So, while this hyper-subject becomes the focus of Cohen’s essay (much like the spectator in Metz’s “imaginary signifier”), what he is actually addressing is not subjectivity per se but rather the apparatus that facilitates this subjectivity. (I have suggested that the same is true of Metz.) As a result, the defining difference between these two theories is at least partially a function of the apparatus that each refers to (more than the subjectivities that result). Cohen himself makes this observation when he argues that the “cinema” described by Metz had, as early as the 1960s, already been divided by the emergence and diffusion of cinematic technologies (156-157). At the same time, Metz and Cohen also identify different models of spectatorship because they are conceptualizing the cinematic apparatus differently. Metz’s apparatus is fixed and totalizing, while Cohen recognizes the apparatus as at least partially determined by the subject who interacts with it. Granted, we must also acknowledge that Metz’s psychoanalytic framework shaped his reading of the cinema and that Cohen is writing with the benefit of historical/critical hindsight. None the less, Cohen’s work demonstrates a deployment of apparatus theory that does not seek to over-determine subject positions or the apparatus itself, recognizing instead that interactions between subjects and material technologies are highly varied.
In terms of a consideration of the contemporary applicability of apparatus theory to video games, Cohen’s work demonstrates the continued usefulness of apparatus critique, and the potential to apply apparatus theory in a way that elucidates spectator subjectivity without necessarily generalizing the position of the spectator. In this regard, apparatus critique following Cohen’s lead would be oriented towards an understanding of spectator positions, but only to the degree that these positions are also understood to be partially determined by the narrative and semiotic levels of the text, as well as the personal subjectivities of the individual spectators themselves. With an attention to the interaction between the spectator—or in the case of the project undertaken here the player—and the material technologies that mediate their access to the text, I would contend that apparatus theory does prove useful in theorizing the structures of contemporary media engagement, provided that a unilateral model where the material apparatus holds total power over the subject’s position in relationship to the text is avoided. It is this, less totalizing, understanding of apparatus that I will use in the next section to explore the complexity of user positions encouraged by video game technologies, the textual engagements they promote, and the trends that they reveal.

Part 3: Theorizing Video Games and Game Play

Given the post-68 historical moment in which apparatus critique emerged and grew to prominence, as well as the tendency of apparatus theorists to draw from psychoanalysis in order to evaluate the material technology of the cinema, it is perhaps not terribly surprising that an apparatus critique of video games hasn’t been undertaken by contemporary game scholars. While useful for its materialist approach, apparatus theory is often bogged down by a tendency to rely on, now outmoded, models of the user as well as a critical understanding of the cinema as a tool
for ideological ends. These elements of apparatic critique, while interesting, have limited applicability in a broader discussion of video game play. None the less, apparatus theory has been useful in framing the way theorists have interpreted the relationship between spectators and the technology of the cinema. As such, I am engaged in this project because a functional apparatus theory of video games has the potential to explore the experience of game play and the relationship between players and the various technologies that facilitate this play in a way that moves beyond the ludological and narratological paradigms that have been employed thus far. This is especially significant to games studies scholarship because this model would allow for an analysis of play across games, while at the same time without necessarily being deferent to the semiotic and narrative content of individual titles.

A general apparatus theory of video games, beginning with a material analysis of game technologies, has yet to be written. Although a significant number of theorists have developed theories of game play that, at least partially, recognize the significance of a technical apparatus in the production of a broader video game experience, and a few do address particular aspects of apparatus, a general apparatus theory of gameplay would seek to begin with an understanding of the components that make a game playable and their role in shaping or influencing how gamers approach games. While there have been analyses that theorize the function of video game apparatuses in the context of more general discussions of gameplay, however, these explorations tend to be oriented either towards a broader theory of game use or a semiotic/structural/aesthetic analysis of video games as texts. What these theories omit is an exploration of the material or technological elements of video games with an attention to their function in facilitating specific modes of play, ideal player positions, or relationships of engagement between players and video game objects/texts.
For example, an early and influential text in the field of game studies, Espen Aarseth’s *Cybertext* (1997), embodies this partial approach to apparatus theory. What Aarseth presents is a semiotic study of cybertexts, or ergodic literature (video games included), based on the reading strategies necessary to make them legible. Aarseth addresses cybertexts as semiotic constructions and thus his work deals primarily with their internal structures and the complicated relationship between the position of author and the position of user that these texts permit. In his study, Aarseth highlights the apparently fraught position of the user as both reader and author in order to explore the apparent textual/structural promise of the cybertext versus the constraints of its construction and function. That is, he argues that despite the need for the user to actively and decisively navigate the cybertext, the ultimate power of authorship remains in the hands of the programmer. In exploring cybertexts as semiotic machines, Aarseth is able to recognize the appeal of the non-linear text and the “freedom” and openness that this implies, while simultaneously pointing to the structural limitation of programmed code and networks of nodes in which a user’s authorial powers are always already secondary.

While critically compelling and essential for its capacity to disrupt misconceptions of new media as inherently open, this discussion centers primarily upon the semiotic level of textual construction. This emphasis on semiotics means that *Cybertext* does not fully theorize the mechanical apparatuses that accompany these ergodic texts. In response to this, I would like to suggest that it is the apparatus, just as much as the semiotic structure of a text, which allows for this confusion of author and reader when it comes to user interactions with cybertexts. None the less, Aarseth, in recognizing the confusion that video games permit between the position of the author and the position of the reader, acknowledges an underlying appeal of the video game, explicit at the semiotic level but also implicit at the level of apparatus, that this thesis centers on:
namely that the video game provides its user with the capacity to affect virtual space, creating an experience or an illusion of openness and the power of control, which will be discussed in more detail below.

For now, it is important to note within this context that an apparatus theory of video games would ideally seek to do something very similar to Aarseth’s *Cybertext* (exploring where the user experiences power and freedom and where the user is already a subject of the apparatus), only beginning with an analysis of the technologies that facilitate game production and play rather than the semiotic structures that make them “readable.” Despite this difference in focus, Aarseth’s model demonstrates the need for a theory that explores the operation (although in Aarseth’s *Cybertext* it is semiotic rather than material in scope) of contemporary, interactive media in terms of its power in producing a particular experience of engagement for consumers of this media. Also notable in *Cybertext* is Aarseth’s ability to explore readerly and writerly texts, and the subject positions they engender, without necessarily over-determining the position assumed by the subject in relation to the text, leaving room for complex or complicated reading positions that emerge when engaging cybertexts. Aarseth’s point is less that subjectivity is determined by the work of the programmer than that the programmer/author/text itself defines the semiotic space in which the subject is allowed to produce and trace meaning. My hypothesis for the apparatus of video game play stresses a similar model of video game technologies; to wit, that they influence the shape of the medium in order promote and partially facilitate an *ideal* of embodiment, subjectivity, and immersion that is not necessarily always or fully realized, rather than a uniform mold to which all user experiences conform.

While *Cybertext* explores the reading strategies and modes of engagement opened by the semiotic structures of newer media, Michael Nitsche’s *Game Spaces* and Alexander Galloway’s
Gaming take more general approaches to the analysis of video game form. Discussed briefly in the introduction to this work Nitsche’s Game Spaces (2008) seeks to explore a general theory of video game use or game play. As noted, in the process of arriving at an articulation of game “space,” Nitsche does approach what could be considered a cursory apparatus theory of video games.

Nitsche begins with an introduction to the theoretical space of video game studies. While this section of his analysis is intentionally general and oriented towards a discussion of “3D Game Space,” Nitsche does provide a useful set of foundational tools for a foray into game studies. Notable, for this project, is his model of the “5 Planes” of gameplay because they allow us to think about how games are played and different social, technical, and structural elements which affect play (Nitsche 2008). Briefly these are:

1. **Rule-based space** as defined by the mathematical rules that set, for example, physics, sounds, AI, and game-level architecture; 2. **Mediated space** as defined by the presentation, which is the space of the image plane and the use of this image including the cinematic form of presentation; 3. **Fictional space** that lives in the imagination, in other words, the space “imagined” by players from their comprehension of the available images; 4. **Play Space**, meaning the space of the play, which includes the player and the video game hardware; and 5. **Social space** defined by interaction with others, meaning the game space of other players affected (e.g., in a multiplayer title). (Nitsche 2008, 15-16)

What this model seeks to describe is the totality of video game play. It is worth noting here that while Aarseth’s ludological study of ergodic texts most closely aligns with the first and third planes (rules and fictional space), the scope of the study undertaken here is perhaps most

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2 This is where the definition of interactivity used in this thesis comes from.
pertinent to the second and fourth planes (mediated space and play space). Nitsche himself seeks to explore the implications of each of these; however, the body of his study tends to be oriented towards the third and fourth planes (fictional space and play space), focusing on the way players interact with and experience the semiotic elements of 3D video game space.

Thus, what begins as a very general discussion of video game play becomes a focused analysis of the semiotic construction of video games in terms of the narrative and experiential “space” of the game as it is mediated for players. Nitsche does recognize and discuss elements of the technical apparatus but this is not the object of his analysis. Video Game Spaces is more immediately concerned with the internal, coded (algorithmically and narratively) semiotic elements of game play that provide users with (and shape) an understanding of game spaces. The later portions of Nitsche’s study examine the way that the internal semiotic structures of a game (including camera movement, editing, sound, etc.) mediate a player’s experience of the game in order to produce a sense of “space.” What is essential in all of this is that this study remains centered on the internal semiotics of the game rather than the apparatus or the external mechanisms that preface this play and that likewise mediate the player’s experience of the game space.

While these semiotically oriented elements of Nitsche’s work are not especially immediate to an apparatus theory of game play, the theoretical groundwork with which Nitsche begins this study of game space is entirely applicable. Nitsche’s, opening discussion of the structure of games, provides a brief but insightful articulation of the material apparatus of video games. Although it does not necessarily theorize the function of this material apparatus in terms of an ideological/social critique, the model described here is suitable to this discussion. What Nitsche deals with in this section are questions of interface with an attention to the relationship
facilitated by technologies for user input. His argument here centers on discussion of “abstraction” via interface. The assumption is that the controller and its manipulation in physical space do not necessarily align with the representation in the space of the game. This assertion is crucial to a theory of apparatus in gameplay as it is this recognition of the discontinuity between the physical space of the user and the virtual space of the game that permits a consideration of the user’s interactive experience with (and immersion within) the game’s fictional plane. Additionally, this concept of abstraction becomes central to a number of other materially inclined studies of video games.

In terms of apparatus, Nitsche is suggesting that the actions players perform on the controller are distinct, in form and appearance, from the actions that they precipitate in the game world. Graeme Kirkpatrick (2011), David Myers (2009), and Gregerson and Gordal (2009) also allude to this abstraction via game controllers. Cumulatively these theorists propose a model of gaming that I also take up here, in which the controller facilitates user immersion in gameplay via a process of abstract mediation. This allows the user to experience presence in the game world through a simple technological apparatus, albeit one that does not necessarily align with the representational space of the game text. Through abstraction, the player is able to “act” in a game, but does so with a relatively simple interface. For example, jumping or running is replaced by the activation of buttons and the manipulation of joysticks. While each of these authors recognizes a similar syntactic discrepancy between player actions on the controller and the game actions these produce, Nitsche is the only one to also recognize a gulf between user and code. Arguably, this is implied by Kirkpatrick, Myers, and Gregerson and Gordal, but Nitsche is unique in his emphasis on the importance of this alienation from code. In this model the controller and the material apparatus become a means of abstract embodiment in the game, but
also serve as a means of obscuring the ludological, algorithmic elements of the game itself. Through the controller the user is freed from an awareness of the computational processes that make the game space possible. Kirkpatrick suggests that when the user fails at a game task the controller becomes visible (I address this in greater detail below); however what Nitsche’s model implies is that we may locate awareness of an apparatus more generally in moments of failure and disruption (a suggestion made in cinematic apparatus theory as well) since it is the disruption or failure of immersion within the game that most overtly reveals the presence of the apparatus, as well as its components and their functions.

Like Nitsche, who points us towards the complementary interconnectedness of interface, algorithm, game narrative, and the users themselves, Alexander Galloway (2006) offers a model of gameplay that highlights the connection between user and code, but with a similar awareness of the semiotic construction of games more generally. Where Nitsche’s theoretical endgame is a model of game space, Galloway is concerned with the algorithmic layer of video games and its import for experiences of game play more generally. In Galloway, the underlying code of the game is a starting point from which questions of representation, perspective, emergent play, and interface may be explored. The code of the game here is an apparatic element, much in the same way that celluloid and the camera are positioned as apparatic elements in cinematic apparatus theory. It is in the code that the game exists, and it is the code that reads and responds to user inputs via Nitsche’s mediated plane. Galloway’s work in this area moves us towards a more complete apparatus theory of game play; beginning with code we recognize one of the foundational, albeit immaterial elements of the video game apparatus. We may then extend this attention to code to a broader consideration of the computational machine that makes sense of this code and renders it as a readable, interactive space via the mediated plane. This is significant
because, although it is not often discussed in the scholarship of video games, the console or computer is the site at which the elements of the mediated plane, input devices, user actions, software, and hardware all meet.

From here we can return to questions of control, interface, and the mediated plane. If Nitsche recognizes the abstract connection between the controller and the user and between the controller and the code, and if Galloway offers us an articulation of the importance of algorithms and code in the framework of the apparatus, then it becomes feasible to start to think of the totality of a video game apparatus. One way we may conceive of this is to think of the apparatus in terms of two functions. Galloway refers to computational processes that are internal to the code (the game interacting with itself) and to computational processes that require user input as split between code that demands the user’s presence and code that is hidden and secured from user influence. I would like to invert this and propose that we may recognize a similar split between the elements of apparatus that are not apparent to the user in moments of immersed/ideal play (the storage medium—CDs or hard drives spinning, flash memory, etc.—the internal workings of the code, and the hardware that exists to process both the coded software and the inputs of the user, and that then project the results onto the mediated plane) and the elements of apparatus that directly address the user (the mediated space of the visuals, sounds, and other haptic feedback, as well as the input technologies that grant access to games as “interactive” media).

What I argue in the next section is that the apparatus functions to promote an ideal mode of interaction and immersion, facilitating the illusion of embodiment within the game. In this ideal mode of gameplay, certain elements of the video game apparatus emerge as a means of addressing user’s bodies, while others remain hidden. Those that do address the user—the
controller, the screen, speakers, and haptic-feedback devices—provide the experience of immersion within the game and illusion of power over both the game narrative and the diegetic spaces of the game world, while simultaneously obscuring and distancing the user from the much more structurally rigid and textually closed apparatic elements of the computer console and the code itself. Cumulatively, the video game apparatus is thus able to provide users with (the illusion of) a degree of authorship and presence within the game, while simultaneously structuring the user’s experience of gameplay through the limitations of technology and code.

