CRITICAL REFLECTION IN A DIGITAL MEDIA ARTWORK - PLAYAS: HOMELAND MIRAGE

A Dissertation

by

JACK ERIC STENNER

Submitted to the Office of Graduate Studies of
Texas A&M University
in partial fulfillment of the requirements for the degree of

DOCTOR OF PHILOSOPHY

August 2007

Major Subject: Architecture

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Approved by:

Co-Chairs of Committee,	Carol LaFayette
	Andruid Kerne
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ABSTRACT

Critical Reflection in a Digital Media Artwork -

Playas: Homeland Mirage. (August 2007)

Jack Eric Stenner, B.E.D.; M.S., Texas A&M University

Co-chairs of Advisory Committee: Prof. Carol LaFayette, MFA
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The introduction of digital media into the working practice of artists has produced challenges previously unknown to the field of art. This inquiry follows an atypical model of artist-driven research derived from disciplines such as social science and education. Here, an artwork functions as a model that is self-reflective, integrating methodologies in a form that benefits art and science. Using Naturalistic Inquiry, including semi-structured interviews of fifteen participants, the work illustrates a process of creation, analysis and evaluation that places the values of the artist on equal footing with the needs of science.

Recently, artists have begun using video game engines as a tool to produce 3D navigable spaces. Using the hybrid video game/installation *Playas: Homeland Mirage* as a case study, this research examines the impact of technology on the artwork and identifies a number of key issues related to the function of critical reflection in this environment. Rules-of-play were a fundamental pre-requisite to the stimulation of critically reflective experience. The human interface with software and hardware was also a primary factor in reflective experience. Based on participant evaluation and observation, the interface was altered in response to its effect on critical reflection,

illustrating how choices in this area impact aesthetic experience. Those with experience in visual art were more likely to engage the work in a critically reflective manner than seasoned video game players who tended to be more interested in scoring and winning. These findings and others inform our understanding of the stimulation of critical reflection in immersive environments and show how we can sensitively integrate technology with meaningful evaluative methods.

By repurposing a video game in this manner, we learn about the nature of the video game and the nature of art. This research enables artists to gain a better understanding of the medium to more fully integrate technology within a meaningful practice. Conversely, other fields will benefit from a better understanding of the stimulation of meaning in immersive spaces and gain a comprehensive view of a work that strives to contribute to our culture on a deeper level than as simple entertainment. Ultimately, more fully understanding critical reflection in virtual environments will enable us to create enriched experiences that transcend space to create “real” or “virtual” place.

To my wife Stephanie and daughter Sydney who put up with me living in front of the computer all this time.

ACKNOWLEDGMENTS

Without Carol LaFayette, I would never have survived Bryan/College Station. She was one of the few who "got it" and understood why art is important, the complexity of its dialogue, why it is worth studying, and how one might go about integrating art and science. In a similar manner, Andruid Kerne recognizes how both are inevitably intertwined and beneficial to each other and provided the kind of theoretically grounded, technologically astute, creative stimulus that was sorely lacking before his arrival. Without his encouragement to fully develop *Playas* into an interactive installation and to submit it to ACM Multimedia 2005, the project would have died. I would also like to thank Karen Hillier for her gracious support for me, as well as my family, over the last several years. She has been the constant that has helped me maintain a sense of continuity from my earliest interests in space and form over twenty years ago to now. Thanks also to Frances Downing. I wish I had met her sooner and had been able to work more closely with her. Her thoughts on place and metaphor were groundbreaking for me, as was her instruction on research methodologies. Without her guidance I would never have been introduced to Yvonna Lincoln and Naturalistic Inquiry. While time and other distractions have not allowed me to take full advantage of the wealth of knowledge embodied by my committee, I can't imagine a better group of people with whom to work. Their inspiration and knowledge will be of benefit for the remainder of my life.

I would also like to thank Steve Rowell of the Center for Land Use Interpretation. I would not have known about Playas, New Mexico without his introduction. His visit to

Texas A&M in Spring 2005 was a fortuitous event that has changed my life. CLUI is a testament to the viral nature of art. It illustrates that meaning is embodied in the world, and that by sharing ideas art can branch into territories never anticipated.

Last, but certainly not least, I would also like to thank Yauger Williams. His energy was infectious, and his graciousness in allowing the *Playas* project to commandeer a semester of his class was invaluable. Without this contribution and those of the Visual Studies 305 and 405 students in the production of the work, this dissertation would not have been possible.

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INTRODUCTION

Computer technology has had an enormous impact on all facets of society. If one considers the world of "art" a reflection of society, then one would expect that "art" would mirror this profound change. This has been the case, especially recently, as artists become familiar with the tools of technology and begin to take advantage of what they offer. In many cases, artists do not recognize the impact a digital medium has on their output. Familiar methodologies and strategies of previous generations may no longer be relevant to contemporary practice that interfaces heavily with technology. The traditional practice of creating work, exhibiting it, and then considering future works based on the input of critics, curators and peers does not work well when dealing with complex digital media projects. It is often difficult or time-consuming to make changes once a digital work is complete, and often these experts are not close enough to the work to effectively identify faults, especially those that are technological in nature. More importantly, it is difficult for those on the outside to identify core behaviors that fundamentally compromise previously held notions of our relationship to the experience of art. For these reasons and others, many artists produce works that are less than they might be, or worse, abandon projects or methods of working before having a chance to thoroughly understand their strengths and weaknesses. Some in the art world go so far

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This dissertation follows the style and format of *Leonardo.*

as to reject digital media artworks, outright. This research proposes to address these issues directly, by example. A digital artwork will be submitted to critical analysis and evaluation in order to gain an in-depth understanding of its function both artistically and technically. The work will serve as an example of the creation of a digitally mediated artwork, illustrating the complexity of artistic and technological issues one must consider in its development. Special focus will be given to the idea of "critical reflection"; its historic conception with regard to the experience of art, new conceptions in response to new media forms, and its exploration in this particular work.

You will notice that there is no attempt to feign objectivity in this discourse. Instead, the dialogue is written from the point of view of an author who is also the creator of the subject of analysis. This is a self-reflective and critical approach to inquiry that attempts to "lay bare" the motivations, strengths and weaknesses of the artist as well as the artwork in order to gain a better understanding of the complex set of influences and decisions that result in a digital media artwork. The goal here is not to create a set of rules for the creation of "good" works of art. Aesthetic experience is seen as a moving target, the result of a set of forces and relationships that are in constant flux. The goal here is to increase our knowledge by better understanding the dynamics at play in this particular work. There is no expectation that findings can be generalized to other works of art, although, certainly, one could expect similar behavior given similar circumstances. This research is intended as part of a dialectical process of evaluation meant to supplement the traditional forms of evaluation in the field of art. While the self-reflective process and critical analysis practiced in this research would benefit any

artist, it is recognized that every work of digital media is not a candidate for this type of investigation. It is intended that this methodology lead to improvements in the relationship of viewer to work (and vice versa) in complex digital media artworks, and serve as a model of practice that balances the artists' intention with the demands of technological production.

In this chapter I will discuss the need for a self-reflective art practice and the importance of critical engagement on behalf of the digital media artist. First I will discuss the socio-cultural context within which this research is conducted as well as the context that informs the creation of the case study project, *Playas: Homeland Mirage (Playas)*. This will serve to set the tone for the following discussion of scientific methodology and how these forms might be useful in the evaluation of digital media artwork. Understanding the context and methodology of investigation will create a foundation that provides insight as I introduce the *Playas: Homeland Mirage* project in the final section of Chapter I. While it is difficult to describe a visual work, textually, I will provide an overview of the work and its conceptual and technical goals. This overview will be used as a base of reference that will structure subsequent discussions.

In Chapter II the focus will be the investigation of Aesthetic Experience and Critical Reflection. What are these things, how and why do they matter to the interface with digital media works, and *Playas* in particular? Initially, I will discuss the range of art that can be called "virtual" and trace its history, especially with relation to new media art. In addition to the historical overview, I will focus on the role of art and experience in these forms. What were the relationships that defined art and experience based on

media? This section will be followed by a discussion of multiple dialogs concerning the experience and value of art. These dialogs are fundamental to understanding the changing ways that we relate to the art object or non-object. Following this discussion I will begin to narrow focus and investigate immersion and reflection. This is the key topic that spurred my interest in digital media as it relates to traditional forms of artistic expression. The immersion and reflection section will define what I feel is one of the primary issues which must be addressed in works such as *Playas*. This project is closely aligned with medium of gaming, so in the following section the focus will be further narrowed to address aesthetic experience in this form. Here I will contextualize gaming and the *Playas* artwork, and will identify four primary areas of investigation. I propose that these constitute support structures, girding the creation of critical reflection in digital works; content, authorial control, "communicability", and embodiment.

In Chapter III, the investigation focuses further. We will conduct a qualitative analysis of the *Playas* project and evaluate the performance of the work with regard to the support structures identified in the previous chapter. This section will present the results of user testing, and will identify more specifically the functioning of the work and the decisions and compromises that were made to create an artistic synthesis. The chapter will end with a discussion of the major findings and suggestions of improvement regarding the Playas project, as well as critique of the methodology and process as a whole.

CONTEXT

If there is one lesson gleaned from Post-Modernism, it is this: context is critical. In order to fully understand complex relationships, the surrounding ideologies embedded in our day-to-day world must be considered. This will be developed more fully later, but the relationship between creator, created, and participant can be described as an Interface Ecosystem:

> *An interface is a border zone where systems of representation come into contact. It is a membrane, regulating the exchange of vital messages from one side to the other. The more open the membrane, the more flow, the more new combinations that an interface supports. Particular membrane structures can act as filters, tuning feedback loops.*
>
> Andruid Kerne [1]

Our daily actions are composed of minute actions that are influenced by embedded ideology. The color of shirt chosen this morning, cereal for breakfast, the preferred route to work, the television program we will watch this evening, each contain meaning no matter how insignificant. These divergent thoughts, practices and ideas come together to form our interface with the surrounding environment. We extract meaning from the interrelation of these events without considering the complexity involved. Science attempts to understand our world by stripping away context in the name of simplification. Of course, it is not fair to indict all of science in this manner, but the cultural inclination to associate science with empirical method has resulted in the dominance of this approach. Intrinsically, artists (and others) understand that the context is what shapes meaning in our interaction with the world. We are individuals, but we are part of a diverse ecosystem that is in the process of construction before our very eyes.

For this reason, any attempt to understand complex phenomena, such as our relation to a work of art, must be grounded within the context of its creation.

Personal Context

It should be stated very early that my primary interest in this work is grounded in an interest in art. I don't believe I have any suppressed desire to be a scientist, as it is traditionally understood. I have always been consumed with the way ideas are embedded in forms of communication. My stepfather was a drag racer in the early days of hot-rodding. I became interested in the slingshot dragster in our back yard and the 1932 Hi-Boy in our garage. The boxes of mysterious, exotic engine parts and the decals promoting hardware by Weiand, Moon Eyes, Iskendarian and others enthralled me. My father spent hours describing the mechanics of speed and how the parts worked together to create a whole. He showed me how optimizing one part would affect another down the line, and thus require further development of the entire chain. Through this process I developed a love of craftsmanship and how these machines could go beyond mere utility. Perhaps most importantly I learned about how cultures and subcultures developed and were reflected in a particular aesthetic. There were concepts and cultures embedded in the forms produced by various groups. The diversity of forms and how each form reflected and was embodied in the behavior of those who identified with it was amazing to me. The ideals of its constituency were reflected in physical form and created a sense of community. I loved the diversity of ideals and forms that were the result of this combination of machinery and creativity. This linkage of form and meaning has followed me throughout my development as an artist.

Simultaneous with this recognition, my family began to become involved with the early conservative evangelical movement. Dallas was, and still is, a major component of "the bible belt". Jack Hyles, Bob Jones and Jerry Falwell were frequent visitors to our church. Slowly, our lives were consumed by the ideology of the evangelical movement and the culture and aesthetics of speed was replaced with an overwhelming community of repression. Creativity and freethinking were frowned upon as everyone strove to conform to a rigid set of rules that were designed to establish a common meaning. It is hard to explain retrospectively how one's life can be so consumed with ideology except to say that it perfectly illustrated Barthes' process of naturalization[2]. This experience, combined with the concepts I extracted from our pre-evangelical lives was fundamental in my development as an artist. I see art as a component of life intended to support creativity and freethinking, and as a tonic to the repression of religion. Of course, I have since recognized that even art is fraught with totalizing ideologies that are equally repressive. As I have sought to personally define art I have been attracted to those ideas that encourage experimentation and thought, and that subvert the status quo. This basic desire to remain open-minded, avoiding dogma (from any direction) informs not only my practice of art, but also research.

An extension of my interest in automobiles has been a love of architecture. Architecture presents the opportunity to combine form and space to create meaning in a way unlike other forms of expression. Spaces that communicate something about the occupants, creators, and society in general, have always attracted my attention. Just as I loved the embodiment of ideas in the forms of car culture, architecture held the same

promise. I have always been interested in conceptual spaces that subvert our expectations of use and form. Experimental works that altered our preconceptions satisfied my latent rebellion against the repressive religious experience of my youth. Works such as Arakawa and Gins, *Site of Reversible Destiny*[3] and their ongoing research/art project *The Mechanism of Meaning*[4] are important works that push Architecture into the realm of art, and propose an integration of form and technology in an "ecosystems" way of life that is relevant today. Alas, after receiving my degree in Architecture and becoming a registered architect, I could no longer rationalize the practice of "real", day-to-day architecture and the conceptual, creative work I enjoyed. I decided after being laid off to find a way to create a life that revolved around my love of art.

Over the course of the next ten years, with varying lapses as life intervened, I was able to indulge my interest in form and meaning through sculpture and installation work. My wife and I became involved with the community of artists in Houston, TX. We renovated a 21,0000 square foot warehouse building into artist studios and exhibition space, and met artists and a culture that has influenced my work to this day. Due to my early interest in form, my work was initially object-based assemblage. This work was very gratifying as I enjoyed working with materials and physically constructing objects. Over the course of several years I began to notice that the work tended to focus on issues of "reality" and our construction of ideology. I was fundamentally interested in patterns of repression and issues of control and how they might be subverted or re-directed. As a part of this interest, I began to focus on interactivity and using interactivity to jolt or

disrupt the psyche of the viewer. I would create objects that appeared docile, yet made loud noises or gestured wildly when activated. I began to think of these disruptions in the context of minimalism, and the contemplation associated with that form, and wanted to manipulate this response. Simultaneous with this, I began to consider materials more fully and became interested in plastics as a means of becoming closer with mass production. I wanted to connect a mass consumer mentality with this sense of intermittent contemplation or its disruption in our daily lives. This work led to the development of installation work that was intended to create this sense of "the blink" or intermittent sensorial contemplation or awareness. I was trying to model an interface with a complex, technological society.

I had been using the computer in the production of still imagery that I would integrate with sculpture, but as I began to do installation work, I became more involved with technology. In the early 1990s I had enjoyed Alan Rath's "embodied" mechanical works, Bill Viola's video installations, and a number of other electronic works, but the work that inspired me most was Gary Hill's, *Tall Ships*[5]. Until that point, I had remained skeptical about the work I had seen that integrated technology, but this work convinced me that meaning could be enhanced without becoming subsumed by machinery. I recognized that my knowledge of computing limited me to the use of commercial software packages, so I decided that if at all possible, I would find a way to go back to school and improve my technical abilities.

Over the course of the last several years, I learned to program and became familiar with fundamental and advanced aspects of computing for visualization. All the while, I

have attempted to keep abreast of the dialogue, not only of computing, but also art and culture. I am keenly interested in the interface of the various ideologies at work in these fields, particularly with respect to their manifestation in art. I have consciously worked to find a synthesis between the fields of architecture, art and computing with relation to their abilities to embody form with meaning. As an artist, I want to create moving experiences that encourage the viewer to throw off the shackle of repression and consider anew the world and their embedded belief structures; I want them to question "reality". As a researcher, I want to know how powerful, moving, aesthetic experiences can be effectively produced in a virtual or computer mediated environment. In order to investigate these matters, we need to establish more common ground regarding the context of inquiry.

Art-Historical Context

Several critical notions have a direct bearing on the conceptualization and construction of *Playas: Homeland Mirage*. There are multiple dialectic currents of thought that have intertwined to produce an environment that is fertile for the exploration of digital media. Prime among these is the critique of "aesthetic experience" embodied in the debates around the "anti-aesthetic" and the development of critical theory subsequent to modernism. This debate shapes current art practice and provides insight that augments the understanding of contemporary work, and in particular, digital media. Related to this is the exploration of change brought about by the introduction of digital processes, and an expansion of our conception of the image. Might this change provide opportunities for art that can reconcile historic weaknesses? The debates

surrounding these understandings have resulted in a schism between traditional fine arts and what is now called digital or "new" media. In this section, I will discuss the art-historical context that surrounds the project. I will explore the development of the anti-aesthetic and how the interjection of digital processes might fundamentally change our understanding of "aesthetic experience" and the vagaries of meaning associated with that term. I will discuss aesthetic experience, itself, more specifically in Chapter II Aesthetic Experience and Critical Distance.

In the introduction to *The Anti-Aesthetic*, Hal Foster proclaims, "that if the modern project is to be saved at all, it must be exceeded."[6] He echoes the thought of many that modernism has died, that it has reached the end of its radical experiment, but that something of it is worthwhile. Modernism, as typified by Greenbergian formalism, could no longer be sustained and is transcended by the contextual, culturally diverse ideology of postmodernism. Originally, modernism was a transgressive, avant-garde ideology meant to undermine and question long held notions of representation and social significance. This oppositional attitude is a value that is cherished in the arts. Man was challenged to "think anew" and release the shackles of history; it was an ideology filled with hope that our new technologies might allow us to create a better, more democratic society. Following the Miesian dictum "form follows function" modernism lapsed into a form of essentialism that proved its ultimate end. It became associated with the aesthetics of autonomy, claiming essential, universal characteristics associated with particular media (painting, sculpture, architecture, etc). An aesthetic preoccupation with beauty, and an elitist focus on taste defined the singular object of art. Worse, yet,

modernism was integrated in all aspects of society; it was a success[6]. It became a part of the institution it was meant to critique.

Photography and its challenge to the autonomy of the art object, as recognized by Benjamin[7], changed everything. The "aura" of the object was questioned and structuralist and post-structuralist thought interrogated our construction of meaning as an essential relationship with the object. Postmodernism recognized diverse subjectivities, placing it in opposition to the autonomous and universal ideology of late modernism. The word "aesthetics" and its association with the study of beauty, was derided as a male, Western, hopelessly incorrect term. In the art world, the neo-avant-garde practices of Dada and Surrealism returned to reject the place of beauty in Modernism and challenge the concept of meaning. The work of Arthur Danto, and others, championed a separation of aesthetics from art. An "anti-aesthetic" developed that privileged the importance of concept over subjective beauty. Indeed, the validity of the object, itself, and its role as the locus of meaning was challenged. Mulvey's investigations into the cinematic gaze, Feminist film theory and its descendent, cultural studies, initiated the movement of subjectivity from the author to the viewer[8]. Happenings, installation, community art, conceptual art, institutional art, all developed as practices intended to subvert and oppose the dominant paradigm represented in modernism.

