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The Architecture of the Videogame:

Architecture As The Link Between Representational and Participatory Immersion

A thesis submitted in partial satisfaction of the requirement for the degree Master of Arts in

Architecture

by

Joseph Maguid

2016

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## ABSTRACT OF THE THESIS

### The Architecture of the Videogame: Architecture As The Link Between Representational and Participatory Immersion

by

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Master of Arts in Architecture

University of California, Los Angeles, 2016

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Much of the historiography of videogames focuses on representational or participatory aspects of the genre. Here, videogames are considered as an art that is dependent on the harmony of those two seemingly separate pieces, the video and the game, with architecture serving as the fundamental link between the two. Architecture works by mobilizing distinct but simultaneous forms of attention, one aesthetic and one interactive. Looking closely at the way architecture creates immersion on a specific format of games, the use of representational aesthetics to affect participatory interaction is examined. While representational immersion is a critical facet of videogames, ultimately it is participation which provides players with a sense of agency need to become immersed. This immersion in the virtual world can manifest itself in the physical manipulation of the real world environment.

This thesis of Joseph Maguid is approved.

Dana Cuff

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2016

## **Contents**

Introduction	1
The VIDEO game	6
The video GAME	12
The Command of Architecture	16
Forms of Attention	23
Architecturally Formatted Videogames	31
Forms of Agency	57
Architecture of the Apparatus	66

# **The Architecture of the Videogame: Architecture As The Link Between Representational and Participatory Immersion**

## **Introduction**

In her 1997 book *Hamlet on the Holodeck: The Future of Narrative in Cyberspace*, Janet Murray, professor in the School of Literature, Media, and Communication at Georgia Institute of Technology, described immersion saying,

The experience of being transported to an elaborately simulated place is pleasurable in itself, regardless of the fantasy content. Immersion is a metaphorical term derived from the physical experience of being submerged in water. We seek the same feeling from a psychologically immersive experience that we do from a plunge in the ocean or swimming pool: the sensation of being surrounded by a completely other reality, as different as water is from air that takes over all our attention, our whole perceptual apparatus.<sup>1</sup>

While Murray was not the first to discuss the etymology of the word “immersion” nor the first to explain the phenomenon of digital or virtual immersion, her remark is of particular note because it is one of the earliest examples of appropriating the term “immersion” specifically for videogames.<sup>2</sup> What Murray describes is an experience that many game developers strive to provide and many gamers seek out. Critically lauded videogames like *The Witcher 3: Wild Hunt*, *Bioshock*, and *Uncharted 4: A Thief’s End* are all praised for the degree to which they give the player “authenticity,” “believability,” and “immersion.”<sup>3</sup>

Videogames almost by definition embody a certain duality, that of the “video” and that of the “game.” In fact, “video game,” written as two words is the grammatically correct form of the term, yet the more common use of the neologism perpetuates the separation between the representational (video) aspects of the videogame and their participatory (game) nature. The use

of the single word videogame in this thesis represents an effort to point out the unique aspects of the genre and highlight that there is no videogame without the video and the game working simultaneously. As an inherently spatial art form, videogames are joined together through an understanding and utilization of the unique properties of architecture.

Immersion, likewise, can manifest itself in ways that mirror the duality of videogames.

Videogames with high graphical fidelity, strong narratives, and realistic settings belong in the realm of representational or aesthetic immersion because of how they enrapture and engross players through sights and sounds. As Art History professor at the University of Wisconsin, Elena Gorfinkel states,

Immersion is not a property of a game or media text but is an effect that a text produces. What I mean is that immersion is an experience that happens between a game and its player, and is not something intrinsic to the aesthetics of a game. The confusion in this conversation has emerged because representational strategies are conflated with the effect of immersion. Immersion itself is not tied to a replication or mimesis of reality. For example, one can get immersed in Tetris. Therefore, immersion into game play seems at least as important as immersion into a game's representational space. It seems that these components need to be separated to do justice and better understand how immersion, as a category of experience and perception, works.<sup>4</sup>

Representational immersion is often regarded as the default meaning of immersion when applied to videogames. Yet a sense of immersion that is wholly concerned with aesthetics is one that is not specific to videogames. One can be representationally immersed in film, television, painting, photography, sculpture. It is videogames' ability to simulate interaction and participation that separates them from more traditional arts and allows them to tap into the type of participatory



immersion which Gorfinkel advocates for, a type of immersion that absorbs players through agency, competence, and satisfaction.

While Gorfinkel is correct in her assessment that in order to understand immersion in videogames one must examine two distinct forms of it, her assertion that “these components need to be separated to do justice” betrays the very nature of videogames as the embodied interdependence of video and game. The link between both video and game and the separate forms of immersion has been largely ignored and understudied. In order to understand videogames and immersion, one must examine the link between their dual natures and recognize that it is architecture, specifically that binds them together. While videogames vary tremendously in terms of gameplay and aesthetic style, architecture typically plays a fundamental role in even the most disparate games. This is because architecture is able to mobilize distinct but simultaneous forms of attention that establishes the link between the video and game.

The disjointed nature of videogame theory is largely attributed to the relative infancy of videogames as an art form. There is only one generation of videogame theory producers and most of the originators of this discourse are still alive today. In the Foreword for the 2003 *Video Game Theory Reader*, game designer and creator of the seminal 1979 game *Adventure* on the Atari 2600, Warren Robinett states,

There is a natural progression in the emergence of a new art form. Often there is an enabling technology that must first be invented and made to work...Then come the first works exploring the new medium. The pioneers are often clueless, from the point of view of later practitioners, about what you can do with the medium, and a great deal of experimentation occurs...The ideas

that work give rise to genres, and all too quickly, the youthful efflorescence is over and the genre hardens. Critics arise when there are enough works that the public needs help sorting the good from the bad. And trying to analyze what separates the good from the bad naturally leads to theory, or theories, about the medium...The critics and theorists cannot get started without a body of work to winnow and analyze, and their work is meaningless without a stream of new works being created, presumably being informed (somewhat) by their efforts. The wolf keeps the caribou strong. The players, the designers, the critics, and the theorists are natural members in a healthy ecosystem. This homespun theory of art-form emergence is based on what I have observed in the field of video games.

The enabling technology (computers and computer graphics) became cheap enough to reach consumers in the 1970s. A great many video games were created in the first ten years, genres comes to be recognized (shooters, racing games, sports sims, side-scrollers, etc.). Critics were born when game magazines began rating various games. As far as I know, this book is the first to focus exclusively on the theory of video games.<sup>5</sup>

What Robinett describes is a natural progression for any art form and one which culminates in the constant cycle of theory and practice working to sharpen and improve one another. With an art form that is so intrinsically technological and the rapid pace in which technology progresses it is possible that practice and implementation can begin to outpace theory. Likewise, videogames are the sum of a multitude of interdisciplinary art forms; writing, music, storytelling, acting, and spatial design are just some of the examples of the interdisciplinary nature of videogames. It makes sense then that videogame theory should attempt to approach videogames through a lens which encompasses multiple art forms. In order to understand architecture's role as the link between the dual natures of videogames and immersion it is imperative to understand the ways in which videogame immersion and architectural influence have been discussed in the past. A vast

majority of the studies adhere to Gorfinkel's logic and study games from the perspective of either video immersion or game immersion.

Janet Murray helps to elucidate the prevailing notion in early videogame theory that representation and participation/interaction are two distinct fields when she described her four essential properties for digital environments,

Digital environments are procedural, participatory, spatial, and encyclopedic. The first two properties make up most of what we mean by the vaguely used word *interactive*; the remaining two properties help to make digital creations seem as explorable and extensive as the actual world, making up much of what we mean when we say that cyberspace is *immersive*.<sup>6</sup>

Murray divides her properties into categories of interactivity and immersion and by doing so highlights the belief that they are two separate things. A more fitting category for "spatial" and "encyclopedic" could easily be representational, yet by calling it "immersive," Murray reveals what is the dominant idea in videogame theory, that the representational aspects of videogames are the immersive qualities of them and that interaction and participation belong in a different conversation altogether.

## The VIDEO game

When examining the literature which highlights the representational forms of attention of videogames a particularly salient text is Steven Poole's *Trigger Happy: The Inner Life of Videogames* in which Poole examines videogames from the point of view that the "inner life of video games was bound up with the inner life of the player whose response was aesthetic"<sup>7</sup>

Comparing them to other media, largely cinema, Poole presents the unique properties of games and describes the psychological and physical involvement of the player. He examines the ways worlds are built and stories are told. Poole's text is one of the earliest works that studied the aesthetics of videogames, not from a technical or graphical point of view, but from an experiential perspective. His reliance on film as an established genre and its relationship to videogames coupled with his focus on aesthetics compels him to analyze games in a manner which is inherently representational. In fact, Poole's book is not the only videogame text which relies heavily on film as an inspiration for the field. The mid to late 90s saw an emergence in videogame theory coming largely from the film community as *Film Quarterly* published its first essay on videogames in 1997. The essay, by Mark J.P. Wolf titled, "Inventing Space: Toward a Taxonomy of On- and Off-Screen Space in Video Games" served as a taxonomy of videogame space divided into eleven categories. The categories are ordered by complexity ranging from "No visual space; all text-based" to "Interactive three-dimensional environment." The essay was concerned entirely with spatial representations, a taxonomy much more varied than the genre of film allows but nevertheless one detailing only spatial aspects of videogames. While film served as an incubator for the field of videogame studies, it was not until July 2001 that the first issue of *Game Studies*—the first online academic journal on games—came into existence.

In 2005 (and later restated in 2010) Roger Ebert commented on videogames and said, “the nature of the medium prevents it from moving beyond craftsmanship to the stature of art...No one in or out of the field has ever been able to cite a game worthy of comparison with the great poets, filmmakers, novelists and poets.”<sup>8</sup> While Ebert’s claims are not worth addressing, they highlight the seemingly ever present need for enthusiasts and critics to validate videogames within the discourse of traditional notions of art. Nic Kelman’s *Video Game Art* is one such example. Kelman, a writer of novels in addition to non-fiction, bases his claim on two central arguments. First, that videogame designers are gifted craftsman who construct compelling and visually simulating worlds using artful skill. Second, that videogames are constructing meaningful experiences which resonate within our culture. He emphasizes that even Homeric epics and seminal novels like *Moby Dick* were once “popular culture” and the status of videogames as such should not discount their importance. Kelvin even argues that due to the variety present in the medium and the number of experiences videogames can convey that they have the potential to become the most important art form of our era. His chapter titled “Imitation of Reality” discusses the ways in which games simulate real world experiences. While he initially points to increased graphical fidelity as a driving force he notes that even *PONG* was a simulation of tennis. He continues with a discussion largely looking at sports games like *Madden* and *FIFA* and the ways in which these videogames seek to emulate their real world counterparts by releasing annual iterations that improve graphical fidelity and portray real world people and places more and more accurately.<sup>9</sup> Kelman’s book seeks to validate videogames as an art form by discussing them in an entirely representational manner. He argues that as technology and graphic fidelity

improve, videogames will be able to better portray reality and continue to depict more and more immersive environments. Yet, the issue is that Kelman is wholly absorbed in an argument about aesthetics. He is operating under a logic that applies equally to other aesthetic and passive art forms. Similar to Murray's remarks that equate spatial and encyclopedic properties of a games as the immersive qualities, there is a prevailing notion that when one discusses videogames as art, they are really discussing videogames as aesthetics. A method that only does an injustice to the genre and is only half of the equation.

One of the most comprehensive discussions of game aesthetics comes from Malmö University Professor Simon Niedenthal and his essay, "What We Talk About When We Talk About Game Aesthetics." Niedenthal admits that while digital games exist in the realm of art and aesthetic experience, "it is still not completely clear what we mean when we talk about game aesthetics, nor what aesthetics can contribute to our understanding of games and play."<sup>10</sup> Niedenthal states,

Although the term "aesthetics" (and the implicit and explicit attitudes associated with it) needs to be critically reexamined within a game studies context, changes in game technologies, as well as arguments drawing upon philosophy, psychology, interaction design theory and cultural studies suggest that an aesthetics perspective can contribute greatly to research discourses on gaming as an embodied and pleasurable experience, and can give rise to new ways of thinking about game design.<sup>11</sup>

Niedenthal is less concerned with advancing game aesthetic theory as he is with documenting the need for it to be furthered. The theoretical substructure behind gaming is lacking and the terms of reference for understanding sensory experience are "impoverished" making it difficult to discuss aesthetics as anything more than superficial appearances.<sup>12</sup>

According to his definitions, there are three core meanings of game aesthetics. The first of these is referred to the sensory phenomena that the player encounters in the game that manifest themselves in visual, aural, and haptic senses. This falls into line with the taxonomy at the Carnegie Mellon Entertainment Technology Center that asserts that, “Aesthetics relate to the way a game looks, sounds, and presents itself to the player.”<sup>13</sup> In this sense, game aesthetics fall under the umbrella of formal characteristics that each contribute to the construction of the larger reality of the game world.