Part 4: An Apparatus Theory of Game Play

As noted, the intent of this study is to theorize the apparatus of video game play via an analysis of the material and technological structures that frame the experience of gameplay and situate players in relation to that experience. As with cinematic apparatus theory, this exploration of video game apparatus seeks to locate the aspects of the apparatus that invest it with the power to give meaning to gameplay, and at the same time to shape or influence the process of play. In cinematic apparatus theory, this power is often read in one of two ways: either as a means to address the spectator at both a psychic and an ideological level, politically shaping his/her subjectivity relative to the text (we see this in Mulvey and Metz for example), or from a more general material perspective, as seen in Comolli or Bonitzer’s writing, that encourages the spectator to assume a specific viewing position in relation to the text, but one that need not necessarily be understood only in psychoanalytic or Marxist terms. In this project I favor the later approach, opting to explore the material components of video game play as a means to shape player’s experiences, but not strictly—or only—for ideological purposes. Rather, I explore the discrete functionalities of specific components of apparatus with the intention of
identifying the multidimensional nature of the forms of interactivity that they facilitate. In doing so, I argue that the material video game apparatus functions as a mediator between player and text, seeking to shape the ways that players experience and understand their position in relationship to the medium of video games more generally, as well as their interactions with specific game texts, in order to achieve an ideal playing position that promises the pleasures of immersion and the illusion of embodiment within the game world.

The suggestion here is that video game apparatus, while operating similar to cinematic apparatuses in terms of their function in positioning the spectator/player in relationship to the text, are also distinct in that the technologies of the video game medium and its modes of consumption allow for different types of engagement and different levels and forms of interactivity than do films. If the cinematic apparatus can be understood as providing a window onto the narrative world of the film, encouraging viewers to immerse themselves in that world by aligning themselves with the goals and the desires of the characters whose actions are glimpsed through this window, the video game apparatus might be understood as a kind of membrane between the physical world occupied by the player and the narrative/algorithmic space of the game, in which the controller allows the player to insert himself/herself into the world of the game and directly interact with it via avatar. In the strictest sense, the “game world,” whether a massive 3D environment used by millions of people, as is the case with World of Warcraft (Blizzard 2004), or a small 2d environment experienced by one or two players at a time, as in classics like Pac-Man (Namco 1980) or Tetris (Alexey Pajitnov 1984), exists only as a program or a set of code stored as digital data on a chip, a hard drive, a disk, or a server. In this form, as code, the game is relatively meaningless to the player; it is abstract, inaccessible, and for all intents and purposes unplayable (Galloway 2007). Although the game is complete as a finished
set of code it is not readable to the player and it certainly cannot be accessed and experienced as it was designed to be without a mediating technological apparatus.

Before a user can experience the massive world of Azeroth (the world in *World of Warcraft*), for example, or navigate Tetriminos (the falling blocks in *Tetris*) into place, the video game spaces in which these actions are given representation must be made readable. A computer must interpret the code of a game and represent it to the player via a mediated plane (Nitsche 2008). It is only after the code has been interpreted and projected, translated into graphics *and* actions, that the user or player is able to make sense of it and engage it, semiotically speaking. This interpretive/representational process is not exclusive to the video game apparatus alone, of course. In cinema the rapid movement of film through a projector is necessary to give still images the appearance of movement, and television only becomes watchable once the transmitted signal has been interpreted by the receiver in order to reproduce the image on screen. Interactive media like video games demand more of the apparatus than simple interpretation and representation, however. In the case of video games, the controller, or, more generally, the “input device,” distinguishes game play from other forms of media consumption, in large part because it simultaneously facilitates and requires a level of interactivity and a type of immersion absent from television or film (Kirkpatrick 2011). Explicitly, it allows the user to “control” the game world, this providing, as mentioned above, the illusion of embodiment within that world. In reality the controller’s function is a bit more complex, and it will be explored in much more detail in subsequent chapters. For now, though, it is sufficient to say that the controller/input device is designed to open the text to the user, to give the user the power to influence and direct the narrative of the text, and to experience the illusion of embodiment within it.
It is worth noting within this context that “controllers” are by no means a recent invention. Televisions and radios have incorporated knobs, buttons, and remote controls since well before video games became commercially available, and with the introduction of home video the capacity to navigate texts via an input device has been further expanded. However, computer input devices and video game controllers propose a more significant and powerful capacity to influence a text, since they promise a dynamic of interactivity that remotes do not. Rather than simply a means to traverse a text by changing channels or moving forward or backward through a VHS tape or DVD, the video game controller’s significance is more immediate to the text itself. More than a means to navigate closed content like flipping through a book, or changing channels; the controller promises the user the power to address the internal algorithms of the text, often (mis)construed as the power of authorship. This is because the controller and the input device do not simply provide the user with non-linear access to the text (Aarseth 1997); they allow the user to interact with the medium at the level of computational algorithms (Nitsche 2008, Galloway 2006). Thus, the controller is not simply a reading tool; as its name would imply, it grants the user control over the text, and the power to determine the flow and trajectory of the game’s narrative (to a degree). For example, In Pac-Man the narrative of the game is open ended: when and how the player-controlled avatar lives, moves, and dies is determined by the inputs made with a relatively simple analogue joystick. The player may only move Pac-Man up, down, left or right, but this is all that is necessary to navigate the game world and, in the case of this particular text, it is all that is necessary to interpolate the reader into an experience of both immersion and authorship. The inputs made with the controller are registered at the level of digitized code and the text responds, shifting patterns on screen and developing the narrative projected on the monitor in response to the unique moment of play.
Thus, the controller becomes a means to power; it allows the player to control the text, not merely to “read” it, to navigate the virtual space of the game, and to experience some degree of presence in the game world. In so doing, it also allows the player to address the internal code of the game and to generate a unique moment of play. It is no wonder then that the controller is often a standout symbol of video game play. Kirkpatrick writes of the controller: “Clearly then, the controller is not just hardware, nor is it software and it is also not straightforwardly a transmitter of player intentions in the game. It is the most concentrated intersection of all these, the key elements of gaming” (Kirkpatrick 2011, 96). Although ludologically inclined theorists may suggest that the algorithmic code is the most immediate point of connection between human influence and game structure, this recognition of the controller as central to this cybernetic process is certainly not an overstatement. It is then, also no wonder that the video game controller is often one of the most dynamic and rapidly evolving components of the video game apparatus. This will be discussed in greater detail in Chapter 2, but very briefly, the history of video game controllers and input devices reveals an ongoing pattern of creative development and redeployment with input devices built around combinations of buttons, joysticks, track balls, sensor pads, ir-remotes, cameras and motion tracking devices, and touch pads, among an even more diverse and growing list of other technologies.

This fascination with and attention to the controller recognizes the controller as the point of connection between player and game. In a meta-textual sense, the controller becomes what the camera or the projector are for the cinema: a physically identifiable object, essential to the apparatus of the medium more broadly, that defines the medium and subsumes these various components, becoming significant in and of itself. I do not mean to suggest that the “power” exercised through the controller to affect game play is ideological, promoting or maintaining
racial, social, or classed hierarchies, nor that that the power it promises to the player escapes or
transcends the video game text; rather, the power that it is invested with is situated in its promise
of a particular experience during play, as well as its capacity to obscure the more rigid a-textual
elements of play. The controller interpolates the player, hailing them in such a way that they are
able to claim game actions as their own, and thus achieving an albeit illusory sense of immersion
within the game. Like the camera in the cinema, the controller represents the promise of the
entire apparatus. Where the movie camera captures and represents filmic worlds onscreen,
facilitating a psychic engagement that allows for the illusion of spectator immersion within those
worlds, the controller promises immersion within the game world, but also a sense of
embodiment that goes beyond just psychic engagement to include physical engagement with the
game world as well. In doing so, the controller renders the particular components and inner-
constructions of the video game apparatus invisible (at least during play), much in the same way
that the movie camera does during projection. That is, the controller physically addresses the
user, eliminating the need for the user to contemplate the internal functions of the console and
code that translate the player’s manipulation of the controller into actions within the video game
world. More than the screen or the physical console itself, then, it is the controller that becomes
the defining symbol of video game play and that promises the user immersion in and power over
the text.

Obviously the controller’s (and the apparatus’s) function is not this simple; the controller
does not merely grant the user the power of authorship. As Aarseth suggests of cybertexts, power
always already exists (and is always already limited) to some degree in the program or code.
This means that the narrative and semiotic space of the video game, which the users become
pseudo-authors of, is always bounded and limited by the structures of the code and the capacities
of the apparatus itself. In this regard, we may divide the power of input (relative to game narrative) into two categories. On one hand, there is the input of the player or user via the controller (or input device), and on the other hand there is the code of the game, the program or algorithm that both precede and respond to the inputs of the player. So, when a user moves the joystick while playing *Pac-Man*, for example, the computer responds based on the coded algorithms, changes Pac-Man’s orientation and movement, and proceeds to graphically represent this on screen. Here, the user has the power to navigate Pac-Man around the game world, and in doing so becomes invested in and responsible for the trajectory of this avatar.

Significantly, though, while encouraging the illusion of total, open-ended control, this “power” to affect action in the game world is limited in a number of very specific ways. The physical inputs that direct Pac-Man’s movements are only possible because they have been programmed into the code of the game. In this sense the user is only capable of making actions that the game’s authors/programmers have accounted for, meaning that they are structured and interpreted by code. Also, as Galloway (2006) suggests, simultaneous to the user input that directs Pac-Man are a string of ongoing algorithmic inputs outside of the player’s control: ghosts continue to move around the map, sound plays, a counter keeps track of points, etc. Thus, the computer is constantly responding to the inputs of the player, while simultaneously executing code that the player cannot directly control. Here we begin to see the fraught relationship between player and text, wherein the authorship is neither solely the result of player input and control nor entirely technologically determined by code and apparatus.

This role of the controller in terms of the video game apparatus is both interesting and problematic. In the process of analyzing the functions of these apparatic components in the following chapters, I explore the topography of this cybernetic connection where the confusion
of player as authorial force and both code and apparatus as deterministic forces emerges. In an idealized engagement with video game play, the successful integration of player, controller, and text renders the entire apparatus invisible as the fully interpolated, fully addressed player experiences the power of pseudo authorship and pseudo embodiment. Indeed, this is the mode of play that I am arguing the video game apparatus is structured to provide to players. In this ideal moment, as one plays, the discrete physical actions necessary to experience the entire textuality of the game fade into a natural experience of immersion within the game. That is, any immediate awareness of the computer interpreting player input and game code, the monitor projecting the visual representation of the game world, the speakers producing game sounds, and even the controller itself translating player actions into actions within the game, begin to fade as the user becomes immersed within the world of the game. This immersion, of course, is also contingent upon the level of comfort or familiarity that the player achieves in interacting with the technological components of the game apparatus. As the individual button combinations and manipulations necessary to perform actions in the game become increasingly familiar to the player, eventually (or ideally) these too fade into a larger process of play, with the controller perceived as a “natural” component of the engagement.

Significantly, in this process of familiarization and naturalization, the structures that bound this experience are unobserved. So, just as the controller obscures the computational processes and code that form the basis for game play, the successful immersion of the player within the game world via the controller and mediated plane allow the narrative space of the game to assume primacy in the user’s experience. In this moment, contemplation of the input device and screen fade into a pure experience of “presence” in the game world (at least ideally). Thus, as the apparatus recedes, the player is able to become invested and immersed in the
narrative of the game. Rather than directing attention to the specific inputs necessary to affect the game world or the computational processes that make it readable, in an idealized engagement, the apparatus shrinks and the player becomes invested in the textual/narrative space of the game.

For instance, to play *Pac-Man*, a user does not need to be aware of the computational processes that register and respond to the inputs of the player and display their effects on the monitor. All the user needs to know is that a directional tug on the joystick results in a similar directional change in the orientation of their little yellow avatar within the game. Furthermore, with some experience playing *Pac-Man*, the need to contemplate this connection is replaced by a kind of reflexive response to the visual stimulus of the game. Obviously *Pac-Man* is an extremely simplistic example (this is partially why I have returned to it in this discussion of video game apparatus), and modern video games have become significantly more complex in virtually every imaginable way. None the less, what we see in this brief and basic discussion is a development towards an ideal position of play in which interaction with the video game apparatus facilitates immersion within the game by seeking to mask the mediation of the controller in translating player actions into actions in the game world. The entirety of the video game apparatus, when successful, therefore hails players, interpolating them in a way that creates a sense of embodiment within the game.

I should note that this is the point at which this discussion of the function of the video game apparatus risks slipping into a model of technological determinism. Rather than going that route, I would like to propose that the model of the video game apparatus that I am formulating assumes that the function of that apparatus is to encourage and/or facilitate an idealized experience of play, one that is certainly achievable, but that is also not necessarily always or fully achieved during game play. That is to say, the video game apparatus represents the
convergence of a number of distinct and deliberately designed media technologies: the carefully edited code of the game itself, the controller or input device, the computer or console that runs it, etc. Each of these components is created with the intention of facilitating an immersive, embodied experience. So, while I do not intend to propose that users are always entirely or perfectly hailed, what I am suggesting is that the medium and, in particular, the apparatus, is developed with an intention of an ideal cybernetic relationship between apparatus and player during moments of play. The question of whether or not this ideal is ever fully realized or is simply approached is arguably irrelevant within the scope of this study. Instead, what I argue is that in terms of their design and the narratives that circulate around them, video game apparatuses promise an embodied and fully hailed subject position for the gamer during moments of play.

Thus, what this study intends to do is to peel back the narrative or semiotic elements of game play and draw attention to the development and function of the technology that precedes (and in many ways enables) these. From here it will be possible to articulate the way the material elements of video game technology both empower and interpolate the user. The argument I make in the following two chapters is that the video game apparatus develops and changes in ways that are intended to give the player a deeper sense or illusion of both immersion and embodied experience within the game. In the next chapter, I will explore the way that changes and developments to the apparatus correspond to more direct and more complete physiological addresses to the idealized user’s body. This includes a growing complexity of code (represented by the need for larger storage media and processing capabilities) in order to facilitate larger, more detailed, and more visually “accurate” semiotic game spaces. A diversification and proliferation of input technologies including motion control, touch control, the addition of
buttons, bumpers, and thumb sticks in order to better incorporate a the gamut of users’ motor functions, as well as interfaces that go beyond the screens familiar to scholars of film and television likewise arguably signify as drive to see gaming technologies more completely respond to and cater to users.

What I propose is that these technological advancements appear to give users a greater experience of immersion and control over the game. The challenge here is to discern where these changes result in a legitimate expansion of freedom and power for the user in terms of the degree to which they can affect gameplay, and where these shifts leave the boundaries of technology and code intact. Obviously, power and control on the part of the player are not necessarily directly opposed to the function of the video game apparatus in positioning of players in relation to the game, since users may be more completely addressed by an apparatus without necessarily being more completely subjected to the limitations and structures of the game. New forms of ‘emergent play,’ for example, demonstrate the complexity and unpredictability of this relationship. Instead, what becomes important is the differentiation between apparatic developments that seek to improve immersion and embodiment and the limitations and boundaries that exist in these same technologies to limit the degree of control over the game players can exercise in this quest for “perfect” immersion and embodiment. Hopefully, what will emerge in my analysis of these issues in the following chapters is the recognition that within technological shifts toward a more perfect or more complete immersion, presence, and power relative to the game, the structural elements of the video game apparatus that encourage players to assume particular positions of play in relationship to the game must necessarily remain in place in order for such immersion, presence, and/or power to be achievable.