Of course, old habits die hard, especially when ideology conflicts with economics. Art institutions and, indeed, many artists whose livelihoods are dependent on the trade of objects, were, and still are, unwilling to abandon the economic system that developed in

the previous century. A disconnect has developed between an element of the art world that is engaged with cultural/critical theory and a parallel world that is quite content producing beautiful goods for sale and display. This is nothing new, as avant-garde practice often relies upon traditional practice as fodder for new ideas, but the changing subjectivities brought about by the theorization of postmodernism altered art and culture at a fundamental level. These issues are at the core of debate of art, culture and science, today.

Foster describes a disjuncture between the public understanding of postmodernism, and a critical understanding; "postmodernism is publicly regarded (no doubt vis-à-vis postmodern architecture) as a necessary turn toward "tradition." [9] Many artists and institutions subscribe to this interpretation, which coincidentally supports their approach to art and the economic hierarchy that has developed. Groups invested in this system often reject the notion of digital media art because it, too, is often non-objective and difficult to sell. Of course, there are groups that do not subscribe to the common understanding of postmodernism and reject digital media art on other, often valid, grounds that we will discuss later. Foster describes this schism in the understanding of postmodernism as a conflict between a postmodernism of resistance versus a postmodernism of reaction.

> *The postmodernism of reaction is far better known: though not monolithic, it is singular in its repudiation of modernism. This repudiation voiced most shrilly perhaps by neoconservatives but echoed everywhere, is strategic: as Habermas cogently argues, the neoconservatives sever the cultural from the social, then blame the practices of the one (modernism) for the ills of the other (modernization).*
>
> Hal Foster[10]

This disjuncture is also reflected in the popular misunderstanding of the relationship between art and culture. Many (artists included), see little relationship between the two, while others see them as one and the same. Whether recognized or not, art-historical and socio-cultural development have always been linked; we are a function of our contemporary social system. I will discuss art and digital media with relation to the socio-cultural climate in the next section, but it should be noted that, increasingly, there are overlaps between artistic production, art criticism, and socio-cultural critique. From the Marxist inflected writings of Benjamin, to Adorno's Critical Theory, to the revolutionary ideals of DeBord, avant-garde art practice has attempted to reduce the division between art and life. Therefore it stands to reason that art theory and cultural theory will often overlap, but we must endeavor to be distinct about the differences between art and culture. The common denominator influencing the discourse of these disciplines has been the postmodern shift in subjectivity from the author to the viewer. In *(Post)Modern Polemics*, Foster describes the neoconservative (reactionary) and post-structural (resistant) forms of postmodernism as opposite extremes of the same schizophrenic response to the changing relationship between the subject and object. "Here, then, we begin to see what is at stake in this so-called dispersal of the subject. For what is this subject that, threatened by loss, is so bemoaned? Bourgeois perhaps, patriarchal certainly – it is the phallocentric order of subjectivity."[11] So, now that the rules have changed, where do we go? Is art doomed to absorption by the culture industry, as Adorno feared? Foster leaves us with one possible direction at the end of his introduction to *The Anti-Aesthetic*. He proposes that art might maintain its transgressive

and subversive function by either revising or rejecting aesthetics as described by Adorno.

> *The adventures of the aesthetic make up one of the great narratives of modernity: from the time of its autonomy through art-for-art's-sake to its status as a necessary negative category, a critique of the world as it is. It is this last moment (figured brilliantly in the writings of Theodor Adorno) that is hard to relinquish: the notion of the aesthetic as subversive, a critical interstice in an otherwise instrumental world. Now, however, we have to consider that this aesthetic space too is eclipsed – or rather, that its criticality is now largely illusory (and so instrumental). In such an event, the strategy of an Adorno, of "negative commitment," might have to be revised or rejected, and a new strategy of interference (associated with Gramsci) devised.*
>
> Hal Foster [10]

Recognizing that the predominant strategy and role of art might need to be reconsidered, he recommends that we look to Gramsci for alternative means to affect change via art. Foster isn't the only theorist reconsidering criticality in the wake of shifts in subjectivity. In his 2003 book, *The Abuse of Beauty*[12], Arthur Danto surprisingly revised his staunchly anti-aesthetic position to include a "pragmatic" role for aesthetics in the understanding of art. Aesthetics, of which beauty is but one component, is not a requirement for art, but is an "inflector" that can direct and inform meaning. It is significant that Foster is repositioning aesthetics while Danto is engaging it in a limited fashion. Together, they shift towards a middle-ground understanding of aesthetics that eschews the polarized, all-or-nothing roles that defined previous thought. This broader understanding of the workings of meaning in art is vital at a time when the terrain of production is fundamentally shifting.

Nicolas Bourriaud's conception of Relational Aesthetics[13] has also addressed the movement of subjectivity in art and culture. I will discuss these ideas more fully in the section on "Dialogism" but contemporary discourse is debating the role of communication in the aesthetic experience. Obviously, this emphasis on communication resonates with digital media art and intersects with the development of subjectivity. Bourriard positions art as practically any form of communication between participants. The artist is valued as an organizer or instigator of communicative action. Sociability and collaboration are prime directives. Often, what is said about a work, or the dialog that surrounds an event is more important than the experience itself. He proclaims the work is differentiated from critical art practices by a focus on action. "We must stop interpreting the world, stop playing walk-on parts in a script written by power. We must become its actors or co-writers."[14] The idea is to change culture, internally, through local activity. Of course, Adorno's *Negative Dialectics[15]* built upon the Marxist, Feurbach notion of action as well. While the ideology is laudable and many of the concepts have merit, the manifestation of the ideas is often somewhat lacking. As Foster observes, "At times, 'the death of the author' has meant not the 'birth of the reader', as Roland Barthes speculated, so much as the befuddlement of the viewer." He also recognizes a "weird formalism of discursivity and sociability pursued for their own sakes," that is troubling[16]. Instead he suggests an intermediate position that admits the checkered legacy of autonomy, but makes room for its contextually appropriate use given the triumph of postmodernism. He terms this "strategic autonomy."[17] Instead of subjugating art and artist to discursion, perhaps there is a middle ground that integrates

the work in a way that accommodates the new emphasis on communication brought about by technology.

A reconsideration of the relation between subject and object also characterizes the relatively recent rise of interest in "embodiment." The subject of modernism located meaning within an autonomous object. This relationship was altered and conceived as the reading of "text" in post-structuralist postmodernism. We are beginning to recognize the weakness of such a polarized understanding of the mechanisms of meaning. Danto now talks about art as "embodied meaning."[18] Recently, there has been an emphasis integrating ideas from cognitive theory and an attempt to heal the so-called mind/body split. This conception of the subject object relationship has particular importance for digital media work that focuses on virtual experience. Richard Allen has called for a turn from traditional film theory, which he characterizes as too narrowly focused on theory, towards an integration of ideas from analytical philosophy and cognitive theory [19]. In his view, traditional film theory has emphasized doctrine, rather than attempting to understand the film experience. He calls for a consideration of the works of Benjamin and Adorno to amplify our existing understanding of film while integrating an understanding of its relation to aesthetic experience. Like Foster, he views the shift in subjectivity from modernism to be crucial to the understanding of technological media.

> *…once the conception of cinema as fantasy is wrested from ontology and relocated in the relationship between signification and reception, a space is opened up in which to understand and analyze the aesthetics of the cinema which is reducible neither to traditional contemplative aesthetics nor to a psychoanalytic theory of subjectivity divorced from historical context. The task of an historically informed film theory is to formulate the way in which individual subjectivity is articulated with 'trans-*

> *individual' subjectivity over time and within and across different institutional and national contexts. This is inseparable from the development of a theoretically informed film history with a method which is adequate to account for the shifting relationship between the public and private spheres as they intersect in the historically changing aesthetic experience of film (and other media).*
>
> Richard Allen [20]

Allen is calling for a synthesis of ideas, creating a pragmatic mix of knowledge gleaned from multiple disciplines that recognize the complexity of our relationship to media. One cannot divorce history. One cannot divorce theory. Neither can one divorce science or philosophy. In this manner, our understanding is open to the integration of new findings in disparate fields. As inquiry turns from a focus on essential truths we begin to view the world as a complex sea of relationships, which create rich responses that require context for the development of meaning.

In a similar manner, the work of Mark Hansen, in *New Philosophy for New Media*, builds on film theory in an effort to update the work of Walter Benjamin, Henri Bergson and Gilles Deleuze. Hansen sees the introduction of the digital image as a "fundamental shift of aesthetic experience from a model dominated by the perception of a self-sufficient object to one focused on the intensities of embodied affectivity."[21] Hansen criticizes "poststructuralist theory and cultural studies for having stopped short of embracing the truly radical aspects of their critical stance toward representationalism."[22] He recognizes that Deleuze's use of cinema, as a means of addressing meaning, should be updated to consider the digital processes of new media. Currently, there is a concern about the dehumanizing aspects of technology and the position of the body in digital experience. This concern is reflected in the work of

theorists as diverse as Ray Kurzweil, Bill Joy, Mark Johnson, George Lakoff, Andy Clark, Freidrich Kittler, Francisco Varela, Katherine Hayles, and many others. Some would argue that technology creates a disembodied experience, which threatens the very existence of humanity. Others would argue that media is an extension of our bodies and that we have a responsibility to mold the relationship. Hansen argues that digital media reinforces the primacy of the body in this relationship. He believes that technology alters our biology as we adapt to technology.

> *The position he stakes out draws deeply on Henri Bergson's defense of the affective, prediscursive body as the active source of meaning. Hansen finds empirical support for this Bergonist program and its relevance to our current concerns about posthumanism and digitality in the work of cognitive scientists such as Francisco Varela, Edwin Hutchins, Andy Clark, Antonio Damasio, and others who have defended the notion of the extended mind. From Hansen's perspective technologies alter the very basis of our sensory experience and drastically affect what it means to live as embodied human agents. They accomplish this by reconfiguring the senses at a precognitional or even paracognitional level (not to privilege one level over the other) prior to conscious perception and assimilation to language.*
>
> Tim Lenoir[23]

The poststructuralist relocation of meaning from the artist to the viewer is reinforced with this shift to the body. Any system for the communication of meaning requires the mediation of the human body. "Virtual reality, Hansen argues, is a body-brain achievement. The source of the virtual is thus not technological, but rather a biologically grounded adaptation to newly acquired technological extensions provided by new media."[24] Previous scholarship related to aesthetic experience, critical theory, and cultural studies, all, have a bearing on this negotiated meaning. In this model,

digital media art becomes a ground for the study of perception and the transmission of meaning.

So, in the course of a century our conceptions of art and the relationship between form and meaning have fundamentally shifted. Various discourses have traced the transition from what were conceived as autonomous works such as painting and sculpture, to the dissolution of autonomy begun with photography, to the poststructural reading of "text" in cinema, and now to a focus on "embodiment" in digital media. Of course, the linear trajectory described above is misleading. The dialogue of art is a dialectical process that is exercised in history. Just as there are artists, today, painting in the mode of Abstract Expressionism, there are artists working to subvert a limited conception of aesthetics as "beauty." There are no "clean breaks." The legacy of postmodernism is a pluralistic approach to knowledge that, rather than division into strict ideologies, has opened discourse to recognize the diversity of influences and contributory disciplines. While some people imagine that their ideologies displace previous thought, and that they have identified a "paradigm shift," knowledge rarely works in that manner. Instead a dialectic contest of thought ensues, and we learn more about our complex relation to the world.

This contest is evident in the current position of digital media within the art world. Many artists, critics, and institutions are invested in dialogs that don't recognize the importance of digital processes. Many would prefer to relegate digital media to the role of tool; no more important than the selection of a brush. In this view, digital media, if recognized at all, would develop the current dialog of art and engage with the discourse

independent of the nature of the medium itself. Those who desire to investigate digital media as unique represent the opposite extreme. In many ways, they recall the modernist tradition of formalism, seeking to identify essential properties of computing in the aesthetic realm. Very often these are scientists or technically oriented people with very little knowledge of the diverse and complicated dialog of critical theory and philosophy, much less the dialog of art.

Rosalind Krauss describes the current environment as the “post-medium condition.” If modernism was concerned with the specificity of the medium, then postmodern work as exemplified by video, installation, photography, and others, have created a pluralistic environment where diverse work leveraging various combinations of media exist simultaneously. She attacks the “international fashion of installation and intermedia” as a “globalization of the image in the service of capital.”[25] If digital work “has a role to play at this juncture, which is to say at this moment of postconceptual, "postmedium" production, Benjamin may have already signaled to us that this is due to its very passage from mass use to obsolescence.”[26] Her conception of the medium, extracted from Benjamin, is that the medium is not redeemed until it is obsolete.

Exhibitions such as Siggraph, Ars Electronica and others are seen as disengaged with the dialog of art, and instead, subservient to the corporate graphics industry. Having attended and participated in several of these exhibitions, I would partially concur with her assessment. While occasionally there is challenging work to be found, the majority tends to be exhibitions of technical prowess, superficial beauty, or pseudo scientific shamanism. Of course, the participants write off the criticism as another example of art

world elitism. Some imagine that they are somehow subverting the institutions of art by operating on the "outside." The fact is, if one approaches digital media from the position of "artist", there is a long, complicated history and set of conditions that frame the activity. A willful ignorance of this dialog is self-defeating and results in work that is less likely to contribute to our attempt to understand art and art experience.

Krauss' concept of "differential specificity" attempts to address the role of media in this pluralistic, post-medium atmosphere. Her goal is to provide a way of understanding art and its media without lapsing into modernist physicality or instrumentalism. With the multiplicity of media, how does art function without defining universals that limit possibilities? She uses the work of James Coleman, and his use of the slide show, as an example of work that addresses the specificity of its medium in a way that supports the content of the work. Of course, the slide show is obsolete technology at this point in history. Hansen criticizes Krauss' concept of obsolescence in *Between Body and Image*. Digital media, (if it can be called a medium[27]) is constantly dealing with new technologies and interfaces, how can we develop an aesthetics that accounts for the influx of new ideas? He points to Krauss' later work *Formless*, and her concept of the "pulsatile" as recognition of the role of the body as intermediary in the production of meaning. "Far from being the source of a reductive unification of diversity, the body is the very place where such diversity can be retained in a nonreductive aggregation. As such, it is itself an integral dimension of the medium."[28]

Hansen's work is valuable because unlike many attempts at considering digital media, it presents an accretive process. Rather than propose a paradigm shift, it links

with our current understanding of art, and proposes directions that develop existing theory. In my view, it proposes a trajectory that addresses some of the weaknesses apparent in current digital media work. As alluded to earlier, and as would be expected in a time of transition and plurality, much of digital media art is of suspect value in terms of its contribution to the dialog of art. Conversely, there is work that we will not appreciate for generations that will have significant impact on future work. These are exciting times.

The art-historical context that frames *Playas: Homeland Mirage* is very much indebted to this thought. Much of contemporary art is still addressing these issues and perhaps more so than any other form, digital media presents opportunities to investigate new strategies of interference as described by Foster, modulated by Danto, and linked to the ideas of Gramsci. While interference in Adorno's framework would rely on the power of critical engagement with the viewer and would position art as a critical commentary on social institutions, a Gramscian approach would integrate art into the fabric of society in order to affect change. Gramsci's concept of cultural hegemony and its influence on the thinking of Althusser, Stuart Hall, John Fiske, and others [29] has expanded the field of contemporary practice, especially with respect to work that deals with communication. The dialogic nature of digital media, which I will discuss more fully later, has produced fertile ground for the exploration of means with which the hegemony of institutional power might be subverted. Indeed, while the institutional art world often seems to wallow in negation, new media practice is moving forward to consider alternate constructions of the relation between subject and object. Digital

media artists should be aware of the contemporary debate between art and culture and work to find a common ground that recognizes the change brought about by technology and our shifting subjectivity.

In the next section I will discuss the socio-cultural context that informs my thinking, and therefore, the *Playas* project. This will lead to a discussion of the position of art within culture-at-large and explore some of the pressures placed on artists practicing in this environment. Our interactions with culture, and arts role within culture, are fundamental to understanding how I position the work across the vast boundaries of understanding that define a diverse audience. Finally, I will conclude the section with a discussion of the current political climate and my view of the works relation therein.

Socio-Cultural Context

Critical theory has had an enormous impact on the conceptualization and development of art since the early 20th century. Developing Gramsci's concept of hegemony, critical theory has looked to the work of Louis Althusser and developed cogent dialog that explains the relations of power structures, especially with regard to mass media. The idea of a collectively formed subjectivity that is filtered through mass culture presents an ominous view of a world beyond individual control. The idea that in order to remain free from the overwhelming force of cultural hegemony is to cultivate a "critical eye" is endemic in much of art philosophy and indeed, the end product[29]. Thought descended from this view of culture has positioned the role of art as a critical form that attempts to remain distant, and detached from a tainted system. The goal of art is to critique the system in order to effect change that might create a more fair,

democratic, and fulfilling existence. While this dialog has been of benefit to art, the shift in subjectivity described by postmodernism has placed critical theory at odds with other conceptions of the role of art in society. In the previous section, I alluded to the fact that there is crossover between critical theory and culture studies, and of course, this crossover is the source of friction between the two. As has been mentioned previously, I am, by nature, leery of ideological extremism. Often, there is a seed of truth revealed in a particular critique that causes people to take extreme positions rather than evaluating how ideas might merge and complement one another. At times this polar positioning appears intentional, at other times, it appears to be a simple misunderstanding of the core concepts at issue. For example, the neoconservative interpretation of postmodernism discussed earlier; is it an intentional appropriation of ideology or a popular misunderstanding, which has been leveraged by opportunistic groups?

Critical Theory, focused heavily on the role of the author and work, proposing an avant-garde relationship with society. Culture studies, as descended from communications, literature, film, and feminism, critiqued Critical Theory as discounting the role of reception in the meaning process. This critique is fundamentally important as we move into the digital era and was well grounded. It is my position, however, that culture studies often falls into the trap of reactive postmodernism. While there is validity to its focus on reception, it too easily, and conveniently, dismisses the role of individual action in the communicative process. Like reactive postmodernism, it often dismisses critical engagement with hegemony and lapses into the instrumental, commercial, use of visuality. It often foregoes individual resistance for a proclaimed,

collective resistance that is too easily dominated by capital. Rather than illuminating and developing forms of interference, it becomes an anthropological exercise, illustrating hegemonic control. Instead, I believe an appropriate strategy is the development of a resistant postmodernism that maintains the critical function of art while updating it to address the shift in subjective focus. The contributions of Critical Theory and cultural studies can be integrated and developed in forms that incorporate modes of interference as described by Foster. The shift in subjectivity does not require us to abandon the author or the work in favor of the audience; rather, it provides exciting new possibilities to expand criticality in forms that could never have been imagined previously. In the following section I will discuss the shift in subjectivity brought about by Feminism and by extension, cultural studies. Next, I will discuss cultural studies and the topic of "digital convergence". While there are components of these discourses that are fundamental to our understanding of the world, and any artist must consider them in practice, there are side effects, which threaten to misdirect art into irrelevance and reduce any opportunity to effect change.