The second definition of games aesthetics according to Niedenthal concern those aspects of digital games that are shared with other art forms in order to provide a generalization about art. Here, videogames share goals, content, themes, forms, and design practices with other art forms, allowing for comparison. David Hayward identifies photo-realism as the dominant aesthetic of videogames and considers how sculpture could move the medium beyond the goal of graphic fidelity.<sup>14</sup>

The third and final meaning understands game aesthetics as an expression of the game experience as pleasure, emotion, sociability, and form-giving that is the “aesthetic experience.”<sup>15</sup> This meaning is often associated with the reasons behind playing games. Robin Hunicke categorizes the aesthetic experience as “fun” and further breaks that term down into eight different goals and emotional states.<sup>16</sup> Taking the idea further, Graeme Kirkpatrick sees the aesthetic experience as, “the play of imaginative and cognitive faculties,” a definition that allows for a sense of psychological immersion.<sup>17</sup>

These texts are not “wrong” nor do they argue a moot point, rather they discredit videogames by attributing immersive qualities and the importance of games as an art form to only their representational aesthetic merits. This way of thinking is not unique to videogames and it is precisely for this reason that it is an incomplete rationale. In his essay titled “Immersion”, game designer and programmer Francois Dominic Laramee claims, “All forms of entertainment strive to create suspension of disbelief, a state in which the player’s mind forgets that it is being subjected to entertainment and instead accepted what it perceives as reality.”<sup>18</sup> Laramee’s ideas are common in the discourse of videogames, game designer Frank Lantz has called these ideas about immersion, “widely held but seldom examined.”<sup>19</sup> In their seminal book *Rules of Play: Game Design Fundamentals*, Katie Salen and Eric Zimmerman assert that the “widely held” notions of immersion in videogames is inherently flawed and constitutes what they term “The Immersion Fallacy” or “the idea that pleasure of a media experience lies in its ability to sensually transport the participant into an illusory, simulated reality.”<sup>20</sup> Salen and Zimmerman do not claim that immersion does not exist, they simply argue that aesthetic representation, mimesis of reality, and suspension of disbelief are not required for immersion. In fact, the authors agree with the notion that videogames engage and engross the player but that it is not only accomplished through representation but more importantly through play. Play, according to them, is identified as a type of metacommunicative media, a double-consciousness in which the player is well aware of the artificiality of the play situation. According to Salen and Zimmerman, the fact that videogames are “played” eliminates them from possibility of suspending their disbelief of an illusory, simulated reality. This leads Salen and Zimmerman to conclude that:



The very thing that makes their activity *play* is that they also know they are participating within a constructed reality, and are consciously taking on the artificial meanings of the magic circle. It is possible to say that the players of a game are “immersed”—immersed in *meaning*. To play a game is to take part in a complex interplay of meaning. But this kind of immersion is quite different from the sensory transport promised by the immersive fallacy.

*Rules of Play* emphasizes that participation and play are at least *as important*, if not more important, to the creation of videogame immersion as representation.

## **The video GAME**

Similar to texts on aesthetics, videogame literature is filled with texts which tell the latter half of the story of videogame immersion and are concerned primarily with the interactive nature of the genre. Stéphane Natkin's book, *Video Game and Interactive Media: A Glimpse at New Digital Entertainment*, argues that videogames are the most advanced sector of the category she refers to as "interactive media."<sup>21</sup> The book is particularly salient for its chapter on "Immersion Methods." Immersion, as Natkin argues, relies on narrative control, game perception, and the playful appeal of the game's rules. She brings in cinema theorist Claude Bailblé who posits that attention by the spectator in a film relies on the film's ability to make the spectator relive a series of emotions that have been experienced in real life. Games however, do not follow this logic, although certain parts of a game such as cutscenes are "cinematic" the essentials of a videogame rely on the player being a participant, not an observer. While we have seen texts on representation rely on comparisons to film as evidence of immersion, Natkin uses the comparison to point out the differences between the genres. To this effect, it is gameplay, Natkin argues, which is the ultimate immersive factor for players, not observation. The development of psychological tension, as Natkin calls it, is manifested by the decisions, successes, and failures on the part of the player playing, not the observer watching. This stance is of particular interest in that it calls to attention the nature in which games are immersive in that they are experienced through gameplay and it is the choices one makes within gameplay that ultimately reflects their level of immersion. Natkin's psychological approach to immersion relies on the fact that the player will feel a certain emotion that is imposed onto them because of the need to make decisions in the game ultimately favoring the "game" over the "video."

2005's *Half-Real: Video Games Between Real Rules and Fictional Worlds* by Jesper Juul

discusses the dual nature of videogames as taking place within fictional worlds while influencing the real world. He claims that the computer revolutionized the game just as the printing press redefined literature and that the computer enabled games that could have never existed before. Juul identifies six distinct properties that a game must have: fixed rules, variable outcomes, valorization of outcome, player effort, player attachment to outcome, and negotiable consequences.<sup>22</sup> While these properties may seem a bit antiquated by contemporary videogame standards and could indeed be argued, they are not what is in question here, rather it is Juul's use of them that is far more interesting. Each of these properties are intrinsically tied to the nature of the "game" and could just as easily apply to chess or football as to videogames.

A text of particular note comes from psychologists Scott Rigby and Richard M. Ryan and their book, *Glued to Games: How Video Games Draw Us In and Hold Us Spellbound*. The duo are not concerned with how games affect cognitive development or whether or not they promote violence or other harmful behavior, rather they are concerned with one question in particular, how do games achieve their immense motivational pull? They begin by discussing the emotional experience of games and a break down of the notion of "fun" as a motivational factor and instead conclude that player motivation is tied more closely with need satisfaction. Satisfaction, according to them is broken down into two categories unique to the genre of videogames, competence and autonomy.<sup>23</sup> Competence boils down to being "good" at a game, or seeing improvement in skill as one progresses and advances further into a videogame. Often used against videogames as an argument against their place in the pantheon of arts, competence and

skill is a phenomenon that does not exist for the beholder or audience of passive arts. One cannot be “bad” at viewing a painting or watching a film but one can certainly be bad at playing a videogame. Yet it is this need for competence and desire to improve one’s skill that Rigby and Ryan argue acts as an immersive pull. Similar to Bogost’s assessment of *Vigilance 1.0*, the player reaches a point where gameplay becomes paramount to their experience and results in the player becoming immersed in the actual “game” far more than in any representations the game presents.

Rigby and Ryan’s second satisfaction determinant, the need for autonomy, is presented in two forms. The first, complies with traditional notions of autonomy as videogames that give player “freedom.” These types of videogames present the player with multiple options and allow them to choose their own path. The second notion of autonomy is rather interesting as it seems counterintuitive initially. The pair of psychologies argue that even videogames which do not give players choices of progression can still make players feel autonomous. Autonomy is tied to volition and as long as a videogame makes a player feel as though they are acting volitionally then the player will retain their sense of autonomy satisfaction. More so than any of the texts that preceded it, *Glued to Games* directly confronts the issue of videogame immersion but does so on a psychological level of the game. The text effectively identifies the immersive pull of the *game*, but largely ignores that of the *video*.

It is worth noting that there is an example of one seminal text which attempts to consider multiple forms of attention in videogames. Geoff King and Tanya Krzywinska’s book, *Tomb Raiders and Space Invaders: Videogame Forms and Contexts*, takes an aesthetic approach to

classifying not only various “gamescapes” but the effect various gamescapes have. King and Krzywinska identify a relationship between what they call “Degrees of freedom” and “Degrees of presence” defining degrees of freedom as player agency, and degrees of presence as immersion. When classifying degrees of freedom the authors state that the “defining element” of videogames is spatiality; videogames are “essentially concerned with spatial representation and negotiation.”<sup>24</sup> It is here that King and Krzywinska highlight the separate forms of attention that videogames exhibit. What they call “spatial representation and negotiation” can be understood as *video* and *game*.

Degrees of presence is explained by looking at various in-game perspectives. Differing points of view for the gamer often contribute to differing ideas of immersion. King and Krzywinska even recognize the dual forms of immersion present in videogames which they call, perceptual immersion—which is often a result of representational capabilities—and psychological immersion. The former involves immersion in the game world while the latter is concerned with the game itself. While perceptual immersion comes from a games ability to create a world worth investing in, psychological immersion is created through a willingness on the part of the player to suspend disbelief through the act of play. The authors main focus is on the dichotomy between degrees of freedom and degrees of presence, discussing the ways in which they sometimes exhibit a negative correlation between one another and at other times a positive one. It is made clear that the two phenomenon are not mutual exclusive but there is no discussion towards the link between the two nor between link between the simultaneous forms of attention.

## The Command of Architecture

Architecture serves the videogame by allowing for the existence of separate but simultaneous forms of attention, one representational and one participatory. While architecture is the direct link between the dual natures of videogames and immersion, in order to understand how it works in the virtual world of the videogame we must first comprehend the ways in which it works in real life. Ronald W. Smith and Valerie Bugni's essay, *Symbolic Interaction Theory and Architecture*, introduces the sociological phenomenon of symbolic interaction into the realm of the built environment. Used to "help us understand how the designed physical environment and the self are intertwined, with one potentially influencing and finding expression in the other; how architecture contains and communicates our shared symbols; and how we assign agency to some of our designed physical environment."<sup>25</sup> The authors argue that symbolic interaction theory helps explain the fundamental connections between architecture and human thought, emotions, and conduct and contributes to our understanding of architecture in three critical ways:

1. The perspective emphasizes that designed physical environments and the self potentially influence and find expression in the other.
2. The theory informs us about how these designed physical environments contain and communicate our shared symbols and meanings,
3. Symbolic interaction theory reveals that this designed physical environment is not merely a backdrop for our behavior. Quite the contrary, because some designed physical buildings, places, and objects act as agents to shape our thoughts and actions; they invite self-reflection.<sup>26</sup>

While the text is essentially a literature review on the symbolic interactionist, it provides salient insight into the ways in which people have studied architecture's symbolic means and methods of interacting with the individual. The essay begins with a discussion of George Simmel's essay,



**Figure 1** - U.S. Capitol Building, William Thornton, 1800

“The Metropolis and Mental Life” in which Simmel focuses on the city as a realm of social interaction and a vehicle for individual freedom. Yet, while freedom may be enhanced, the city also “forces urban dwellers to become impersonal, reserved, indifferent, blasé, and calculated as a means of protection from over-stimulation.”<sup>27</sup>

While Smith and Bugni highlight the ways in which architecture mobilizes individual participation—a distinct form of attention—they often are most successful when they express the role of representation—another distinct form of attention—in defining how architecture acts onto the individual. For example, the two cited Benjamin Latrobe’s U.S. Capitol Building (fig. 1) as rejecting the dominant designs inspired by the Italian Renaissance and drawing inspiration from ancient Greece. Formally, the building resembles ancient classical structures while symbolically it works to emphasize the ideals of simplicity and rationalism of a newly founded democracy. Likewise, the authors examine the nature of Walter Gropius’ modernist architecture and its role in rejecting the bourgeois. By casting aside ornamentation and using what he deemed to be

“honest” materials, Gropius designed buildings to symbolize the need for change in a contemporary and functional world. The building had become a machine and operated under the guise of a machine. Machines do not require decoration or visual opulence, they only need to function efficiently.

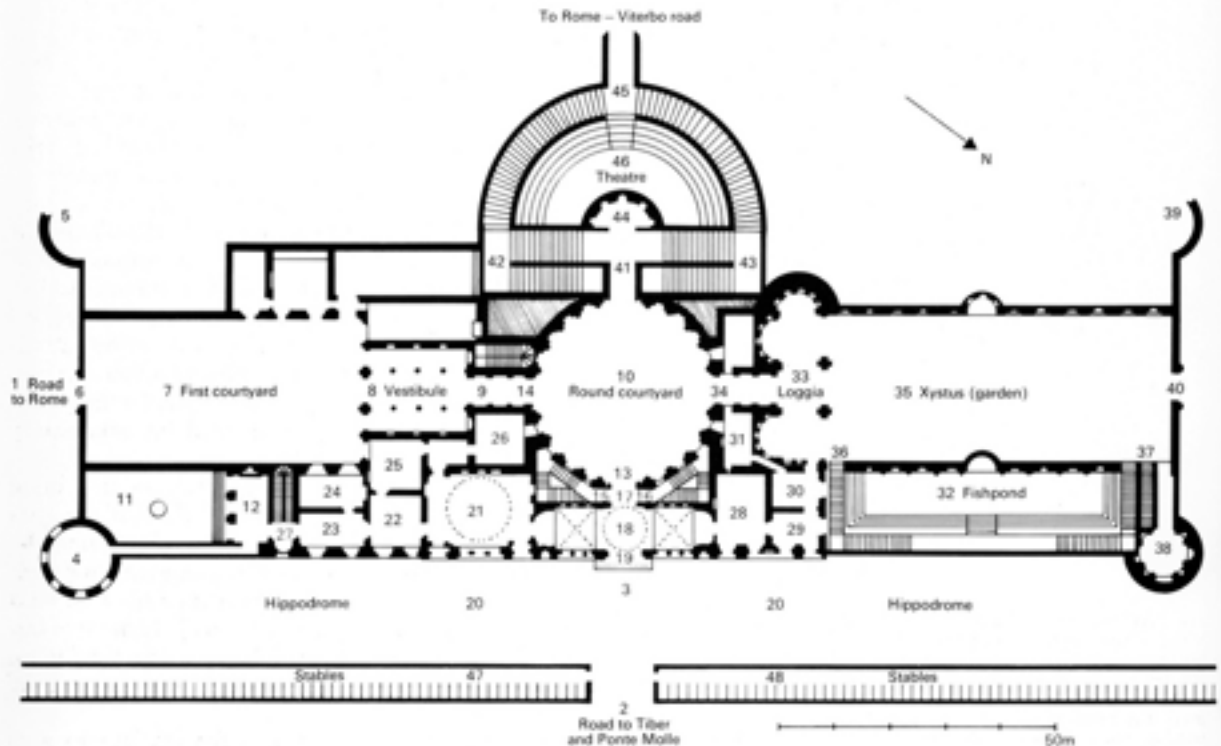
What could be classified under the umbrella of symbolic interaction theory, Rajiv C. Shah and Jay P. Keban’s essay, “How Architecture Regulates” seeks to examine more specific methods of control and regulation architecture exerts onto humans. They question the ways in which architecture can express cultural or symbolic meaning, affect how people interact, and be biased towards or against certain social groups. While humans have agency, Shah and Keban seek to analyze the ways in which architecture influences behavior. A simple example the pair use is the juxtaposition between hallways and open spaces. As they claim “hallways tend to discourage social interaction, while circular rooms tend to encourage it.”<sup>28</sup> This allows architecture and interior designers to facilitate social interaction or discourage it with the placement of stairways, porches, and water coolers. On a grander scale this type of social influence can be seen in the creation of open-space plazas. As the authors note, it is not enough to have open spaces if the goal is communal congregation, it is also necessary to imbue those spaces with properties which make them habitable and desirable. William H. Whyte’s book *City: Rediscovering the center* found that the most successful plazas and open spaces in New York City tended to be the ones that had plenty of seating and included features like fountains, food stands, and activities to watch.<sup>29</sup> Architecture can also work through methods of exclusion. As Shah and Keban detail,



inhabiting a private space means rejecting a public one. This manifests itself in interior architecture with the creation of private meeting rooms and even cubicles.