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3 Emergent play describes play with/in games which goes beyond or outside the intended structure and objective of the game.
CHAPTER TWO: SURVEYING THE APPARATUS

“So while video games began as games played on a television screen with raster imagery, advances in imaging technologies, the porting of and adapting of game titles to hardware with a variety of imaging technologies, and commercial marketing which tends to use the term video game to describe all these things have resulted in a broad, popular definition of the term, the boundaries of which remain as blurred as ever as new software and hardware continue to appear” -- Wolf, 2008, 7

What Wolf is addressing here is the difficulty in using the term “video game” as a means to bracket off and describe a specific media form. As Wolf argues, this difficulty arises from the complex and evolving medium that the term video game recalls. That is, there is no unifying technical structure behind all video games; rather the term is used to describe a collection of technologies that facilitate a specific kind of experience or mode of engagement. As noted in the previous chapter, this complexity is what makes a theoretical discussion of video game apparatus difficult. In terms of their material components, video game technologies remain in a constant state of flux. Obviously, the same could be argued for other media forms; cinema grew to incorporate sound, color, and a breadth of other technologies such as stereo and surround sound, digital projection, widescreen, cinemascope, 3d picture, etc. (some successfully and some not successfully). However, with video games this technological amorphism continues to restructure even the foundational elements of the medium such that gameplay on a Wii console, an iPhone, and a personal computer look and feel completely different, yet each falls under the purview of “gaming.” As a result of this complexity, the task of describing and exploring the function of game apparatuses seems to demand one of two approaches. Either we explore the entire history of video game apparatuses and make note of the systems of engagement that these facilitate and encourage, or we note the analogous structures or components of the video game apparatus and
examine each in terms of its development more generally, as well as its function in shaping the experience of play.

Within the parameters of this project, I will opt here for the later. While a complete history of video game apparatuses presents an academically productive endeavor, the task at hand is a more general theory of video game apparatuses. As the goal of this project is a discussion of apparatus in terms of its function in facilitating an experience with a game, a complete history of video game technologies would take us too far afield. Rather, I draw here on brief discussions of certain changes and developments made to the apparatus and the general trajectory that these developments suggest, in order to examine the ways in which these modifications made to the video game apparatus function in the production and evolution of the ideal position of play relative to video games discussed in the previous chapter.

Recalling Nitsche’s “5 Planes” of gameplay -- Rule-based space, Mediated space, Fictional space, Play Space, and Social space (Nitsche 2008)--with which Nitsche sought to theorize a total model of gaming, I would like to divide the video game apparatus in such a way that both the narrative and experiential functions of each becomes identifiable. Thus, it will become possible to study specific developments to the technology of game play in terms of the way that they address the spectator. Through this lens a more general trajectory of development will become visible and with it, hopefully, the function of the apparatus itself as both a means to embodiment and immersion will become more clear.

In the previous chapter we split the apparatus into the components that directly address the spectator and those that function in a less immediate or apparent way. These are the mediated plane and the input device versus the computational machine and the code. For the discussion at hand, we will focus on the development and function of each of the following: the controller (or,
more generally, the input device); the screen (a portion of the mediated plane which also includes sound and other feedback); the physical, computational hardware of the console or computer; and the code, (the software or algorithm that constitutes the text of the game). What I argue here is that developments to each of these apparatic components facilitate greater immersion and embodiment for the player or user (or at least the illusion of this experience). While this does not necessarily equate greater authorial power, the growing complexity of each of these components does result in, at least the potential for achieving the ideal of a more complete, complex, and immersive experience of play. This may take the form of longer, more intricate algorithms resulting in larger and more complex worlds, longer narratives with more opportunities for, and more varying types of, player engagement, and more enhanced content. It could also include input capabilities that better or more totally interact with the user’s physical body, as well as graphics and/or interfaces that provide greater detail and depth in order to encourage a more complete sense of immersion.

Part 1: Algorithms and Code

In *Gaming: Essays on Algorithmic Culture*, Alexander Galloway (2006) suggests beginning a study of games at the level of algorithms. Although often one of the less visible components of the video game apparatus, the code forms and contains all of the content, spaces, and rules of the game. To return to the analogy of the cinema, a game’s code most closely resembles celluloid on which the content of the film is recorded and from which it is projected. That is, the raw text of the game, before it is made readable and playable by the user, is the code. In this regard, the content of any game is, technically speaking, reducible to the commands and algorithms written into the program. This code, however, is often (and increasingly) complex,
written in program-languages as strings of logical statements readable by a computer. This, of course, means that to the average user the code is meaningless, particularly when compared to the mediated text represented to the user via the screen. Thus, the program of the game is at once virtually unrecognizable and in turn unseen by the user. Indeed, the code of any game is generally inaccessible to the player who only ever “sees” it once it has been interpreted as a playable text on screen. In this sense, the other parts of the apparatus serve as a means to separate the user from the raw text that is the program.

However, despite this distance from the user, the code is essential to their experience of gameplay. It dictates the space of the game world, it defines their capabilities in terms of acting on/within that space, it interprets their interactions with the game, and it contains all of the semiotic and narrative content that the user can and will experience in the process. Whether we are speaking of (Home) Pong (Atari, 1975), one of the earliest commercially available and successful video games for home use, or something much more contemporary and complex like Assassins Creed (Ubisoft Montreal 2007), we are describing virtual play-spaces constructed out of code. Although early games like Pong and the content developed for the Magnavox Odyssey console were technically “analogue,” programed using wires, resistors, chips, and boards rather than digital/binary code like modern programs, both of these systems generate a programed space that both defines and limits the extent of a user’s authorial power over the game. So, although early games were “programed” onto boards and chips using analogue electronic programs, while modern games are written and stored on a number media including hard drives, disks, and flash memory and are read as digital data, either of these coded systems are finite. In the strictest sense the video game is only as large and as open ended as the space of its code allows.
Obviously this “space” of the code while total, cannot fully determine the player’s position relative to the game. That is, although the program determines the virtual space and function of the game, it cannot fully determine the user’s experience of play and the meaning they make of it. What I am suggesting is that the code defines the logical properties of the game world, but cannot fully determine how the user experiences it, much in the same way that films or works of literature exist as closed texts yet remain open to user/reader/spectator interpretations. This becomes increasingly apparent if we consider practices like “glitching” or “super-play.” (Also, emergent play.) In *Playing with Video Games*, James Newman describes “glitch-hunters” as players who seek out and catalogue glitches in games usually caused by problems in the game code (Newman 2008, 114). These glitch-hunters also often engage in a practice termed “glitching,” wherein glitches in code become a means to bend or exploit the rules of the game either to gain advantages in the game or simply to test the boundaries of code. Trends like “superplay” refer to gameplay practices that seek to “demonstrate a mastery of the game through performance” (Newman 2008, 123) by constructing new challenges and objectives within the code of the game. Included in this are players who “speedrun,” or attempt to reach the conclusion of a game as fast as possible, often skipping entire sections of the game if they can. What supperplay represents is the development of alternate narratives of gameplay and a redeployment of game objectives in order to create a new experience of play within the existing code of the game. Taken cumulatively, superplay and glitching demonstrate user engagements with code that ignore, defy, or reject the narrative design of a game while remaining within the technically rigid space of the game code.

We may add to these practices of glitching and superplay, practices in which users actively engage in the reconstruction or alteration of game code. If glitchers and superplayers
experiment within the confines of the game code, “hackers” and “modders” alter the code itself. Newman notes that modding can often apply to a range of strategies that include modifications to the material elements of the apparatus, including computer cases, but also hardware and firmware. However his discussion focuses specifically on the practice of modding game code, the practice that is also most relevant to our discussion here. Modding in this sense refers to the manipulation of game code. This may take the form of content added to the game, the creation of new game modes, addition of items and objects to the game, or changes to the visual properties of the game world. However, Newman also notes that modding may refer to hacking, the construction or exploitation of game code in order to give players advantages in the game. (Newman 2008) Thus, where superplay and glitiching experiment with play while remaining within the confines of the original code, modding and hacking represent user engagements that actively address and alter the code of the game world (either to create something new or to gain advantages over other players through the manipulation of code).

My purpose in drawing attention to these engagements with code is that they demonstrate modes of play that intentionally elide the structures and engagements encouraged by the game itself via the game code. That is to say, these users recognize the structures and modes of play that the code of a game encourages; they recognize the “ideal” position of the player as defined or intended by the programmer, but they choose to interrupt it via these emergent engagements. What this reveals is twofold. Most obviously it demonstrates the limitations of code, that players are not always fully subject to the structures of code. However, these practices, in their pseudo-transgressive nature, also demonstrate the existence of a more general, more common ideal structure of play. If modders and superplayers represent a group of users who recognize the original, intended playing positions promoted via the structure of game code, and
become transgressive or outstanding through their active experimentation with and modification of these structures, then this implies that the average user does not. The idealized, general video game player does not have access to the algorithmic structure of the game in the same way that these players do, and instead must play within the bounds established by the structure of code. In this regard, the modder and the superplayer occupy a privileged position; they possess a literacy that the average player cannot or does not exercise. In a very real way these users do become pseudo-authors: they intervene in the text of the game and produce new narratives of play and even new structures of code. By contrast, we can begin to see how the “idealized” position of play created by the game code is barred from this level of authorship.  

Ultimately, then, although we may recognize interventions in game code and the deployment of alternative ludological models in the examples of modders, glitchers, hackers, and superplayers, we must also recognize that these modes of play are outside of the norm. That is to say, these players represent a select group of users who intentionally disrupt or elide intended game mechanics, and the structure or space of video game algorithms do not necessarily lend themselves to these interventions easily. Indeed, in a contemporary game economy these interventions are often discouraged and policed through anti hacking software, a constant system of patches and updates intended to correct glitches, and tightly held developer tools. Again, this is not always the case, as with open-source software and games that encourage user contributions. *Team Fortress 2* (Valve 2007) went free-to-play in 2011 and introduced the “Steam Workshop” which allows users to contribute to the design of items used in the game.

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4 Players who are able to participate in modding, glitching, or hacking have a more technical understanding of game code. In short, they possess a level of literacy and expertise that the average/ideal player lacks (or at least does not exercise).

5 Free-to-Play refers to an economic model where the game itself is ‘free to play’ but is generally supported by ‘micro transactions,’ purchases made by players *in* the game itself. This is usually to unlock content or gain advantages not available to ‘free’ players.
However, the literacies required for these engagements with code and the limited coding power provided to non-expert users suggest that the authorial position of the programmer and the structures of the game code continue to define and limit the pseudo-authorial power of the user. Thus, although we may look to emergent practices and modding as examples of the still-openness of game code this does not change the fact that the code itself is closed to the majority of users and still ultimately defines the scope of the game space.

The abstraction\(^6\) between user and code is further extended if we consider the growing complexity of video game programs. If the complexity of program language is sufficient to bar the average user from an authorial engagement with the game text at the level of its code, then the growing scope of these texts also complicates any intervention in the game algorithm. As noted above, early games were written using analog architecture, but following the birth of the home console and the home computer, these technologies quickly went digital. Accompanying this shift, the code of video game programs has rapidly become more complex. This, in turn, has necessitated the use of more powerful processing hardware, as well as larger and faster media on which to store this code. Each of these technological shifts has been designed to accommodate the growing complexity of code. In terms of our discussion of the video game apparatus, as players demand larger, more detailed, and more immersive game experiences this necessitates more complex program architecture. In short, as the games we play become more expansive, so too does their code.\(^7\)

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\(^6\) Abstraction, here, refers to the discrepancy between the ‘game’ that the user sees and the ‘game’ as a body of code. Specifically the structures of the game in play are heavily mediated by hardware, firmware, operating systems, etc. meaning that they look and function very differently when the user perceives them in a moment of play and as they appear at the level of program language.

\(^7\) For example, the PC operating system Windows 95 (Microsoft 1995) was written with approximately 15 million lines of code while Windows Vista (Microsoft 2006), released 9 years later, contained about 50 million lines of code. Granted, counting the lines of code is a problematic gauge of a program’s complexity or function; none the less, it is useful here to demonstrate a trend towards longer more detailed and intricate systems of code.
This increase in code suggests that as the games we play become more immersive and compelling through better graphics, more accurate physics, more open worlds, and longer narratives, they are also becoming harder and more complex to program. This means that in addition to the language of code itself preventing the lay-user from intervening in the algorithms of a game’s program, the size and scope of these texts also dissuades serious interventions in the text.  

Ultimately, as video games continue to develop both as a medium and as a technology, the distance between users and text is growing. While early games connected the user to the semiotic space of the text via analogue programming and interface, digital gaming sees the gulf between player and game world growing through the abstractions of programmed code. That is, the functional distance between players and the worlds that they experience is determined by the complexity of the game’s code. And, given that the code necessary to create the immersive and expansive worlds that modern gamers inhabit is rapidly growing in size, length, and intricacy, then this means that users are actually further separated from these worlds in a strictly technical sense. This is not to say that this renders the text increasingly inaccessible, only that more code comes between the player and the complex digital game. Users may always be separated from the game code by limitations of literacy but as code grows its scope makes interventions in the algorithmic layer of the apparatus more cumbersome.

What all of this suggests is that the literacies necessary to understand, intervene in, and edit code prohibit the average/ideal user from engaging these texts from a truly authorial position. Although users can and do develop unique and emergent modes of play relative to video game texts, as seen in the example of the superplayer, these are generally bounded by the

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8 Some games allow for and facilitate simple modifications however, direct interventions in games’ core logic and structure is much more difficult.
limitations or the scope of the game’s coded space. In an optimistic sense, we might read the expansion of code as an expansion of space in which creative possibilities for alternative forms of play may develop. However, we must also recognize this growth of code as a development that necessitates a greater abstraction between the user and the game world. Ultimately, then, this discussion of code leaves us with a kind-of double-bind: in one sense game worlds are becoming larger and the room for creative/personal interaction with those worlds is growing; in another sense the growth of these worlds results in further abstraction or alienation between the user and the algorithmic text of the game. This implies that while game use may appear to be an open and playful experience, it is always limited by the parameters of a game’s algorithmic structure. Games allow for users to act and interact creatively with these structures but we must recall that these structures themselves remain relatively rigid or limited.

Part 2: Hardware: Consoles and Computers

If we recognize that video game code, while potentially accessible to privileged users, is closed to and abstracted from the gaming experience of the average player, then the question turns to the mechanisms of the apparatus that allow the code to go unnoticed and unremarked, facilitating this structural alienation between the user and the game world. It is here that we must begin a discussion of the hardware of the apparatus. Although early games were “programmed” onto chips, modern games are written and stored on a number media including hard drives, disks, and flash memory. As a result, although the program algorithm is theoretically only as material as any other language or logic, it is stored and accessed in a material form. Similarly, the processes that facilitate this access also take on a material form. It is the material object of the computer and its technical functions that effectively separate the user from the code. We will
turn later to the controller and screen which form membranes between the user and the narrative
of the game via input and output; however, in order for these mechanisms to function a
computer must mediate (or process) the interactions of the algorithm and the user interface.