Linda Nochlin's 1971 essay, "Why Have There Been No Great Women Artists?" points to the change in subjectivity brought about by Feminism and post-structural postmodernism[30]. The obvious dearth of women artists in the canon of art exposed the embedded patriarchy of the historical dialog. Critical Theory and aesthetics (as beauty), with its focus on the heroic artist was shown to harbor a male, heterosexual bias that called into question its claims of autonomy and universality. We began to reject master narratives in favor of local, contextual understanding. In his review of Adorno's

Aesthetic Theory, Stephen Eisenman cites Laura Mulvey's essay, *Visual Pleasure in Narrative Cinema*, as “a kind of prolegomena for the discipline now known as cultural studies.” He defines culture studies “as a mode of interdisciplinary writing and research that has rejected aesthetic distinctions of value among media and devoted itself to the study and appreciation of new communicative forms and technologies.”[31] Culture studies places emphasis on viewer reception and has contributed much to the understanding of how meaning functions in society. While this conception of subjectivity, moving from the author to the viewer, is fundamental in the development of art for the past century, it is not an either/or, oppositional structure. Unfortunately, many succumb to the tendency for polarized debate. Rather than marry approaches in a manner that might expand knowledge, many rejected aesthetics as “beauty” tied to an essentialist, elitist conception of communication. Rather than positing culture studies as a replacement for Critical Theory, we must place the two within context. Context, remember, was the lesson of postmodernism. As Eisenman quotes Adorno, otherwise, we risk throwing “the baby out with the bathwater.”

In it’s earliest incarnation, aesthetics was related to our perceptual abilities. By the late eighteenth century, the field of Aesthetics as defined by Baumgarten became an investigation into the specific form of knowledge associated with sensation. While the field veered into the ascription of value, beauty and taste, the core goal was to understand how our senses created an “analogy of reason” and the relationship between cognition and sensation[32]. In the early 1970s, the word “aesthetic” was associated with Greenberg and the formalism of Abstract Expressionism. In this guise, it was a

deserved target of this particular critique, with the paradigmatic male artist, Jackson Pollock, at the helm. But this was aesthetics co-opted by Greenberg. Beauty and the values of taste were a part of the language of high culture. With relation to beauty and the role of beauty in society, the critique was absolutely valid. The structures of society that control "the gaze" were questioned as never before, and this attack continues today. But, the target should not have been commingled with a narrow understanding of “aesthetics”. Perhaps the word is now hopelessly tainted, but there is too much valuable scholarship to simply ignore its role. I believe a broader view, which conceives of aesthetics as the study of personally meaningful experience, and not as a comparative value system, allows us to investigate the ways art can transform culture, without denying the processes at work.

In addition to its heritage from Feminism, culture studies extends from the dialog of communications. In the mid 1960s, Stuart Hall and Dick Hebdige conceived of culture studies as an attempt to uncover meaning hidden in our day-to-day interactions with the world and their relationship to culture-at-large. Much like Barthes’ “Death of the Author”, Stuart Hall’s reception theory recognizes that meaning is a negotiation between an audience, artist and “text”. The idea of negotiated meaning is fundamental to contemporary art and its integration in culture studies has drawn the two together. Artists have long been interested in popular culture, and indeed the lack of direct action characteristic of Critical Theory is recognized as a weakness. As an artifact of culture, art can be understood through the lens of culture studies, and especially in the area of tactical media, community-based art, relational aesthetics, and the post-autonomous

practices discussed earlier, many artists are eager to work within the framework of culture. Because of the pervasive impact of digital media on all areas of knowledge, much of the scholarship of new media comes from culture studies or affiliated disciplines such as comparative literature, or language and communication. Academics, scholars, critics and theorists of all types are eager to document and stake out territory in this new terrain. While the confluence of multiple perspectives surrounding digital media is exciting, it seems that many artists do not recognize that the dialog of visual art is not often a consideration in these discussions. The focus of culture studies is overwhelmingly on the products of popular culture almost to the exclusion of contemporary art. Ironically, given Hebdige's contribution to cultural studies[33], subcultures such as art don't seem to factor into the debate.

Henry Jenkins describes the current climate as one of digital convergence. Without reference to Krauss' concept of the post-medium condition, he describes the fact that media distinctions are no longer important. Movies are created for Hollywood, distributed on DVDs, and repurposed as video games. He recognizes that Critical Theory has not proposed means of change beyond critique, and suggests that the role of digital media in culture is to propose a utopian ideal that effects change. He provides an example in the form of teen gays who meet online and discover a world very different from the physical:

> *No meaningful change can occur until we can imagine a world different from our own. The queer teens' on-line experience of "what utopia feels like" may lead them to fight for it in their real lives. In that sense, the utopian imagination is not a refusal to face problems but rather a theoretical strategy which allows us to move from a preoccupation on problems towards a new conceptualization of solutions.* [34]

He describes a participatory culture and "utopian imagination" that can take either the form of digital boosterism, typified by Wired Magazine, or a cautious utopianism "which uses the future to question troubling aspects of contemporary life." While his sentiment is laudable, and there is perhaps some merit in the instrumentalization of utopia, culture studies collapse of society into a digital convergence of popular culture is problematic. The literary foundation of much of the discourse appears to be completely unaware of the dialog of art and art philosophy during the past century. The focus and point of reference for most discussion is narrative. Much of the discourse involves analysis of popular forms such as television, cinema, and video games. This flavor of culture studies is very different from a critically engaged culture studies of resistant postmodernism. This neoconservative form collapses any product of culture into the realm of art. There is no longer a distinction between art and other artifacts. Much like the pastiche of forms that typified neoconservative postmodern architecture, art becomes a simple commodity. Worse, the measure of significance is the degree of incorporation by popular culture. In this system, inquiry begins to look more like anthropology. Jenkins has gone so far as to proclaim that video games are art. "Computer games are art – a popular art, an emerging art, a largely unrecognized art, but art nevertheless."[35] In his article, *The Work of Theory in the Age of Digital Transformation*, he cites concern that we "will reconstruct old cultural hierarchies, elevating avant garde digital works (afternoon, Patchwork Girl, Victory Garden) at the expense of recognizing the cultural impact and artistic innovation of commercial products (Myst, Chop Suey)."[34] All three of his examples of "avant garde digital works" are interactive fictions, hardly what

I would consider the cutting edge of digital media art. The risk, here, is that by confusing art with popular culture, art will be absorbed and reduced to ineffective style, as have so many previous counter cultures. Just as the British punk culture was later absorbed as stylistic apparel and haircuts, minus the social commentary, by suburban American teens, art risks losing its critical function. Even Jenkins acknowledges this process of content neutralization in the work of William Gibson, noting that "the more critical and dystopian elements of Neuromancer (1984) have been ignored amid the giddy excitement which compels computer scientists to try to build the cyberspace he imagined….This failure to preserve both the critical and the utopian dimensions of Gibson's 'cyberspace' does not bode well for the digital counterculture's chances for achieving radical change."[34] The very process of absorption witnessed by culture studies should be warning that art must remain an activity of artists who are committed to an experimental, avant-garde relationship with society. Art must continuously challenge culture, rather than allow itself to be absorbed into irrelevance. Instead of taking culture studies and wedding it with Critical Theory, some would cynically give up any attempt to affect social agency. Adorno warned against this in Aesthetic Theory:

> *As legitimate as Herbert Marcuse's critique of the affirmative character of culture was, its thesis requires the investigation of the individual artwork: Otherwise it would become an anticulture league, itself no better than any cultural asset. Rabid criticism of culture is not radical.*[36]

In a society undergoing fundamental change, and with a social system that values capital above all else, the temptation to collapse boundaries and rationalize that effective change can be made from within is tempting. Universities, now conceived as businesses

beholden to customers, do what all businesses do, and follow capital. Innovation and experimentation are expensive. Challenging thought is fraught with risk that affects the bottom line. It is much easier to embed with the system, cultivate profitable relationships with industry, prepare a docile workforce, and appease the conscience with quasi-radical verbiage. Obviously, I am leery of the motivations of each party when art and industry conveniently align. History has not shown this to be an equitable or critically incisive relationship.

We continue to find our way with regard to the role of culture, art, and technology. But, beyond the socio-cultural position of digital media, in order to provide a reflection of the current conditions that inform *Playas,* one must also discuss the political situation in the United States. When this project was begun, in early 2005, the country was in the grips of fear brought about as the result of the bombing of the World Trade Center on September 11, 2001. Due to the bombings, the country was split between those with a fear-based response, and those who saw it as pause for reflection on our global relations. Obviously, the responses were more varied than that polarized description would imply, but fundamentally the population was divided on how we should deal with this catastrophic event. Without spending a lot of time outlining the history of events, the result was that George Bush became President and our response to September 11, was assured to be fear-based. Every existing power structure took this as an opportunity to consolidate control and expand influence. In the name of "security" all manner of personal and privacy rights, governmental checks and balances, and accountability limits were voided. Citizens willingly relinquished their freedoms. Fighting an "axis of evil"

straight out of Star Wars, we have launched a crusade against Islam, not realizing we are killing ourselves in the process. As I write this, the lead story on the evening news is how the Boston Police Department, fearing terrorism, shut down major portions of the city as a result of a viral marketing campaign to place LED signage on storefronts and overpasses. Ironically, artist collective, Graffiti Research Lab[37] had been performing this very activity for the past year in New York City, without igniting paranoia.

During the last year, it appears the public is finally beginning to tire of the fear tactics, such as the Department of Homeland Security's "Terror Alert" system[38], and especially the "War on Terror" in Iraq. The optimist in me hopes they see these activities as fear-based control mechanisms that must be ended, but the realist tells me they are simply tired of the story occupying the headlines every day. Either way, fear remains a predominant characteristic in American society, and this fear is the major component of the conceptual substance of the *Playas* project.

Solutions are usually found in the middle ground between extreme positions. While there is much to learn from the dynamics of popular culture, there is still a need to distinguish between artifacts based on their intention and role. Medium may become less important, but art has not been exclusively "about" the medium, except for a relatively small period in the 1940s. There is a role for the subculture of art to effect change in popular culture. In order to do this, art must be involved with popular forms, and must take advantage of the tools of technology in order to effectively speak the language. Engagement with culture does not mean that art disappears and becomes one and the same with cultural artifacts. Art must retain its critical function yet intelligently

embed within popular culture. I see this as a union of cultural studies and Critical Theory augmented by the development of forms of interference. Rather than the arms-length-distance implied via Critical Theory, or conversely, the disappearance of art championed by some in cultural studies, art should enjoin the strengths of both and begin to develop a theoretical, as well as practical, understanding of the dynamics of mediation. This will require a holistic approach that is truly interdisciplinary in nature, incorporating discourse from literature, fine art, philosophy, Critical Theory, culture studies, and all of the various stakeholders with interest in the outcome. Digital media is forcing artists to broaden their knowledge base and intensify their engagement with popular culture. Technological culture is reshaping the role of the artist, who must respond by developing new approaches towards their discipline while maintaining the critical nature of creative practice. In the next section, I will discuss the range of these new practices.

Current Practice

An explosion of works, denying categorization, typifies the early to mid 2000s. I won't attempt to cover any particular work in detail, here, but will discuss the primary forms and significant themes that inform this project. In her book *Digital Art* [39], Christiane Paul breaks the digital medium down into the formal categories of installation, motion imagery (film, video, animation), Internet art, software art, virtual reality, and sound. As you can see, there is overlap with pre-digital media such as film, installation and sound. Still imagery, built on the legacy of painting and photography, she classifies as practice that utilizes digital processes as a tool, rather than as a medium.

Of course, the boundaries are fluid, there is plenty of work in film and video that uses digital technology merely as tool, for example, and there are certainly works that procedurally create still imagery which might qualify as medium based works. One of the defining characteristics of current practice, which reinforces Krauss' notion of the post-medium condition, is that, generally, artists don't feel compelled to limit themselves to any particular medium. As the Internet has developed from a primarily hypertext medium towards a hypermedia environment that supports not only text, but also imagery, video, sound, virtual reality, and many other forms, the notion of a limited craft has begun to dissolve. This trend was begun prior to digital media, however. Installation, assemblage and similar practices introduced a variety of media that had begun to break down the importance of media well in advance of the introduction of the computer.

Rather than focus on medium, today, the more fruitful and interesting discussion of current practice revolves around the thematic content of work. Paul identifies several key themes that, again, are not delimiters, but general categories of behavior. I will mention several of these, discuss the general context that informs them, and then focus on the categories that most clearly relate to *Playas.*

Perhaps one of the most popular forms one would consider purely "digital" would be works created using Internet technology. From the beginnings of the Internet, there have been artists experimenting with the capabilities afforded by mass communication. While there is some debate over the need to categorize work in this manner, some identify the period from 1994 to 1999 as the period of "net.art." Early projects such as those

produced by jodi.org (Fig. 1), Alexei Shuglin, Heath Bunting, eToy, I/O/D, Mark Napier, and many others, are considered the first to define a field that explores the use of the network as a fundamental component of the work. Much of this work established themes that are still being explored today, though, recently it seems Internet art has lost some of the energy that defined the period of net.art.

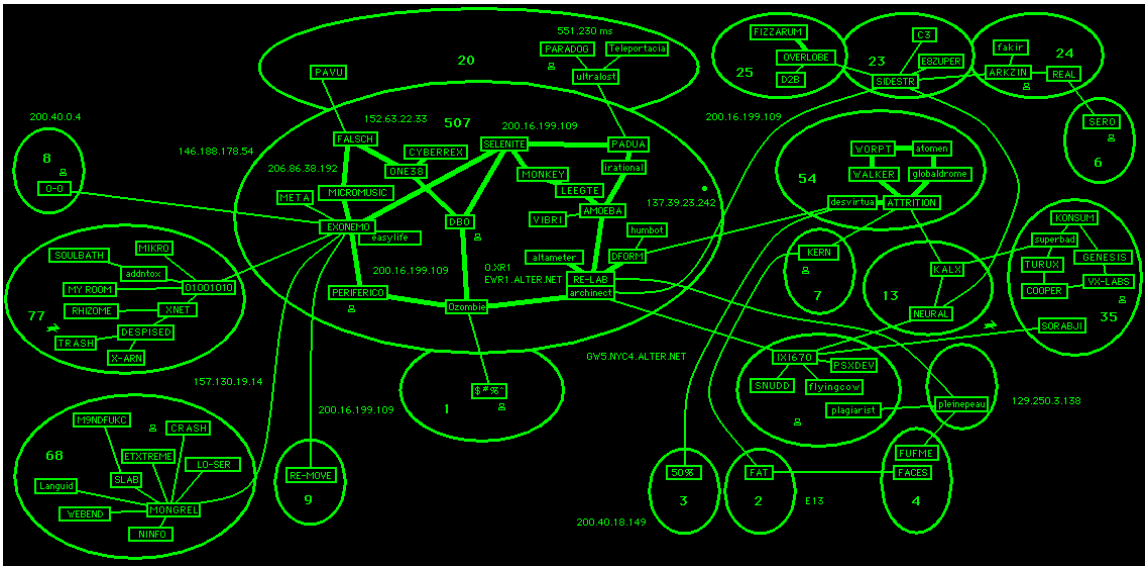

Fig. 1. Image from jodi.org website.

A key theme brought to the fore by the advent of the Internet was pervasive distributed communication. Suddenly we witness a technology that promises, and appears to be capable of delivering, instantaneous, location independent connectivity. There have been multiple responses to the power of mass communication and what it means for our subjectivity, and ideas related to this topic have coincided with the decentered approach to art resulting from the influence of poststructuralism. Obviously, building on the interest in subjectivity vis-à-vis the philosophical and critical

underpinning of the art world, this new paradigm raises important questions. How does power shift? Will this medium be used to monitor us? What does this shift do to our conception of identity? Since communication is fundamental to art, how does it adapt? These questions have led to the development of artworks that can be retrospectively cataloged into themes such as “tactical media”, “telepresence”, “locative media”, “bio media”, and “gaming”. Since gaming very often deals with thematic content that crosses multiple boundaries simultaneously, it functions as a medium that provides a host of opportunities for exploration.

One significant work, is *Listening Post* [40] (Fig. 2), by Ben Rubin and Mark Hansen. While the works of net.art were primarily restricted to the computer monitor, this project uses the Internet by sampling conversations on newsgroups, web forums, chat rooms and other public forums and brings them into an exceptionally powerful installation environment. Suspended LED displays are used to visualize fragments of the text, which are programmatically cataloged into themes. As portions of text stream from display to display, an ambient soundtrack plays as a voice reads each fragment preceded by a repeating phrase such as “I am” or “I love”. The resulting sentences, such as, “I am cold”, followed by, “I am 50 miles away”, followed by some other random selection of text is metaphoric. The textual juxtapositions, the monotone recital of the phrases, the mood established by the aural loop, and the mesmerizing flickering of the displays create an aesthetic experience, that for me, signals the unified depth of experience which can be achieved using digital mediation. It also reinforces the fact that

viewing work in the form of still imagery and reading it descriptively in text does not serve experience-based art well.

Fig. 2. *Listening Post* installation view at The Whitney Museum, 2002.

Tactical media takes its cue from the socially engaged work of the sixties. Of course, since the invention of the printing press, artists have use new technology to subvert the power structures that are slow to respond to the changes introduced. Recognizing the power inherent in mass communication, and taking advantage of the affordability of the new technology, some artists use the tools to subvert power. Krzysztof Wodiczko appropriates architectural facades and monuments and converts them to backdrops for slide and video imagery that reveals their true role in the perpetuation of hegemony [41] (Fig. 3). His themes are often homelessness, oppression of human rights, and violence. Some works attempt to engage community involvement

by creating portable shelters and other custom designed objects to facilitate the disadvantaged.

Fig. 3. View of *If You See Something* at Galerie Lelong, 2005.

Perhaps even more “tactical”, The Yes Men are a collaborative that attacks corporate power by making apparent the hypocrisy of corporate actions. They instituted a series of actions targeted at the Dow Corporation. Initially they issued a press release, pretending to originate from Dow, sarcastically outlining why Dow is not responsible for compensating the victims of the disaster in Bhopal, India. Among other actions, such as creating official appearing websites, such as dowethics.com, and making appearances at Dow board meetings, their largest success was in duping the BBC to broadcast a live interview with a person claiming to represent the corporation[42] (Fig. 4). In the

interview, broadcast around the world, “Dow” officially took responsibility for the disaster and claimed they would design an ethical plan for compensation of the victims and remediation of the site. While some would argue that this tactic does not solve problems, art has never been a domain intended to produce solutions. As an artwork, the Dow projects performed exactly as intended, increasing awareness, and bringing important issues to the forefront of cultural awareness.

Fig. 4. Still from BBC broadcast of the Dow project.