Similar to Smith and Bugni, Shah and Keban include Bentham's panopticon in the discussion of architecture as a controlling and disciplining device yet they take Bentham's logic out of the correctional facility and use it in everyday reality. The mention ubiquity of surveillance in the United Kingdom and its role in reducing crime while acknowledging how surveillance can make certain social groups which deviate from social norms—such as gays and lesbians in South Africa—feel subjugated. The ever present gaze onto “deviant” behavior results in the creation of safe havens for those outside the social norm such as gay bars that encourage socializing with like-minded individuals.

Robin Evan's seminal essay, “Figures, Doors, and Passages” examines large scale domestic housing from the 16th to 19th centuries such as the Villa Madama (fig. 2). Concerned primarily with the floor plan, Evans argues that form does not explain, but rather is the thing which needs explaining. Early villa plans did not include any corridors or hallways. The invention of these passageways, as Evans details, was primarily concerned with the privacy of movement. Meaning, the bourgeois sought a way so that their servants could move around the property and serve their patrons while ensuring that they remained as invisible as possible.<sup>30</sup> These corridors introduce a sort of express route throughout the villa and allow for an individual to move from one location to another in the most efficient manner possible.



**Figure 2** - Villa Madama, Raphael and Antonio da Sangallo the Younger, 1525

If one is to consider the impact of the hallway on a house then one must consider the state of affairs which existed before hand. As Evans states.

First, the rooms have more than one door—some have two doors, many have three, others four...

Once inside it is necessary to pass from one room to the next, then to the next, to traverse the building. Where passages and staircases are used, as inevitably they are, they nearly always connect just one space to another and never serve to as general distributors of movement. Thus, despite the precise architecture containment offered by the addition of room upon room, the villa was, in terms of occupation, an open plan relatively permeable to the numerous members of the household, all of whom—men, women, children, servants, and visitors—where obliged to pass through a matrix of connected rooms where the day-to-day business of life was carried on. It was inevitable that paths would intersect during the course of a day, and that every activity was liable to intercession unless very definite measures were taken to avoid it.<sup>31</sup>

Before the proliferation of hallways and passages, rooms were used for circulation rather than serving as destinations. The use of multiple doors to a room signifies the ability to move through the space rather than the room acting as an endpoint. This is again another way in which architecture works on individuals. The absence of passages socializes the very action of movement while the inclusion of them privatizes and expedites circulation.

While Evans began to scratch the surface of how doors influence us, Bernhard Siegert's "Doors: On the Materiality of the Symbolic" takes a deeper dive into the symbolism of the door and its affect on humans. Siegert asserts that, "doors are architectural media as an elementary cultural technique because they process the guiding difference of architecture, the difference between inside and outside."<sup>32</sup> The door is the very thing that creates the notion of inside and outside. While a wall may differentiate and demarcate space, the door establishes that space as properly inside or properly outside. As opposed to the wall, Simmel writes, "Precisely because [the door] can be opened, its closure provides the feeling of a stronger isolation against everything outside this space than the mere instructed wall. The latter is mute, but the door speaks."<sup>33</sup> Doors condition us to perceive of space as inside and outside, crossing through a door is crossing through the threshold between in and out. The door is a barrier to a destination, a gateway into another space, a space which by definition of the door is closed off to those on the outside.

The door also carries with it the connotation of what "inside" truly means. That being inside means one must comply with a certain cultural and social order. "To step through a door means to subject oneself to the law of a symbolic order, a law that is established by means of the

distinction of inside and outside”<sup>34</sup> Entry into the new symbolic order is not freely granted, “if the door is a machine by which the human being is subjected to the law of the signifier, then the lock is part of the door that expresses the law as interdiction.”<sup>35</sup> The inaccessibility of the lock creates a situation of desire, a temptation of space that can only be sated via entry.

The prevailing discourse on videogames and their immersive artistic qualities focuses primarily on either representational or participatory aspects of the game. The rare instances when both forms of attention are discussed are done so in a manner which ensures the forms remain disparate. Architecture reveals itself as genre that intrinsically necessitates the convergence of representation and participation and a necessary factor in the study of videogames.

## Forms of Attention

The inherent interdisciplinary of videogames as a genre necessitates an interdisciplinary approach to analysis. In an essay titled “Computer Game Studies: Year One” by Espen Aarseth in the first issue of *Game Studies*, Aarseth states,

Of course games should be studied within existing fields and departments, such as Media Studies, Sociology, and English, to name a few. But games are too important to be left to these fields. Like Architecture, which contains but cannot be reduced to art history, games studies should contain media studies, aesthetics, sociology etc. But it should exist as an independent academic structure, because it cannot be reduced to any of the above<sup>36</sup>

Likewise, in this first issue of *Games and Culture*, the essay, “The Pleasures and Dangers of the Game. Up Close and Personal” by then president of DiGRA, Tanya Krzywinska said,

What I fear however is that if all game research is done within dedicated departments a kind of new orthodoxy of approach will crystallize. This may be the price of the development of our subject. It might mean blindsiding those who are for example engaged with philosophy or political economy because there are not essential, apparently, to running community for newcomers from whatever background, who may bring ideas that challenge new orthodoxies... Academia is now industry focused, funding hungry, and biased towards empiricism and entrepreneurialism; as a result, speculative and idiosyncratic work that values intellectual inquiry is becoming an endangered species. If experimental thinking is devalued, academia becomes a less interesting place to work and study. All approaches have their strengths and weaknesses, and each formulate issues and perspectives according to particular rhetorics. Power and pleasure are not therefore simply a dynamic at work in the playing of games. Speculative approaches have their place and are essential components in making game studies a rich, evolving, and multifaceted entity.

Krzywinska describes the necessity for other fields to study games so that the field does not develop an orthodoxy that alienates those outside of it. Videogames have and will only continue

to benefit from a multidiscipline approach. Immersion is not a phenomenon unique to videogames, one can be immersed in more passive arts like painting, literature, and theater. In fact, as an art form that is, at most, 58 years old it is helpful to understand how other forms of immersion manifest themselves in more traditional arts so that we can begin to learn from and adopt a theoretical substructure that is needed in videogames.<sup>37</sup>

What is referred to as immersion in videogames is more suitably called absorption in painting. Introduced in Michael Fried's book, *Absorption and Theatricality: Painting and the Beholder in the Age of Diderot*, absorption is the "persuasive representing of a particular state or condition... of rapt attention, of being completely occupied or engross or (as I prefer to say) absorbed in what he or she is doing, hearing, thinking, feeling."<sup>38</sup> In this context, Fried is referring to the figure in Greuze's *Un Père de famille qui lit la Bible à ses enfants*; he argues that realism of the scene comes from the sense that the characters in it are fully absorbed and that they behave in a manner that is believable.<sup>39</sup>

Absorptive figures are not the only way to convey believability and realism according to Fried. Citing works by Jean-Baptiste-Siméon Chardin, Fried argues that Chardin naturalized and domesticated absorption and locked the experience in the home and surrounded it with ordinary things. Paintings like Chardin's *Game of Knucklebones*, *Card Castle*, and *Soap Bubbles* encapsulate the imperfection of the home. Chardin's environments, being less than perfect, created a sense of realism.<sup>40</sup>

While Greuze and Chardin use different techniques to create absorption, they both rely on a distinct principle, they ignore the beholder. The reason the beholder can become absorbed within a painting is because they believe in the reality being depicted, that the scene in the canvas is actually happening or at the very least could be happening. The acknowledgment of the presence of the beholder breaks this sense of reality as the figures are no longer behaving in a believable manner but rather catering to the viewer. This creates what Fried calls a paradoxical relationship between painting and beholder stating,

underlying the pursuit of absorption and the renewal of interest in the sister doctrines is the demand that the artist bring about paradoxical relationship between painting and beholder— specifically that he finds a way to neutralize or negate the beholder’s presence, to establish the fiction that no one is standing before the canvas. (The paradox is that only if this is done can the beholder be stopped and held precisely there)<sup>41</sup>

This ultimately brings Fried to discuss what he called an “ontological fiction” that both the subject and beholder must adopt. The fiction is, of course, that there is no painting, no painter, and no beholder. That the scene viewed is a moment in time captured, not by an artist and not for the intention of display but rather a window into another reality.

As the title of his book would suggest, Fried frequently discusses Denis Diderot’s criticisms of 18th century French painting with regard to absorption.<sup>42</sup> Diderot, whom Fried refers to as the finest art critic of the 18th century, frequently comments on the absorptive qualities of paintings at the Salon of 1767. Commenting on Jean-Baptiste Le Prince’s *Pastorale russe*, Diderot states, “I actually find myself there.” When staring at the landscape in Claude-Joseph Vernet’s *La Source Abondante*, (fig. 3) Diderot remarks,

I was motionless, my eyes wandered without fixing themselves on any object, my arms fell to my sides, my mouth opened. My guide respected my admiration and my silence; he was as happy, as vain as if he were the owner of even the creator of these marvels. I shall not tell you how long my enchantment lasted. The immobility of beings, the solitude of a place, its profound silence, all suspend time; time no longer exists, nothing measures it, man becomes as if eternal.<sup>43</sup>

The “enchantment” he describes is the phenomenon of becoming absorbed in a work of art. In his case, he quite literally finds himself within the paintings. Diderot becomes enraptured with the scene, he imagines himself interacting with the figures in the scene, enjoying the music they



**Figure 3** - *La Source Abondante*, Claude-Joseph Vernet, 1767

are playing and admiring the landscape. For Diderot, landscapes in the Salon of 1767 were successful as a work of art if they compelled the beholder to imagine or adopt the fiction of entering the painting and placing themselves inside the scene.<sup>44</sup>

Regardless of genre, the existence of the fourth wall is integral to absorption. As Fried states, maintaining the fourth wall means ignoring the beholder a sentiment which Diderot echoes, “If, when one makes a painting, one supposes beholders, everything is lost.

The painter leaves his canvas, just as the actor who speaks to the audience steps down from the stage.”<sup>45</sup> By acknowledging the beholder, the painting steps out from its own fictional reality and acknowledges its status as painting. Fried and Diderot’s discussion of absorption is an entirely



representational sense. Experiencing a painting is looking at a painting no matter how enrapturing and immersive of an experience it may be, it very much an aesthetic experience.

To understand how this type of representational immersion is achieved is helpful to yet again turn to another art form, this time literature. In an essay written in 1968 by literary critic Roland Barthes (and translated in 1986 by Richard Howard) titled “The Reality Effect,” Barthes examines the ways in which literature creates a series of “reality effects” which work to eliminate a competing sense of what the real is thereby producing a type of reality. Barthes does this by analyzing Gustave Flaubert’s *Madame Bovary*, particularly the description of the city of Rouen saying,

The aesthetic foal of Flaubertian description is thoroughly mixed with “realistic” imperatives, as if the referent’s exactitude, superior or indifferent to any other function, governed and alone justified its description...it is likely that, if one came to Rouen...the view one would have coming down the slope leading to the town would not be “objectively” different from the panorama Flaubert describes.<sup>46</sup>

Flaubert uses Rouen and his realistic description of it to serve as a referential authority to the fiction taking place in it. Essentially, Flaubert is counting on the authority of real world Rouen to legitimize and validate the fiction he is presenting to take place there. If the setting is real, so too must the events taking place there. This use of deferring authority to what Barthes calls a “referent” is a type of “reality effect.”

Barthes also describes another form of “reality effect” which he calls “concrete reality,” this takes the form of superfluous and unnecessary objects that serve no narrative function other than the

creation of believability. They are placed in a scene simply to exist and provide a believable setting. In his discussion of Julian Barnes' novel, *Flaubert's Parrot*, Barthes highlights a passage describing the interior of a room in which Barnes details nearly every object inside with the upmost detail. One object in particular catches Barthes' attention, a barometer. According to Barthes, the barometer is, "neither incongruous nor significant, and therefore not participating, at first glance, in the order of the notable."<sup>47</sup> Yet, he posits that it does indeed have significance, not in connection to Flaubert's story but by virtue of its connection to the general discursive practice of modern narrative realism.

Immersion in the paintings observed by Diderot and the literature read by Barthes manifested itself in the recreation or description of objects in a manner which was believed to be realistic and seemingly superfluous. Traditional arts are typically passive experiences, or rather experiences in which one provide their full attention in order to experience. Yet, as Claire Bishop notes *Participation*, "the explosion of new technologies and the breakdown of medium-specific art in the 1960s provided myriad opportunities for physically engaging the view in a work of art."<sup>48</sup> Bishop acknowledges important precursors for participatory art in the form of the Paris "Dada-Season" of April 1921 as a series of manifestations that sought to involve the city's public. Citing Walter Benjamin and Brechtian theatre as an example of a form of participatory art, Bishop notes the ways in which Brechtian theatre presents situations which intentionally interrupt the narrative through a disruptive element that causes audiences to break their identification with the protagonists on stage and be incited to critical distance. Brechtian theatre compels the audience to take up a position towards the action and relies on raising the

consciousness of the spectator through the distance of critical thinking. This form of engagement is quite the opposite of traditional theatre and conventional notions of immersion. While a typical audience can sit and easily become immersed in the representation of narrative on stage, the Brechtian audience is purposely forced out of that comfort and daze and asked to engage critically with the work, a form of participation in itself. By contrast, a paradigm of physical involvement in Antonin Artaud's theatre of cruelty sought to reduce the distance between actors and spectators literally including the audience in the production.