In *Aesthetic Theory and the Video Game* (2011) Garame Kirkpatrick notes that video
game hardware is often fetishized, citing attention directed toward graphics cards and special
edition consoles. In this sense, the hardware associated with game play is certainly more visible
than the code of a game. Indeed, Kirkpatrick is correct to suggest that hardware is closely
scrutinized. It is not an uncommon practice for dedicated computer game players to cite their
hardware setups in their online signatures. This is because, especially for video gamers using
personal computers, gaming hardware ultimately determines how and how well a game will run
on a given system. Where the code forms the basis for the game world, the hardware of the
console or computer is responsible for processing and representing that world to the user by
translating the code into graphics and actions, a technical process that depends greatly on the
capabilities of that machine. For this reason cutting edge hardware often translates to more
speed, better graphics, and generally better performance.

While this scrutiny of technological capacities is often the norm among dedicated
computer gamers, the same is not necessarily true of home console gamers whose dedicated
video game consoles are generally closed to hardware modification. Indeed, although hardware
modification via peripheral technology is commonplace, these consoles usually prohibit (often
via a warranty or copyright law) serious modifications to the internal computational components
of the game system. This, however, does not mean that console gamers are unaware of the

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9 I am using computer here to refer to a computational device. Although they function differently, personal
computers, game consoles, smartphones, etc. generally have analogous components: microprocessors, memory
modules, motherboards, chips and other circuit boards.

10 This would include changing out controllers or adding peripherals like a DDR-pad, litegun, or even the Microsoft
*Kinnect*, a motion capture device for the Xbox 360.
technological specs of their machine. For example, the video game news website IGN compared the “Slim”\textsuperscript{11} versions of the PlayStation 3 and the Xbox 360 in an article, \textit{Xbox 360 vs. PlayStation 3: The Hardware Throwdown}, designed to address and evaluate the components used in each system and the performance advantages of each (IGN.com 2010). Clearly, then, although inaccessible and obscure, the internal components of the machine do matter to console gamers. They become selling points and, as the IGN article demonstrates, distinguishing characteristics of each system. They also represent the cutting edge of technology. We may observe this technological progress if we consider the development of the game console. The Sony PlayStation video game console, released in 1994, housed a Central Processing Unit (CPU) capable of operating at speeds of 33.33 MHz while the PlayStation 3 (one of the subjects of the IGN article) released in 2006, housed a CPU capable of operating at 3.2 GHz or \textit{3,200 MHz} on 7 cores, essentially 7 separate processes at 3.2 GHz simultaneously.

In this regard, the hardware associated with video game play is significantly more apparent to users than the code of the game. It represents the upper limit of a computer/console’s performance and also, simply, the promise of access to a game. This fetishization of hardware recognizes that play is dependent on access to or ownership of specific technology and that more complex technology facilitates more complex games. While game code is abstract and generally only ever seen in its mediated form, computational components are at least identifiable as the components that facilitate play; the hardware is persistent and physical, while code is much more abstract (in addition to being abstracted). Thus, hardware is more easily fetishized in the form of better graphics cards and faster CPUs, but also as newer smartphones and game consoles, while the software of games are generally only seen (and fetishized) in their already mediated form.

\textsuperscript{11} These are slightly re-designed home video game consoles introduced near the middle of the technology’s life span.
From the standpoint of apparatus theory, this is interesting but it elides another, perhaps more crucial point. That is, all of this concern over the technology of gaming is largely removed from a moment of actual play. That is to say, in the moment at which a player is actually playing a game, the specific components of the console are secondary to their function in facilitating an experience of play. When playing a game, a user is not concerned with the technical specifications of the machine, unless of course they are disrupting play (causing lag, or slowdown); rather, awareness of the machine ideally disappears, as it brings together the program code and the user’s input, and projects the combined result onto a screen in a way that renders the machine itself invisible. Thus, this interest on the part of gamers in the specs of their computer does not translate to an awareness of or attention to the computational processes that these high end components execute during gameplay, when they actually execute them. Put simply, the fetishization of hardware described by Kirkpatrick and represented by the IGN article does not necessarily translate to an attention to the discrete functions of computational components at the moment of play. Although users will notice an increase in performance as a result of more sophisticated hardware, they are not required to understand or reflect on these processes during game play (unless of course some aspect of this technology fails); in an ideal engagement the physical hardware of the computer, like the code, is hidden behind the physical and visual membranes of the controller and screen (and speakers).

What all of this suggests is that while the console/computer is readily associated with the process of play, it disappears during an ideal moment of play. In this regard the computer is certainly more visible and accessible than the code of the game, which the average user may never plainly encounter, but it is also not as immediate to the player’s experience as the controller or screen. While we may recognize the fetishization or scrutiny afforded to video
game hardware, this is not synonymous with an understanding of the apparatic functions of the machine during use. Rather, the computer and the technical components that make it up serve as a promise to users: it represents the possibility of a more semiotically appealing experience, meaning visually, narratively, and structurally the mediated experience of play is improved by greater technological capacities. Although increasingly lengthy code remains hidden, the scrutinized-computer hardware associated with game play implies the capacity to realize the complexity of an explosion of code. In this sense, code and hardware are connected in more than simply their technical function. Hardware permits the development and execution of code necessary to produce more complex and more compelling experiences of play. So, although users are not necessarily aware of the discrete functions of hardware during play, they are acutely aware of the fact that better hardware permits longer, more graphically impressive and more complex gameplay—which, in turn, holds out the promise of greater immersion in the game. In this regard, the computational hardware comes to stand for a promise of immersion. Not necessarily haptic or sensory immersion, as these are more readily associated with controllers and screens, but the immersion afforded by bigger and more visually impressive games that are the product of hardware meeting code.

Part 3: Screens: Virtual Windows and Virtual Boys

The quote from Mark J.P. Wolf’s The Medium of the Video game that opens this chapter expresses the difficulty of bracketing and defining a set of cultural artifacts under the title “video game.” Included in this discussion (and alluded to in this quote) is a question of the term “video” and what that implies. Wolfe tackles this very directly, exploring the different video and screen technologies used to produce the images and visual spaces of these games, going as far as to
draw distinctions between raster and vector imaging technologies. While this approach is historically and semantically useful, I intend to take a different tack. Wolfe’s model deals very heavily with the computational and technical components used to produce screen images. However, from the standpoint of apparatus theory, these distinctions hold less critical significance, particularly when it comes to the experience of video game players in relationship to these screens. Rather, what is significant in terms of a theory of apparatus is the question of how screens have been/are deployed to position the subject relative to the text.

The previous two sections of this chapter have dealt with elements of the apparatus that, at the moment of play, are rendered invisible. While we may argue that the same is true of controllers and screens (during an ideal moment of play, they too fade into what should be a fully immersive experience with the game at a narrative level), they do occupy a position of immediacy that code and computer hardware do not. That is, although the player’s specific awareness of them may disappear during game play, the screen and the controller do directly address the user on a sensory, physical level, functionally separating the user from the hardware and code, while at the same time connecting the user to the world of the game via the illusion of the power to affect actions in the game world. In this model, the screen serves as a membrane between the user and the semiotic world of the game. As previously discussed, Nitsche termed this mediated space, consisting of “all of the output the system can provide in order to present the rule-based game universe to the player” (Nitsche 2008, 16). In this sense, the screen or the mediated plane (which would also include sound and haptic feedback) functionally stands between the player and the technical processes of the code and hardware, rendering the game text semiotically readable and playable. It offers a window into the game world, much in the same way that film and television screens provided windows into the fictional worlds of movies or TV
shows. The screen, then, is the space in which the game becomes textually immediate to the user; it is the point at which the user experiences the video game.

Given their crucial function in the production of a playing position relative to the apparatus and the text, it is perhaps a wonder that game screens do not have a more complex history. Although we may point to the proliferation of pixels, games running at higher resolutions, and the shift from LED screens and CRT monitors to LCD and plasma screens, the history of game screens is not particularly distinct from the history of home televisions and personal computer monitors. Despite this shared history, though, the video game screen is arguably functionally (as opposed to physically) distinct from television and computer screens. That is, the way that the game screen is used to position the player in relationship to the game requires a different set of strategies of engagement than those employed in TV and Film spectatorship, or in computer use. Likewise, although video games are often played on television or computer screens, the functions of these screens change slightly but in significant ways in each of these instances.

A quote from Anne Friedberg’s *The Virtual Window* is instructive here:

For Alberti, the metaphor of the window implied direct, veridical, and unmediated vision, transparency of surface or aperture, and transmitted light. The computer ‘window’ implies its opposite: the visual field seen through a computer ‘window’ is rarely direct (although webcams play on this function); it is mediated to a high degree through its proprietary or trademarked ‘software’; and its representational function is highly iconic. Computer ‘windows’ coexist on the flat surface of a computer display. They open onto flatness or depth, image or text, moving or still content. Some ‘windows’ open onto networked systems, some only refer to the hard drive of its base. (Friedberg 2006, 231)
What Friedberg identifies here is a distinction between the computer screen and the framed image/window described by Leon Battista Alberti in 1435. The window described by Alberti is in reference to a specific painting convention, in which the content on the canvas is depicted as “framed” through a window that makes up part of the image, thus serving as a model for thinking of the canvas as providing a window into a world separate from that occupied by the spectator gazing at the painting. This model of an ostensibly unmediated vision of a world made apparent via the canvas-as-window becomes a metaphor for a multiplicity of virtual windows that follow the medium of painting, including cinema (and by extension, television). These images, as Friedberg notes, imply direct spectatorship into a complete and, crucially, unmediated space. Obviously these windows are mediated, but the illusion, when successful, does persist. This establishes a split with the virtual windows experienced by computer users, which are explicitly mediated, multiple, and fragmented. In one sense, Freiberg is gesturing towards the abstraction of code discussed earlier, but in another, broader sense, she is also implying that these computer windows are not designed to be seen or experienced as a cohesive world/narrative space. Rather, they are functional; they seemingly lack narrative and (generally) depth. The computer window described here is used to write documents, browse the internet, read text, etc. It is not a narrative space; it is a functional space designed for efficiency and pointed use. What this describes is not the computer window used to play computer games but the computer window as a space to execute a variety of tasks.

The usefulness of Friedberg’s distinction here in terms of a discussion of the screen as a component of the video game apparatus is that her “windows” become a means to consider the function of game screens in terms of the interaction of the player with the game. In particular, a discussion of video game screens relative to Friedberg’s model reveals that the game “window”
potentially occupies neither side of this dichotomy between computer screens and Alberti’s window. In *Gaming* (2006) Galloway brings concepts of film diegesis to bear on a discussion of the representational, semiotic construction of video games. He does this in order to differentiate between elements of the game that are associated or related to the “games total world of narrative action” (7), which would include images and sounds assumed to come from within the narrative space of the game, and those elements external to this world, including musical scores, menu interfaces, and onscreen information, like a HUD\textsuperscript{12}. In this model of diegesis/non-diegesis, the game screen becomes neither fully a virtual window into another world nor fully a functional, flat, informational space. That is, the game screen occupies both sides of Friedberg’s dichotomy, as it serves as both an informational, functional plane and as window into a complete narrative space for the game player. This means that, from the perspective of apparatus, the game screen is functionally distinct from the television and movie screen, but also distinct from the computer screen. Of course, as games are generally played on the same screens that are used by computers or for television spectatorship the distinction here between screens is less material and more a question of semiotics. None the less, this model would seem to demonstrate that the apparatic function of the screen changes in response to its content; furthermore, in the case of gameplay, it becomes both a window to a world but also a window partially populated by information and interface.

This is significant because it elucidates some elements of the screen’s function relative to the apparatus more broadly when it comes to video games. Notable in both Freiberg’s model of the computer screen and Galloway’s model of gameplay is that behind these screens exists a much more material, technically functional, structure. Friedberg refers to hard drives and

\textsuperscript{12} A HUD (Heads Up Display) is an element of the interface which generally occupies the peripherals of the screen in games and contains information useful to the player like remaining health, ammunition, often representations of crosshairs, maps, etc.
networks while Galloway describes algorithm and code. In both cases, the screen becomes a highly mediated, abstracted plane (abstracted from the technical elements that facilitate it). Also notable in each are the tensions between the narrative space of the screen and the functional elements that (in the case of hard drives and networks) precede it, or (in the case of non-diegetic interface and sound) provide necessary context and meaning to the user. That is, the hardware and the non-diegetic interface are essential to the player’s use of the screen, but, in the production of a fully immersive virtual window, they can create problems. They threaten to reveal the apparatus or at least to disrupt the wholeness of the narrative space by introducing non-narrative elements into the screen display. Many of these tensions are addressed at the semiotic level; Both Nitsche (2008) and Galloway (2006) discuss representational techniques at work in the construction of video game images. These include the implementation of first person perspectives or the minimization or outright elimination of HUD elements. Galloway cites *Ico* (Sony Computer entertainment 2001) and *Myst* (Borderbund 1993) as games that seek to eliminate or minimize the non-diegetic elements of interface for the sake of a more immersive user experience.

Similarly, the screen itself (as an apparatic object) becomes a site at which tensions over questions of immersion and depth are addressed. As the point at which the user ideally identifies with the game, the screen and game applications of screen technology can either render the visual apparatus more immersive or render it as a point of disruption or frustration for the user. Monochrome screens are generally less appealing than color screens. Large, high-resolution screens are preferred smaller or low resolution screens. In the same way that we can cite the rapid growth of code and hardware in terms of this imperative to provide the player with a “perfectly” immersive experience of game play, we may also recognize the development of
graphical representations on screen, as well as the experimentation with what could best be termed novelty visual technologies,\textsuperscript{13} as attempts to facilitate greater degrees of immersion. Although video game screens have generally developed on pace with computer and television screens, there have been forays into the development and marketing of alternate, innovative, or novel screen technologies. Perhaps the most famous (or infamous) of these is the Nintendo “Virtual Boy” sold in Japan and North America between 1995 and 1996. The Virtual Boy was not simply a screen technology, but a console built around stereoscopic 3D technology. Users wore the console/headset over eyes and looked into two screens which created a 3D effect. What the Virtual Boy sought to do was to create a visual system that addressed the user’s stereoscopic vision and simultaneously eliminated the edges of the virtual window. That is, in terms of its physical address of the user’s body, the Virtual Boy recognized two issues with the virtual window as it has traditionally functioned: that it is limited by the scope of the frame, allowing the world around the edges to interfere with a complete immersion in the image, and that the traditional television/computer/game screen could not address the user perception of depth, they are inherently flat, 2-dimensional representational planes\textsuperscript{14}. Recall that Baudry (1970) suggests that the darkened cinema facilitates immersion by isolating the spectator from the other members of the audience; similarly, by enclosing the user’s visual field, the Virtual Boy guarantied complete scopic immersion while the unit’s virtual LED screens addressed the their stereoscopic vision.

\textsuperscript{13} By ‘novelty visual technologies’ I mean technologies which seek to elide standard screen formats. Although they are each distinct, TV, movie, and computer screens are all based on similar visual principles. By comparison, 3D images, multiple screens, touch screens, etc. seek to disrupt or amend this standard from.