A number of digital media works can be described as addressing issues of telepresence. Of course, these works were not the first to consider long distance communication in the production of art. Orson Welles’ *The War of the Worlds* (1938)

could be considered an early progenitor, as can Lazlo Moholy-Nagy's *Telephone Pictures* (1922); works created by a sign painter in response to the artists' telephoned commands. Joseph Kosuth, James Lee Byars, Roy Ascott, and many others took advantage of the new telecommunications technology. In the late 1970s Kit Galloway and Sherrie Rabinowitz developed what they called "Aesthetic Research in Telecommunications". The project *Hole-In-Space* (Fig. 5) was perhaps their most successful project, creating a televisual link between New York City and Los Angeles. People on the streets of one city could view into a storefront window and interact with someone on the other side of the country, in real time. With the pervasive availability of web cameras, it is hard to imagine what a shock this type of interaction created back in 1980[43].

Fig. 5. View from street as people interact telepresently.

With the advent of the Internet, projects such as *Telegarden* (1995)[44], by Ken Goldberg, where an Internet controlled robotic arm controls the destiny of the plants confined to a terrarium, are made possible. Eduardo Kac's 1999 *Uirapuru*[45] connected a local installation consisting of an artificial flying fish and a rainforest filled with Amazonian birds with a website that allowed visitors to interact with a local Brazilian myth (Fig. 6). What he called "pingbirds" chirped based on a measurement of the ping delay time as messages were sent to servers located in the vicinity of the Brazilian rainforest.

Fig. 6. Installation view of *Uirapuru*.

Perhaps one of the most active themes in recent years has been in the realm of work called "locative media." Combining the communicative power of the Internet with the availability of affordable Global Positioning Satellite (GPS) and cellular telephone access, artists are creating works that unite people and places from diverse

environments. C5 is a collaborative group based at San Jose State University. Their work includes the creation of a large landscape database they call the "Landscape Initiative". Over the years they have developed a number of visualizations of topographies derived from their database. In 2005 they created *The Analogous Landscape: Rim of Fire* project (Fig. 7). "The objective of *The Analogous Landscape: Rim of Fire* project is to develop inferencing techniques for navigation of terrains of similar characteristic. At issue is whether navigation paths can be transposed by analogy on a selected terrain's other."[46] Using technology they have developed, they find paths across geographically distant terrains that are numerically similar. For example, they plotted a path that correlates The Great China Wall across southern California.

Fig. 7. Installation view of *The Analogous Landscape*.

Another project, *PigeonBlog* [47] (Fig. 8), combines GPS technology with a tactical media disposition. A blog-style website receives real time locational and environmental data from a series of pigeons that are fitted with air quality sampling devices and GPS transmitters. The artists determined that the sampling methodology used by government monitors averages results in a way that causes certain areas to be woefully underrepresented. Many monitoring stations utilize stationary towers located in low traffic, less pollution intense areas, obviously moderating significantly elevated air quality problems exactly where people live and breathe. Even though the samples are averaged over distances between towers, the results do not accurately reflect local conditions. The pigeons are dispatched to the target areas and retrieve samples that reflect the actual, local, air quality measurements. These results are tabulated, categorized by location/release event, and "blogged" on the *PigeonBlog* website. The public pigeon releases serve to publicize the importance of local environmental issues as well as make the information publicly available via the Internet.

Fig. 8. Pigeons fitted with sampling transmitters.

At Conflux 2006[48], which is a conference devoted to locative media, there were over 90 participating projects. One project that has been garnering interest is *The Milk Project* [49] (Fig. 9). The artists provided GPS devices to a set of geographically distributed people involved in the "milk trade." They created a website that documents the production of cheese, from milk produced in Latvia, to its preparation and

distribution in The Netherlands. Tracings of the distribution channels are accompanied by interviews with the participants as they describe their activities.

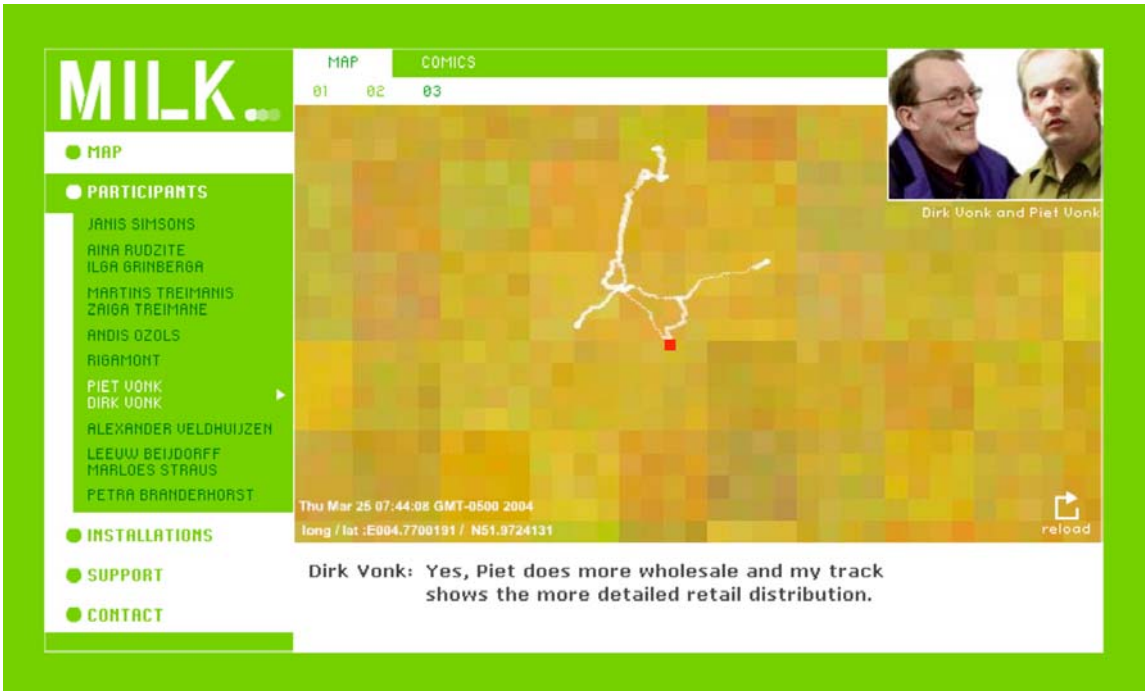

Fig. 9. View of a GPS plot of a portion of the distribution channel.

Works such as these often have a strong community aspect in addition to the action itself. Using the model of the Situationist dérive, they create circumstances that provide the opportunity for the experience of art. The artist becomes a director, of sorts, whose role is to coordinate and provide structure for the event. Nicholas Bourriard would call these works of Relational Aesthetics[13], Michael Lingner uses the term "post-autonomous" art[50]. Kac discusses them as "dialogic" works descended from the ideas of Mikhail Bakhtin[51]. With varying distinctions, they are all describing a change in the subjectivity of art where communication with the viewer/participant takes precedence over the classic modernist autonomous author or object. Here the role of

communication becomes important, that the artist facilitates the dialog. Many of Sal Randolph's projects epitomize this concept. Her project Free Money[52] is an ongoing work where she attends events and gives people the choice of $20 to keep or $100 to give away. She creates a sort of treasure hunt by stashing gold envelopes containing money and imprinted with the Chinese character for good fortune. As witness, she collects the stories and experiences that occur as a result of her intervention (Fig. 10).

Fig. 10. Envelope with free money.

Responding to the impact of biotechnology, a new form of digital media art described as Bio Media, or Bio Art, has begun to develop. Just as he influenced the field of telepresence, Eduardo Kac has played a significant role is this area of exploration. His perennially controversial *GFP Bunny*[53] is certainly one of the best known and

earliest works in the field. In 2006, a collaboration between Bioteknica and the Tissue Culture and Art Project exhibited *Biotechnica: Terratological Protoypes*[54] (Fig. 11) at the International Symposium for Electronic Arts 2006[55] exhibition in San Jose, CA. They describe the work as a,

> *complex installation, including functional laboratory equipment, a free standing tent, and a video work, all in support of a single tissue culture sculpture - a Teratological Prototype. Developed with Oron Catts and Ionat Zurr, the prototype consists of a P4HP bioabsorbable polymer scaffold sculpted in the form of a teratoma, and seeded with mammalian cells - growing live in the gallery environment. This work mobilizes the notion of remixing the laboratory environment as a critical turn in creating an interface between non-specialists - and 'real' and mediated representations of the laboratory.*

Recreating the laboratory environment, the installation becomes a performance where participants don biohazard suits while interacting with living cells. The scenario cannot help but conjure a sense of responsibility and fear with regard to the direction technology is headed. How far will we go if given the power to directly modify and create biological matter? These projects blur the line between science and art as they further question our notions of subjectivity and question our understanding of the very meaning of life.

Fig. 11. Installation view at ISEA 2006.

The video game has become a popular form for exploration in the arts. I will address this more fully in Gaming as an Aesthetic Experience, and will present several works that define the context here. As mentioned earlier, Paul identifies “gaming” as a theme in her taxonomy, but acknowledges that there is diverse content. Indeed, there are a number of “games as art” projects that deal specifically with “game” and its relation to art and culture, and just as many that deal with broader themes that extend beyond gaming. Of course, one could argue that games such as *Myst*, or *The Sims* rise to the level of art, with its depth of beauty in the former, or the introduction of non-violent community in the latter. In this discussion I will consider works that were created with

the primary intention as works of art. These works tend to be created by people who consider themselves primarily as artists and work singularly or in collaboration with small groups.

As of early 2007, the website rhizome.org, which documents new media art via its "ArtBase", lists 149 projects that reference the keyword "game." There are certainly more than that, and while there is great diversity in terms of content, there are perhaps 15 that are consistently mentioned or shown as part of larger exhibitions. I will mention several of the most popular to establish the context of current practice.

One of the early artists working with video game technology was John Klima. In 2000, he created *ecosystm*[56]. The 3D engine is used to produce a joystick navigable world that contains flocks of birds that swarm around trees representing the leading market index of various countries around the world. As the market index fluctuates, the number of tree branches varies to match. The population of any particular flock is tied to the valuation of a country's currency. In this manner, the virtual world becomes a reflection of the global economy (Fig. 12).

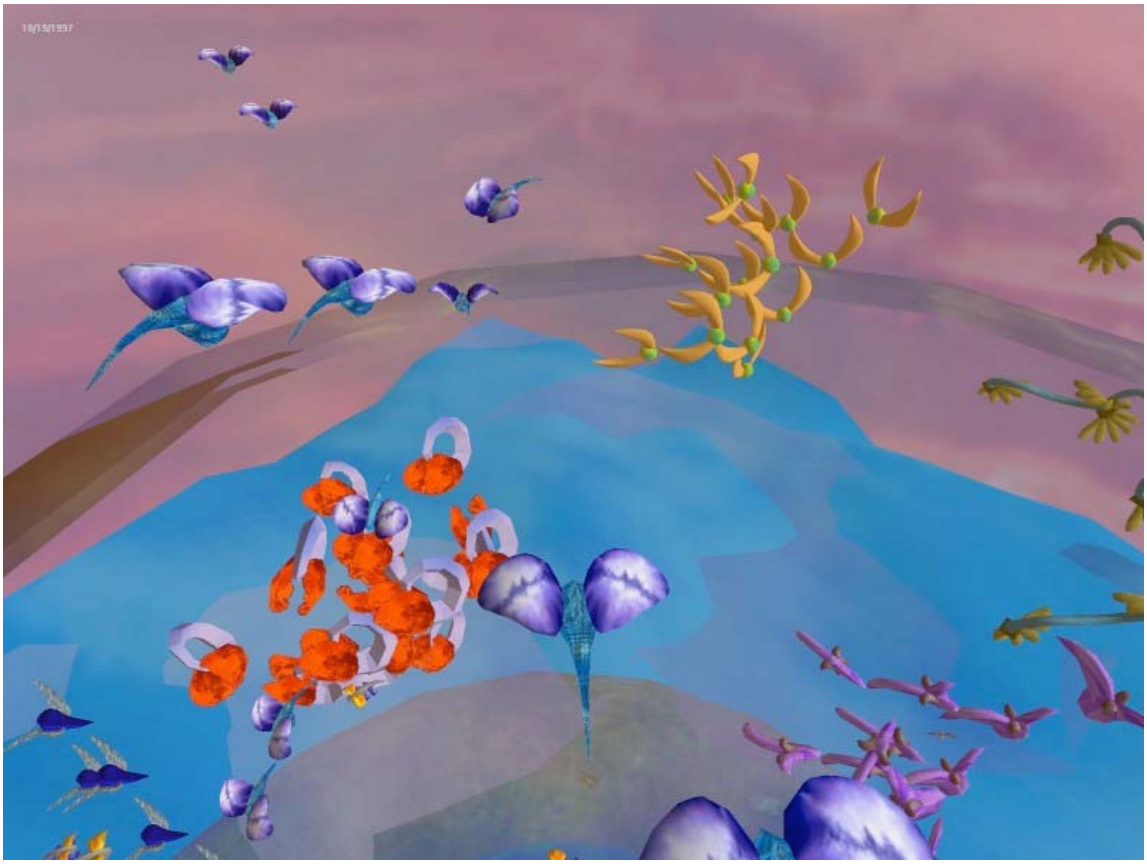

Fig. 12. In-game view of *ecosystm*.

A number of artists working in the realm of video games have been interested in reworking obsolete gaming consoles or modifying games from the early history of the video game. This might be a result of nostalgia, or it may be a symptom of Krauss' claim, extended from Benjamin, that in obsolescence these media reclaim some of their aura. This low tech approach can be seen in the works of jodi.org's, *Jet Set Willy Variations ©1984*[57], Cory Arcangel's, *Super Mario Clouds* [58], Vuk Cosic's *The ASCII Unreal* [59] and Thomson and Craighead's *Triggerhappy* [60]. *Triggerhappy* critiques the subjectivity of the participant and riffs on the post-structuralist deconstruction of language. The game becomes an alternative reading of the "text."

The artists explain, “triggerhappy becomes a folly. A self-defeating environment looking at the relationship between hypertext, authorship and the individual.”[60] *Triggerhappy* appropriates the classic video game *Space Invaders*™[61], combines it with Foucault’s *The Death of the Author*[62], and converts it from a mindless pastime to a commentary on subjectivity (Fig. 13).

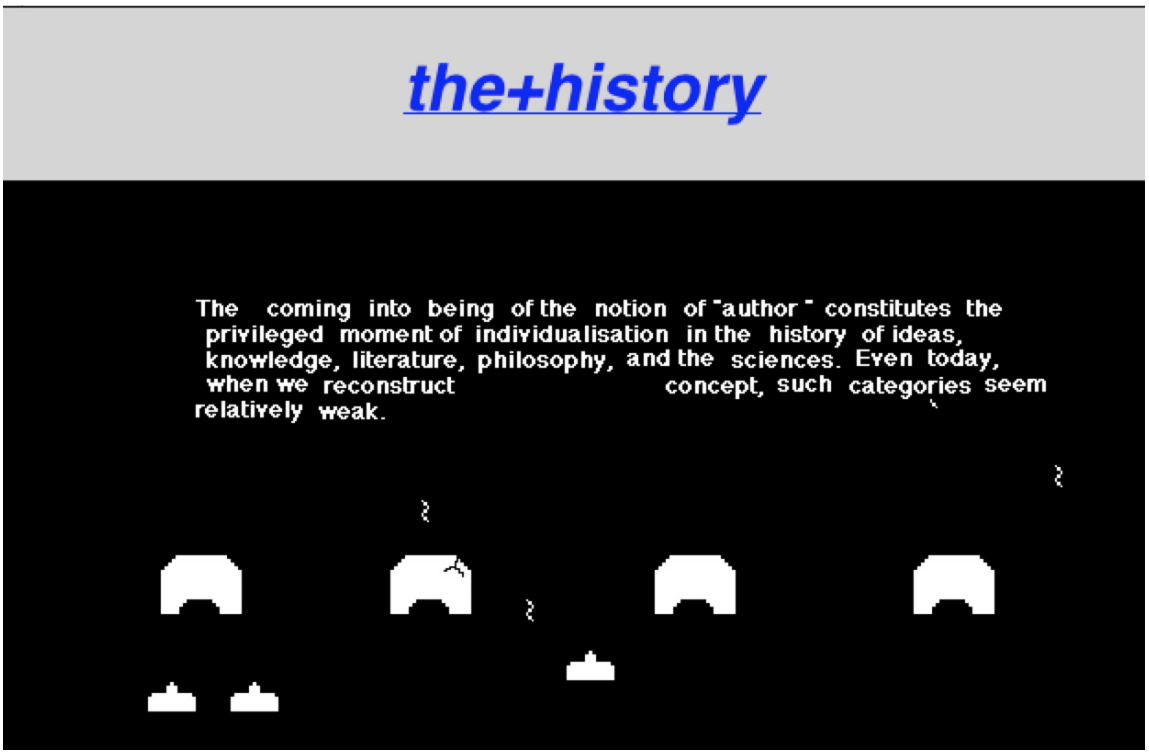

Fig. 13. Screenshot of Thomson and Craighead's *Triggerhappy*.

Another strategy commonly used in video game based art, is the “mod,” slang for modification. Game developers often publish a publicly accessible set of tools that allow the game player to customize portions of the game. Perhaps the most successful of these is Anne-Marie Schleiner’s *Velvet Strike* [63]. Here, the artist has added

functionality to the commercial video game *Counter-strike*™[64], which subverts the overtly propagandistic message embedded within the game. Instead of supporting the mission to kill terrorists and Osama Bin Laden look-alikes, the player engages in the placement of in-game graffiti or "sprays." These graphic elements contain messages such as "Make love, not war" and other slogans that are "counter" to the concept of the game. (Fig. 14)

Fig. 14. Screenshot showing "spray" tag.

Yet another type of video game attempts to engender a physical response from in-game activity. *Painstation* [65] consists of a custom designed console, similar to the tabletop games common in arcades. One hand operates a trackball that in the manner of *Pong*™[66], controls a "tennis racket." This game, though, inflicts pain in the loser when the opponent scores points. Both contestants' free hand is placed on a surface mounted grid device, which delivers an electrical shock based on the performance of the

participant. Conceptually similar, *Tekken Torture Tournament* [67] (Fig. 15) by the collective artist group c-level, inflicts an electro-shock via a series of armbands worn by participants. In what becomes a happening, or performance, groups of people experience the virtual environment, made real, as they play the game, *TEKKEN 3*™[68].

Fig. 15. Participants playing *Tekken Torture Tournament*.

Perhaps a commentary on the "art game" or the institution of art as defined by the white cube of the gallery, Pierre Huyghe's *Atari Light*[69] is a work that also references the classic video game, *Pong*™. The ceiling of a large gallery space is composed of light tiles that correspond to the pixels that would ordinarily constitute the screen of the video game (Fig. 16). His work references issues of copyright and identity and draws on

our relation with popular culture in a form that asks us to question what is real and what is fiction. His piece, *Two Minutes Out of Time* [70] features a manga [71] character, whose copyright, he and partner Phillipe Parreno purchased and "freed" from a life as a cartoon character. His video *Blanche Neige, Lucie*[72] is an interview with a French woman who was the voice of Disney's *Snow White*, and documents how she reclaimed her voice from the multimedia giant.