Guy Debord, co-founder of the Situationist International, advocated that the construction of "situations" was the logical development for Brechtian theatre with one crucial difference: they would involve the audience function disappearing altogether in the new category of *viveur* (one who lives). Rather than simply awakening the critical consciousness as in the Brechtian model, "constructed situations" aimed to produce new social relationships and thus new social realities.<sup>49</sup> The transition from audience/beholder to *viveur* or producer/participant is one in which the audience is just as responsible for the art as the creator, a notion which in many ways echoes those of Barthes' on the "Death of the Author."

While painting, literature, and even participatory theatre all provide a theoretical substructure for the understanding of attention, all art historical theory of attention comes together in videogame immersion. An analysis of the genre that relied purely on any of the aforementioned art forms would be incomplete at best as they themselves only understand attention from one particular vantage point. As James A.W. Heffernan notes in his essay, "Staging Absorption and

Transmuting the Everyday: A Response to Michael Fried,” Fried’s analysis and later writings clearly display a bias towards 18th century painting. He is able to adopt the ontological fiction for them but not for other genres such as photography.<sup>50</sup> Similarly, Larry Shiner’s essay, “Flaubert’s Parrot, Agee’s Swan: From ‘Reality Effect’ to ‘Fictional Effect,’” makes it clear that Barthes’ particular form of analysis is most apt in a discussion of the written word which can be over long and random while still never quite providing the level of detail that an image can. In many ways, literary descriptions of non-fictional places, events, or things can serve the opposite purpose of a “reality effect” when the image of the thing does not match the mental depiction of the thing.<sup>51</sup> As an inherently interactive art form, architecture stands out as a necessary comparison, not only does it share videogames’ duality of being representational and participatory but architecture literally works in videogames to mobilize player attentions.

## **Architecturally Formatted Videogames**

In 1960, Clement Greenberg's "Modernist Painting" put forth the notion of medium specificity. He claimed that for art to become independent, for it to be acknowledged as its own specific medium it must embrace those aspects which it does not share with any other art form, or those aspects which are specific to only it.<sup>52</sup> As an example he calls upon painting and classifies its defining characteristic as flatness. Yet, is this true of all painting? In her 1979 essay, "Sculpture in the Expanded Field" Rosalind Krauss rejects the notion of medium specificity and argues that there is no statement one could make that is applicable to all forms of an art, in her case, sculpture. This is not to say that painting and sculpture do not exist, but rather that they do not exist as "mediums" because there is no such thing as a "medium." Mediums are pre-defined pre-conceived notions of a particular genre or type that exist, until they do not. Not all paintings are flat, not all sculptures are three dimensional, and not all videogames use architecture.

Operating in a post-medium era, David Joselit argues that it is format far more than medium that needs to be examined.

'formatting—the capacity to configure data in multiple possible ways—is a more useful term than 'medium,' which, all heroic efforts to the contrary, can seldom shed its intimate connection to matter...Formatting is as much a political as an aesthetic procedure because the same image may easily be adduced as 'evidence' in support of various and even contradictory propositions—determining a format thus introduces an ethical choice about how to produce intelligible information from raw data...since such data is both superabundant and ostensibly trivial, what gives it value are the kinds of formats it can assume.'<sup>53</sup>

Videogames encompass a wide variety of platforms, formats, perspectives and interfaces. When it comes to “raw data” many videogames share similar narratives, structure, settings, enemies, and motivations. What separates them is formatting. Is the game two dimensional or three? Is it open world or linear? Is the game played from a first person perspective or an isometric perspective? Is the game played on a television, a handheld, a computer, or a headset?

Espen Aareth says that the defining notion of videogames is spatial representation<sup>54</sup> while King and Krzywinska claim that videogames are “essentially concerned with spatial representation and negotiation”<sup>55</sup> yet these are claims for a type of medium specificity that does not exist. What about text adventure videogames? While it may be fair to say that a vast majority of videogames are concerned with spatial representation, the nature of the genre simply is not that absolute. What is even more apparent is that architecture’s role as mobilizing separate but simultaneous forms of attention in videogames is clear an issue of formatting. The logic of architecture as the link between representational and participatory aspects of the videogame is a topic which is unique to certain specific videogames, three of which will be discussed below.

To fully grasp the ways in which architecture works both representationally and interactively to create immersion in a videogame it is best to take an in-depth look at a particular example that merges the “video” with the “game” particularly well. *Assassin’s Creed 2* depicts a fictional story littered with real world events and people and takes place Renaissance Italy. Immediately the logic set forth by Barthes in his discussion of *Madame Bovary* becomes obvious. Developer Ubisoft exploits Renaissance Italy to serve as an authoritative referential backdrop for its

fictional drama of high flying assassins and templars. However, as a videogame, *Assassin's Creed 2* cannot rely solely on the discussion of literature “reality effects” it is necessary to take into account the illusory aesthetic representations throughout the game.

The game is what is referred to as an “open-world, third-person action game.” Third-person indicates that the “camera,” or rather the player’s perspective, is situated slightly behind and above the player character (fig. 4). This allows for one to have a better awareness of their surroundings. More importantly, open-world, from the standpoint of the gamer, means that players are given relative freedom to go where they wish when they wish and are able to complete tasks set before them in any number of ways or ignore tasks altogether. Yet in the context of videogames and immersion, “open-world” functions differently. A more fitting classification in this instance would be “open forms of attention” meaning that because the game



**Figure 4** - *Assassin's Creed 2*, Ubisoft, 2009

provides players with agency and choice in how they would like to proceed (or whether they would like to proceed at all) there are multiple simultaneous tasks, goals, and forms of attention which the player can pursue. When speaking about the *Assassin's Creed* franchise, Gernot Hausar, Professor of Film Studies at the University of Wisconsin argues, “As it is an open world, where players can choose their paths, architecture is the single most important tool for level and mission designers to shape the path of players”<sup>56</sup>

Looking in particular to the portrayal of the city of Florence in the game it is apparent that develop Ubisoft uses architecture first and foremost as both its referent and its example of “concrete reality,” both types of “reality effects” that Barthes discusses. Take for example the biggest landmark in all of Florence, the Cathedral of Santa Maria del Fiore. The important thing to realize about a referent is that it only works if one is familiar with what is being referenced.



**Figure 5** - *Assassin's Creed 2*, Ubisoft, 2009



The cathedral is one of the most iconic buildings in the world and Ubisoft is relying on that fact in order for it to serve as a true authoritative referent. The developers have even manipulated architectural history in order to represent the building in a more recognizable fashion. For example, beginning in the late 15th century, the game depicts the facade of Santa Maria del Fiore, as it stands today, under construction (fig. 5). However, the cathedral was not given the facade we see today until the 19th century. This manipulation of reality is all part of Ubisoft's attempt to present an image of Renaissance Florence that looks like the player expects it to look. The notion of representation goes beyond the landmarks as well. In order for the game to feel immersive, the player needs to believe the fiction that they are inhabiting 15th century Florence. To this effect, Ubisoft went as far as to hire Maria Navarro, an architectural historian from McGill University, to authenticate all of their stylistic choices.<sup>57</sup> While the urban fabric represented in the game is inaccurate, the ornamentation and style of the nondescript buildings that populate the majority of *Assassin's Creed 2's* map is largely accurate to the location and time period. These are formal characteristics that are generally unknown to the average player but they are representations that have seeped unconsciously into the minds of player whether through other forms of media like film, television, painting, or even real world visits. While the ornament functions in a representational manner in order to contribute to the aesthetic of 15th century Florence, it also functions in a very participatory manner. *Assassin's Creed 2's* open-world structure allows player to traverse the environment how they please, a feature heighten by the game's groundbreaking method of traversal. Any object that appears as though it could theoretically be used to climb or grabbed onto, can be. Essentially, if it looks climbable, it is. This means that players can, are encouraged, and often need to scale buildings. Luckily for the

player, the Renaissance and Gothic architecture that makes up 15th century Florence is filled with ornamented, rusticated buildings that provide a plethora of points of articulation for the player to climb. An *Assassin's Creed* game set in a 20th century modernist city would never work, the plain facades and general lack of ornament would make scaling buildings impossible. Ubisoft's representation of 15th century Florentine architecture perfectly embodies the marriage of representational and participatory immersion, not only do the buildings look the part, but it is precisely *because* they look the part that the entire gameplay mechanic of climbing buildings—a mechanic which is really at the heart of the *Assassin's Creed* franchise—is even possible.

While representational immersion may be the prevailing form, realistic visuals have never been solely responsible for a critically lauded videogame. No matter how accurately represented a setting is or how impressive the graphical fidelity of a game may be, if the gameplay is not fun, engaging, and compelling the game cannot be fully immersive. To this effect, Ubisoft has taken several liberties with architectural representation in *Assassin's Creed 2* in order to serve gameplay over aesthetics. Looking back again at Florence's famous cathedral it is clear that Ubisoft valued experiential gameplay over accurate one-to-one recreations. Keeping with the example of the Cathedral of Santa Maria Del Fiore, in the game the dome appears stunted or shortened. It is as if the top was cut short (fig. 6). This is because Ubisoft wanted the top of the dome, or the cupola, to be immersive in an interactive manner rather than in a representational manner. The entire cathedral is greatly scaled down due to technical constraints, as a result if Ubisoft were to retain the correct proportions of the cathedral and the manner in which the dome ascends it would be left with a cupola that was far too small to inhabit. Because *Assassin's Creed*



**Figure 6** - Left: Brunelleschi's dome for the Cathedral of Santa Maria del Fiore. Right: *Assassin's Creed 2's* depiction of the dome

2 values gameplay more than representation and because a main facet of gameplay involves climbing buildings and monuments it is imperative that when one reaches the cupola that it feels similar to how it does in reality, a feat that, given the scaling down of the entire cathedral, is only possible by manipulation of its proportions.

*Assassin's Creed 2* unique brand of parkour traversal perfectly illustrates the way in which architecture mobilizes player movement. Players are free to walk the streets in order to get to their destination but due to the height of the surrounding buildings and narrowness of the streets it is difficult to have a line of sight to one's destination and almost necessitates the use of the in-game map. Sticking to the streets funnels players down predefined pathways that often lead to

open public spaces. It is here, in the Italian piazzas that players are given agency in how they wish to approach and execute their mission. Later games in the series play up this notion of an open sandbox greatly by providing players with a wealth of options for success.

An experienced *Assassin's Creed* player will tell you that the best method of navigation is far above the street level. For those familiar with the real world urban fabric of Florence (or even those who have played the game for a few hours) the general layout of the city is relatively correct. While the in-game map acts as a crutch for navigation, a player experienced in the real or virtual Florence can easily navigate the city by ascending to the rooftops and using landmarks to find their way around. For example, an early mission in the game tasks the player with locating his/her in-game father and brother, imprisoned in the Palazzo Vecchio. While the map can guide players there so that they never actually see the building until they enter Piazza della Signoria a more experienced player can climb up the closest building, scan the urban skyline, locate the Palazzo Vecchio and arrive there on their own accord. This is just one of the ways in which *Assassin's Creed 2* melds representation and participatory aspects of videogames.

The *Assassin's Creed* franchise has become such a mainstay in popular games culture that it is often taken for granted, but before 2007 when the first game in the series released, architecture was used largely as an obstacle, a barrier to exploration that forced players to move through game worlds largely on the X and Y-axes. *Assassin's Creed* as a franchise opened up architecture and allowed for the free exploration of the Z-axis. Because the player can climb nearly any building or object they see, the Florentine rooftops are never far away. In fact, it is when the

player leaves the confines of the street, ascends to the roofs, and alters their environment from a series of corridors to a vast open space that one is able to freely explore and navigate the game world, often without the need for a map. Not only is this possible in the game, but it is precisely what the developers intended. Gary McDevitt, lead writer for *Assassin's Creed Revelations* notes that landmarks are more than just historical background, that they “serve as a focal point for exploring the city, getting you sense of space and you bearings.”<sup>58</sup> While the player uses architecture to navigate in-game space, the architecture itself manipulates the movement of the player, as Hausar claims,

Where linear games lead players on a prearranged path through rooms simply by limiting the possibilities of interaction with architecture on a formal level, in open spaces players have to be coerced by narrative elements, thus making the audio-visual set, including architecture, artifacts and other content of a game important as a tool to manipulate the players desires through all possible means available.<sup>59</sup>

There is no videogame franchise more deeply indebted to historical representations of architecture than *Assassin's Creed*. Each game in the franchise takes place in one or more historical cities ranging from 12th century Jerusalem to 19th century London. While there have been very few exceptions<sup>60</sup>, the franchise has always succeed when operating inside the metropolis. It is at the heart of the city that players are able to take up the role of assassin and immerse themselves in both representation of the role and actions of the role. As Rebecca Solnit states,

Cities have always offered anonymity, variety, and conjunction, qualities best basked in by walking: one does not have to go into a bakery or the fortune-teller's, only to know that one

might. A city always contains more than any inhabitant can know, and a great city always makes the unknown and the possible spurs to the imagination.<sup>61</sup>

In *Assassin's Creed 2*, Florence and Venice serve as bustling metropolises filled with countless enemies and even more pedestrians. The city affords one the ability to blend in, disappear, and operate in the unknown. The game was lauded for its ability to represent massive crowds of people on screen at one time, but this was far more than an aesthetic property. Each entry into the *Assassin's Creed* franchise has allowed players to blend in with the crowd in order to evade enemies. It is such a crucial and ingrained mechanic that it was even featured in the franchise's first ever CG advertising trailer.<sup>62</sup> While the city may be critical to narrative, (the game revolves around a series of real world events) it is even more fundamental to the gameplay of *Assassin's Creed 2*. Not only does the city provide anonymity, but it supplies buildings to climb, a tight urban fabric for which runs across rooftops, layers of hidden mysteries, and a wide variety of open and closed spaces.