\textsuperscript{14} This is particularly salient as the Virtual Boy was designed and released around the same time home consoles were transitioning to 3D graphics. The first financially successful polygonal 3D video game consoles Sony’s PlayStation, the Sega Saturn, and the Nintendo 64 were released in 1994, 1994, and 1996 respectively.
In an ideal sense, the Virtual Boy deployed screen technology in an attempt to fully immerse the user in the experience of gameplay. In actuality, however, the Virtual Boy failed. Sales of the unit were poor and the Virtual Boy was discontinued about a year after it was launched. Its failure is often attributed to its design and its functionality; specifically, although it provided a visually immersive scopic apparatus, complete with three-dimensional visuals, its red, monochromatic LED screens and cumbersome vr-goggle design were not appreciated by users. Arguably, this failure resulted from a number of significant oversights in the console’s design. The unit’s hardware was integrated into the vr-goggles, rendering the computational apparatus more apparent and cumbersome during play rather than less obtrusive. Although the goggles hid the body of the console from the player, its physical presence remained quite tangible. Also, the red LED screen used in the unit undermined any graphical improvements gained by the use of 3D. That is, although the images appeared in 3D, they were also monochromatic, red, and low resolution, so that the 3D effects were forced to compete directly with an image that was technologically substandard in nearly every other conceivable way.

The ill-fated Virtual Boy illustrates a tension around the screen as a component of the video game apparatus more generally. Although not the first attempt to render video games in stereoscopic 3D, and certainly not the last, the Virtual Boy is unique in that it recognizes and seeks to address a set of limitations associated with traditional television and computer screens. However, despite its ambitious design, the Virtual Boy failed precisely because it disrupted and rendered more intrusive other elements of the apparatus.

The design and subsequent failure of the Virtual Boy, in conjunction with Friedberg and Galloway’s semiotically oriented discussion of the traditional gaming screen begins to

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15 Both the PlayStation 3 and Xbox 360 support 3D on televisions with a high enough refresh frequency for 3D projection (and the use of 3D glasses) while Nintendo’s 3DS (2011) is capable of rendering 3D images without the need for glasses, these screens however function
demonstrate the function and limitations of the screen in terms of its role in the broader video game apparatus. Clearly, the screen defines the visual portal into the world of the game. This portal, however, is functionally limited by its scopic depth and the frame constituted by the edges of the screen. In this regard, the game world is only open to the user via the limited aperture of its associated screen and is only as deep as 3D game graphics permit. At the same time, the semiotic difficulty of the screen described by Nitsche and Galloway, discussed here in reference to Friedberg’s virtual window, is that it must contain all of the information necessary to a user during play. This then burdens the screen, forcing it to occupy a space between a fully representational, narrative world and an informational, functional interface.

Cumulatively this would suggest that the screen is indeed a window; in an apparatic sense, it allows the user to visually experience the immersion within and power to affect the game world promised by the medium. However, this power is certainly not complete, nor is it completely open. In terms of apparatus, the screen is extremely rigid and thus demands that all the semiotic and narrative elements fit within its limited space. Much like code, the screen brackets the user’s experience with a game world, only in a much more immediate and apparent sense. Rather than defining the parameters of the game, the screen defines the visual space available to the user. Obviously, in an ideal moment of play and immersion the borders of the screen or the tensions between diegetic and non-diegetic game elements can and do still recede. But, we must also recognize that, while users are immersed in the screen and alienated from the other elements of the apparatus, this immersion is at least partially affected by the scope and depth of the screen. So, although the Virtual Boy ultimately failed, the ambitious elements of its design demonstrate the ideal function of the screen in terms of video game play: it addresses the user’s visual capacities with the intention of immersing them in the semiotic space of play. In
this regard we may note an idealized function of the game screen as a total, seamless membrane between player and text behind which the apparatus and material-context of play may disappear.

Part 4: Controllers and Interface

If the crucial characteristic of game play is an element of interactivity related to direct user interface with the text of the game, then it is the controller that establishes (or at least symbolizes) this possibility. The controller enables the user to engage with the game world on a physical and not just a psychic level, as it becomes a means to affect actions within the game world. Where, ideally, screens facilitate scopic and narrative immersion via the construction of a virtual aperture into a game world, the controller allows the illusion of interaction with and embodiment within that world; it is through the controller that the user’s power and presence in the game space is achieved. To return to a question of authorial or pseudo-authorial power in play, the controller becomes the instrument of this intervention, even if this intervention is always, already bracketed by code. And, like code, hardware, and screens, the controller also establishes the limits of users engagement with the game; it’s structural and technical capabilities functionally bracket the extent of a user’s mechanical immersion or control within a game. This places a set of contradictory demands on the controller: in one sense it must allow the user adequate power to produce a sense of sweeping or complex influence over the game world; however, it must also do this without disrupting the illusion of embodiment during play.

In *Aesthetic Theory and the Video Game*, Graeme Kirkpatrick argues that “video game play is centrally structured around a set of paradoxes that involve the controller. The controller is what connects us to the game and enables us to play but it is the part of play that we are least likely to reflect on. Gameplay is a physical activity that involves our hands using the buttons and
levers and triggers on the controller, yet we prefer to talk about what we do with games as if we were ‘in’ them and not holding the controller at all” (Kirkpatrick 2011, 111). What Kirkpatrick is arguing is that the controller fades in a moment of ideal gameplay, facilitating the perception of total immersion and allowing the user to experience the illusion of embodiment via a conceptual possession or ownership of game actions. The actions made in the game are seen as the direct product of the user’s own agency. Rather than expressing play action as a character “doing X” the successfully integrated controller allows the user to project their identity onto their game persona, resulting in the expression of game actions as “I did X.” This is a point of distinction between video game apparatus and film apparatus. In the video game the user has some degree of control over the narrative/text of the game, facilitated by the controller, hardware and code. Conversely, in cinema the spectator may ideally identify with a character or see their desires realized by the vision of the camera but their distance from the text prevents them from claiming ownership of these actions. In this sense, Kirkpatrick’s evaluation of the controller’s disappearance in an ideal moment of play is astute. Indeed, this suggestion that the controller ultimately facilitates—and thus fades into—an embodied experience of play is synergistic with the overall argument of this thesis: that ideally, all of the video game apparatus may disappear as the user becomes fully addressed by the culmination of technical components, leading to a near-total immersion in gameplay.

However, the suggestion that the controller is always or even generally unremarked is an overstatement that assumes a perfect engagement in each instance of gameplay. What I mean is that while the controller often and ideally does allow the user to immerse themself in the moment of play and claim their actions as their own, this immersion is only possible during a nearly seamless integration of player and controller. That is, immersion in play or the disappearance of
the controller described by Kirkpatrick is only achievable when the user is both fully familiar with the controller layout and the specific function of the controller during play.

Given it’s centrality to play, it is not particularly surprising that the controller is, historically, a site of constant innovation and reconfiguration. The Magnivox Odyssey, the first commercially available video game console released in 1972, employed a controller that consisted of two analogue dials. Five years later, the Atari 2600 was introduced, which employed a controller (one of the more recognizable in video game history), consisting of a joystick and a single face-button. The Famicom (or the Nintendo Entertainment System, in the US), first released in 1983, included a rectangular “gamepad” controller with 2 face buttons, a directional pad or D-pad, and start and select buttons. This early gamepad became the model for a variety of game controllers that would follow. More recently, the PlayStation 3 (2006) introduced a controller with a traditional 4 button directional pad, 4 face buttons, 2 thumb-sticks (joysticks for your thumbs, which also have button functionality), 4 shoulder buttons, start and select buttons, a “home” button (used to call up the console’s operating system menu), and integrated motion sensing technology. Clearly, the PlayStation controller is a significant deviation from the Odyssey’s analogue dials or even from the NES’s gamepad; however, it is not a development without precedent as the traditional gamepad has had a very deliberate evolution marked most significantly by the proliferation of buttons, the addition of more nuanced inputs (digital thumb-sticks in place of 4-way D-pads, buttons which sense pressure, etc.), and haptic feedback. (This omits more novel forays into interface innovation like the sensor pad, light-guns, music peripherals, motion control, etc.16 which will be discussed below.) However,

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16 Sensor pads, like the ones used to play the console-ported arcade dancing game Dance Dance Revolution, (DDR), (Konami 1998), detect the pressure of user’s foot and body movements and allow the users to effect control with more/a different part of their body than their hands/fingers; Light-guns, as their name implies, are simulated guns which allow users to ‘shoot’ objects on screen; Music peripherals, like those used in Rock Band (Harmonix 2007) or
cumulatively this innovation and experimentation with controller interface (apparatus) at least partially upends Kirkpatrick’s suggestion that the controller goes un-scrutinized, unremarked, or disappears during play. Instead, what this, albeit brief and anecdotal, survey of game controllers reveals is that the controller is, in an extra-textual sense, highly scrutinized, and represents a deliberate application of technology with the intention of more completely addressing the subject’s body via the physical properties of the apparatus.

This question of how the controller addresses the user’s body is a central point in David Myers’s “The Video Game Aesthetic” (2009). What Myers explores here is the way that the controller becomes a point of connection between player’s bodies and game actions. Myers writes, “All video game controllers-- including the Wii and other exceptions to current norms-- have at least two common properties: (1) they employ arbitrary and simplified abstractions of the physical actions they reference, and (2) they require some level of habituation of response” (Myers 2009). Myers makes two crucial observations here. First, his model of abstraction (not to be confused with abstraction via code discussed earlier) suggests fundamental differences that distinguish interface actions form game actions; in this case, Myers is suggesting that the actions made with the controller are generally quite different from the actions that are produced in the game world. In other words, pressing x on a controller to “jump” in the game is, physiologically, very different from the actual, embodied act of jumping. Second, he is proposing that, in order to use the controller to effectively interact with the game world, a level of familiarity with its material structures and game functions is necessary. This means that players must develop a particular literacy, which includes a habitual or reflexive intimacy, with the controller. These two

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*Guitar Hero* (Harmonix 2005) are designed to resemble and be used like musical instruments, only with simplified interfaces; Motion control, which detects the motions of the user’s body, seeks to allow more natural or more complete interaction with the game via control which registers the motions of a user’s body. This includes control like the Wiimote which detects the motion of a hand held remote but also technology like the Xbox Kinect or the Playstaion EyeToy which use cameras to track motion.
characteristics of the controller described by Myers reveal the difficulties of creating and organizing a technology designed to connect and translate a user’s physical actions and presence into the digital, algorithmic space of the game world.

First, the concept of abstraction suggests that, even for innovative control interfaces there is a discontinuity between the player’s actions and the game actions that are produced via the controller. In this regard the gamepads or keyboards used to play the vast majority of video games (and computer games) are highly abstracted. The buttons and thumb-sticks employed as a means of engaging the game and producing actions onscreen are manipulated by users’ fingers and thumbs in very small or compact patterns. Semiotically, this makes sense when navigating already abstract informational spaces like menus and virtual interfaces. However, for actions like running or jumping, the minute physical inputs made with the controller do not match the actions that are produced in the game. While certainly not too disruptive or abstract to prevent a pleasurable or immersive enjoyment of play, these traditional gamepads mark a significant disjunction between the user and the semiotic space of the game.

In response to this, the video game apparatus has grown to incorporate “novel” interface devices. Like the *Guitar Hero* (Harmonix 2005) guitar or the *DDR* (Konami 1998) pad, these technologies represent an attempt to address and mitigate the abstraction associated with traditional controllers. An interface with a multiplicity of different potential configurations and applications, these novel technologies intend to more directly map game actions onto controller actions. For example, the game *Guitar Hero* is a rhythm game. It is played by pressing a series of buttons and levers in time with a musical score. The game is played, not with a traditional gamepad, but with a controller designed to look and feel like a guitar. The controller is developed with the intention of minimizing the abstraction between the material actions made by

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17 Perhaps at the expense of more universal functionality.
the player and their representation in the game. Specifically, when playing *Guitar Hero*, you look like you are playing the guitar along with your in-game persona.

For musical, rhythm based games like *Guitar Hero*, the mitigation of controller abstraction is relatively simple. However, the task of seamlessly linking more complex game actions-- running, jumping, fighting, etc.-- is significantly more problematic and difficult. None the less, technologies like the Wiimote, Kinect, or PlayStation Move\(^\text{18}\), which allow the player to input more complex and varied commands using physical actions that mirror the virtual actions in the game-space, demonstrate a potential application of technology in the same spirit as the *Guitar Hero* controller. All of these technologies seek to minimize the abstraction associated with control while simultaneously allowing more varied inputs from the user.

It is crucial to note here, however, that these novel technologies have yet to address the fundamental differences between the physical space that the player embodies and the space of the game. That is, as Andreas Gregersen and Torben Gordal argue in “Embodiment and Interface” (2009), the representational space of the game (on the screen) is inherently separated from the physical space that the player occupies. Arguably then, any intervention in the technology of the controller with the intention of mitigating abstraction, is inherently limited by the essential disconnect between the player and the game space. So, even though novel/emerging control schemes like those facilitated by the Wiimote, Kinect, and Move do partially address the abstraction described by Myers, they remain limited by the split between physical and virtual space.

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\(^{18}\) The Wiimote, Kinect, and Move are motion sensing technologies used for game play. Each is a dedicated peripheral used with the Wii, Xbox 360, and PlayStation 3 respectively. These control interfaces minimize the need for a traditional controller by allowing the player to control the game using their bodies and a range of physical actions.
As a result of this essential distance between player and game space, the design of the controller and its current state in a modern moment of gameplay tends less towards an elimination of abstraction and instead favors embodiment via an increasingly complex or nuanced interface technology. That is, rather than mitigating abstraction, the gamepads still employed by the majority of home consoles allow the player to experience interactive immersion via a complex array of buttons and thumbsticks. These gamepads and other hand-held control interfaces (including the still popular computer mouse and keyboard) are technically quite intricate; as previously noted, the PlayStation 3 Dual-Shock 3 controller has 19 potential modes of input (20 if we count motion control). What distinguishes these more traditional interface devices from devices that seek to mitigate abstraction is that in this model abstraction is the norm. Rather than address abstraction, the gamepad embraces it with the intention of making control and interaction easy, physically speaking, and exact. So, while the user’s entire body may not be integrated into the input process, the controller becomes a very precise means to navigate a game space with each button, stick, key, etc. assigned to a particular function. Similarly, while immersing the player’s body in the game via something like a DDR Pad or motion control more completely engages the user in the physical process of control, this also requires much more physical coordination and strain than pressing buttons on a gamepad, which was the alternate mode of control available to DDR players on home consoles. The function of the gamepad, then, is not necessarily an exact replication of the physical actions of the player into the virtual space of the game; rather its function becomes an *efficient* mediation of the physical into the virtual.

It is here that Myers’s second point becomes salient. When Myers suggests that video game control depends on a degree of habituation, he is referring to a particular reflexive literacy necessary to use a controller effectively. This suggests that the successful use of a controller (use
that permits the controller to fade into the experience of play, as in Kirkpatrick’s model) is dependent on a familiarity with controller’s mechanical and virtual function. Rather than simplifying play via the mitigation of abstraction, the gamepad simplifies play via a semi-universal input device which, once learned, becomes increasingly simple to master.