Fig. 16. Installation view of *Atari Light.*

Of course, the current art-historical context is not simply defined by the types of work created by artists. A number of broader concepts have been at the core of debates

concerning cultural production via digital means. A central point of division is related to ownership. The desire to possess an object of value that can be exploited for financial gain has not diminished within the art world, much less the virtual world of the Internet. Two opposing viewpoints illustrate this battle. On the one side, are large corporations that desire to protect their assets by virtue of what is euphemistically called "Digital Rights Management" (DRM). On the other side is the Open Source movement, which claims that by loosening control over digital production, an environment can be created which is ultimately more productive, creative and democratic. In order to protect their software or digital assets, the former use security techniques to limit the availability of their products. For example, the Microsoft XP™ operating system contains software that checks to see whether a person has modified their hardware in such a way that would indicate to Microsoft that they have moved the software to another computer without permission. Alternatively, the Open Source Linux operating system is "free", and places no hardware-use limitations of the end user. Of course, this does not imply that the system is free of ideology. We will discuss this later. Open Source applications are exactly as the name suggests, open to modification and inspection by the user. The user can access the code base and in keeping with the licensing agreement provided with the source, can use the source to create derivative work that more closely approximates their needs.

There is a symbiosis of ideology between artists who value dialog and community action, rather than the control (especially with respect to pricing) that occurs when dealing with a closed source application developer. Very often, a software developer

will price their commodities based on what they perceive to be their primary clientele, business. They often do not recognize that a user may only need to use their software a single time, or sporadically, and cannot justify the expense. They certainly cannot conceive an artist using their software to create something with no monetary value. As a result, open source software has been an invaluable resource for the digital media artist. Practically every type of software has a corresponding free alternative that is adequate for the needs of the artist. More importantly, if an artist can program, the inner workings of technology, in the form of basic libraries and interfaces, are open for exploration and customization. Basic networking protocols to complete game engines are available. Artists can utilize these resources to create applications unimagined or deemed worthless by corporate standards. Many of the previous works cited would not be possible were it not for the availability of open source models of digital distribution and use.

Concomitant with the development of Open Source, digital media artists are increasingly working with code. The Whitney Museum's digital media web portal, Artport, hosted an exhibition CODeDoc, organized by curator Christiane Paul, back in 2002. In this exhibition, artists not only published the visual results of their work, but also released the code. As Paul points out, "Code has also been referred to as the medium, the 'paint and canvas,' of the digital artist but it transcends this metaphor in that it even allows artists to write their own tools--to stay with the metaphor, the medium in this case also enables the artist to create the paintbrush and palette."[73] Sites such as runme.org and selectparks.net contain hundreds of examples of code-based or "software art" projects. Perhaps the poster-child of software art is Alexander Galloway's

Carnivore [74]. Using the distributed authorship model promoted in Open Source software development, *Carnivore* is an application that sniffs network traffic and feeds clients, which provide customized visualizations of the data. Anyone can create their own *Carnivore* client to produce his or her own interpretation of network data.

Artists are not concerned with formal categories, or to what medium they belong. They will use whatever means is necessary to accomplish their conceptual goals. Carsten Höller's flashing wall of light bulbs, *Lichtwand*[75], Gary Hill's corridor of interactive video, *Tall Ships*[5], Bruce Nauman's *Lip Sync*[76], Marcel Duchamp's marvelous Rotoreliefs[77], and many others, utilize, if not computers directly, some form of electronic or electromechanical mediation. The 1938 International Surrealist Exhibition in Paris was to contain interactive lighting that responded to the approach of viewers, had Man Ray managed to get it working before the opening [78]. As Krauss suggests, we truly are in an age of post-media.

You can see that there is an exciting diversity of work created using technology in some form. To define these works as a medium serves only to separate the work from the greater dialog of art and does harm, not only to digital media art, but also impoverishes the diversity of art practice in general. Today, the medium is not what is most important, but the concept and contextual relations that define the work. What does the work say and how does it engage with the dialog of art and culture. It is without question that the computer will affect culture, and as a cultural enterprise, art will address the changes that result.

There are many artists and works that are in some sense, disconnected from the greater dialog of art and are not seen to contribute to this legacy. This does not imply that the work is not significant to its creators, or that it does not engage an audience. Indeed, history is witness to the fact that upon reflection works created "outside" and with little awareness of history, philosophy, or art theory, have contributed significantly to our understanding. Technology opens the door to the interaction and participation of a broader range of people than are typically involved with art using traditional media. Collectively, this diversity is a good thing that will enrich and broaden our art and cultural knowledge base, but it is not without conflict and confusion.

During the last several years, there has been a great deal of work produced that goes by various terms such as "generative art", "algorithmic art", "aesthetic computing" and other terms. Mathematicians, physicists, computer scientists, and others who can now use the computer to graphically visualize formulas and routines in interesting ways often create this type of work. Much of it is quite beautiful, in the manner of 1940s Abstract Expressionist painting. Some of the work is interesting from a scientific point of view because it allows us to visualize natural algorithms and patterns that are otherwise unseen. Unfortunately, this work is often fundamentally disengaged with the history, philosophy and critical theory of contemporary art. Of course, its adherents make claims, typically calling up the name of Leonardo as a paragon of the unity of art and science, that the work is significant. I will admit that the ability to visualize phenomena self-reflexively says something about the medium of computing. Perhaps it provides a new appreciation of our physical world and its complexity and inherent beauty, but this

is territory that has been exhausted in the field of art. We know where autonomous art forms lead. The dialog of art has traversed thought from works whose focus was "aesthetic" (as characterized by beauty) to the "anti-aesthetic", to a more recent turn that attempts to reconsider "aesthetic" in broader terms that values the conceptual component of experience. While often well crafted, work that is purely self-reflective and merely attempts to illustrate nature (algorithmically or otherwise) does not interest me. This is especially the case, given the current social and political climate.

For the artist who chooses to work with digital media, the current discourse is fractured with many competing visions. I believe there is a thread that is developing in the work of current art theory as espoused by Foster, Krauss, Danto and others that opens theory to account for digital media art in thought-provoking ways. I am excited by the continuation of an alternate modernism, descended from Duchamp that does not limit aesthetics to beauty, but also recognizes the conceptual component of meaning. I am excited that there is a growing recognition that art is not limited to singular objects that require galleries or museums for display. I believe this will situate art to engage the viewer in a broader range of physical locations and in unique transformative experiences. With the growing focus on embodiment, I am hopeful that the kinds of experiences we have come to expect from great works of art will be possible in whatever form of mediated experience is developed in the future.

So, as we have seen, the dialog has traversed a lineage from critical modernism to aesthetics as autonomous objects, followed by a fracturing of postmodernism into neoconservative and poststructuralist strains; one concerned with pastiche and the other

critically engaged with context. The aesthetic and anti-aesthetic are beginning to be reconciled as a melding of ideas that recognize and expand the view of aesthetics to include notions of embodiment and negotiated meaning.

I have described the context of this research from a broad, art-historical and theoretical viewpoint. Following this discussion, I approached the context from a socio-cultural perspective, highlighting the interchange between Critical Theory and culture studies. Subsequently, I narrowed the scope to investigate relevant work that describes the flavor of digital media art practice. In turn, this was contextualized with a description of practices, which in my view, are tangentially related to digital media art. With this understanding of philosophy, Critical Theory, history, and art, my goal is to create work that is a synthesis of these ideas, taking advantage of the opportunities presented by this changing, evolving ecosystem.

SCIENTIFIC METHODOLOGY AND ART EVALUATION

Artists have long considered the practice of art a form of research. By iterating through variations of ideas, knowledge is formed that is passed to successive generations. This form of knowledge accumulation is conceived as a dialectic process of give and take. Foster discusses this process in terms of “returns”. Ideas are explored, some fade into insignificance, only to return generations later when they are found to be relevant. A prime example of this process is the work of Marcel Duchamp, whose work was not truly appreciated until the shifts of subjectivity that occurred during the 1960s. This evaluative process works well, and has produced scholarship that illustrates art’s

cogency with respect to culture and advanced thought. As long as artists produce work that addresses the important issues of our being in the world, philosophers and critics will contextualize the work and contribute to the expanding dialog. There are, however, issues with the current system of artistic production and evaluation that have implications for those working with digital media. As mentioned in the introduction, the scale of projects, the collaborative nature of some work, the depth of knowledge required to interface with various disciplines in order to synthesize a cohesive whole, as well as the expectation that a person on the "outside" of a project can effectively evaluate a work is daunting. While not every digital media artwork warrants an in depth evaluation, documentation, and development process, certainly many works do. In particular, works that function at the edge of our understanding of perceptual relations with technology are prime candidates for analysis. Does new media art require a wholesale restructuring of the idea of art as research, or are there elements of the current system than can be incorporated?

Science + Art

The current evaluative framework that surrounds art practice was conceived when painting was the primary form of expression. Without resorting to stereotypes, in this model, an artist begins to paint, and through studio practice, develops a body of work that reflects his or her interests and concerns. The key word, here, is "practice". An artist may iterate through a work innumerable times before deciding a particular piece is complete. Other artists produce work sequentially, with no filters on what is shown and what is not. In either case, once it is exhibited, the evaluation passes to the audience,

critics and curators. Subsequently, the artist will choose to either reject or accept the critique that is received, and decide whether to incorporate the feedback into new work. Through this process, the artist will build his or her own knowledge about themselves, the subject matter, and the place of the work within the dialog of art. In turn, the artists' work informs and shapes dialog, which filters into the greater system and our knowledge as a whole. This is a heuristic system of practice-based research that typifies the current academic model in art schools throughout the world. It works very well for the types of activities and processes utilized by traditional media. Multiple, short duration works can be created that over time build upon each other. While practices vary, and certainly there are extremes, a serious artist working on a painting every day, will typically take less that a month to produce a work. Often he or she will work on several pieces simultaneously to allow for drying time and other practical considerations. The current system works well given these criteria.

As media become less specific, the efficacy of this process begins to weaken. It is one thing to repetitively work with a limited set of media such as oil paint and canvas, and another when an artist is working with the multiple forms taken by a complex digital media installation. Digital media artworks often require the artist to investigate methods and processes from fields outside their area of expertise. It is, as if, the painter were to attempt to reinvent paint or canvas with each new project. For example, an artist may desire to create a work, which requires some component of information visualization. Assuming the artist already knows how to program a computer, she will need to investigate the many techniques computer science has developed for retrieving,

collecting, processing and displaying information. Each of these areas, retrieving, collecting, processing and displaying, are complex disciplines in their own right. It is not always possible to enlist the help of someone willing to collaborate in this situation, especially given the fact that digital media artworks are not typically commercial in nature. This immediately creates a scenario where development time and funding becomes an issue. A work may take months of research and experimentation before this single component of the project is ready to be incorporated. In this environment, there is little room for multiple failed attempts and a heuristic process of creation, critique, and integration. In this scenario, art development begins to be more akin to commercial software development, where periodic user testing is required to validate the behavior of the application. A work is created in stages and submitted to testing. Bugs are identified and improvements are made. Slowly the work is congealed into a whole that is the consummated work of art. Unless carefully planned, the tests rarely suffice as independent artworks.

Is this any different than a painter showing a work-in-progress to a fellow painter in order to get preliminary feedback? The primary difference is the amount of time committed before feedback, the risk involved in needing to start over, and the question of whether we truly know if the work, as a whole, will function as intended until viewed in an art context. Of course, context is a whole other issue. What of the context if it is something other than a gallery? What is the response of a viewer when interacting with an artwork in a distributed environment via their home computer? Assuming people desire to encounter rich experiences virtually, is there a place for art in these

environments? If so, what changes and how? Assuming critics and theorists should not be required to have advanced knowledge about all areas of science and technology, how might we create a discourse, tailored to the unique needs of digital media artists? Are the requirements of digital media artworks sufficiently different from commercial applications? Obviously, digital media art presents new challenges to old models of practice, and the model of research should adapt to meet these new conditions.

I desire a discourse that recognizes my desire to communicate aesthetically with a viewer. I desire a discourse that balances aesthetic communication with an understanding of the mediation of digital processes. I want to read about how another artist integrated a video game engine in their work and overcame the problem that games are typically designed for repeated use, rather than short duration experiences. I desire a discourse that combines a conceptual depth and understanding of artists' intention with a practical evaluation of how those intentions were respected in implementation. I do not want a discourse built around rules, but a discourse that values understanding rather than "knowing".

This type of research should be considered in conjunction with traditional methods of evaluation in order to maximize our capability for understanding. Without diminishing the importance of critics and the system of curation and exhibition, digital media artists should begin to supplement these practices and engage in forms of research once considered the exclusive domain of science. We need to carefully choose methodologies that respect the unique goals of artists and be willing to modify techniques to suit. We have to be very careful not to fall into the trap befallen other

disciplines that have attempted to integrate science in the understanding of complex human relations. For example, the field of architecture has long grappled with the relationship of viewer and space. A form of architectural research called “evidence based design” is a perfect example of a model to be avoided. Evidence based design (EBD) is becoming popular in the area of healthcare design. Kirk Hamilton defines EBD, partially in terms of the architect: "An evidence-based designer, together with an informed client, makes decisions based on the best information available from research and project evaluations." [79] Scientific research is conducted that identifies various human responses to environmental conditions and the results of this research are used in the design of healthcare structures. The goal is to improved medical outcomes by providing “better” design. The premise is that the human body responds to environmental factors and these factors can be controlled through architectural design. A better medical outcome is related to features of the architectural environment, and therefore a “better” design is one that produces better medical results. Using positivist methodology taken from science and applying the technique to the design of complex human relations, such as that embodied in the relationship between persons and architecture is naïve. And of course, this kind of quantification of design inevitably leads to “certification” that design follows particular guidelines [80]. Roger Ulrich has performed studies suggesting, for example, that patients have better outcomes when exposed to views out of windows [81], or view subdued, representational imagery of nature rather than abstract art [82]. Sara Marberry references *Coping with ADD: The Surprising Connection to Green Play Settings* [83] to suggest that the use of the color

green provides benefits in creating spaces maximized for attention, such as offices, factories and schools [84]. EBD suggests that design characteristics can be determined empirically. Imagine a color-coded world where every function that someone deemed attention worthy is painted green! Is that good design? This is a classic misapplication of positivist ideology to human perception. In order to define rules, traditional scientific methodology strips away context in order to simplify the object of study. In so doing, the very dynamic of complex human relations is lost. One cannot approach complex phenomena such as design, and especially something as complicated as art, through a process of simplification.

"Interdisciplinary" and "multidisciplinary", are overused buzzwords in academia. Everyone recognizes the need to work together and take advantage of knowledge produced by other professionals. The range of activities that can be considered to fit under the umbrella of these terms is broad. At a minimal level, a researcher might ask for input from a colleague in another discipline. At the other extreme, a full-scale partnership in the development of work might be initiated. Based on the conception of what constitutes multi or inter-disciplinary action various problems can arise. Rarely do the interests of parties with different agendas coincide. In the realm of art, this is particularly true since art is generally thought of as concerned with beauty and "the appearance of things". Practical minded scientists will desire to collaborate with artists in order to make their work appeal to a larger audience. Because artists in academia typically have MFA degrees rather than Ph.Ds, they are often considered somehow "less academic" than their collaborators. In an ideal scenario, each participant in

collaboration is valued equally and there is mutual respect for what each other can contribute to the work. At a recent panel discussion, entitled *New Media Futures: The Artist as Researcher and Research as Art in the 21st Century* [85], Jon Ippolito described three ways that artists can engage with research. One possibility is to live with the rules of science, mimicking or forcing art to exist within empirical models. This type of relationship is not attractive, because art would loose its meaning in the process. A second possibility is to collaborate with science. This, unfortunately, is not a "symmetrical relationship" for the very reasons mentioned above. Too often, art is subsumed to functionalism or worse to appearances. A third possibility is for artists to begin to engage in actual research. This is described as practice that is continuously developed. This is the hardest path to follow because art is limiting, but with appropriate methodology and a constant sense of vigil over the requirements and characteristics of art, this conception has the most promise.

Research in art is intended as a more formalized approach to the documentation of knowledge gathered through committed art practice. The goal is not to quantify but to qualify knowledge. Rules for "good" or "effective" art destroy the very concept of creativity, and thus art itself. Research in art, must also guard against directing energy towards a functionalist, utilitarian conception of the field. Some claim there are healing attributes that can be ascribed to art and utilize art in the practice of "art therapy". Perhaps that is true, but in terms of art research, it might be better located in the field of medicine. The value of art does not reside in its utility and traditional scientific thought often leads to a pragmatic view of the world that only places value on practical use. Art

research is better served with a focus on the intentionality of the artist, the relations of the artist, work, and viewer/s, and understanding the process of mediation. Findings should never be considered prescriptive or generalized to other art works.

There are models of this type of research that already exist in science. The general term “qualitative analysis” is often used to describe research that does not feature quantitative methods. Often dismissed as “soft science” by those who practice traditional methods, qualitative analysis has become accepted in areas of science that must deal with complicated phenomena such as social studies, ethnography, education, information studies and others. Naturalistic Inquiry is an umbrella term, made popular by Yvonna Lincoln and Egon Guba [86], that encompasses multiple forms of research given names such as post-positivist, ethnographic, phenomenological, subjective, case study, qualitative, hermeneutic, and humanistic. While each of these subtypes have specific interests and characteristics, Naturalistic Inquiry (NI) provides a flexible way of conceiving of research that allows the specific methodology used to be tailored to the specifics of a project. NI does not impose a set of rules, but nevertheless proposes techniques and methods that lend academic rigor to the process.

It is not my intention to detail all facets of NI, but there are five key elements that direct research and are important to understand with relation to the research embodied in this dissertation, and to the proposal that NI is appropriate for art research in general. These “axioms” are in stark contrast to those that frame traditional positivist research.

The first axiom is with regard to the nature of reality. In the positivist paradigm, reality is single, tangible, and fragmentable. In the naturalistic paradigm, reality is

multiple, constructed, and holistic. I believe that this model of reality more closely aligns with our experience of the world, and art in particular. The second axiom deals with the relationship of the knower to the known. In the positivist paradigm, knower and known are independent. There is a duality between the two. This is often called the "cartesian duality". In the naturalistic paradigm, the knower and known are interactive and inseparable. This characteristic of NI is symbiotic with the latest developments in cognition and embodiment. The third axiom considers the possibility of generalization. Positivist science focuses on time and context-free statements of truth. These are also called universals or nomothetic statements. The naturalistic paradigm proposes that knowledge is time and context bound, only working hypotheses are possible. In other words, we can only make idiographic statements of knowledge. This relationship to knowledge is in keeping with the lessons of postmodern theory and posits a dynamic relationship to knowledge that is a better fit with respect to art. The fourth axiom is related to the issue of causality. In positivist thinking, causes are real and precede or are simultaneous with effects. Action and reaction are basic tenets. The naturalistic paradigm assumes that states are in flux, there is no way to distinguish cause from effect. This viewpoint recognizes the complexity and interrelatedness of interaction, which, again, more closely fits the behavior we see in the field of art. The final, and perhaps most significant axiom is related to the role of values. Positivism claims that inquiry is value-free. It proclaims that the investigator can attain a state of objectivity. The naturalistic paradigm accepts that inquiry is always value-bound. Inquiry is always influenced and filtered through the value system of the investigator. Rather than pretend

to be objective, NI is powerful for the very reason that it places the investigators biases in the open. We gain understanding by viewing phenomena through the experience of the investigator, complete with the context within which the object of study is located [87].