While Ubisoft manipulates the proportions of the buildings to provide more accurate experiential spaces, they also manipulate the urban plan of Florence. The game hinges on the ability of the player to be able to navigate the rooftops of the city. It is necessary to leap from rooftop to rooftop a feat that, even given Florence's dense planning would be nearly impossible without manipulation of the width of roads and size of alleys and piazzas.<sup>63</sup> Here, again is another example of Ubisoft willingly altering representations of the city for the benefit of interactivity. The manipulating the former will likely go unnoticed, hindering the latter would make the game unplayable.

2007's *Bioshock* is a game that is difficult to categorize and fundamentally challenges expectations. At the most basic level it is a first-person, linear videogame. The game is concerned with linear forms of attention, meaning the player must accomplish tasks in a sequential order and proceed through one and only one path. The game begins with the player's plane crash landing in the ocean and forced to seek refuge in the under water city of Rapture. Rapture, the creation of business magnate Andrew Ryan was envisioned as a laissez-faire state that would allow people to escape from the oppressive political, economic, and religious authority of the surface world. The experiment ultimately fails and the player finds themselves in a ruined dystopia of a city overrun with madmen and hulking monsters. While *Assassin's Creed 2's* reliance on historical architecture and open-world nature lends itself well to a discussion of architecture, *Bioshock*, on the surface does not. Yet it is precisely for this reason that it is a fruitful object of investigation. While clearly a different format from *Assassin's Creed 2*, *Bioshock* is nevertheless just as reliant on architecture.

Released to nearly universal critical acclaim, critics lauded *Bioshock* for its storytelling and unique setting, IGN editor Charles Onyett said,

It's the little ideas that pop up from time to time that make this world so believable: the piano plinks that resonate as you browse menu options; the guitars you can actually play randomly scattered around Rapture; the way every room is realistically constructed reflects both the heights to which Rapture managed to climb as well as the decadence and sense of voracious, selfish entitlement that brought it smashing down. You'll hear some of the voice-overs muse, "Why do they wear the masks? Maybe there's a part of them that remembers how they used to be, how they used to look, and they're

ashamed." Little bits like that get tossed at you, and you don't necessarily have to absorb them-- they're not essential to plot or anything, but they're instrumental in making BioShock as immersive as it is.<sup>64</sup>

For an underwater city, Rapture is surprisingly familiar. Founded in the 1920s the city is an Art Deco masterpiece. Towering buildings rise up from the sea floor, signs lit up in lights litter the facades, and bold geometric shapes and lavish interiors populate the architecture inside and out (fig. 7). As an underwater city, Rapture has no need for towering buildings or exterior ornamentation of any kind. The game takes place entirely indoors and while exterior signs and advertisements are sometimes viewable from windows they are frequently obscured and



**Figure 7** - *Bioshock*, 2K Games, 2007

meaningless when one has no course to pursue them from the outside. It is as if developer 2K Games designed a block of early 20th century New York and placed the entire thing underwater. The result is a city that looks and feels familiar but is only experienced from the inside. The



building exteriors are meant purely for representational purposes, they serve no gameplay function whatsoever. Instead they serve as a sort of referent to the lifestyle and motivations of Rapture. According to Rigby and Ryan's *Glued to Games*, humans operate under the notion of certain "schemas" which organize information based on past experience or preconceived notions.<sup>65</sup> Schemas are the reason people know how to behave in a restaurant they've never visited before. They can even apply to fiction objects or worlds. Various forms of media have conditioned certain schemas into popular culture—everyone knows what a vampire is and how it has to behave—so much so that even when fictional things deviate from our preconceptions of them, we perceive them as fake (A vampire who does not drink blood is not an "authentic" vampire). The Art Deco representation of the city of Rapture then allows players to assign their preconceived notions of the time period onto the spirit of the city. As F. Scott Fitzgerald said, "the parties were bigger, the pace was faster, the shows were broader, and the buildings were higher."<sup>66</sup>

Inspired by Ayn Rand's views of Objectivism and her novel *Atlas Shrugged*, Rapture was meant to embody individual rights and laissez-faire capitalism. The player's entrance into the city is accompanied by a voice over from Andrew Ryan,

I am Andrew Ryan, and I'm here to ask you a question. Is a man not entitled to the sweat of his brow? "No," says the man in Washington, "it belongs to the poor." "No," says the man in the Vatican, "it belongs to God." "No," says the man in Moscow, "it belongs to everyone." I rejected those answers; instead, I chose something different. I chose the impossible. I chose... Rapture. A city where the artist would not fear the censor; where the scientist would not be bound by petty morality; where the great

would not be constrained by the small! And with the sweat of your brow, Rapture can become your city as well.<sup>67</sup>

Rapture was meant to be a safe haven for the best and the brightest of humanity to pursue their goals free from governments and moral codes. As Ryan claims at a later time, “It was not impossible to build Rapture at the bottom of the sea. It was impossible to build it anywhere else.”<sup>68</sup> Scientific progress flourished at first, leading to rapid developments in engineering and biotechnology. Exploration of the sea led to the discovery of “ADAM,” a stem cell harvested from a species of sea slug that were discovered to regenerate damaged tissue and rewrite the human genome leading to special powers called Plasmids. These discoveries quickly led to horrific and twisted experiments which eventually led to gene modifications that caused the population to become addicted to gene splicing. Those who fell victim became known as “Splicers,” crazed lunatics obsessed with finding the gene splicing liquid stem cell agent known as “ADAM.” The result was a city that tore itself apart. When the player arrives in Rapture in 1960, the city is a nightmare. The once bustling city is all but abandoned with most of the remaining inhabitants being murderous Splicers, possessed little girls, or hulking beasts in old-fashioned divers suits called “Big Daddies.” The result is a city that is as horrific as it is grandiose, haunting as it is breathtaking, and one that is begging to be explored, uncovered, and demystified.

Videogame critics and reviewers often use the phrase “environmental storytelling” to convey a sense of representational immersion. *Bioshock* takes this to a previously unattained level, Rapture is one of the most well built and fleshed out settings to this day, nine years after the



**Figure 8** - *Bioshock*, 2K Games, 2007

game's release. Rapture, far more than the player character Jack, or the megalomaniac Andrew Ryan is the true protagonist of the game. Similar to the thoughts Onyett echoes, what truly separates Rapture is the details. The hints of a wild night out, the details of an operation gone wrong, the fallout of a civil war yet to be resolved all tell the player things about Rapture without the need to read or utter a single word (fig. 8). What could easily pass off simply as representational attention here actually functions in a participatory manner as well. *Bioshock* does not comply to any one particular videogame genre yet it certainly contains aspects of survival horror. The weapons, ammunition, powers, and health are scarce while the enemies are fast, powerful, intimidating, and plentiful. The game wants players to be afraid, it intentionally taps into traditional fears to make the player timid and careful. A blood smear on the wall, a mutilated

corpse, a broken light, unidentified crazed laughter all environmental aspects that serve to unease the player and greatly impacts the way in which the game is played.

Because resources are so often limited, players are forced to search the environment for anything that can help them. Trashcans, desks, crates, and even dead bodies all hold valuable resources that must be found in order to be successful. This scavenging necessitates exploration. While *Bioshock* is a fundamentally linear game, certain portions allow for a certain amount of freedom to explore small spaces before proceeding through a specific route. It is in this aspect of gameplay in which architecture truly begins to impact player experience. Long hallways and corridors facilitate player movement and signify that there is no need to stop and explore, there is nothing to be found. The game uses these instances for real-time narrative exposition. It knows the player will not be occupied fighting enemies or scavenging. Hallways are meant to funnel players from one open space to the next. And yet, these corridors can often present interesting choices for the player when inevitably a forking path appears before them. Oftentimes both paths will lead players to their desired destination but the ever present need to loot any and all items in the area causes trepidation in the player. What if they advance too far down a particular path and are unable to backtrack and explore the path not taken originally? There is a risk of missing out on crucial items, powers, or aids to help in an imminent battle to come.

Narrow hallways may expedite player movement but they are terrible for exploration and, more importantly, gun fights. At its heart, *Bioshock* is a frantic first-person shooter. Hallways hinder lateral movement and make for extremely easy or extremely difficult firefights as there is only



**Figure 9** - *Bioshock*, 2K Games, 2007

one place to aim and shoot your weapon. Open spaces allow for much more dynamic fights. Player can use environmental cover, flank enemies, or be bombarded from all directions. When the dust has cleared (or, more accurately, when the gun barrels stop smoking) the frenetic action gives way to contemplative pause and exploration. Players must loot the bodies of fallen enemies, search every corner of the room, and prepare themselves for the next firefight.

While it may be strange to say and not obvious to even the most seasoned *Bioshock* players, the game is largely centered around doors. For a game which focuses player attention on one goal, it often presents players with a bevy of doors. Ultimately, and without fail, the player's end goal will be behind some door somewhere. Not only is Siegert's notions of inside and outside applicable here, it is that very logic of the door that has conditioned players to perceive doors as barriers separating them from their goal. This then creates a situation where entering the door

and traversing the plane from outside to inside becomes the goal itself, rather than what lay behind the door. *Bioshock* is fully aware of this phenomenon and exploits it. When a player sees a door they know that they must pass through its gateway to progress but certain gameplay functions often prevent that from happening. Early in the game, the player encounters a door which cannot be opened because the electronic fuse powering it is broken (fig. 9). Rather than using the representation of a broken door to insinuate to players that the path ahead must lie somewhere else, *Bioshock* intentionally shows player sparks shooting out of the door, suggesting that the problem is inherently electrical. Because all progress is halted, the player is forced to explore their relatively small enclosed environment until they find a particular item which allows them to shoot bolts of electricity from their hands. Acknowledging that their path lays behind the broken door, players must use their newly acquired power to shoot the electrical circuit and open the door. A similar experience takes place where players must gain the ability to shoot flames from their hands to melt ice which holds a door closed. Similarly, at one point in the game, players reach a door which will not open until a particular enemy is killed. The player must backtrack, find, and kill the enemy in order to proceed. What *Bioshock* does in these types of situations is funnel players to their expected goal in the form of a door before explicitly telling the player that it is closed to them. The locked door is a signifier of an action or gameplay mechanic that must be performed before opening to the player. As Siegert says, “if the door is a machine by which the human being is subjected to the law of the signifier, then the lock is part of the door that expresses the law as interdiction.” By representing a door, particularly a locked door, *Bioshock* entices players into a desire and need to pass through it while requiring them to

partake in specified participatory aspects in order to achieve their goal of being placed in a new “symbolic order.”

Linearity often means that digital environments are much smaller than a developer would have the player believe. Often, the truly habitable space in a game like *Bioshock* is relatively small, yet 2K uses certain architectural illusions to trick the player into believing their environment is larger than it is. This is largely the reason that exterior facades, signs, and ornamentation exists. They act as a sort of “concrete reality” that presents an aesthetic illusion before the player allowing their minds to extrapolate spaces which do not actually exist. This representational form of immersion is not only used to fabricate exteriors, but provide the illusion of space as well. Rapture is meant to be a vast metropolis and as a result, *Bioshock* must depict spaces which are not habitable but provide the illusion of habitable space. While windows allow for the perception of exterior architecture, 2K relies on the logic of Siegert and traditional connotations of the door to allude to even more space. As Simmel said, “Precisely because [the door] can be opened, its closure provides the feeling of a stronger isolation against everything outside this space than the mere instructed wall. The latter is mute, but the door speaks.” A plain wall does nothing to imply that behind it exists another room, an inside to the player’s outside or vice versa. A door, implies just that, it communicates to a player that there is a vast matrix of interconnected rooms, passageways, and buildings. To this effect, *Bioshock* is filled with doors that serve a purely aesthetic purpose. No specific gameplay action is needed to open them, they are not locked. They are little more than a *trompe-l’oeil* painting on a wall. They act only to make the player believe Rapture is much larger than it truly is. Their existence, while understandable could be seen as

immersion breaking. If there is a door presented to a player why should they not be able to access the space behind it? One may reason that it is simply locked and proceed on intended path and it is evident that 2K believed their representational immersive effects outweighed their lack of interaction. A much more elegant solution *Bioshock* occasionally uses is to show players a path that appears no different than the one they are meant to take yet blocks it off with environmental barriers like rubble or fire. The player can clearly see what looks to be a perfectly habitable space and route that could under normal circumstances be taken yet is barred from entry because of a reasonable barrier.

If *Bioshock* was a game that excelled at environmental storytelling then 2013's *Gone Home* perfected it. Despite having the lowest graphical fidelity of any previously discussed game, *Gone Home* is arguably the most realistic. The game takes place entirely in 1995 within an empty house belonging to a husband, wife, and their teenage daughter. Taking on the role of the older daughter returning from Europe to an empty home, the player must investigate the seemingly haunted house to find clues as to where her family is. *Gone Home* is not a typical videogame, there are no “bad guys” and there is no way to “win” or “beat” it, the game simply ends as a book or film would. Player mobility is even severely limited, allowing you only the ability to walk, crouch, pick up objects, and open drawers and cabinets. Often referred to as a “walking sim[ulation],” *Gone Home* is what is traditionally referred to as an adventure game that is primarily about exploring one's surroundings. Players examine photographs, ephemera, and read postcards, memos, and handwritten notes to try and piece together the mystery of the missing



family. The entire focus of the game is on exploring a house that is equal parts foreign and familiar.