This subject will be discussed in much greater detail in the following chapter, but briefly, to an experienced gamer, the gamepad-style controller is familiar; even if the placement of buttons and joysticks change, the abstraction between controller manipulation and game action is established and accepted. So, while effective use of the controller may necessitate a familiarity with a particular game-text, the traditional controller itself is familiar to the experienced user. By contrast, to an inexperienced user, the traditional controller is cumbersome; even to an experienced user playing an unfamiliar game, the controller and control scheme must be learned, or, as Myers puts it, habituated. Compared to the gamepad, the novel models of control discussed above, designed to mitigate abstraction, are easy to learn. This is because there is not a significant distinction between game actions and player actions. However, these technologies remain physically cumbersome and tend to be relatively inexact. The difficulty in this shift toward novel control schemes is therefore that they necessitate more direct action on the part of the user, who is no longer simply pressing buttons and turning joysticks, but instead must physically engage a simulated guitar, gesture with a Wiimote, or perform in front of a motion tracking camera when using the Kinect. Ironically, all of this undermines immersion by forcing the user to reflect on the physical actions necessary to affect the game world. By contrast the controller is simple and precise, meaning that once a player is familiar with its structures and its associated game functions it no longer becomes a point of reflection. It is for this reason that habituation or, more specifically, controller-literacy in play is so essential. Habituated control
ultimately allows the user to immerse himself/herself in the fictive moment of play rather than the technical, apparatic level of play.

In this regard, both novel control technologies as well traditional input devices (gamepads, mouse and keyboard) represent strategies intended to make the game world accessible to the user. This is ultimately the function of any input device. However, this seems to establish a tension with traditional models tending towards a high degree of abstraction in favor of more precision and more habituated functionality, while newer and novel models of control, designed to minimize abstraction, reduce the need for habituated play, but in turn limit precision. What both of these models do share is their intention of rendering the apparatus of control less apparent. Ideally, mitigated-abstraction renders games playable without the need to learn a controller’s functionality, rendering the apparatus always invisible. By contrast, the complex gamepad necessitates a period of familiarization with the intention that, in an ideal moment of play, the controller may then be used precisely and reflexively. Thus, regardless of particular models of control, from an apparatus perspective, the controller is ideally a technology that fades in the course of a seamless mechanical and narrative/semiotic engagement with the game. So, although Kirkpatrick’s suggestion that the controller always goes unremarked may be an overstatement, in an ideal moment of play it does facilitate a complete immersion in the narrative space of the game via its own disappearance. If we trace the development of traditional control schemes simultaneous with the emergence of more novel control technologies, a trend towards this seamless mediation of player actions into game actions becomes apparent. That is, the development of the controller suggests that Gregerson and Gordal’s always-there abstraction may be diminished by the mitigation of both abstraction and the disruptive/apparent interface.
Part 5: Conclusion: The Game Apparatus

What this discussion of code, hardware, screen, and control apparatuses has sought to reveal is a tension between authorial power and technological enclosure when it comes to video game play. In the ideal moment of play the user experiences the illusion of presence in the narrative, semiotic game space. In this moment, the technologies that facilitate play, the code of the game, the hardware computing this code, the screen as aperture, and the controller as a tool of embodiment, functionally disappear; they are hidden behind the virtual world of the game or they are seamlessly integrated with the physical body of the user. However, in a less ideal engagement or when their limitations become apparent, they serve as a means to bracket and bound play. Code is logically finite; hardware has restricted functionalities; Screens are framed and distinct from the physical space of the user; control is inherently abstract and limited in its complexity. Thus, the experience of play always resides somewhere between these two poles.

This attention to the technical elements of the video game medium also suggests that a textually oriented critique of the video game, without an acknowledgement of apparatus, is incomplete. This model sees the apparatus as an essential component of the video game medium simultaneous with narrative, semiotic, and ludological elements. These textual elements of the game are both rendered and experienced via the apparatus. By exploring the specific technologies which come together to make the video game possible we see that apparatus facilitates play and in this regard the apparatus also structures play to a degree. Although the extent to which play is structured by the apparatus is indefinite, the inherent limitations of hardware, code, and interface explored here reveal that the medium is never entirely open. In a strictly material sense the technological structures which make video game texts possible also render them as finite spaces. The inherent limitations of the apparatus are always present and
functional in facilitating a position of play for the player, but in an ideal moment of play their limitations are rendered invisible, allowing the user to experience a near-perfect immersion relative to the narrative and semiotic elements of the game. We may then say that a successful video game apparatus facilitates an experience with the game-as-text wherein the user is able to develop or exercise their own pleasurable power relative to the game’s immaterial elements.

In recognizing the apparatus’s relationship to an experience of play we must acknowledge its centrality to the video game medium. However, in making this point we must also recognize that the apparatus is closely connected to the semiotic and narrative components of the video game. What this means is that although we have largely separated apparatus from the semiotic and narrative layers of the game for the sake of identifying its operations and effects, the apparatus is not fully divorced from these elements. In the same sense that the apparatus affects users’ positions of play, the apparatus is also closely linked to the semiotic and narrative qualities of a game, although it’s effects are certainly not universalized. The following chapter explores these potential overlaps in much more detail. What this analysis reveals is that the apparatus is essential to play in a variety of ways: structuring and informing play and occasionally being called upon by the more textual and experiential elements of the game.
PART 1: THE DISRUPTED APPARATUS

In February of 2012, MarineKingPRIME (Lee Jung Hoon), a professional player of the computer video game "StarCraft 2" (Blizzard 2010), played an exhibition match against a high-ranked amateur under the tag OnlineJaguar. The match was one in an ongoing series called "GSL-Off the Record," hosted by GOMTV.net (an e-sports broadcasting website), in which professional players are paired with amateurs and given handicaps chosen at random. In the first of two matches, MarineKingPRIME wore a pair of mittens while he played. In his second match, MarineKingPRIME was restricted to the use of a computer mouse only, prohibiting the use of a keyboard while the challenger, OnlineJaguar, played normally. These conditions drastically alter the material process of gameplay with the intention making play more cumbersome for the professional players, theoretically evening the playing field between the "pros" and the "joes."

This anecdote is interesting as it sheds some light on the relationship between the material apparatus of gameplay and the relationship between player and game. Specifically, these conditions seek to disrupt a "normal" or "ideal" gameplay apparatus in a way that makes the material conditions of play visible, difficult, and at least partially absurd.

Generally, "StarCraft 2" is played with a computer mouse and a keyboard. In the style of a typical real-time-strategy game (RTS), a player uses the mouse and keyboard to move units around a map, as well as to make selections in the game’s non-diegetic interface and system of menus. These games most closely resemble a kind of chess game (only one where players are always acting, rather than taking turns). In this genre of games, the player does not control any one avatar or unit, but rather is responsible for the actions of an entire army of units. Under this system, the mouse can be used to navigate the entirety of the game’s graphical interface;
however the keyboard is generally used to supplement this navigation, allowing players to “hotkey”\textsuperscript{19} their way through basic menu selections. For example an attack move command, which directs selected units to move to a location and attack any enemy units encountered en-route, can be completed in two ways: a left-mouse click on the attack button and a left mouse click on the desired destination on the game-map (or the mini-map) or the player may use the “A” key on the keyboard to select “attack” and then simply left-click on the map to direct the selected unit. The advantage to the second method is that, with experience, the physical process of inputting an A-move or attack-move command with the keyboard and mouse is significantly quicker than if it is done with the mouse alone. This is because the player may use one hand to select the “A” key and the other to make mouse directions on the map, rather than pointing the cursor first at the interface button to select the attack command, and then moving the cursor to the desired destination on the map and left-clicking to move.

The benefit of the mouse+keyboard combination relative to the mouse-alone method of play becomes increasingly apparent when one recognizes that, in addition to basic menu navigation, the keyboard can also be used for more complex menu navigation. For example, in order to build structures on the map, \textit{StarCraft} 2 players must first select a worker unit, then select the “build” option followed by the specific structure (from a list of about 9), and then select the building location on the map. While this is all possible with a series of mouse selections, this type of command is also possible with as few as one or two mouse selections (for building location), assuming that the keyboard is used supplementally. Thus, with the keyboard this build action can be completed with 3 keystrokes and one mouse-click, or (more likely) one mouse-click, 2 keystrokes, and a mouse-click, while using the mouse alone, a player would have

\textsuperscript{19} The ‘Hotkeys’ in \textit{StarCraft} 2 can be edited or reassigned; however, as I do refer to them, it will be in reference to their default configurations.
to make these selections by alternating between the game’s menu interface and its map interface for a total of 4 clicks interrupted by the movement of the cursor.\(^{20}\) These strings of commands are referred to as “actions” and any given game can contain thousands of them. Indeed, the capacity to perform actions quickly is so essential to success that skilled and professional players are often clocked for their “actions per minute” (APM), much like typists register words per minute, and can have APMs as high as 400 in some (rare) cases. Thus, the difference between playing with a keyboard and hotkeys versus playing with only a mouse becomes increasingly significant as actions add up.

As a game, *StarCraft 2* tasks players with the development and maneuvering of an army through a system of resource gathering, unit/building construction, and unit battling, with games ending when one player either surrenders or has all of their structures destroyed. All players act simultaneously during the course of the game, controlling only their units; this means that the game is, at least partially, a race between players for the strongest army or economy. In this regard the capacity to make inputs quickly and efficiently plays a large part in determining how well a player can play the game (the other deciding factor being strategic ability). So, when MarineKingPRIME plays against OnlineJaguar without the use of a keyboard, he is placed at a significant disadvantage (the figurative statement ‘fighting with one hand tied behind my back’ takes on almost-literal significance here). OnlineJaguar has the benefit of a more complex interface in which both of his hands may be used to navigate the game, while MarineKingPRIME retains the universally useful mouse (which can be used to make all essential

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\(^{20}\) If we write out the operations necessary to construct a structure using only mouse inputs it would look like this: 1) Click to select unit, 2a) move cursor to menu box, 2b) click ‘build’ command, 3a) move cursor to desired structure, 3b) click to select structure, By contrast the hotkey input could be written as follows: 1) Click to select unit, 2) B key (to build), 3) ‘x’ Key (for desired structure), 4a) move cursor to location on map, 4b) click to build structure.
In the second model steps 2a and 3a are completely eliminated. Furthermore, the second method allows a player to use both hands in order to produce a build action, further expediting the process.
game-menu selections), but must sacrifice the use of his supplemental keyboard (and left hand). In the context of this exhibition match, MarineKingPRIME is faced with the difficulty of a more cumbersome interface, and must compensate with his more advanced understanding of strategy and general game-awareness.

Within the context of this study, this match explores the relationship between a player’s sense of embodiment in relationship to a game, his/her embodied engagement with game play, and the material mechanisms of play that facilitate both these things. In the matchup between MarineKingPRIME and OnlineJaguar, both players are playing the same game-text at a narrative and semiotic level; indeed even in terms of ludological understandings of gameplay, the rules of the game here are the same for each player. However, the interface changes for each, and the result is two very different embodied relationships to the game. OnlineJaguar, with his mouse and keyboard, plays the game “naturally,” or as he would under ideal circumstances; by contrast, MarineKingPRIME has his natural relationship to the game disrupted; he must re-learn, or at least re-route, his gameplay in terms of this limited and less efficient interface. To return to the example of the attack-move, the reflexive “A”-“click-move”\(^\text{21}\) command is replaced by a much more deliberate and cognitively-intentional “attack-click”-“click-move.”\(^\text{22}\) So, while both players are playing the same game, they are distinguished based on the depth of their embodiment in the game. In simple physiological terms, OnlineJaguar’s body is more completely engaged with the mechanics of play,\(^\text{23}\) while MarineKingPRIME must play while using a less complete apparatus of engagement.\(^\text{24}\)

\(^{21}\) Made with the keyboard and mouse.
\(^{22}\) Made with the mouse alone, thus necessitating the movement and re-focusing of the cursor on screen.
\(^{23}\) He controls the game via a keyboard with one hand and a mouse with his other.
\(^{24}\) MKP only has the of his ‘mouse hand.’
Taken cumulatively, this disruption of the gameplay apparatus available to MarineKingPRIME reveals something about the natural-ness of experienced or learned play. Specifically, in the moment of this exhibition match, the apparatus does not simply function as a means to the content of the game, disappearing from observation or consideration in favor of the larger experience of play; rather it becomes increasingly apparent because it is comparatively cumbersome and at least partially absurd. In this moment, the promise of (efficient, unobtrusive) “control” is broken and the role of the technological input apparatus in the larger mechanism of the video game experience is revealed.

In the story of MarineKingPRIME vs. OnlineJaguar, MarineKingPRIME prevails, successfully adapting his style of play in order to compensate for the limited apparatus available to him during the match. Although this demonstrates that apparatus is not necessarily all-determining, the significance of this matchup remains poignant. Specifically, it serves to establish the function of the technical apparatus of control; the apparatus does not determine gameplay alone, but rather functions as one essential component of the broader experience of play. However, crucial to this discussion, what we do see here is that the apparatus precedes and influences subsequent levels of play. Before the semiotic and narrative elements of the game become meaningful, they must first be made accessible; this is the primary role of the apparatus.

Most apparently, the loss of keyboard controls forces MarineKingPRIME to re-imagine or re-learn his relationship to the material controls of the game. This is not the extent of the disruption; the cumbersome apparatus also necessitates adaptation at a virtual, in game, level. Without the use of the keyboard, MarineKingPRIME is forced to rely more directly on the programed interface of the game, meaning that the graphical representations of buttons on

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25 Also, OnlineJaguar makes a number of serious strategic mistakes during the course of the game functionally negating his apparatic advantage.
screen, the non-diegetic virtual interface, become more significant as physical keyboard strokes are supplemented with the use of on-screen buttons and menus. In this moment, physically habituated or learned interface commands, and the subsequent disappearance of the controller described by Kirkpatrick (2011) that results from them, are exchanged for a much more deliberate navigation of onscreen representations of “buttons.” Navigation of the game comes to resemble an attentive or self-reflexive strategy of engagement more than a physical reflex.

Tasteless, one of the commentators casting the game, remarks, “I can see MarineKing in his booth right now, he actually just looked at me… it looks so awkward to see him play in there with his idle hand just sitting there.” What Tasteless is recognizing is that MarineKing is made uncomfortable by the atypical mechanisms of play. Indeed, the disruption caused by the lack of a keyboard facilitates MarineKing’s disconnection with the game, manifested as eye contact with Tasteless. What this demonstrates is that although he is playing with an apparatus disrupted at the level of control, his displacement is much more significant than simply a cumbersome interface. In making eye contact with Tasteless, MarineKing has also, albeit briefly, disengaged with the screen and subsequently with the narrative and semiotic elements of the game contained within it. Clearly, MarineKing is still invested in and engaged with the game as this glance away from the screen is brief and he quickly turns his attention back toward the match; none the less, in this instant we see that the apparatus is crucial to the subject position of the player in relationship to the game. Although this is a strategic disruption of the apparatus, it reveals that while the apparatus may have an idealized function, it is also, potentially, imperfect, and that both ideal and disrupted states of play affect the larger experience of subjectivity via the game.

This nagging imperfection, manifested as disrupted control in this anecdote (which is, perhaps always partially present during play), is exposed here via a juxtaposition between ideal
play and imperfect play. In this instance we are able to recognize disrupted or less-than ideal play through a comparison with a more efficient mode of play. Specifically, seeing MarineKing play without a keyboard is meaningful because we can compare it to his play with a keyboard. What this suggests is that the question is not if a player is/isn’t immersed, but the degree to which the material, semiotic, and narrative elements of the game address the player in ways that facilitate immersion. What this allows us to ask is how this degree (and structure) of immersion affects an experience of play.