With this set of criteria defining an approach to inquiry, one can gain knowledge without the need to identify truths or distill complex, perhaps unknowable, interactions to simple reproducible “facts”. Inquiry becomes as much about process as about the end result. This form allows the artist to act as primary investigator, and participate in the research process such that insights only the creator can recognize do not go unnoticed. In many ways, this approach mirrors the practice of art and suggests the two might work in tandem to allow us to know more about the world around us.

NI encourages a holistic approach to inquiry that complements the fundamental structure of society as a complex system of communication and information flow between forms of representation. Information technology and the interconnected condition of society are changing the ways knowledge is produced. There are a number of varying attempts to come to grips with the new technological environment, each of which would benefit from inquiry conducted using principles of NI. Several variations of the word “disciplinary” describe the interconnected interests of once separate knowledge practices. The previously mentioned ecosystems approach is another conception of relationships that define a melding of complex inter-related knowledge. In the following sections I will first discuss ideas related to the term “transdisciplinarity”

and in the following section, further discuss *Playas* with regard to the ecosystems approach.

Transvergence

The *Playas* project was installed at the 2006 International Society of Electronics Artists (ISEA) Symposium in a category of works called "Transvergence." Professor Rachel Beth Egenhoefer interviewed the event chair and director, Steve Dietz and Joel Slayton, to get their description of the term "transvergence." [88] Using Marcos Novak's paper *Speciation, Transvergence, Allogensis: Notes on the Production of the Alien* [89] as a point of departure, they resisted a firm definition. Dietz described it as a way of working that, unlike "interdisciplinary," which implies an intersection of disciplines; "transvergence" is more of a way of working "across disciplines" that "perturbs the other disciplines." It can be likened to "transgressive play." As opposed to simply combining objects and things, "transvergence is more about combining processes." Related in many ways to Andruid Kerne's idea of an "Interface Ecosystem" [1] it is a term that does a good job of describing an emerging way in which digital media artists can work within a complex, digitally mediated society. This term is well suited to describing the methods and mindset that informed the creation of the *Playas* project. In particular, I like the way the term suggests ideas related to "emergence", "divergence", and "convergence"; processes often used by artists in the creation of work.

Perhaps the greatest challenge to artists today is brought about by the complexity of working in a fast paced, highly technical society. Digital media are affecting culture at all levels, and the repercussions on society necessarily place the artist at the intersection

of these forms and life. Some artists choose to remain with traditional means of expression, such as painting, while others decide to engage technology directly. Some use the model of Leonardo, as an artist and scientist, to reinforce the modernist "hero" ethic, and expect the artist to invent new forms and technologies. I take a post-structural, post-modern viewpoint, positioning the artist as someone who synthesizes the context of the world in which they operate, placing more value on meaning generated by the viewer/participant. This synthesis view of practice supports the idea of transvergence as a working method to create art. First comes the concept of a work, and then supporting tools and methods are selected, modified, and adapted based on their relationship to the concept as a whole. This way of working presents challenges to artists to maintain a broad awareness of culture and technology and to be willing to research avenues of inquiry beyond their immediate expertise. Often, no single person can possess the range of skills (not to mention time) necessary to produce an idea, and collaboration becomes a valuable means of working. As mentioned previously, from the artists' point-of-view, there are weaknesses in the collaboration model of research. I am currently working at a research-oriented institution, the University of Florida, so as one would expect, there is an emphasis on collaboration. Recently, I was asked if I would be interested in "collaborating" with someone in another area to create animations of a biological process. Of course, the animations would have to be physically correct and "accurate" in representation. The interest of the scientist in this scenario is typically to find a person familiar with digital tools to produce an accurate visualization. This type of request is the result of a conception of art akin to the period of "patronage" during the

early Enlightenment. Artists functioned as artisans in a labor pool for the elite. While the scientist harbors no malice towards the artist, he simply does not understand, nor recognize, the role of art and art practice in society, today. Very often, the scientists' response to the artists' refusal to collaborate in this manner, is that the artist is being elitist. Of course, participating in these types of activities pleases institutions, which don't really understand the distinctions involved, either.

Transdisciplinarity describes an alternative to the other conceptions of collaboration. This mode of working is symbiotic with the modes of practice in art, recognizing little distinction between knowledge gathered via traditional science, and knowledge acquired via art. The term was first used by Piaget in 1970 [90], and considerable scholarship has been devoted to its development in recent years, particularly in light of the demands of technoculture. Again, I am not going to devote this document to an in-depth exploration of transdisciplinarity, but the key ideas have relevance for the type of scholarship that might define practice-based art research.

In *The Potential of Transdisciplinarity* [91], Helga Nowotny identifies that a trans-based practice requires a great deal of patience because, in general, people still do not recognize that science and society are problematic. This accounts for the primacy often given to science, and scientists, when collaborations between art and science are attempted. In his *Manifesto of Transdisciplinarity*, Basarab Nicolescu defines transdisciplinarity as the acquisition of knowledge based on three primary postulates: "1. There are, in Nature and in our knowledge of Nature, different levels of Reality and, correspondingly, different levels of perception; 2. The passage from one level of Reality

to another is insured by the logic of the included middle; 3. The structure of the totality of levels of Reality and perception is a complex structure: every level is what it is because all the levels exist at the same time." [92] These postulates are fairly commonly accepted in art, but are often rejected in science. The differing conceptions of reality make it difficult to engage in fruitful collaboration. Successful collaboration depends on the mindset of the participants and their knowledge of each other's differences and willingness to work around obstacles. As Nowotny puts it, "transdisciplinarity is about transgressing boundaries." Art is also about transgression, whereas science is more about establishing boundaries. Art and therefore art-research is inherently a transdisciplinary practice and can collaborate fully with science when this behavior is recognized and accepted by all participants. Otherwise, conflicting interests necessarily compromise collaborative efforts.

The Ecosystems Approach

In *McLuhan and Media Ecology* [93], Paul Levinson describes the impact Marshall McLuhan had on a group of academics that eventually formed the Media Ecology program at New York University in the early 1970s. Developing McLuhan's thesis that the "medium is the message," they stressed the idea that the technology says as much about who we are as the content itself. Neil Postman, founder of the Department of Culture and Communication describes media ecology as,

> *Cultural meaning is embedded in every level of our communicative process. In the case of media environments (e.g., books, radio, film, television, etc.), the specifications are more often implicit and informal, half concealed by our assumption that what we are dealing with is not an environment but merely a machine. Media ecology tries to make these*

> *specifications explicit. It tries to find out what roles media force us to play, how media structure what we are seeing, why media make us feel and act as we do. Media ecology is the study of media as environments.*

Whether implicitly or explicitly, the Interface Ecosystem builds on this idea of pervasive, culturally determined communication. The ecosystems approach considers the "interface" in its broadest sense, to include not just the ways we relate to software, but also the relationships that are formed between ourselves and the culture within which we are embedded. The interface is a border zone that intermediates between systems of representation [1] that the artist (in this case) assembles and coordinates to create an experience. The assemblage of the systems of representation we manipulate is balanced to achieve an end result.

As seen in the Ecosystem Diagram (Fig. 17), this approach facilitates a holistic view of the creative process that allows the artist to connect heterogeneous methodologies, interpretive frameworks, influences, and effects while maintaining a vision for the work. In the square labeled "Culture" are grouped sets of forces that bear on the ecosystem composed of artist, work and viewer. At the heart of the system, and underlying/informing the design of the components and their interconnections, is the work's situation within culture. Factors beyond the control of the artist are implicitly acknowledged to have an impact on the understanding and interpretation of the received message. Every element in the chain is influenced by the effect of culture.

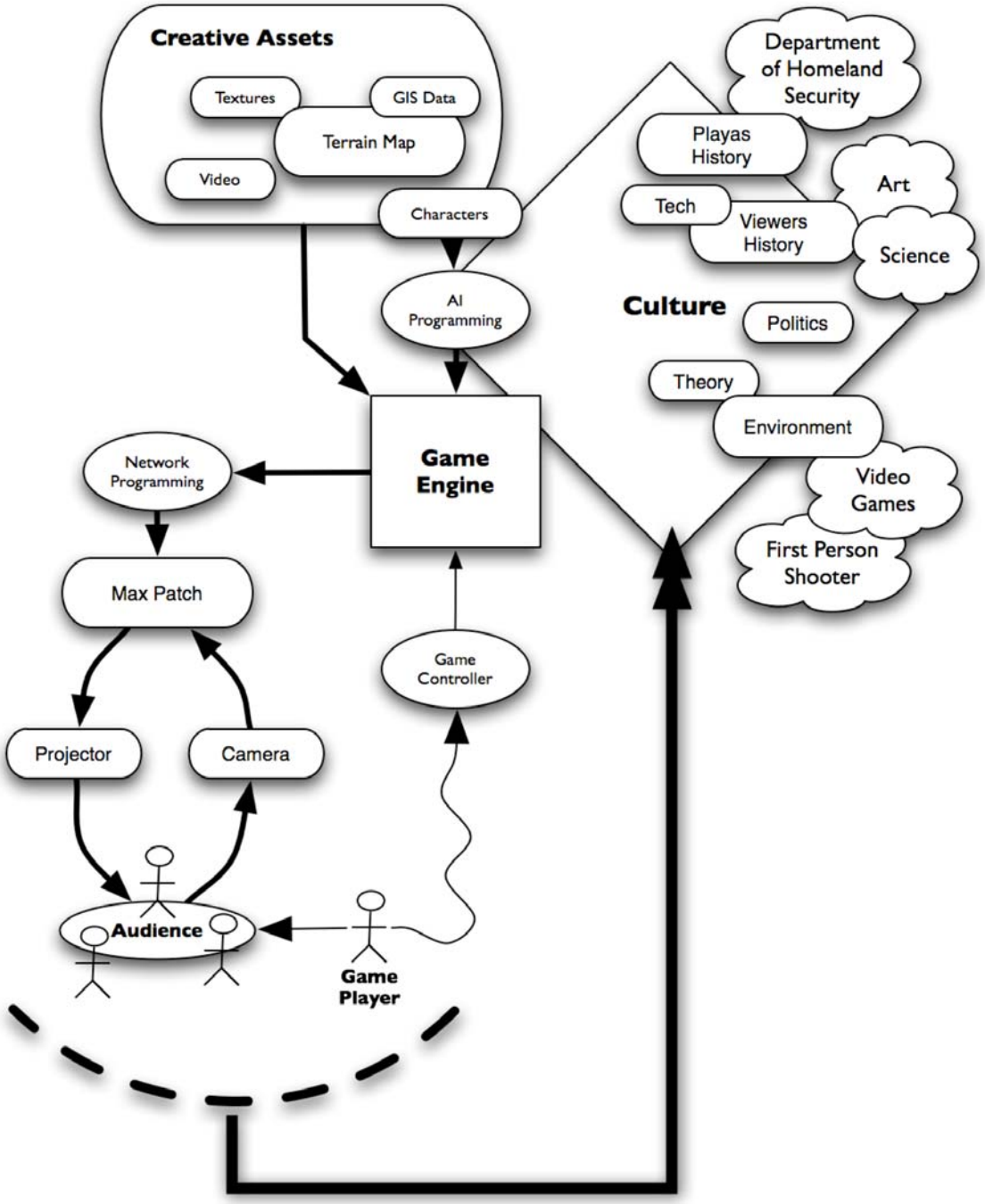

Fig. 17. *Playas: Homeland Mirage* ecosystems diagram.

History, not only related to the work itself, but at every level shapes our constructed meanings. Technology and its capacity to embody history, theory, and meaning, influence the system. The politics that drive technological development place ideological pressure on choices such as software, operating systems, and aesthetics, activating chains of repercussive implications. Choices are made and elements are designed, filtered through the "lens" of the artist. The relations of these elements influence the choice of creative assets that structure the *Playas* video game and artwork. Each of these assets carries cultural information that reflects not only the message of the artist, but also meanings constructed over generations. Even the game character's behavior is filtered through both micro and macroscopic representations of culturally constructed meaning.

The game engine acts as a nexus for the processing of meaning, but it too is dependent on constructed representations and conventions inherited from both past and present. The engine "talks" to the installation environment through a network language (TCP/IP), again filtered and reflective of the software chosen to enact its vision. The installation environment itself is reflective of the ecosystem in general as it provides a continuous, cultural feedback loop between the machine and the viewer, mediated via camera, computer, software, and projector. In turn, the game player recursively provides dynamic input to the game engine, which influences not only the response of the viewers but the game player, herself.

This process of reflection upon reflection, inflection upon inflection, produces responses in the viewer, audience and artist that in turn, travel back through the cultural

ecosystem, producing small perturbations, influencing culture and forever changing the dynamic. Not only is an ecosystems approach a methodology whereby an artist might conceive of his or her relationship to technology and culture, but it is also a model of cultural communication and meaning generation as a whole. The process of creativity becomes a reflection of culture-at-large. With this holistic view comes an implied responsibility, which subverts the tendency of traditional scientific methodology to avoid responsibility for outcomes. As a mode of thinking this approach is compatible with a system of thought that attempts to reconcile the mind and body into an embodied whole and provides a place for art in our lives. Despite the local nature of experience, we exist in a complex ecosystem of relationships that is greater than ourselves, and this system must be studied and understood through the context of a whole.

PLAYAS AS A WORK OF ART AND MODEL OF RESEARCH

In this section I will introduce the case study project, *Playas: Homeland Mirage* and consider the work, generally, in terms of concept as artwork and research practice. Detailed examination will take place in the analysis later in the dissertation, but it is important that the reader have a general indication of the work, its genesis, and its role in research.

Genesis

I recounted earlier my personal development as an artist, but after deciding to return to school to develop my technical abilities, I slowly started to realize the complexities of

working with technology. I began to consider how I might use digital media to extend what I had already been doing via interactive objects and video installation work. For the first year, or so, I spent most of my time becoming comfortable with programming and the basic principles of computer visualization. In 2001, I began to think about developing my masters thesis and started working on a project called, *Public News Network* [94]. *Public News Network* (PNN) was conceived as an artwork that incorporated multiple technologies for the re-visualization of the evening news broadcast. The project is designed as a framework that can be extended over time and modified to incorporate new ideas and developments in technology. The visualization is similar to that of a video game, in that the viewer navigates a virtual space, but the geometry and experience are a dynamic reflection of culture as expressed in the typical evening news broadcast, here in the United States. The work is intended to be a distributed application that provides a downloadable client, which communicates and remains up-to-date via the PNN web server. My original intention was to continue development of this project as part of my dissertation work, however, I changed course when the idea for the *Playas* project arose. I still view PNN as a work in progress, and look forward to integrating many of the things I have learned in the development of *Playas*. In many ways, I view *Playas* as a pilot or component of the PNN framework.

In early 2005, Steve Rowell of the *Center For Land Use Interpretation* [95] came to Texas A&M University as part of the Spring, Artist in Residence (Spring A.I.R) program begun by Associate Professor Carol LaFayette. Her class, *Digital Media: Inspiration and Process* [96] is structured such that participants are encouraged to work

directly with visiting artists for a period of time, typically seven to ten days. During Steve's visit, he introduced us to the story of Playas, New Mexico. The thought of the city's conversion to an anti-terrorist training facility immediately stirred images of computer simulated training exercises and suggested a linkage with video gaming. As an architect, I was also struck by the design of this "company town" in the desert, in keeping with the model of a typical suburban development. It was interesting to me that both of these behaviors are triggered in response to fear. Due to fear, our culture feels compelled to simulate terrorist attacks to presumably prepare for their eventuality. Similarly, for fear of alien interlopers, like minorities, white families flee cities for the presumed safe suburbs. The combination of these thoughts in the form of a video game was subversively enticing. With this basic understanding and the desire to communicate these parallels in our attitudes, *Playas: Homeland Mirage* was begun.

Having conceptualized an artistic direction, I began to think about ways to bring things together. *Public News Network* contained the basic elements of a game engine, which I had written, but it was designed around the generation of procedural geometry, rather than the representational models and texture handling that would be required of something that appeared like a commercial video game. The networking code in PNN was also weak compared to a full-fledged game environment. I realized that a more fully developed engine targeted specifically at video games was needed. Because I believe that meaning is embedded in software, and in our choices of which tools to use, I do not appreciate the proprietary nature of many applications, especially games. I wanted to use a technology that would be cross-platform, and especially wanted a game

engine that had the capability to support network play. After spending quite a bit of time installing and evaluating various open-source and commercial game engines, I decided the Torque Game Engine™ [97] best fit my criteria as the basis for a 3d navigable environment.

Of course, selecting an appropriate game engine was just the beginning of a process of synthesizing ideas and technology. The following chapters will more completely illustrate this process, but I feel it is one of the key issues confronting the digital media artist. When should one use pre-existing tools, and when should one custom program what is needed? What tools are designed and developed in a way that is adaptable for your particular purpose? How can one stitch together applications so they can "talk" to each other? What technologies are available that can act as intermediaries between other applications or tool sets? The digital artist needs to be aware of computer programming at a fundamental level in order to make these evaluations. In many ways, the artist functions as an architect, synthesizing multiple disciplines and behaviors, and marshalling resources with an eye trained on the end result. Science (and the scientist) tends to specialize, narrowing focus and stripping away context to arrive at basic "truths." The artist finds linkages and stitches these ideas back together to find, yet again, another question.

Installation Description

A video game, structured like the typical "first-person shooter" style *Quake*™ or *Doom*™, and presented within an interactive installation environment, is the foundation for this inquiry (Fig. 18). *Playas: Homeland Mirage* is an interactive installation and video game that conflates issues of security within the context of suburbia and our recent obsession with terrorism. Playas, New Mexico was a company railroad town, established in the early 1900s. It was abandoned and then reconstructed as a suburban mining town in the seventies. Abandoned again in 1999, Playas was purchased in 2004 as the site of a training facility for the U.S. Department of Homeland Security. A person plays a video game, in which the goals are to stay alive and explore a simulation of the city. The presence of others within the installation space transforms the game image into a mirage, which is projected into the exhibition environment. Virtual game characters include innocents, terrorists, and Department of Homeland InSecurity (DHI) agents.

As the player explores each home in the Playas construct, historical photographs from the site are displayed. Environmental background information and imagined family scenarios are available on demand. Objects left behind in the abandoned homes trigger video imagery that questions our responsibilities and place in the world. Meanwhile, as other human participants enter the installation zone, a video tracking system monitors them and spawns a new virtual character for each. Innocents and terrorists are visually similar, appearing as civilians, while DHI agents wear SWAT uniforms. DHI agents hunt terrorists, but periodically, accidentally kill innocents, including the game player. For every innocent they kill, multiple new terrorists are spawned.