While *Assassin's Creed 2* allowed for multiple open forms of attention and *Bioshock* focused on linear singular forms of attention, *Gone Home* operates somewhere in the interstitial space between the two. The entire game can be completed in one minutes (there is even an in-game achievement for doing so), yet a typical first play through will take between two to three hours. Players are free to concern themselves only with advancing the plot and finding their family, but more careful and curious players are rewarded for taking their time and investigating further. The family of the player character, recently moved into this new home while she was away studying abroad, as a result, neither the player nor the in-game character is familiar with the layout of the home. The game begins with the player entering a colonial style house at night in the middle of a



**Figure 10** - *Gone Home*, Fullbright, 2013

thunder storm (fig. 10). It is soon revealed that the house is indeed empty and the player is left to discover the mystery of what happened to her parents and younger sister. The setting is meant to elicit feelings of fear and dread immediately. The time of day, weather conditions, and foreign house all serve to make the player feel as though they are playing a horror game. The wooden home creaks in the wind and shudders with the booming of thunder. The basement is dark and mysterious and contains a faulty lamp which provides the smallest of startles. The grand staircase in the foyer is a remnant of a bygone era, and indeed the home is filled with evidence of a past steeped in scandal all of which contribute to an inherently haunting feeling the game purposefully tricks the player into. *Gone Home* is not a horror game, in fact, developer Fullbright intentionally makes it seem to be one so that the game's true revelation comes as even more of a shock. The truth of the matter and what is essentially *Gone Home*'s main plot is that the player character's younger sister, Samantha, has begun to realize she has romantic feelings for another girl and the two begin to pursue their passions. What begins as a sweet and innocent romance turns into a conflict as Samantha comes out to her parents only to have them reject her feelings. The end results in Samantha running away from home with her girlfriend Lonnie as the two seek a life together away from the judgment of her pursuing parents. What is seemingly a horror story actually turns out to be a love story.

The slightly anachronistic time period and house is an excellent example of representation and participation working together seamlessly. The amount of material culture and ephemera that existed in 1995 is far greater than contemporary culture. In fact, *Gone Home* could not exist in 2013, today messages and conflicts take place entirely on cell phones and computers, the

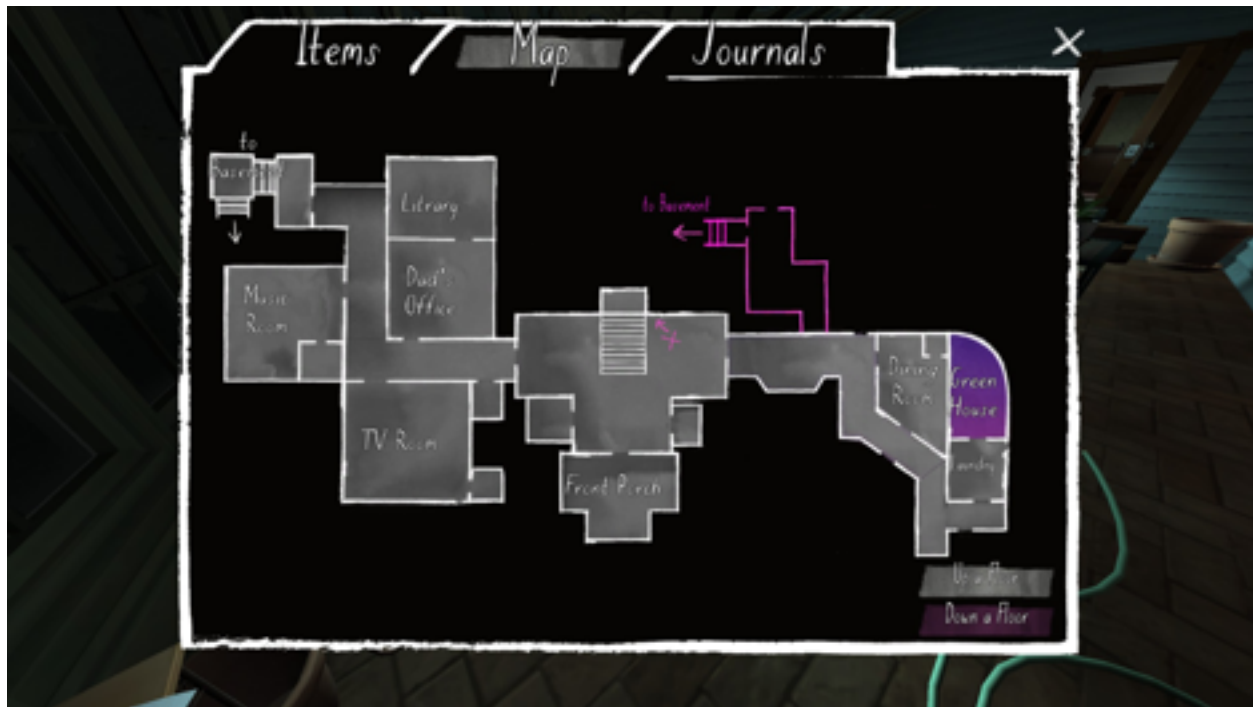


**Figure 11** - *Gone Home*, Fullbright, 2013

evidence trail is virtual, mobile, and protected by passwords. The world of 1995 is populated with postcards, hand written notes, physical mail, cassette tapes, and love letters, (fig. 11) objects that are rare if not extinct in 2013. A ticket stub to an Earth, Wind, and Fire concert, a magazine cover depicting Jodie Foster, empty pizza boxes, class notes, and diaries are all essentially representational, they work much in the same way as Flaubert's barometer, they populate the game with history, situate it in a place and time and offer an insight into those that inhabit it. Yet, they do far more than that, the nature of *Gone Home* as a game allows them to transcend a single form of attention. As Bishop argues, similar to Brechtian theatre, these pieces of ephemera rely a message to the player, forcing them to step outside the role of passive observer and occupy the position of critical thinker. *Gone Home* is not a game about skill, it is a game about thinking, analyzing, and discovering the truth. One can be immersed in the representation of a hidden note

but it takes participatory immersion for the player to synthesize the raw information given to them and come to the conclusion before them. While Sam and Lonnie's romance is presented slowly and gradually, it is necessary; *Gone Home* cannot be completed without the revelation of what happened to them. Yet the house is filled with other stories and mysteries. Careful players will soon realize that the home was inherited by the father from his uncle. A deeper dive reveals that the father is a JFK conspiracy theorist with a strenuous relationship with his own father. This explains the closeness with his uncle, an uncle who was seemingly faced with pedophilic allegations. Looking further, players may discover that the mother is having an extra-marital affair with a co-worker. The game does not explicitly tell the player any of this, it simply represents it and asks the player to comprehend it all.

Formally, *Gone Home* operates under the logic Evans finds in his study of 17th and 18th century villas. The dichotomy between passageways and multiple door rooms shows itself here. The in-game map reveals the floorpan of the home to be a fairly standard residence (fig. 12). Varying hallways lead players down paths with rooms branching off from one another. Following Evans' line of thinking, the hallway serves to expedite movement throughout the home so that people need only enter the single door rooms in which they intend on entering. Yet, not counting bathrooms and closets, there are three rooms (initially) in the home which have multiple doors, "Dad's office", the "Laundry" room, and the upstairs "sitting room", each of these rooms' second door leads to a room which is only accessible through the first room. At the most basic level this transforms these rooms from destinations into possible thoroughfares. These multiple pathways also present themselves as multiple forms of attention. Does one enter into the office and



**Figure 12** - *Gone Home*, Fullbright, 2013

continue into the library or continue down the hall and examine the “TV Room”? The sedate pace of player movement and the fact that the game can be completed in one minute means that exploration of every room is not necessary as it would be impossible to visit them all in only one minute. Yet, it is up to the player to decide how she spends her time. For example, “Dad’s Office” contains no story imperative items or clues but the library contains a secret compartment and hidden passageway that connects to the upstairs. It is in the library that critical narrative elements and items necessary for progression are found and yet the room can only be accessed through another room. Fullbright encourages and facilitates exploration by making it necessary to walk off the beaten path at some point. Where some rooms reveal themselves and everything they hold to the player immediately, other rooms, like the library, require additional investigation.

The house is a literal labyrinth the player must navigate, yet unlike *Bioshock*, the home is meant to feel confining and at times small and claustrophobic. There are no doors which cannot be accessed eventually, no signifiers of vast open spaces which are not habitable. In fact, the nighttime setting makes it almost impossible to see anything outside of the home. Fullbright's goal is to create an entirely immersive experience within an entirely enclosed and confined space. In a game where representation is so inherently tied to participation, authenticity, realism, believability, or whatever moniker one chooses is crucial to player interaction. Samantha's room is a mess, covered in stray clothing, band posters, and magazine cutout collages. So many pieces of "concrete reality" as Barthes calls them reveal more about Samantha than anyone could ever communicate in writing or orally. As Shiner makes clear in his critique of Barthes, the image, far more than the word, serves as the ultimate form of referential authority.<sup>69</sup>

## Forms of Agency

As Matthew Wysocki and Matthew Schandler discuss in their essay, “Would You Kindly? Bioshock and the Question of Control,” “if a player does not control the game, there is no experience. You must participate to keep the story moving forward.”<sup>70</sup> To this effect, player choice and agency becomes a crucial aspect for participatory forms of attention and immersion. In fact, Michael Mates’ essay, “A Preliminary Poetics for Interactive Drama and Games” claims that “agency is a necessary condition for immersion.”<sup>71</sup> It is in a videogame’s representation of agency that players are able to feel autonomous. Scott Rigby and Richard Ryan’s book, *Glued to Games*, examines the nature of agency and autonomy in videogames.

First, it’s true that autonomy is most likely to be satisfied when we feel we have interesting choices and opportunities, but this is different than ‘freedom.’ Yes, freedom implies that you are unconstrained in your choices and action, but it describes your circumstance, not your state of mind. How many people retire each year and enter a state of ‘freedom’ and then don’t know what the heck to do with themselves?...What’s missing for many is the perception that there are interesting or personally valued opportunities to pursue and ready avenues and tools to go after them. Freedom itself isn’t enough—you have to see *real* opportunities for yourself within your environment. We only truly feel a sense of choice when we perceive the situation as providing intriguing or valued alternatives or options, ones that we can actually explore and realize rather than just imagine. It’s these real and meaningful choices—or opportunities for action—that contribute most to autonomy.<sup>72</sup>

Under this logic, it is easy to see the ways in which *Assassin’s Creed 2* and to a lesser extent *Gone Home* facilitate player agency and multiple forms of attention through architecture. The two games are filled with side quests and optional storylines that one is free to pursue through and investigation of the surrounding architecture, yet these avenues are completely optional.

They are present and shown to the player yet the autonomy comes from the decision to pursue a particular one, thereby rejecting the others for the time being.

For example, an early mission in *Assassin's Creed 2* tasks players with assassinating a man inside the cloister of the church of Santa Croce. The ground level entrance to the cloister is guarded and brute force can result in a fleeing target. While a frontal assault is always an option, it is the architecture of the city of Florence that provides players with a sense of agency in how they wish to proceed. For instance, the bustling metropolis of Florence is home to many courtesans who after a certain amount of financial coercion will happily distract the guards allowing the player to slip into the cloister unnoticed. The formal qualities of the church and cloister provide the player with yet another option for assassination. The player can scale the building or those near it to ascend to the rooftops and drop into the cloister, assassinating the target from above. Players are free to execute their mission objects in any way they wish, free to utilize any and all architecture around them to gain vantage point, eavesdrop, tail, and assassinate their targets. This form of architecture's mobilization of players mobility and agency stands at the heart of *Assassin's Creed 2*.

While it does not allow for the same level of mobility as the architecture in *Assassin's Creed 2*, the architecture in *Gone Home* serves the agency of the player as well. While the main narrative can only be carried out in a particular way, the house is intended to act as a sort of labyrinth for the player to get lost in explore. Hidden corridors and secret compartments provide a constant



curiosity of the unknown, while locked doors and inaccessible rooms spur the player to choose what the game wants them to.

The relative open nature of these games allow for traditional notions of agency and autonomy to ring true, yet when applying ideas of “freedom” and choice to *Bioshock*, it appears, at least initially that the game severely limits player agency. Despite being a relative contemporary of *Assassin’s Creed 2* and *Gone Home*, *Bioshock*, more so than any other videogame could be classified as a modernist videogame. According to Greenberg, “the essence of Modernism lies, as I see it, in the use of characteristic methods of a discipline to criticize the discipline itself, not in order to subvert it but in order to entrench it more firmly in its area of competence.”<sup>73</sup> At its core, *Bioshock* is a game that questions the very nature of videogames and player autonomy.

*Bioshock* is a unique videogame in that it tells a narrative that could not be told in any other genre. The very essence of *Bioshock* lies in the ability for the narrative to perfectly harmonize the video with the game, creating an experience unattainable in literature, film, or theatre. To understand how this works, it is necessary to understand the plot of *Bioshock*. As the game begins, the player character Jack, the sole survivor of a plane crash over the Atlantic Ocean seeks refuge in a nearby lighthouse. The lighthouse contains an underwater pod which guide the player to the entrance of Rapture. Upon arrival, Jack is greeted over the radio by a man named Atlas who informs him that the city has seen better days and that in exchange for helping save his family, he will help Jack navigate his way through Rapture and escape.

Slowly the player begins to learn that as the gap between the rich and the poor began to increase, a local business man, Frank Fontaine, established organizations to manipulate the lower class in opposition to Rapture founder Andrew Ryan. Fontaine becomes a powerful mobster who tries to overthrow Ryan but is reportedly defeated. All these action take place before Jack ever arrives but serve to inform the dystopian nature of the city. Within a few month, your radio companion Atlas, rose as a leader of the lower class and on New Year's Eve 1959, shortly before the player arrives, lead another revolt against Andrew Ryan. Guided by Atlas, Ryan is painted as the evil megalomaniac antagonist of the game. Eventually the player reaches a submarine intended for escape and containing Atlas' family only to see it destroyed by Ryan. It is at this point that Atlas asks Jack to kill Ryan.