As an example of this line of inquiry, Gregerson and Gordal in “Embodiment and Interface,” argue that the inherent distance between the game world and the real world is always a barrier to complete immersion. They write “experiences of being patients, being objects of embodied actions deriving from game worlds, are presently not supported by existing game technologies” (Gregerson and Gordal 2009, 81). Thus, Gregerson and Gordal argue, the player may act in the game, but the game world remains distanced from the player via abstraction. In other words, the nature of the interface prevents the game world from being physically immediate to the player’s experience. In this model, play is always contingent on a kind-of suspension-of-disbelief, only one where players must accept the conditions of the abstracted interface in order to immerse themselves in the game. What this reveals is a kind of strategy-of-use demanded by the apparatus, in which the apparatus demands that the user assumes a playing position that forgives or allows for the essential distance between material space and game world. This is, at least in part, what allows gamers to become immersed in play, although they are never physically present in the game space.

The strategic shift demanded of MarineKingPRIME is perhaps a bit less severe. Although some element of this accepted-abstraction may precede any instance of play, what we see in this
case is a strategic shift much more immediate to the semiotic/narrative level of play. Without his keyboard MarineKingPRIME is not as fast or efficient as he would/could be were he using the complete apparatus. As a result, he is slower than his opponent, which necessitates a strategic recalculation of exactly how he plays the game. The first to recognize this is the commentator, Tasteless, who express surprise during the match at the strategy employed by MarineKingPRIME. The expectation is that, given the conditions of the match, MarineKing will opt for an aggressive strategy that requires a minimum of resource management, but seeks to catch his opponent off-guard. Essentially, Tasteless and his co-caster, Wolf, imagine that MarineKing will play a “quick” game before the disparity between his apparatus and his opponent’s apparatus make the game unbalanced. Instead, to the surprise of both commentators, MarineKing opts for what is often termed a “macro” strategy, where emphasis is placed on early defense and resource accumulation rather than aggression. Tasteless and Wolf note that this approach is potentially problematic as a macro strategy generally results, initially, in a very small pool of units, and necessitates a careful/exact management of these forces until a larger army is developed. The strategy employed by MarineKing therefore demands nuanced application of apparatus and game-level techniques in order to succeed, while a simpler, aggressive, “one base” build requires different, less technologically intense manipulation/control to succeed.

When asked about this in the interview following the match, MarineKingPRIME elaborates on his choice; his explanation for employing the strategy that he does is that a defensive position “needed less micro” to defend.” Thus, MarineKingPRIME intended to respond to the challenge

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26 Essentially, MarineKing reacts to his situation strategically. In addition to an interface/apparatic strategic shift, his ‘gameplay’ strategy changes at the semiotic and narrative levels. He is still building and maneuvering an army in the game but the techniques he uses allow for him to be defensive/passive rather than aggressive.

27 If ‘macro’ describes play focused on large scale game elements like economy and production, micro refers to the ‘micromanagement’ or small scale manipulation of a group of units. Generally ‘micro’ describes the careful positioning and maneuvering of units during an engagement with an opponent’s army with the intention of gaining small positional advantages.
of the game not by committing all of his resources to early aggression, but rather by engaging in a defensive strategy that was less complicated to execute and afforded him a positional advantage. Although initially risky, the defensive/macro play style used by MarineKing demanded less physical skill in the long run and instead allowed for a slower paced strategic style of play. As a result, MarineKing essentially re-maps his play in order to respond to the apparatic interface tools available to him, developing an approach to the game that compensated for his mechanical disadvantage via an exploitation of the game’s system of rules.

This is significant within the context of this study, because it reveals a close connection between the apparatic technologies of play, the strategies employed by the player during gameplay, and the player’s experience of that play. This anecdote reveals elements of the apparatus intervening in and necessitating compensation at narrative (strategic) levels of play. In response to the limitations created by the changes to physical apparatus of play, the associated semiotic and ludological structures of engagement are also changed—so that ultimately with a different apparatus the game’s “rules” change. Obviously then, the process of gameplay here (or anywhere, for that matter) is irreducible to semiotics, narrative, or apparatus, but instead must be recognized as a complex construction that involves intersections between all three. Each of these elements comes together to structure an experience of gameplay, with the result that the scope or shape of the particular mode of play is only fully understandable when apparatus is recognized for its role in facilitating both the player’s positioning in relationship to the text and the strategies he/she uses to engage with it.
Part 2: Apparatus and Narrative

As mentioned previously, the assertion that apparatus precedes and influences a textual experience (be it film, video games, or any other medium identifiable via its technologies) is easily overstated or misread as apparatus creating and defining the experience. What I have suggested above with reference to Comolli’s work on cinema is that successful apparatus theory sees the apparatus as a means to facilitate, encourage, and open potential strategies of engagement between spectator/player and text. That is not to say that all media engagements are completely open. The technology does, in very strict terms, determine how a user comes to a text; it is difficult (if not impossible) to play a video game without the proper components, for example. An Xbox game disk will not run on a Sony console, nor will a player be able to play *Metal Gear Solid* (Konami 1998) without a controller attached to the system (and barring serious modding the only controllers that will allow this, at least on the PlayStation, are the PlayStation game pad, its successor the DualShock gamepad, or a third party facsimile). In this regard, the elements of the apparatus are inseparable from the experience of play and essential to the player’s positioning relative to the game. So, although it would be problematic (and incorrect) to argue that the player has their subjectivity determined by the technology of the medium (as this would ignore a diversity of play experiences) it is equally unhelpful to suggest that video game play and player subjectivity are entirely open and un-restricted. It is crucial to recognize that the material context of play influences or structures the engagement (without necessarily determining it), in the same way that semiotic and narrative structures influence player experience.

In this regard, the match between MarineKingPRIME and OnlineJaguar reveals a close relationship between technical elements of play and the unique strategies employed by the
player. In this instance, the apparatus is disrupted in order to disadvantage MarineKing which in turn encourages a strategic re-configuration of his model of play. Here, the technical apparatus has influenced play at a semiotic, ludological, and narrative level. The disrupted apparatus influences how MarineKing plays. However, this apparatic disruption and subsequent strategic shift is not the extent of the relationship between apparatus and game. In other words, the apparatus is not simply deterministic of or even strictly related to strategies of play. What this suggests is that the altered/apparent apparatus can have a number of effects on users’ experiences and models of play. For example, lag, essentially game slow-down as a result of hardware, network, or code limitations, represents an unintentional disruption of the apparatus for which very few compensatory strategies exist. Intentional disruptions of the apparatus, like in the GSL-Off the Record match, also alter play but do so in a variety of ways, often with particular, unique purposes.

To more fully demonstrate the potential scope of an apparatic/interface influence on the experience of play it will be helpful to look briefly at two other, distinct applications of apparatic disruption. Both the flash game *QWOP* (Foddy 2008) and Hideo Kojima’s classic *Metal Gear Solid* (Konami 1998) incorporate intentional interruptions of the game apparatus in order to situate or affect user positions, each with a very different ideal outcome. If the GSL-Off the Record match disrupts the apparatus with the intention of evening the playing field between MarineKing and Jaguar, these two games offer examples of this disruptive use of apparatus that are not necessarily intended to ‘disrupt’ ideal play or handicap the user, but instead are designed to be integral aspects of the play experience. *Metal Gear Solid* and *QWOP* thus reveal the potential for the disrupted apparatus to add meaning or depth to an experience of play.

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28 The game literally slows down or becomes jumpy (freezing or skipping between frames).
QWOP is a “flash game,” part of a larger set of games called “browser games.” These are “games which are text-based or contain only few graphical content and are playable without local installation on the computer. Only an internet connection and a browser is needed to use them” (Schultheiss 2007). This means that from the perspective of apparatus, the technology necessary to play these games is already present on most computers (with an internet connection and web browser), and thus access is comparatively easy and common (relative to console games that require separate equipment, and other types of computer games that must be installed). However, this also means that these games are almost always relatively simple, designed with less complex code than the majority of major commercial games, and requiring a minimum of hardware capabilities to run. Often these browser games are also free, which while not directly relevant to questions of apparatus, does make them more accessible.29

As a browser game QWOP conforms to these trends. Designed in 2008 by Bennett Foddy, the game remains free-to-play on Foddy’s website (although iPhone/Pad versions also exist). The game itself is based on a simple premise: the user controls a runner (or more specifically his legs), and is tasked with navigating this runner across 100 Meters of virtual track towards a finish line. When playing the game users control “Qwop” (the runner’s name) with the Q, W, O, and P, keys on a standard keyboard. W and P keys control his thighs, while O and P control his calves, and users must press these keys with certain timing in order to produce a walking or running motion. In terms of its visual appearance and narrative, this game is relatively unremarkable. The task of moving this runner from one end of a track to another is mundane compared (anecdotally of course) to the narratives of popular commercial video

29 This would be a potentially interesting industry-studies question. Relationships between distribution/profit models, game design, and user expectations.
games\textsuperscript{30} that have players engaging in much more complicated tasks in larger or more open worlds, and its flash\textsuperscript{31} based graphics are neither realistic or complex. The game looks as though it is made of 2D cutouts (which, in a virtual sense, it is). What does render the game noteworthy is its intentionally cumbersome design. The use of the QWOP keys to control the runner is neither intuitive nor easily learned. The task of completing the run is so difficult in fact that most users fail within the first few meters. Foddy, in an interview for \textit{Wired Magazine} explains "If it wasn't such an everyday task that the guy was performing, you wouldn't think of it as hard. You expect to know how to do it, and you fail horribly. For a certain group of people, that is motivating" (\textit{Wired}, August 2011). What Foddy has created is a game where the fun and challenge of play does not exist at the semiotic or narrative level, but rather at a ludological, apparatic level; the game's intentionally cumbersome control interface poses the challenge. Here, the appearance and narrative of the game are significantly less essential to the experience of the user; rather, what the user engages with most immediately are the keyboard controls and their function in the game. The narrative of a runner on a track simply facilitates this mechanical challenge. The point here is not a seamless identification with the runner; it is a mastery of the intentionally problematic apparatus. 

Thus, while MarineKing's disrupted apparatus is designed to handicap him during a game with a less skilled opponent, this disruption only distracts from the narrative and semiotic content of the game. MarineKing is still, primarily invested in and engaged with the virtual space of the game, as well as the narrative content his particular match. This is very different from

\textsuperscript{30} For example, \textit{StarCraft 2}, the game played MarineKing in his “GSL-Off the Record” match combines 3D visuals, a scripted single-player campaign/narrative, online multiplayer, and the capacity to control and navigate a variety of “units.” By comparison, QWOP’s rudimentary 2d visuals, limited interface, and simple narrative objective render it significantly less complex.

\textsuperscript{31} Flash is a multimedia platform developed by Adobe. It is commonly used in browser games but also for web video and internet advertisements.
QWOP, which does not forgo narrative, but in which the site of this meta-narrative experience is much more immediate to the technical mechanism of the control/interface apparatus and their direct relationship to the game. For example, the “a-move” command is difficult for MarineKing to execute with only a computer mouse (without a keyboard), but the significance of this technique is only meaningful in the particular narrative moment of his match. By contrast, the narrative of QWOP is always explicitly referential to the control interface, meaning that the keyboard buttons are as essential to and apparent within the play experience as the virtual runner on the screen. QWOP is therefore arguably unique in that it demands that the narrative of the game never supersedes the apparatus. The apparatus cannot be re-mapped or re-learned, even habituation is explicitly difficult. Essentially, the keyboard in QWOP can never fully disappear from player awareness (as per Kirkpatrick’s suggestion), as the game is intended to force the player into an awareness of it. Indeed, the keyboard never disappears into a seamless identification between runner and player because it is always an essential component of this relationship. In QWOP immersion is not the goal, this is not to say that a user cannot develop a mastery of the interface, but that this mastery has less to do with narrative identification and more to do with a manipulation of the keyboard control apparatus.

If the keyboard/interface apparatus is rendered apparent in QWOP with the purpose of moving the narrative of play from the virtual space of the game back into the physical space of the user and apparatus, then Metal Gear Solid (MGS) serves as a useful counterpoint as it does the exact opposite. In this instance, the physical apparatus is acknowledged and claimed by the virtual/narrative space of the game. What I will refer to here is a particular moment in MGS, cited in an IGN article as the second of the “Top 100 Video Game Moments” (IGN.com, No Date, Accessed 5/18/2012) involving a “boss battle” that occurs during the game between the
player avatar, Solid Snake, and the villain, “Psycho Mantis.” What is immediately apparent about this moment in the game is that it breaks what might be referred to in cinematic terms as the “fourth wall.” Mantis, a “psychic,” speaks directly to the player, commenting on the content of their memory card\(^{32}\) in the device on which the game is being played or the frequency with which the player saved the game, as a demonstration of his telepathic ability. Even more notable, Mantis will (assuming the user has a controller equipped with a “rumble” or vibration feature) vibrate the controller with his mind. The majority of this occurs during a scripted portion of the game. The player is “watching” the game at this point more than playing. However, even during the battle itself (at which point the player is actively interacting with the game), these tactics continue: the screen will go black with the word “Hideo” in the upper corner, a play on a blank “video” screen,\(^{33}\) and, in order to defeat Mantis, the player must change the controller from the “Frist Player” input to the “Second Player” input in order to prevent Mantis from “reading the user’s mind.”

![The fake blank screen from *Metal Gear Solid.* (Konami 1998)](image)

As a narrative technique, breaking the fourth wall or actively addressing the user’s position outside of the game is not unique to *Metal Gear Solid.* Games frequently disrupt the

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\(^{32}\) The device which stores saved game data.
wholeness of the screen image or game narrative through the incorporation of non-diegetic elements, tutorials, menus, etc. (Galloway 2006). Even in the Metal Gear series this is neither the first nor last instance in which the game addresses the user. While this technique of calling attention to the user’s position as a user may be common in the history of video games, though, it is particularly interesting here in its play (not game-play) with the apparatus of the game and the narrative meaning with which it imbues the apparatus. When a menu addresses the player, or when a tutorial instructs the player to press the “x” button to perform a task, this disrupts the integrity of the game-world at a narrative level by rendering the game’s construction apparent. The disruption of normative apparatic functions in MGS functions differently because rather than break from the narrative wholeness of the game, this disrupted fourth wall seeks to draw the apparatus into the narrative arc of the game. Within this context, it is worth point out that if telling the player to press a button in order to perform an action in-game disrupts the diegetic totality of the game, this is because the recognition of the button as the means-to-action in the game subsequently renders the apparatus apparent as the means to game power and presence. The shattering of narrative in this instance reminds the user that the game word is separated from the physical/real world of the user. However, in the Psycho Mantis boss fight the fourth wall is disrupted with a different effect. Rather than render the constructedness of the game-as-game apparent, Metal Gear Solid breaks the fourth wall with the intention of incorporating abstracted elements of the apparatus into the narrative space of the game. This means that the controller, screen, and memory card are called upon during this segment not to render their function in play apparent, but with the specific intention of creatively re-deploying these apparatic elements within the narrative of the game (instead of preceding the narrative).
The battle begins with a monologue. Psycho Mantis explains that he “will show you why I am the most powerful practitioner of psychokinesis and telepathy in the world...this is no trick. It is true power.” Mantis then goes on to evaluate the player’s “past” reciting dialogue which tailored to the player’s approach to the game. For example, if the player has been killed or hurt by traps Mantis will say “you are careless around traps”; however assuming the player has not sprung any traps prior to the encounter Mantis will say “You are extremely cautious around traps.” The game keeps track of this information (kills, continues/deaths, alert phases, traps activated, saves, item usage, etc.) during the course of play, and is thus able to script this interaction between Mantis and the player as set of custom responses. In addition to recognizing play statistics, Mantis will also recognize memory card content and respond with lines of dialogue like “You like action games!” or “So you like Suikoden?” Following this display, Mantis offers one more demonstration of his power: he asks the player to lay the controller on the floor while he moves it with his mind, which is actually achieved through the activation of the controller’s internal vibration mechanism, but gives the appearance that the controller is being moved “telepathically.”