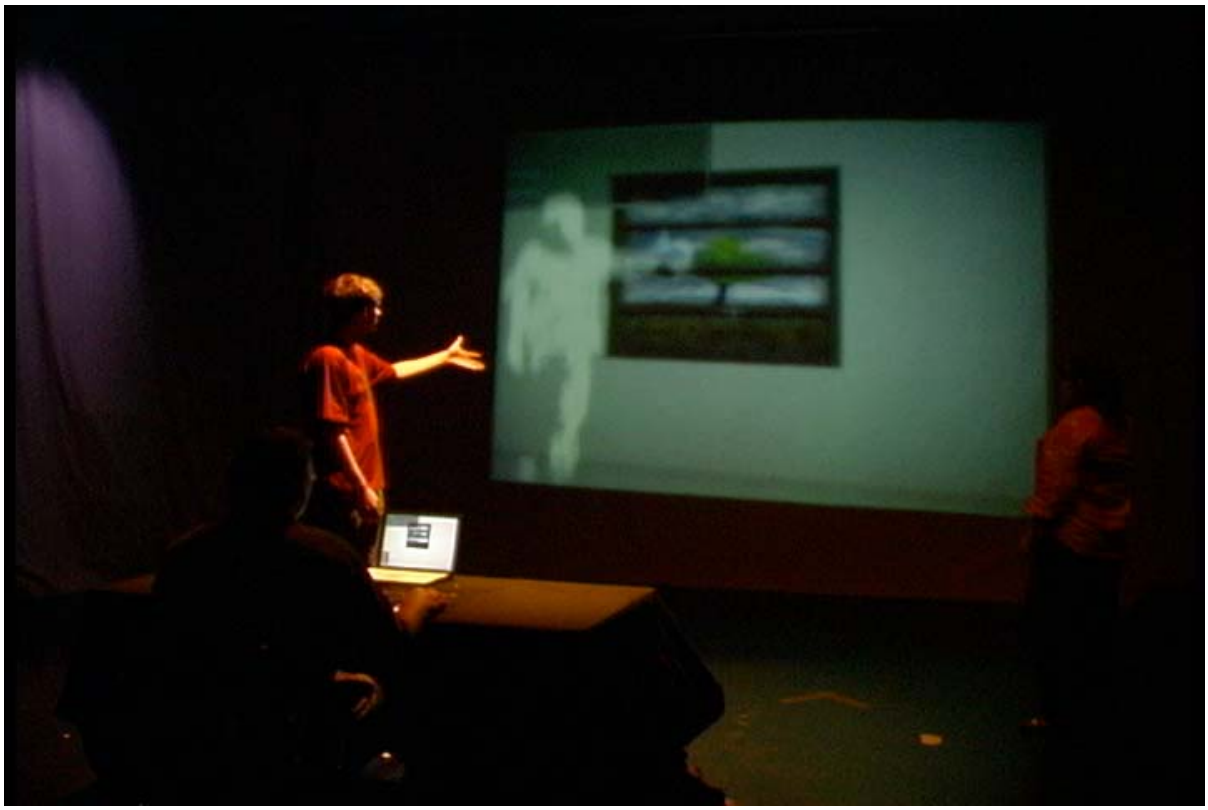

Fig. 18. Installation view of early prototype.

The exploring game player can hardly distinguish each approaching character as friend or foe. One character may simply want water, while another may self-detonate. A third may suspect you, the game player, are a terrorist and shoot. Tension between the curiosity for exploration and the fear of threats provides conflict within the game. In addition to the spawning of characters within the game, the presence of human participants also impacts the visual representation of the environment. This is an intentional act to suggest the idea that we, as a society, are implicit in the world we create. As viewers move throughout the installation space, a ghost-like form of their

presence is blended with the game environment. Their presence transforms the video imagery into the form of a mirage.

This set of circumstances and the geography of this place raise questions about our constructed realities. Is the training that takes place in these environments truly responsive to the threat, or is it based on a flawed perception of our environment? What exactly is the primary threat, and is this the way to defend against it? What parallels exist between our response to urbanism (suburbia) and our response to domestic terrorism?

CHAPTER II

AESTHETIC EXPERIENCE AND CRITICAL REFLECTION

INTRODUCTION

The concept of aesthetics and its development in visual art has been discussed in the previous chapter. We discussed the original incarnation of aesthetics as an attempt to understand human perception. Then we discussed how this conception was co-opted to describe exclusively the study of "beauty". Subsequently, art and theory responded by rejecting notions of beauty in the "anti-aesthetic". Finally, we explored how, recently, we have begun to reclaim aesthetics, but on new terms which do not pose such polar oppositions, instead recognizing the value of aesthetics as a means to understand perception in a critical and embodied manner. In this chapter I will discuss the relationship of aesthetic experience, critical distance and critical reflection. I will focus on their role in art, and in particular, art that uses digital means. Are they altered in immersive digital experience, and if so, how? Are they concepts worth saving? Considering that *Playas* is heavily indebted to the video game genre, what impact does this have for aesthetic experience and critical reflection? Towards the end of the chapter, I will discuss video gaming as an aesthetic experience and will explore various viewpoints about the video game and how one might approach an understanding of *Playas* based on an aggregation that recognizes the diverse contributions of multiple lines of discourse. The final section will introduce what I have identified as four support structures for the understanding of critical reflection in digital media art.

A Brief History of Art and Virtuality

A number of theorists have related art as a history of virtuality, or the desire to experience an alternative reality. Steve Dietz categorizes immersion as one of his *Ten Dreams of Technology*. "From Wagner to Daguerre's panoramic dioramas to James Turrell's *Roden Crater*, artists have dreamed of artworks in which the viewer is totally immersed." [98] Lev Manovich, in "*The Language of New Media"* [99] describes this desire in terms of the "screen." He identifies four types of screens and positions them as historically progressive developments. First there was the classical screen, which is a rectangular view port that is essentially static. Traditional paintings and photographs are emblematic of classical screens. The next type of screen is the dynamic screen. The dynamic screen contains moving imagery of the past, such as cinema. The third type of screen is the real-time screen. This screen contains moving imagery of the present. The television, though not always, can be associated with this type of screen. The final screen type is the interactive screen. This is the screen of the computer. According to Manovich, the ultimate screen, is not really a screen at all, but the dissolution of the screen, Virtual Reality. The result of this inexorable journey towards Virtual Reality is an existence free of our bodies. Many theorists surmise that our innate desire for virtual existence is a result of our desire to be free from the limitations imposed by our bodies, in essence a desire for immortality. Manovich claims that this progression, rather than providing freedom from bodily confinement, actually serves to increasingly confine the body to apparatus. He illustrates this by pointing to the machine tethered head mounted display (HMD) of current virtual reality systems, which provide the illusion of freedom

while increasing our connection and reliance on equipment. In an interview in 2002, Myron Krueger, who introduced the term "artificial reality", acknowledged the deficiencies of the HMD, but claims that it is too early to discard virtual reality on the basis of our current technological abilities [100]. His conception of artificial or virtual reality carries Manovich's description of the dissolution of the screen, past the HMD, to a world where displays are integrated with our daily life in such a way, that we interact with representations of humanity (and others) without distinction between real and virtual. Imagine a set of contact lenses that allows a distant relative to participate in a conversation with you, as if they were in real-time space as you walk down a street. Their avatar appears every bit as real as the others who walk beside you. Krueger is not describing a screen-based interaction, as we know it, but a complete integration of our daily lives with ubiquitous computing. Of course this requires a dependence on hardware, as Manovich suggests, but in terms of tethering the body, mechanically, Krueger's experience is much less physically invasive and constrictive.

Oliver Grau, in *"Virtual Art: From Illusion to Immersion"* [101], traces the advent of simulation and virtual reality to Roman frescoes and large-scale murals created ca. 60 B.C. "Through the device of seeming to extend the wall surface beyond a single plane, the room appears larger than its actual size and draws the visitor's gaze into the painting, blurring distinctions between real space and image space." Fifteen hundred years later, Renaissance art was defined by the invention of true perspective. The picture plane, began to function not only to represent an idea, but also to invite the viewer to enter a diagesis [102] with the content. Utilizing mechanical means, the camera obscura further

enabled the artist to represent a vision of the world by enabling an accurate perspective to be rendered. Prefiguring photography, this technology was responsible for the amazingly accurate representations by Leonardo and other masters of the 15th – 18th centuries. Later in the late 1700s, Robert Barker patented the panorama, a process of creating undistorted images on large curved surfaces. An officer of the British military, who saw its value in military planning and visualization, largely supported his work. Indeed, many historic panoramas visualize heroic battlefields, which covered huge expanses of palaces, ceilings and rotundas across Europe. Grau chronicles the development of this desire for 360-degree immersion with the image, discussing the increasingly technological developments of the stereoscope, cinema, *Sensorama* (Fig. 19), IMAX and most recently, the computer. Only recently has the technology that makes this kind of experience possible become publicly accessible in the form of theme park rides and theatrical events or as commercially available devices.

Fig. 19. Morton Heilig's 1962 *Sensorama*.

Ron Burnett examines art and virtuality as an extension of the history of the image. Whether static or in motion, the object of interest is the image itself, and how we make meaning from imagery. He describes virtual space as “imageworlds” or “imagescapes”. In his view, we are moving “from images as purveyors of meaning to images as contingent spheres of influence, temporally driven places and spaces as opposed to objects for viewing….images need to be thought of in broader terms as one part of a

larger number of ‘installations’ that make up a continuously evolving built environment of great cultural diversity.” He goes on to relate how architecture, as a field at the nexus of space and image, has become significant [103].

In a number of ways, Burnett’s use of imageworlds is echoed in Hansen’s use of Henri Bergson’s concept of duration, and the body as a “center of indetermination” within a field of images. Hansen describes virtuality as not so different from the way the body relates to the field of images that constitute “reality”. “On Bergson’s account, the body functions as a kind of filter that selects, from among the universe of images circulating around it and according to its own embodied capacities, precisely those that are relevant to it.”[104] In contrast to Burnett, Hansen places ultimate primacy on the role of the body in digital media. Gilles Deleuze also built his theories upon the work of Bergson, but according to Hansen, necessarily accommodated cinemas lack of embodied interaction by creating a “purely formal understanding of cinematic framing and thus suspend(s) the crucial function accorded the living body on Bergson’s account.” [105]

> *Beyond simply defending the sensorimotor body, our effort to redeem Bergson’s embodied conception of the center of indetermination will ultimately require us to reverse the entire trajectory of Deleuze’s study, to move not from the body to the frame, but from the frame (back) to the body. What we will discover in the process is that the frame in any form – the photograph, the cinematic image, the video signal, and so on – cannot be accorded the autonomy Deleuze would give it since its very form (in any concrete deployment) reflects the demands of embodied perception, or more exactly, a historically contingent negotiation between technical capacities and the ongoing “evolution” of embodied (human) perception. Beneath any concrete “technical” image of frame lies what I shall call the framing function of the human body qua center of indetermination*. [106]

Hansen desires to create a dialog that accommodates new media in terms that are not limited to “the frame” or the screen. Especially with regard to works that involve immersion, I feel that this is currently the most promising conceptualization of subjectivity as it relates to the operations of aesthetic experience. When virtual worlds contain such disparate media, and with the imperative to find a place for critical engagement with culture, the recognition that a holistic approach to experience is necessary is foundational. The development of the dialog of virtuality from a relationship with a picture plane, to a simulation of space, characteristic of frescoes and cinema, to the dynamic intersubjective relations possible in virtual reality, has important ramifications for contemporary art. We must endeavor to recognize the changes this has brought about and attempt to maintain or adapt what we cherish about art. The historical drive to create immersive spaces provides convergent evidence for the existence of a deep-seated conceptual metaphor. If the desire for immersion is, indeed, a fundamental conceptual metaphor, and our implementations of technology don’t account for changes in the relationship between artist, art and viewer, we risk losing the critical function of art in society. The next section will discuss the development of aesthetic experience and how this concept relates to the experience of works of art in this context.

THE AESTHETIC EXPERIENCE

Aesthetic experience is a term that is often used indiscriminately to encompass practically any response to audio-visual stimuli. As an artist interested in exploring the relationships between artist, work, and viewer, my concern is the more narrow

interpretation of aesthetic experience. Generically, walking down the street can induce an aesthetic experience every bit as powerful as many artworks in a museum. The key distinction between the kinds of aesthetic experience that interest me, and these other forms of aesthetic experience, revolve around the intentionality of the stimulus. I am interested in experience instigated by the actions of an artist (or collective), with the intention of eliciting an aesthetic response. Furthermore, my interest is demarcated by an interest in works that intend to stimulate critical reflection in the response of the viewer. I don't claim that these types of experiences hold more value than other types of experience, or that they are more worthy of the title "art" than any other. For me, that is a topic well beyond the bounds of this research, and needlessly discussed in this context.

In *The Art of Seeing – An Interpretation of the Aesthetic Encounter* [107], Mihaly Csikszentmihalyi provides a definition of aesthetic experience based on his work extended from the principle of "flow." Referencing the results of his qualitative studies of 57 curators or museum professionals in the United States, he came to the conclusion that "on the basis of what we have learned, we can define it [aesthetic experience] as an intense involvement of attention in response to a visual stimulus, for no other reason than to sustain the interaction." [108] He illustrates the parallels between "flow experience," which are experiences people participate in for the pure enjoyment of participation, rather than for an external reward, and aesthetic experience, which is associated with the interaction with art and music. "When this heightened state of consciousness occurs in response to music, painting, and so on, we call it an aesthetic

experience. In other contexts, such as sports, hobbies, challenging work, and social interactions, the heightened state of consciousness is called a flow experience." [109]

Csikszentmihalyi's theory of aesthetic experience recognizes that aesthetic experience is approached from varying subjective viewpoints. The approaches can generally be categorized as cognitive, perceptual, emotional, or transcendental. Much scholarship has been invested in understanding aesthetic experience framed in each of these points-of-view. Of course, as is so often the case, ideologies form around each of these categories as if the others are "wrong." He describes the cognitive approach as one extended from the ideals of Kant (1790), linking aesthetic pleasure with "the union of intuition and understanding, and, according to Croce, it results from the process of expressing a formerly unformulated intuition." This form of aesthetic experience is often described as the "blinding intuition." The experience is "pleasurable because a great amount of knowledge about the world is encapsulated in the transaction." He also terms this the "cognitive rush." The perceptual approach he describes as one invested in sensory pleasure. This approach extends from the notion that as humans we have innate tendencies and genetic structures that cause us to experience pleasure when we experience certain stimulus patterns. We inherently find certain relationships more pleasurable than others, and we seek these through aesthetic experience. His third category is the emotional. This category extends from Aristotle and builds on psychoanalytic theory. In this approach, the viewer desires a cathartic experience that purges interior conflict in such a way as to provide pleasure or release. In his opinion, this view is seen as limiting, reductionist, and currently out of favor. The final approach

to aesthetic experience he discusses is the transcendental approach. This approach often extends from the work of Benjamin, Hauser, and Marcuse, linking with Marxist theory. He describes this approach as a desire for utopian "emancipation from false consciousness, or the systematic understanding of alienating social forces". The ultimate goal of this work is freedom from hidden forms of repression [110].

I agree that the approach to aesthetic experience is varied. I don't see that as a negative but rather view it as consistent with the lessons of post-structural postmodernism. Allowing for this variety is what makes Naturalistic Inquiry so powerful as a research methodology. I don't feel the need to require everyone to approach a work from the same set of criteria. We have learned that is impossible, anyway, as everyone frames experience through his or her own personalized life filter. Based on a person's frame of reference, they will take from a work what is personally relevant. Sometimes it is helpful to understand what a work is about, or what frame of reference an artist used in creating the work, in order to fully appreciate what is offered. That is to be expected, but is not entirely necessary. As Parsons describes, we develop an understanding of art based on life experience [111]. Not everyone is at the same stage of development; not everyone is aware of the latest theory and if they are not it should not be construed as negative. Art is a language and a dialog, and it takes time to learn the language. This fact may cause problems for other artistic goals and intentions, but is something artists have to accept. I would never approach an installation by Dan Graham or Robert Irwin in the same way I would approach a work by Ilya Kabakov or Ed Kienholz. One set are interested in perceptual qualities, while the other are interested

in narrative aspects of experience. This is learned behavior on my part, and enriches my ability to appreciate works of art, but does not mean that someone with less understanding cannot have an equally rich experience with the work. If someone else's lack of understanding of a work causes them to have less of an experience that is fine as well. Art has moved past the thought that it should be universal and speak equally to everyone.

With respect to Csikszentmihalyi's theory of aesthetic experience, I am satisfied that it accounts for the type of experience I value. In terms of the categories he defines, I see each of them as tools for the artist. We have the freedom to create work that straddles these categories and use them for our own end purposes. I value works that could be placed in each of these categories. As you will see later in the dissertation, I am certainly a subscriber to the transcendental approach to aesthetic experience. I believe art has the capacity to change society and transcend our day-to-day lives. You will also recognize that I value cognition in our relations to aesthetic experience. I seek to experience "blinding intuition" in my art as well as the work of others. At the same time, I respond favorably to work that addresses me on a perceptual and emotional level. In many ways, the use of sensual and emotional techniques are some of the most powerful tools in an artist's arsenal, that in turn facilitate the success of the other, more intuitive aspects of aesthetic experience.

In the next section I will discuss several important dialogs that are related to these varying modes of subjectivity and discuss their relationship to immersive aesthetic

experience. These dialogs will inform the subsequent discussion of critical reflection and critical distance as it relates to the practice of art.

SIX DIALOGS OF EXPERIENCE AND VALUE

Over the course of history, a number of significant dialogs have emerged that attempt to describe the unique qualities of art. These dialogs attempt to describe the experience of works and some have historically been used to establish a sense of value. While there are certainly other significant dialogs, I will focus on introducing six that are of particular importance with relation to *Playas.* Some of these have been discussed in certain respects earlier, but here I will begin to contextualize them within my own art practice. These dialogs are aura, objecthood, significant form, dialogism, remediation, and ontological authenticity. An understanding of *Playas*' relation to these concepts will enhance our understanding of its conception and development.

Aura

The concept of "aura", associated with the work of Walter Benjamin and his oft-cited essay *The Work of Art in the Age of Mechanical Reproduction*, describes the challenge to art resulting from the introduction of photography as a means of mechanical image reproduction. This reproducibility was the antithesis of the unique object of art, which relied upon a sense of authenticity or "aura" to establish its ritual value, and instead "of being based on ritual, it begins to be based on another practice - politics." [112] With the introduction of technological reproduction, Benjamin claimed art was freed from its reliance on ritual or cult value and could begin to address the structure of

society, directly. Benjamin was writing this in the early 1930s as film became a medium that, like photography before, changed our perception of reality and subjectivity. His frame of reference was to compare these forms with his understanding of art, which was based on the idea of an object of contemplation, such as painting or sculpture. He justifiably recognized that these new forms would be used in the production of art, and that by virtue of their status as reproducible, the autonomy of the object would forever be altered. "When the age of mechanical reproduction separated art from its basis in cult, the semblance of its autonomy disappeared forever." [113]

The essay has been the source of much debate in the arts. In *New Media and the Permanent Crisis of Aura*, Bolter claims that it is one of the most commonly used terms in media theory [114]. Benjamin's notorious ambiguity has caused a great deal of confusion and misunderstanding about its significance. Benjamin seems to use the term in multiple ways that expand the notion of authenticity to one of experience with nature. He discusses aura with respect to art objects, as related to a work's singularity and authenticity. While this understanding is clear in the arts, his parallel explanation related to our experience of the natural world "as the unique phenomenon of a distance, however close it may be" [115] contributes to the confusion. He provides a description of our simultaneous appreciation of a mountain range and a tree branch, describing our sense of separation from them as analog to aura. This mental image, I believe, leads Bolter to confuse aura with immersion (or immediacy).