Eventually the player reaches Ryan's headquarters and finds a conspiracy theory wall covered in photographs and notes. The phrase "Would You Kindly" is written on the wall in what appears to be blood. An audio recording called "Mind Control Test" is located on a table and reveals a conversation between a child and a doctor. The doctor asked the child to "break that puppy's neck, would you kindly?" Despite protesting, the child complies. Perhaps a little unsure what is happening, the player is prompted by the game for what will surely be the final boss encounter with Ryan. Ammunition, health, and other resources are strewn around the room a tactic which conditioned players have learned is meant to prepare them for battle. Yet, upon entering into Ryan's office the player is not greeted by a battle but rather a cutscene, one of the few times the game ever hijacks control entirely from the player.

As Jack confronts Ryan, who is nonchalantly working on his golf put in his office, the truth of *Bioshock* is revealed to the player in the form of a tirade by Ryan,

The assassin has overcome my final defense, and now he's come to murder me. In the end, what separates a man from a slave? Money? Power? No. A man chooses. A slave obeys. You think you have memories. A farm. A family. An airplane. A crash. And then this place. Was there really a family? Did that airplane crash, or was it hijacked? Forced down. Forced down by something less than a man. Something bread to sleepwalk through life until they are activated by a simple phrase, spoken by their kindly master. Was a man sent to kill? Or a slave? A man chooses, a slave obeys. Come in. Stop, would you kindly? Would you kindly. Powerful phrase. Familiar phrase? Sit, would you kindly. Stand, would you kindly. Run. Stop! Turn. A man chooses. A slave obeys. Kill! A man chooses. A slave obeys.<sup>74</sup>

A series of flashbacks ensure revealing the frequency to which Atlas spoke the phrase “would you kindly” to the player and suddenly things become clear. Jack had been the subject of mind control the entire time. In fact, it is revealed that Jack was born in Rapture only two years ago as the illegitimate son of Ryan but he was stolen, and genetically modified by Fontaine and conditioned to obey the phrase “would you kindly.” As tensions escalated between Fontaine and Ryan, Jack was given the orders to hijack and sink the plane he was on and enter Rapture as Ryan’s would be assassin. Fontaine was never dead, he simply adopted the more likable and trustworthy persona of Atlas. Fontaine has been pulling the strings all along and it is only when the player confronts Ryan that it is revealed that Jack was under mind control the entire time. As Grant Tavinor says in his book, *Bioshock and the Art of Rapture*,

the same moment that the character realizes that they are a pawn in the struggle between Ryan and Fontaine, the player is made to realize that they are a pawn in the game and narrative of Bioshock. Fontaine, through his sympathetic skill Atlas, has played us for a fool by the means of manipulating our motivations and our information about the world. But at the same time, the

game has manipulated us through its use of environmental nudges, game-world obstacles, and objectives we have been so kindly asked to achieve, so that for the most part, we have ‘sleepwalked’ through the game, unaware of the artifice, and actor in someone else’s artwork.<sup>75</sup>

The player was never in control. Yet, it is precisely because the player executed those actions and engaged in the participatory nature of the videogame that this twist is so shocking. If there ever was to be a medium specific notion of storytelling, this would be it. This revelation serves as a modernist commentary on the very nature of videogames. Why do we do what we do in videogames? Because the game tells us to? Because we want to? Is there such a thing as player agency or is the player at the mercy of the videogame?

While Jack may have been forced to obey the phrase “would you kindly,” those words mean nothing to the player. Yet, as Tavinor points out, the game relies on human beings already conditioned notions of environment and architecture to nudge players in the direction it wishes. It is the previously discussed use of doors, locks, and hallways which the conditioned player “sleepwalk[s]” through. The true brainwashing is in our allegiance to the built environment. In this sense, the player is no different from Jack. While the narrative controlled him through a phrase, the game controlled the player through representational and participatory methods of immersion. As Wysocki and Schandler discuss,

You will be wrapped up in watching it but you will also be experiencing it as a participant. You are engaged in the story but you are also controlling it. Some theorists describe this as deep flow, a total absorption in the activity, especially as you get really good at it. The sense of game and gamer as separate can fade away as one gets involved in things. You are simultaneously engaged in the story and immersed in the action because you were controlling it. In a really intense session, the idea of the player and the avatar as separate can be suspended.<sup>76</sup>

The line between representation and participation is blurred if not erased altogether. This is akin to Bishop's notions of participatory art or Artaud's Theatre of Cruelty where the audience or player become as much a part of the art work as the artist or material. In fact, *Bioshock* even further emphasizes this phenomenon. Jack's confrontation with Ryan, in which he is forced to kill the founder of Rapture is not the end of the game. The revelatory conversation with Ryan only informs the player as to the nature of the game's true antagonist, Fontaine/Atlas. In order to complete the game, players must seek out and kill Fontaine knowing full well that even now, their actions are not their own. This type of Brechtian distancing invites the notion of critical thinking necessary in participatory art.

It would seem, that if *Bioshock* does anything, it is rob players of their agency before explicitly telling them and forcing them to consider the nature of videogames as impediments to autonomy rather than advocates for it. This line of reasoning conforms to Rigby and Ryan's assertion that, "We only truly feel a sense of choice when we perceive the situation as providing intriguing or valued alternatives or options, ones that we can actually explore and realize rather than just imagine." Yet the two go onto say that autonomy is not necessarily about the opportunity to pick and choose from multiple options,

Autonomy itself is not dependent on always having 'options.' It is more fundamentally about acting volitionally, regardless of the level of choice that may be before you. At its heart, autonomy means that one's action are aligned with one's inner self and values; that you feel *you* are making the decisions and are able to stand behind what you do. Even if you have only a single pathway open to you, you still feel autonomous if it is the one you want to travel down. Certainly, circumstances of freedom and choice facilitate being able to select and optimize one's

preferences, but volition doesn't require that one have lots of opportunities. Indeed, it is often when an individual has a sense of mission and purpose that they feel most autonomous, even though they may not perceive a lot of options or specific choices<sup>77</sup>

In this case, completely linear games can still provide a sense of autonomy as long as they are able to align the player's interests with the predefined goal. In *Bioshock*, the player is enlisted to help stop the evil madman Ryan, the player is given the role of hero and savior and because of a willingness to conform to that role chooses to act in a way which progresses the game's narrative, even if there was never a choice to begin with. It is here then that representational aspect influence participation. *Bioshock* gives players an in-depth view at the horror Rapture has become and places Ryan at the top of perpetrators of atrocities. For as grand as Rapture once was, it is in a state of utter decay once Jack enters it, gene splicing monsters wait around every corner, possessed little girls stolen from orphanages wander the halls, and the ever present remnants of horrendous actions constantly unease the player. An empty bassinet and a recording of a mother losing her child illustrate the story of a city which has sunk to both physical and metaphorical depths. All of these representational factors influence the emotion of the player, making them feel scared, tense, and vengeful. As Rigby and Ryan state, "It doesn't matter that the stories we create for ourselves are real or even plausible. When we are immersed, our emotions true the boring world of 'facts.'"<sup>78</sup> A second play through reveals that the signs were there all along. The player was never in control but the decrepit setting of Rapture compels the player to move forward, even if it is just to escape.

If the player's motivations do not align with the player-character's motivation, however, there is still an acknowledgement or agreement by the player that they are acting volitionally. While

feelings and motivations may not align, the player assumes the role of the in-game character and behaves in the way he/she would. As Clint Hocking points out in, *Ludonarrative Dissonance in Bioshock*, playing the game at all is an autonomous choice by the player and acts as a sort of contract saying,

I don't have choice with regards to the proposition of the contract. I am constrained by the design of the game to help Atlas, even if I am opposed to the principle of helping someone else. In order to go forward in the game, I must do as Atlas says because the game does not offer me the freedom to choose sides in the conflict between Ryan and Atlas.<sup>79</sup>

All art requires agency on the part of the beholder to engage with it at all. The act of playing a videogame is an autonomous act by the player and whether the player is influenced by the architecture or proceeds purely for the purpose of advancement, they do so of their own volition.

## **Architecture of the Apparatus**

A discussion of architecture, videogames, and immersion that takes place only in the realm of the virtual is an incomplete one. Attention implies human presence, and if that videogames can use architecture to manipulate the minds of players it is worth examining the ways in which videogames use physical architecture to immerse players' bodies as well.

The word “media” comes from the word “middle” and serves as a middle ground between the audience/player and the subject matter. According to Rigby and Ryan, to truly be immersed into a videogame one needs to cut out the middleman, to let “media” fade into the background. A videogame cannot be seen as media if it is to be truly immersive.<sup>80</sup> In the context of videogame, media takes the form of apparatus, controllers, screens, consoles, headsets, chairs, couches, beds, all serve as a type of media or middleman between the physical presence of the player and the virtual presence of the game. As Peter McDonald says in his essay, “On Couches and Controllers: Identification in the Video Game Apparatus,” “The basic controller belongs along with the screen, the console, and the couch (or domestic space generally) as elements of an apparatus that makes video games possible.”<sup>81</sup> Player agency is ultimately a product of the actions which they take in the virtual world, actions which are performed only with the aid of the real world physical controller. “The player’s ability to act is a defining formal feature of games as a medium, and the controller not only operates and organizes what acts the player can perform, but poses as a middleman each time.”<sup>82</sup> The controller is the literal link between physical input and virtual output and vice versa, it is the apparatus on which the game is “played.” If we are to understand play as a type of metacommunicative form of media that



constantly informs the player of the artificiality of the videogame as Salen and Zimmerman posit, then the physical manifestation of that metacommunicative media is in the controller. The ever present controller acts as equal parts gateway and barrier into an immersive state. It is necessary for the controller—and all other forms of media—to fade into the background and go completely unnoticed. McDonald even argues,

When a game responds to the player's actions correctly, that player is able to focus on the world of the game. This satisfaction is crucial to the higher level of forms of involvement such as "presence," "immersion," "absorption," or "flow" that emphasize a sense of direct contact and are commonly used to describe the video game experience. By performing satisfactorily, and thus effacing itself, the controller allows the player to take part in a fantasy of telepresence a utopian or dystopian dream of an unmediated virtual space that haunts popular and academic discussions alike.<sup>83</sup>

The quicker the controller becomes a second thought the faster the player can ignore the real and becomes immersed in the virtual. Yet, "performing satisfactorily" may put the responsibility on the controller but equal, if not more, responsibility is put on the player. Mastery of the apparatus is necessary: one cannot be immersed in an experience taking place on screen if one must constantly look down at the controller to find the correct button to press. Likewise, improper button presses lead to in-game actions being taken that were never intended. Attempting to jump, but accidentally shooting is another immersion breaking problem that is only overcome when controller and player act as one.

When it comes to the physical impact videogames have on real world architecture it is helpful to look towards television as the latter is frequently used to experience the formers and the two

genres generate similar reactions. In his essay, “Television as a Gathering Place” Paul C. Adams highlights television as a uniquely place-like media that facilitates gathering and social congregation; despite lacking a “definable location, it serves various social and symbolic functions previously served by places.”<sup>84</sup> Adams even goes so far to say that TV more so than even architecture is responsible for supporting hegemonic social control. The “TV Room” has become a near ubiquitous presence in the American home, shy of the bed, no single object defines its space more than the television. Couches and chairs are manipulated, specific furnishings are used to provide optimal placement, and windows are covered to reduce glare all in the name of the television. As Adams argues, the television does not belong in a certain place, rather the television creates a place, creates a space of congregation and shared experience.

A recent study by the Entertainment Software Association found that 51% of American households own a dedicated gaming console and estimated that over 155 million Americans play some form of videogames.<sup>85</sup> While the videogame console has yet to reach the level of ubiquity of the television, it has certainly made its presence known in American households. Videogames are fortunate in that they inherited a domestic culture which had already been established by television. Often placed within a TV stand, videogame consoles require the use of a third-party screen often in the form of a television. As a result, a domestic culture around furniture, location, and attention already existed when the first videogame console was released in 1972.<sup>86</sup> In their early stages, consoles were meant to facilitate congregation. Every successful console ever released allowed for multiple controller connections to enable multiplayer, even advertisements for the Magnavox Odyssey, Nintendo Entertainment System (NES), and Nintendo 64 all showcase



**Figure 13** - From Left to Right - Advertisements for the Magnavox Odyssey, Nintendo Entertainment System, and Nintendo 64

multiple people playing consoles. In fact, Nintendo famously had more success marketing and selling their first console in Japan once they rebranded it the Famicom (short for family computer).

A closer look into advertisements into the aforementioned consoles begins to elucidate certain departure points from television (fig. 13). In each of the three advertisements, the players of the consoles are within inches of the console itself and of the television as well. This is a vastly different experience from that of passive television observer that is free to sit where he/she pleases. Videogames often necessitate a closer proximity to video screens than televisions do as the requisite participatory form of attention that is unique to videogames often demands a large and unobstructed point of view. This need for proximity begins to ignore television's previously established norms. The man and woman playing the Odyssey appear to be sitting on the floor, the family playing the NES is gathered around a desk as they would a computer, and the children playing the Nintendo 64 appear to have pulled chairs up near the television. It should be noted that part of the necessity for physical proximity (but surely not to the extend of those depicted) comes from console generations one through six being entirely dependent on wired controllers.

Not only must the console be plugged into the television and an external power source, but the game controller must be plugged into the console, finite wire length means that players can never be more than a few feet away from the console or screen while player. The seventh generation of videogame consoles introduced both the wireless controller and high definition aesthetics which both allowed for a greater sense of distance between player and screen to exist.

The need to manipulate the room to accommodate the videogame is in a way, a physical form of immersion. Graphical representation is more noticeable and more easily interpreted from a closer vantage point. As Barthes makes clear, reality effects work in a way in which someone becomes immersed in one reality by disregarding any competing sense of another. By moving physically closer to the screen, the player is eliminating as much external stimuli as possible and able to absorb themselves more wholly into the virtual. The player disregards the established norms of the room and alters it to better suit their experience in the virtual world.