Following this scene the battle begins; however, shortly after the player is given control of Snake, the game screen goes black, giving the appearance that the console has shut itself off (which, while not necessarily common, has been known to happen when playing games). The black “Hideo” screen, accompanied by a pitched error tone, persists for only a few seconds before the game screen returns to normal. However, as the player begins the actual process of “fighting” Mantis it becomes apparent that weapons are unable to hit him. When Snake/the user

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34 *Suikoden* was also published by Konami.
35 Incidentally, vibration technology in video game controllers is designed to simulate physical presence in the game through haptic feedback, although here it is being used much more transparently.
36 Hideo Kojima is the director/creator of the *Metal Gear* series. See Footnote 32 for image.
takes shots at Mantis, his “telepathic abilities” permit him to dodge these shots. As the player
continues to struggle with an inability to effectively combat Mantis, a support character contacts
Snake over the radio and suggests that he change the controller input.\textsuperscript{37} Only after switching to
the console’s second controller input is Mantis rendered unable to “read Snake’s/the user’s
mind” allowing the player to complete the battle and defeat Mantis.

The sense in transcribing these \textit{narrative} moments in a study dedicated primarily to
apparatus is that that although each of these “psychically” powered disruptions serve the
narrative trajectory of the game, in the process this sequence directly address and calls upon the
apparatus. In short, these elements of the “Psycho Mantis Battle” claim the apparatus for the sake
of narrative, inverting (or subverting) its mechanical function for the sake of a heightened (albeit
somewhat gimmicky) narrative range. “Reading the player’s past” draws attention to the function
of the game’s memory card, as well as its capacity to track player actions, relying heavily on
code and data (and coded/scripted responses). By having Mantis read the players “past”, the
game calls attention to an element of the apparatus that otherwise goes unremarked. However, in
doing so, the memory-card is drawn into the wholeness and structure of the game’s narrative.

Similarly, psychically moving the controller capitalizes on the recent introduction of haptic
feedback technology,\textsuperscript{38} but does so not for the sake of simulating game forces in the player space
(as is generally the case), but rather with the intention of allowing the game’s narrative to reach
out to the player. Granted, in either instance the vibration function of the controller belongs to
the mediated plane; it is not an element of input but a technology for meaningful output that like
the screen or speakers communicates game information in the real/physical world which the

\textsuperscript{37} The player can change the controller before this point but during an initial play-through a player would not know
to do this. Indeed, it is only after the player dies and continues/re-attempts the battle that they are prompted to switch
inputs.

\textsuperscript{38} Both Nintendo and Sony introduced vibration functionality in their controllers during the middle of their fifth
generation (Nintendo 64, PlayStation) console life span.
player occupies. However, vibration or haptic feedback is usually felt, not seen. That is, the vibrating controller is generally omitted from the player’s visual field. In this instance its hiddenness is disrupted, it is seen and it is meant to be seen. The controller is elevated to a position of significance simultaneous with the game screen, and in this moment the essential division between game world and the player’s world, marked by the screen-as-membrane, is breached by a controller that allows the narrative of the game to reach into the player’s space. Add to this a disrupted video screen, which simulates hardware failure, and the need to physically engage the hardware of the console by switching controller ports, and we have an apparatus which, at least for this moment, is entirely disrupted and in turn rendered visible, or more precisely to-be-seen.

What is unique about this non-normative use of apparatus is that, unlike the apparatus used by MarineKing or the keyboard in QWOP, this disrupted apparatus does not also disrupt play. “GSL-Off the Record” alters the apparatus in order to handicap MarineKing; his mouse alone is more cumbersome than the mouse+keyboard combination generally used to play the game. QWOP also changes the function of the apparatus; however, this is less a question of handicapping the player than of the clumsy interface taking on its own significance with the challenge of the game experienced most readily at the level of interface (rather than internally or strictly-ludologically); the narrative of the runner is secondary to the narrative of the interface. In Metal Gear Solid the apparatus is also, technically, “disrupted;” however, this disruption is designed to heighten the experience of play and, specifically, to allow the user to become more invested in the game narrative. Here the apparatus is not simply facilitating immersion in the virtual/representational narrative space of the game, but also allowing these narrative elements to reach back, through the screen, to address players in their physical moment.
Part 3: Narrative, Apparatus, Subjectivity?

Each of these unique applications of apparatus function to reveal a close connection between the physical technologies that facilitate play and the experiential position of the user in relation to the game during moments of play. More importantly, they demonstrate that the semiotic and narrative experience of play, the meaning, strategies, and identifications associated with gameplay are inseparable from the apparatic context in which they occur. While this certainly does not equate to apparatic determinism, to assume that player subjectivity is entirely open or that play is only truly meaningful inside of these virtual spaces is equally problematic. If these three brief case studies are any indication, just as much as users experience meaning and identification within the narrative and semiotic structures of these texts, it is crucial to recall that these narratives and virtual spaces depend on and are at least partially defined by the mechanisms that facilitate their construction, execution, and that render them accessible to the player. For MarineKing, the altered apparatus necessitates a reconfiguration of his strategies within the game. *QWOP* is designed in such a way that the user must reflect on the material interface apparatus, functionally moving “play” from the virtual plane, at least partially, back into the physical space of the game world. And, perhaps as a counterpoint, *Metal Gear Solid* uses the apparatus as a means to extend the narrative elements into the physical apparatus, in the process drawing this apparatus into the narrative. In this regard play or interactivity is contingent on a breadth of factors: users, semiotics, narratives, and apparatuses each uniquely and simultaneously affect the position the player assumes in relationship to the game during gameplay.

The usefulness of this point is that it disrupts a reading of video game play strictly in terms of narrative content, or even those readings that see the mechanisms of the apparatus only
as a means to the text. More than tools to connect users to virtual spaces, we begin to recognize here that material technologies of video game play reach into these spaces and affect the experience of play at the level of narrative, strategy, and semiotics; play is heavily contingent on apparatus. While not defining or determining play, the apparatus becomes one essential element in the broader construction of any specific moment of play. In *Metal Gear Solid* the narrative of the game briefly calls upon and claims the apparatus for the plot and for character development. Conversely, in *QWOP* the narrative *is* (at least partially) the cumbersome apparatus of the Q, W, O, and P keys. In these unique cases, the virtual and the material are inseparable. For game studies, and perhaps apparatus theory as well, this opens a new and meaningful line of inquiry into *how* user’s experience games and how games are played or “read.” If we return to Espen Aarseth’s work in *Cybertext* (1997), we see a mode of critique opened by an attention to the narrative or textual structures of “ergodic” texts. What a ludological approach to games recognizes is that play is not simply a question of narrative content, but is also largely defined by the structures and coded rules of these digital texts. Similarly, identifying the effect that apparatus has in this structure allows us to think about the experience of play, which is often seen as an embodied interaction, in terms of the tools and mechanisms that facilitate engagement with the game. Ultimately, an apparatus theory of video games is most useful or most revealing when used to explore the specific functions of the technologies of play in terms of interrogating much broader structures and experiences of play.
CONCLUSION: BUILDING ON APPARATUS

The intention of this study was to explore and articulate the feasibility of an apparatus theory of video game play. Building on concepts of apparatus put forward by film theory and with an attention to the growing body of literature in game studies, this thesis has sought to understand the ways in which specific technologies shape and affect the experience of video game play. Although the “video game apparatus” is a difficult construction to define and pin down, due largely to the diversity and complexity of technologies included under the term “video game,” what is described here is a general model of video game apparatus organized around an understanding of video game technologies in terms of their mechanical and experiential function. While the specific components particular to an instance of video game play vary significantly, it is possible to point to analogous structures of a video game apparatus, and from here an apparatus theory of game play becomes feasible. So, although console, computer, and portable games each require unique applications of technology, each still consists of a game written as code, processed by a computer, affected via a physical interface, and represented to the user through a mediated plane. What I have argued is that this general apparatus is essential to any instance of play as the technology of the medium is what imbues these otherwise abstract texts with form, accessibility, and the capacity to interact with the inputs of a user (and vice versa).

The general assertion here is that the apparatus (at least partially) precedes the textual elements of the game. Ideally, the apparatus addresses the user in advance of the experience of the game narrative in a very particular way. Elements of the game’s construction, the code and computational hardware, are hidden behind more readily apparent apparatic elements like the screen and controller. This allows the user to experience the game without reflecting on the inherent structures and limitations imposed by the code or the translation of physical inputs into
data through the controller interface and computer hardware. Although it remains hidden from the user this apparatus has a very real effect on the experience and power of the player. In one sense, it facilitates the textual engagement, but in another sense it defines and delimits the extent of users’ power in and over the text. In this regard it is not unfair to suggest that the apparatus is essential in the production of a subjective experience of play; it situates the user in relationship to the text and defines the extent of their power to affect the coded space of the game.

While essential in structuring an experience of play for the user the significance of the technical apparatus is not strictly limited to the construction of player positions. A close examination of the technologies of the apparatus also reveals a link between apparatus and the textual/ludological shape of the game. What this means is that the apparatus of the video game is closely connected to the more textual elements of the game structuring and limiting this space. Specifically the code of the game is finite and limited by hardware capabilities, the screen partially dictates the visual scale and depth available, while interaction and the capacity to affect the game is bound by interface technologies. This does not mean that the textual possibilities are determined by the apparatus but that game texts must accommodate for these apparatic limitations.

The purpose in restating all of this is not to propose an apparatic determinism but to articulate the centrality of technological elements to the video game. The apparatus is one significant element of video game play that affects an “experience of play” simultaneous with unique user subjectivities, narrative content, and semiotic structure. Additionally, the apparatus structures the technical space in which narrative and ludological elements may be produced. This means, quite simply, that it is crucial to recognize the function of apparatus in a broader discussion and theorization of the video game. The last section of this thesis explores the
implications of this applied apparatus theory. So, when the apparatus available to MarineKingPRIME changes, his relationship to the game at a narrative and semiotic level changes; conversely, when the narrative breaks the fourth wall in *Metal Gear Solid*, the narrative changes the nature of the apparatus. What all of this demonstrates is that video game play is defined in the interrelationship of a number of crucial textual and extra-textual factors, of which apparatus is only one, albeit a very significant one.

In terms of its critical import for game studies, apparatus critique adds depth to broader discussions of play that seek to define a general theory of the video game. Apparatus theory brings a materialist critique to discourses of video game play, which otherwise have been structured through textual and aesthetic models of the video game. Specifically, this apparatic model becomes a means to bridge understandings of the video game as a textual machine with understandings of games in terms of their material structures, and in terms of the player engagements that these structures promote. This means that while a complete theory of the video game may still be rendered problematic as a result of the complexity of cultural productions subsumed by the term “video game” a recognition of apparatic structures and functions becomes a means to bracket and discuss these productions. This attention to apparatus also disrupts more optimistic readings of the video game as a truly open text. Certainly the qualities of “interactivity” and “play” so often associated with the video game signify a greater textual freedom on the part of the user. However, to see this interactivity as the power of authorship or the result of a complete textual openness is unproductive as it ignores the crucial, technologically imposed limitations of the medium. This does not necessarily imply a pessimistic view of video game play, the subjective experience of the player and the meanings constructed by the user in a moment of play remain quite open. Indeed, the video game may still stand apart from non-
interactive media via the capacity for the user to affect its textual world. Rather, an apparatic critique of the video game suggests that we must temper our readings of the open, interactive text with an understanding of the structures which precede and facilitate it.

For this reason, this thesis has largely avoided discussing and theorizing the subjective experience of the player relative to the apparatus or relative to the game. Ultimately, an apparatic critique still remains unable to fully account for user subjectivity in a moment of play and to try and construct a model of the subject would be a reductionist endeavor. This thesis does allude to the unique subject positions of the glitcher, modder, and superplayer in Chapter Two and we see MarineKing exercise creative play in his match with OnlineJaguar but these are specific instances where subjectivities relative to the apparatus become apparent. As a theory, the apparatic model is incapable of fully accounting for the diversity of potential player subjectivities as the meaning and narrative experienced in play is dependent on a number of factors, including the unique identity of the individual player. So, any attempt to define the user in a general or totalizing way runs the risk of omitting or over-determining the identity and experience of the unique subject. Furthermore, given that Psychoanalytically inclined models of cinematic apparatus, which relied on a number of generalizations about spectators’ identification with the cinema, have been undermined by their totalizing theories of film spectatorship, it seems prudent here to avoid reading too heavily into the identity of the gamer. For this reason this thesis has only addressed player subjectivity in moments where it is already made apparent rather than assuming that certain subjectivities or subject positions are favored or natural to the apparatus. Ideally, this allows an apparatus theory of games to remain applicable even as patterns of usership change.
Ultimately a concrete model of the subjectivity of the individual player is not the point of this study, nor is it particularly useful. Rather than think of how apparatus constructs the subject, the goal of this project has been to study how apparatus facilitates play and functions to define the medium more generally. Apparatus is not designed to determine or describe the subject but to consider the demands placed on the apparatus and the ways that technology may respond to these demands. What a model of video game apparatus reveals is that technology functions as a means to the experience and narrative elements of the text. Put simply apparatus theory allows us to think about how technology influences texts as well as the way users and these virtual spaces interact. Although the subjectivity of the player is fluid, the structures of the apparatus do take on an essential function in the production and facilitation of the experience of play and it is the recognition and evaluation of the implications of these structures that renders apparatic critique powerful.

Future Connections

This general model of apparatus opens game studies to a critique of the technologies which facilitate play. This approach provides a means to connect textually oriented readings of the video game, readings which center on the narrative and semiotic elements of play, with a more technically grounded understanding of how games work. What this allows is a closer connection between game studies in the humanities and the industrial, technological, scientific fields which produce these texts and these technologies. An awareness and articulation of the technical functions of the video game apparatus connects theories of game use to the theoretical and scientific models which facilitate the development of game technology as well as to the industrial and commercial interest which develop individual game texts and which market these
technologies. Ideally, this connection will be the legacy of an apparatic critique of the video game. These connections will provide the capacity for a more total understanding, not just of how games work, but of the elements which come together to create the video game as a cultural production.
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