If, as Adams says, television works as a gathering place, then it is fair to argue that videogames work in a similar manner. Or that videogames *used* to work in a similar manner. Released in 2001, the Playstation 2 Network Adapter released as a peripheral attachment to the already released Playstation 2. The Network Adapter allowed the Playstation 2 to take full advantage of the internet and for the first time in the history of dedicated videogame consoles, make online play possible. Reaching truly levels of ubiquity with the seventh console generation, online capabilities catapulted videogames into a previously unachieved realm. Not only were players able to move further away from consoles, but they were able to move further away from one

another. Pre-online videogames were played under traditional notions of play, they required players to be within a few feet of one another and forced them to share a similar experience of physical immersion with the screen. Online gaming allowed for the segregation of play. No longer bound by hardware or physical space, it became possible to play a game with someone thousands of miles away, subverting the very notion of mutual play.

Physical immersion is another form of participatory immersion. By manipulating one's body and environment to better suit a virtual experience, one becomes just as much of a participant of the game as one does by playing the game. There is a seemingly infinite feedback loop where virtual architecture's power and compelling nature gives agency to and immerses the player, causing the real world architecture of the home to be disregarded, tolerated, or altered to suit the game. Ultimately, it is architecture that works in the videogame to join representation with participation, join the video with the game, and join two distinct but simultaneous forms of attention.

- <sup>1</sup> Janet Murray, *Hamlet on the Holodeck: The Future of Narrative in Cyberspace*, MIT Press, 1997, 77.
- <sup>2</sup> A similar phenomenon, titled “(tele)presence has been described in 1980 by Marvin Minsky, founder of the MIT Artificial Intelligence Lab with regard to the identification of operators with their remote-operated machinery.
- <sup>3</sup> Charles Onyett, “Bioshock Review”, [IGN.com](#) [Online] August 16, 2007.  
Vince Ingenito, “The Witcher 3 Review”, [IGN.com](#) [online] May 12, 2015.  
Andrew Reiner, “Uncharted 4 Sets A new High Bar For Storytelling,” [gameinformer.com](#) [online] May 8, 2016.
- <sup>4</sup> Elena Gorfinkel, “RE:PLAY: Game Design + Game Culture.” Online Conference, 2000.
- <sup>5</sup> Warren Robinett, “Video Game Theory Reader”, Routledge, 2003.
- <sup>6</sup> Janet Murray, *Hamlet on the Holodeck: The Future of Narrative in Cyberspace*, MIT Press, 1997 77.
- <sup>7</sup> Steven Poole, *Trigger Happy: The Inner Life of Videogames*, 2000.
- <sup>8</sup> Roger Ebert, “Video Games Can Never Be Art” [rogerebert.com](#) [online] 2010.
- <sup>9</sup> Nic Kelman, *Video Game Art*, Assouline Publishing, 2005.
- <sup>10</sup> Simon Niedenthal, “What We Talk About When We Talk About Game Aesthetics” DiGRA Online Library, 2009.
- <sup>11</sup> Ibid.
- <sup>12</sup> Ibid.
- <sup>13</sup> J. Schell, Game Innovation Database, Carnegie Mellon University Entertainment Technology Center.
- <sup>14</sup> D. Hayward, "Videogame Aesthetics: The Future!", Gamasutra.com, [Online], October 14, 2005.
- <sup>15</sup> Simon Niedenthal, “What We Talk About When We Talk About Game Aesthetics” DiGRA Online Library, 2009.
- <sup>16</sup> Hunicke, R., Le Blanc, M. & Zubek, R. 2005, , MDA: A Formal Approach to Game Design and Game Research (2005).
- <sup>17</sup> Graeme Kirkpatrick, "Between Art and Gameness: Critical Theory and Computer Game Aesthetics", *Thesis Eleven*, no. 89, 2007, p. 74.
- <sup>18</sup> Katie Salen and Eric Zimmerman, *Rules of Play: Game Design Fundamentals*, MIT Press, 2004.
- <sup>19</sup> Frank Lantz, *Hacking the Holodeck*, unpublished.
- <sup>20</sup> Katie Salen and Eric Zimmerman, *Rules of Play: Game Design Fundamentals*, MIT Press, 2004.
- <sup>21</sup> Stéphane Natkin, *Video Game and Interactive Media: A Glimpse at New Digital Entertainment*, A K Peters, Ltd. 2006.
- <sup>22</sup> Jesper Juul, *Half-Real: Video Games Between Real Rules and Fictional Worlds*, MIT Press, 2005.
- <sup>23</sup> Scott Rigby and Richard M. Ryan, *Glued to Games: How Video Games Draw Us In and Hold Us Spellbound*, Praeger, 2011.

- <sup>24</sup> Geoff King and Tanya Krzywinska, *Tomb Raiders and Space Invaders: Videogame Forms and Contexts*, I.B. Tauris, 2006.
- <sup>25</sup> Ronald Smith and Valerie Bugni, *Symbolic Interaction Theory and Architecture*, Wiley, 2006, 125.
- <sup>26</sup> Ibid 125.
- <sup>27</sup> George Simmel, "The Metropolis and Mental Life," in *The Sociology of Georg Simmel*, Glencoe, IL: Free Press 1950.
- <sup>28</sup> Rajiv C. Shah and Jay P. Kesan, "How Architecture Regulates", in *Journal of Architectural and Planning Research*, Locke Science Publishing Company, 2007, 353.
- <sup>29</sup> Ibid.
- <sup>30</sup> Robin Evans, "Figures, Doors, and Passages" *Translations from Drawing to Building and Other Essays*, MIT Press, 1978, 63.
- <sup>31</sup> Ibid 64.
- <sup>32</sup> Bernhard Siegert, "Doors: On the Materiality of the Symbolic" Translated by John Durham Peters, MIT Press 7.
- <sup>33</sup> George Simmel, "Bridge and Door," in *Simmel on Culture*, ed. David Frisby and Mike Featherstone (London: Sage, 2000), 170–174.
- <sup>34</sup> Bernhard Siegert, "Doors: On the Materiality of the Symbolic" Translated by John Durham Peters, MIT Press 7.
- <sup>35</sup> Ibid 10.
- <sup>36</sup> Espen Aarseth, "Computer Game Studies: Year One" *Game Studies*, 2001.
- <sup>37</sup> The date of the first "videogame" is often contested with some believing it to be 1958s *Tennis for Two*, while others argue it is 1962s *Spacewar*.
- <sup>38</sup> Michael Fried, "Absorption and Theatricality: Painting and Beholder in the age of Diderot", University of California Press, 1980, 10.
- <sup>39</sup> In Greuze's *Un Père de famille qui lit la Bible à ses enfants*, a family gathers as the father reads The Bible, while most of the family is listening attentively, the right side of the painting depicts a distracted toddler trying to play with a dog while the grandmother restrains the child. Fried argues that this portrayal of a family absorbed in their activities creates a sense of believability.
- <sup>40</sup> Michael Fried, "Absorption and Theatricality: Painting and Beholder in the age of Diderot", University of California Press, 1980, 46-48.
- <sup>41</sup> Ibid 108.
- <sup>42</sup> Fried details the different techniques of absorption between Greuze and Chardin. In the latter half of the 1750s and into the 1760s Greuze's figures became more emotive, more outlandish, and more provocative so that the beholder felt as though they were privy to a scene which was not meant for viewing. Chardin on the other hand remained forthright in his use of depicting ordinary scenes and items. Diderot comments on the contrasting styles stating, "People are more affected by a madman tearing out his entrails with his own hands than by the simplicity, the nobility, the truth, the grace of a tall figure who listens in silence. It may even be the case that the latter is more difficult to imagine, and, once imagined, more difficult to render."

- <sup>43</sup> Michael Fried, "Absorption and Theatricality: Painting and Beholder in the age of Diderot", University of California Press, 1980, 125.
- <sup>44</sup> Landscape paintings in 1767 were not the prevailing style.
- <sup>45</sup> Michael Fried, "Absorption and Theatricality: Painting and Beholder in the age of Diderot", University of California Press, 1980, 146.
- <sup>46</sup> Roland Barthes, "The Reality Effect." *The Rustle of Language*. Trans. Richard Howard. Oxford: Blackwell, 1986, 145.
- <sup>47</sup> Ibid 142.
- <sup>48</sup> Claire Bishop, *Participation*, MIT Press, 2006.
- <sup>49</sup> Ibid.
- <sup>50</sup> James A.W. Heffernan, "Staging Absorption and Transmuting the Everyday: A Response to Michael Fried", *Critical Inquiry*, The University of Chicago Press, 2008.
- <sup>51</sup> Larry Shiner, "Flaubert's Parrot, Agee's Swan: From 'Reality Effect' to 'Fictional Effect,'" *Journal of Narrative Technique*, 1990.
- <sup>52</sup> Clement Greenberg, "Modernist Painting" *Forum Lectures*, 1960.
- <sup>53</sup> David Joselit, "What to Do with Pictures", *After Art*, Princeton University Press, 82.
- <sup>54</sup> Katie Salen and Eric Zimmerman, *Rules of Play: Game Design Fundamentals*, MIT Press, 2004.
- <sup>55</sup> Geoff King and Tanya Krzywinska, *Tomb Raiders and Space Invaders: Videogame Forms and Contexts*, I.B. Tauris, 2006.
- <sup>56</sup> Gernot Hausar, "Players in the Digital City: Immersion, History and City Architecture in the Assassin's Creed Series," *Early Modernity and Video Games*, 2014.
- <sup>57</sup> Manuel Saga, "What It's Like to Be an Architectural Consultant for Assassin's Creed II", [archdaily.com](http://archdaily.com) [online], 2015.
- <sup>58</sup> x360aNews, *Assassin's Creed Revelations Tour of Constantinople and Istanbul*. [youtube.com](http://youtube.com).
- <sup>59</sup> Gernot Hausar, "Players in the Digital City: Immersion, History and City Architecture in the Assassin's Creed Series," *Early Modernity and Video Games*, 2014, 183.
- <sup>60</sup> *Assassin's Creed 3* and *Assassin's Creed 4: Black Flag* took place in rural colonial America and the Caribbean respectively.
- <sup>61</sup> Rebecca Solnit, *Wanderlust: A history of walking*. New York: Viking, 2000, 178.
- <sup>62</sup> Assassin's Creed trailer, "Assassin's Creed" [https://www.youtube.com/watch?v=cc-ClutaN\\_I](https://www.youtube.com/watch?v=cc-ClutaN_I) [online] May 14, 2006. Accessed May 24, 2016.



<sup>63</sup> A later game in the series, *Assassin's Creed: Syndicate* takes place in 19th century London and the inclusion of in-game carriages necessitated a widening of the streets, meaning that players could no longer easily traverse rooftops. While the carriages and wider roads fulfilled both representational and participatory aspects of the game's immersion, they broke the pre-existing gameplay mechanic that had existed for years before. To combat this issue, Ubisoft introduced a new navigation mechanic that requires suspension of disbelief to a much greater degree than before. In order to scale massive modern buildings and traverse wide streets, player were given a "batman-esque" grappling gun which they could shoot across long distances and use as a zip-line.

<sup>64</sup> Charles Onyett, "Bioshock Review", *IGN.com* [Online] August 16, 2007.

<sup>65</sup> Scott Rigby and Richard M. Ryan, *Glued to Games: How Video Games Draw Us In and Hold Us Spellbound*, Praeger, 2011.

<sup>66</sup> F. Scott Fitzgerald, *The Great Gatsby*, Scribner, 1925.

<sup>67</sup> 2K Games, Irrational Games, *Bioshock*, 2007.

<sup>68</sup> Ibid.

<sup>69</sup> Larry Shiner, "Flaubert's Parrot, Agee's Swan: From 'Reality Effect' to 'Fictional Effect,'" *Journal of Narrative Technique*, 1990.

<sup>70</sup> Matthew Wysocki and Matthew Schandler, "Would You Kindly? Bioshock and the Question of Control." *CTRL-ALT-PLAY: Essays on Control in Video Gaming*, McFarland & Company, 2013.

<sup>71</sup> Michael Mates, "A Preliminary Poetics for Interactive Drama and Games." *First Person: New Media as Story, Performance, and Game*. MIT Press, 2004.

<sup>72</sup> Scott Rigby and Richard M. Ryan, *Glued to Games: How Video Games Draw Us In and Hold Us Spellbound*, Praeger, 2011.

<sup>73</sup> Clement Greenberg, "Modernist Painting" *Forum Lectures*, 1960.

<sup>74</sup> 2K Games, Irrational Games, *Bioshock*, 2007.

<sup>75</sup> Grant Tavinor, "Bioshock and the Art of Rapture", *Philosophy and Literature*, Project MUSE, 2009.

<sup>76</sup> Matthew Wysocki and Matthew Schandler, "Would You Kindly? Bioshock and the Question of Control." *CTRL-ALT-PLAY: Essays on Control in Video Gaming*, McFarland & Company, 2013.

<sup>77</sup> Scott Rigby and Richard M. Ryan, *Glued to Games: How Video Games Draw Us In and Hold Us Spellbound*, Praeger, 2011, 40.

<sup>78</sup> Ibid 83.

<sup>79</sup> Clint Hocking, *Ludonarrative Dissonance in Bioshock*, ETC Press, 2009.

<sup>80</sup> Scott Rigby and Richard M. Ryan, *Glued to Games: How Video Games Draw Us In and Hold Us Spellbound*, Praeger, 2011, 82.

<sup>81</sup> Peter McDonald, "On Couches and Controllers: Identification in the Video Game Apparatus", *CTRL-ALT-PLAY: Essays on Control in Video Gaming*, McFarland & Company, 2013, 108.

<sup>82</sup> Ibid 109.

<sup>83</sup> Ibid.

<sup>84</sup> Paul C. Adams, “Television as Gathering Place” *Annals of the Association of American Geographers*, 1992, 130.

<sup>85</sup> Entertainment Software Association. “Essential Facts About The Computer and Video Game Industry”, 2015.

<sup>86</sup> The first dedicated videogame console, Magnavox Odyssey was released in 1972.