In *New Media and the Permanent Crisis of Aura*, Bolter traces the impact of aura with respect to augmented and virtual reality. He would like to claim that these forms

are not inconsistent with Benjamin's aura, in order to make a place for them as art. While I agree, for the most part, with his understanding, he appropriates aura and redefines it "as the personal and cultural significance that an object or place holds for an individual or a group of viewers." This linkage of aura with "significance", evidently extended from Benjamin's tree analogy, allows Bolter to assign aura to all manner of cultural artifacts. While I agree aura can be linked to cultural significance, it is not an indicator, condition, or result of immersion. To Bolter, authenticity related to aura is equated with mimesis and therefore, it appears, the immersion capabilities of technology. He claims that Hollywood movies are "auratic experiences" that attempt to immerse us in a reality by virtue of continuity editing. In his view, because Hollywood movies are typically structured to maximize immersion and diagesis, they must be auratic. While continuity editing supports immersion, it has little to do with aura in Benjamin's sense. Benjamin is not talking about mimesis when relating aura to art. After all, many works of art with which Benjamin was familiar certainly embodied the aura of art with little or no attempt at mimesis. Despite Benjamin's explicit description of the Hollywood star system as a commodity inflected replacement for the lack of aura in film, Bolter claims that the exaltation of stars is an example of aura. In a most perverse inversion, the result of Bolter's examination of aura results in the attachment of aura to Hollywood films, while avant-garde films are said to be non-auratic. Their use of techniques, which challenge mindless immersion (or distraction in Benjamin's terms) are said to exhibit a lack of aura. How did we travel from aura associated with unique works of art, to aura associated with generic cultural production? Benjamin's

formulation of aura would assign the term to avant-garde film, rather than Hollywood film, for the very reason that it challenges cultural norms and control structures. Avant-garde film, as art, attains this status by virtue of its unique characteristics and its authentic approach to the medium in opposition to commodity distraction. Benjamin held hope that this new medium could maintain the critical function of art in society. Benjamin knew that aura could still exist in these new forms (photography and film), but that it would be more difficult since the loss of authenticity diminished the power of aura. This is what Benjamin meant when he identified that the question to ask is not whether new forms are art, but how do they transform the entire nature of art.

Aura lives on, though transformed by new technology and new understandings of subjectivity. Despite culture studies attempts to move aura into the everyday, this desire belies the power attributed to the aura of art. Everyone wants to claim what he or she does or says is “art”. Obviously, unique objects still exist and maintain their claim as “auratic”. One-off objects are still shown in galleries and museums across the world, and collectors still pay premium prices for the aura associated with them. This practice will probably continue indefinitely, such is its power. But no longer is aura associated solely with unique objects. Benjamin’s limited understanding of art as delimited by objecthood precluded an understanding of the location of aura. In the 1930s the subjectivity of art was still located in the object. As previously detailed, that subjectivity, in part due to the introduction of new technologies, has moved from the object to a position of dialog between artist, work and viewer. Even so, as recognized by Robert Kaufman, “it’s no small thing to realize that in the eyes of Brecht, Benjamin, and

Adorno (the very figures who in the Left tradition are so frequently said to have helped set the stage for the collapse of aesthetic distance), there really was - and there really was intended to have been - aura, still." [116]

I believe aura is associated with the embodied experience of transformative events. These types of experiences may occur anywhere, at any time, and for any duration. Things that are given the title "art", more often than not, attempt to create these types of experiences. For this reason, art is still associated with aura and is often bestowed with that characteristic despite a lack of direct, personal experience. Aura is attached to experiences that have meaning for us. Aura is very much the sign of art.

With *Playas*, because I claim it is a work of art, and place it within an art environment, it automatically receives a certain aura. As Benjamin describes the reduction of aura due to technology, it is obvious that aura is not a fixed quantity. Some things have more of "it" than others. Some will experience *Playas* and have no sense of transformative aesthetic experience. This may reduce the aura the individual attaches to the work. Others may experience it differently and leave the experience with a greater sense of aura associated with the work. In many senses, aura is loose indication of the value an individual associates with a particular aesthetic experience. This conception of aura does not limit the experience of art to objects that claim to be art, but allows the individual to establish his or her own value system. Obviously, these values are more complicated than a simple indication of direct experience. The more a person knows about the context of a work, the more likely they are to have an experience that results in increased aura. In fact, viewer awareness that others have assigned aura to an

experience is likely to affect the individual likelihood, as well. Aura is a simple word that describes a complex set of mechanisms that relate to our personal appreciation of aesthetic experience. While it connotes a value system, the values are individualistic such that it makes no sense to say one work's aura is greater than another. One may say that this particular work "speaks" more to me than another, connoting a greater aura, but that is nothing more than a subjective evaluation. The fact that a Thomas Kincaid painting may sell for thousands of dollars, and a movie ticket to see David Lynch's *Inland Empire* costs $7, does not mean I place more aura in the former.

Objecthood

The role of the object in art is still problematic amongst the general population. In the United States, neo-conservative thinking and influence on government policy has wrenched art education from most institutions, and has produced a utilitarian culture that places little value on subjective experience. The popular conception of art is as a commodity favored by the rich, and of course, commodities are typically objects that can be sold or traded. As scientists, educators, sociologists, and others, become aware of the value of images in culture, and begin to approach their operation on meaning, most are blissfully unaware of the dialog of art, much less the debates around the once sacrosanct art object. It is common to see references to obsolete forms of artistic expression and all manner of lyrical verbiage about how their work addresses or somehow incorporates art.

The object as a necessary condition to art was exorcised the moment Duchamp displayed *Fountain* in 1917. As with any new idea, it takes a while to travel through discourse and have an impact on production, but as a significant concept relating to the

idea of art and the art object, Duchamp provided the answer. As a common theme in this dissertation, we must be careful not to lapse into extreme ideology, so be clear that Duchamp's statement does not mean that art *cannot* be an object. Rather, Duchamp's act opened the dialog of art to include non-objective work. Meaning, derived through context is what establishes a work as art instead of some intrinsic physical characteristic. This simple understanding had major ramifications throughout the 20th Century. An understanding of art that does not include the significance of this act cannot hope to understand the construction of meaning in aesthetic experience.

Obviously, *Playas: Homeland Mirage* is not a work that one would consider an object. A collector would not likely purchase this work and display it in their home as one would a sculpture or painting. *Playas* functions by contributing to the discourse of art through the process of exhibition and enters the dialog via its publication and research documentation. The focus of the *Playas* artwork is to engender an experience rather than create a commodity. Of course, the game can be downloaded and run on an individual's home computer. This form of the experience could be packaged and sold as a limited edition, perhaps. Artists such as Brody Condon have prepared their video game work in this manner. I personally do not view the downloadable version of *Playas* as a complete work of art. Without the features of the installation environment (video tracking, ghost compositing, mirage effect), the downloadable version of the game is more a demonstration of the video game experience than it is a fully realized aesthetic experience. The fully realized work is contingent on the relationship of the viewer, work and audience and space within which it is installed.

Significant Form

Significant Form, as a term, was first proposed by Clive Bell in *Art* (1914) [117]. His conception of significant form was to distinguish between the beauty of natural phenomena and beauty created by artists. He described the difference as the "metaphysical hypothesis" that the artist suggests emotion, whereas bugs and trees, etc. do not [118]. His aesthetic theory was primarily developed as a means to defend abstract art. With time and the changes in subjectivity alluded earlier, his conception has fallen out of favor and has been supplanted by other theories of visual art.

Susanne Langer more completely developed the idea of Significant Form in *Feeling and Form* [119]. She acknowledges Bell's development of Significant Form but believes his conviction that "the business of aesthetics is to contemplate the aesthetic emotion and its object, the work of art, and that the reason why certain objects move us as they do lies beyond the confines of aesthetics," is incorrect. She believes Significant Form should be developed into a theory of art that attempts to explain this very issue. She relates Significant Form to her work regarding music in *Philosophy in a New Key* [120] saying,

> *Here in rough outline, is the special theory of music which may, I believe, be generalized to yield a theory of art as such. The basic concept is the articulate but non-discursive form having import without conventional reference, and therefore presenting itself not as symbol in the ordinary sense, but as a "significant form," in which the factor of significance is not logically discriminated, but is felt as a quality rather than recognize as a function.* [121]

With this understanding, Significant Form becomes a theory of art that attempts to explain our relation to the art object. As opposed to a theory that tries to explain

language, it continues the work begun by Bell, attempting to explain the "ineffable." Langer appears to recognize the narrow focus of Bell's version of the theory and expands it from a theory of emotion to one of "feeling and form." To her, the base element in the understanding of art is to understand our feelings.

> *The answer to this problem entails, I believe, the solution of all the related yet oddly incommensurable paradoxes, and most directly the one involved in Baensch's notion of objective feelings, non-sensuous qualities invisibly seen.* [122]

Langer's theory of art is important to culture, and this research in particular, because it presents a conception of artistic activity that resolves the traditional divide between objective (Science) and subjective or intuitive (Art) knowledge. As a theory of knowledge it gives equal weight to the discursive (verbal) manipulation of symbols as well as non-discursive (non-verbal) symbolic manipulation. This recognition of two forms of knowing, for the first time recognizes that art can contribute to human knowledge; it just operates in a different manner.

Langer introduces the ideas of discursive and presentational logic in *Philosophy in a New Key*. Equating science and art, both as forms of logic, she separates them as two distinct types. Discursive logic is related to language and the system of signs as described by Sausurre. Presentational logic embodies the ineffable elements of experience, such as emotions. Art exists as a presentational form as opposed to a discursive form. The distinction between the two can best be described in her own words from *Feeling and Form*,

> *The import of an art symbol cannot be built up like the meaning of a discourse, but must be seen in toto first; that is, the "understanding" of a work of art begins with an intuition of the whole presented feeling. Contemplation then gradually reveals the complexities of the piece, and of its import. In discourse, meaning is synthetically construed by a succession of intuitions; but in art the complex whole is seen or anticipated first.* [123]

This understanding of holistic intuition contrasted with the build up of meaning through discourse aptly describes the difference between the experience of art and the experience of traditional narrative film and literature. Especially with regard to the video game, and indeed even more critically in the form of video game used as art, the current impetus to force traditional narrative structures on video games becomes important. Langer also correctly recognizes the role of contemplation in the understanding of art. It is this layering of meaning at the gradual unraveling of content that provides rich experiences. This process provides thinking space for critical reflection and gives art the power to connect with the individual in a transformative manner.

In *Remembrance and the Design of Place* [124], Downing extends the idea by linking the presentational form of expression with memory. “Language, as expression, is abstractly removed from experience and refers back to it. The presentational form of expression, on the other hand, is characterized by mental images which are expressions of memory.” [125] While Langer seems to focus on feeling and emotion (not exclusively, but primarily); the introduction of the role of mental imagery opens the discourse to include a greater range of mediated experiences. Mental imagery tied to memory also affords the opportunity to integrate the body into the discourse. It

recognizes a link between our physical being and perception. Instead of connecting with an ineffable emotional response mechanism or feeling, the full power of our cognitive capabilities comes into play. While Langer seems to reject any notion of the discursive in art, post-structuralist and post-modern theories of meaning generation rely heavily on our capacity to function symbolically using discursive methods. These theories should not be understood to imply that we perceive using the symbols of language, but that the processes of meaning are similar. If art is to be more than pretty pictures, if it is to engage more than (not to the exclusion of) our feelings, then we have to recognize the complexity of our embodied experience. By defining a viewer-based process of mental imagery linked to cognition (memory+) the barrier between discursion and presentation is crossed. I believe this is a benefit to the theory of Significant Form and widens its relevance to include recent post-structural and post-modern theories of meaning generation.

I find it interesting that there appears to be a convergence of thinking around this new approach to meaning. As discussed previously, Hansen, too, is looking for reconciliation between the body and mind with regard to art and meaning. Similar to Langer, he builds his theory on the image-based system of Henri Bergson. Even Danto recognizes the importance of this contribution,

> *The plane of contact between the self and the world, inestimably more complex in its curvatures than those of its sub-areas in which sense and stimulus make contact, is the reality of mind as Langer has sought to grasp it philosophically. Merely to have recognized its character, let alone carried its analysis so systematically far, has been to make as immense and transformative a contribution to philosophy as I can imagine.* [126]

Another strength of Langer's work is her description of the process of meaning via visual stimulus. Building on Sausurre, Langer defines representation as "the illusion of an object." [127] We recognize form in basic shapes and associate them with recognizable forms. We gather meaning through the process of symbolic transformation. She views representation as only one of a number of expressive forms an artist may exercise. Presentation can be described as the construction of a mental image and the way we remember it. "The mental image and its active, imaginative reconstruction create order out of chaos, an order that is presentational in nature." [128] When we recreate memories, those reconstructions are never "accurate." For example, I remember a large snake crossing my path as I went fishing with my grandfather, as a child. My memory of the event "presents" a snake the size of an Anaconda! My cousin, who was there, denies it was this large, but the image in my head would certainly qualify as that species of snake. So here we have an image that has been reconstructed with exaggerated dimensions. "Mental images have a tendency to become metaphorical: they mean things." [128] The fear I felt became linked with the size of the snake. Representational images are constructed as an illusion of reality, while a presentational image is metamorphosed in the consciousness of the viewer. Representation versus Presentation communicates the difference between illusion that attempts to match reality and illusions that are reconstituted in new ways.

Playas is an attempt to understand how Significant Form might be embodied in a digital media environment. The process of meaning generation through symbolic transformation described by Langer is heavily mediated in these environments, more so

than she could ever have imagined in 1942. Her theory provides a framework that allows us to update the understanding of meaning to incorporate science without jeopardizing art. Like her own life, *Playas* is an attempt to learn by doing, by practice.

Dialogism

I chose the title "Dialogism" for this section because it is perhaps the most succinct description of the phenomenon, but there are multiple, intertwining concepts and "isms" that relate to this idea. Mikhail Bakhtin is perhaps most closely associated with the term by virtue of his writings in *The Dialogic Imagination* [129]. His recognition that works consist of a polyphony of voices acting in dialog with each other, and the mutability of the participants in any dialog, coincides with our developing, heavily mediated, communications society. His conception of a dynamic relationship with art reinforces the post-structuralist shift in subjectivity that has informed the development of installation and non-objective arts practice since the 1960s. The term "dialogism" is often described in contrast with "monologism". Forms of art, for example, painting, can be thought of as primarily monologic. The artist invests his or her labor and meaning in the work, and the viewer attempts to decipher meaning from the work, often by considering the creator's intention. The artist gives, and the viewer takes. There is a one-way process of communication. Even if the artist receives some value in return from the viewer, the communication act itself is a somewhat closed system. Dialogic practice, on the other hand, would allow the viewer to equally contribute to the work. In a dialogic practice, the artist frames a scenario to be enacted by the participant, who extracts meaning by virtue of completing the work. Obviously, this is an extremely

polarized presentation of the concept, the situation is infinitely more subtle than the simple opposition of monologic versus dialogic.

In *Telepresence & Bio Art*, Eduardo Kac devotes a chapter to the discussion of dialogism in electronic art. He sees electronic art as a platform for the experimentation and literalization of dialogic practice. Bakhtin's work was primarily focused on literature, comparing the novel with the epic. Neither of these forms, with their physical manifestation on paper, can be considered literally dialogic. Once the text is printed, it is not mutable. However, Kac proposes that the dynamic communication processes afforded by digital technologies allow us to extend dialogism and, in effect, negotiate meaning. He terms art that functions in this manner, "dialogical electronic art". He calls for a reconsideration of traditional modes of considering aesthetic experience by integrating the process of two-way communication.

> *For Bakhtin, language is not an abstract system but a material means of production. In a very concrete way the body of the sign is negotiated, altered and exchanged via a process of contention and dialogue. Meaning arises along the way. Bakhtin is very clear: 'the thinking human consciousness and the dialogic sphere in which this consciousness exists, in all its depth and specificity, cannot be reached through a monlogic artistic approach.' If taken literally, as I believe it should be, Bakhtin's approach reveals the possibility of articulating artworks that give no prerogative to visuality and that reinstate the dialogic in the aesthetic experience. In this scenario, images (and objects) become one among many elements in the elaboration of dialogic situations.* [130]

All electronic art is not interactive, however, all dialogical electronic art is interactive. That interaction provides a means for the viewer to change and alter the content of communication. As the quote above illustrates, Kac recognizes that there are many degrees of dialog. Dialogism does not replace monologistic practices. Post-

structuralism has long posited a dialogistic interaction between authors and viewers. We understand this complex relationship, but Kac proposes that by focusing on the dialogic properties of traditional forms and relationships, we "miss the opportunity to contribute a theoretical viewpoint to the actual embodiment of dialogical principles in art."

Kac's view of dialogism in electronic art is a manifestation of one of Dietz' *Ten Dreams of Technology*. The desire for a dialog that allows the viewer to negotiate meaning is based in the desire to foster democratic communication; "The Dream of the Open Work". To institute a process whereby the viewer completes the work is based in the desire to free mankind from the dictates of power structures that are self-interested. As such, dialogism is overtly political and optimistic. It is assumed that individuals can and will accept power and use it in a productive, meaningful way.

An art practice that incorporates an awareness of electronic media's capacity to support dialogism is fundamental to the current conception of technologically mediated art. As is typical, some take these ideas to ideological extremes, rejecting all form of monologic practice, but I think even Kac recognizes and appreciates art that engages through the voice of the author. In the Fall of 2005, I had the opportunity through the previously mentioned A.I.R program at Texas A&M, to spend some time with Mr. Kac. I drove him from the university to Houston, Texas, where he was to fly home. He asked that we leave in time to visit several art spaces in Houston before driving to the airport. One of the sites he wanted to visit was Rothko Chapel. I found it ironic that he would want to visit this icon of autonomous art practice and asked him, "What is a committed dialogist doing asking to see Rothko?" He laughed and said, partially, "I was a lot

younger, then!" He went on to explain that he still enjoyed the traditional experience of art and had long been interested in Rothko's work. Dialogism should be seen as an augmentation of art, not as a replacement of existing forms. As experimental artists we can, and should, endeavor to strengthen our communicative possibilities by incorporating and leveraging the possibilities that technologies afford us. Even as these possibilities challenge our previous conceptions of art, they lead us to push into new territories that expand our knowledge and capacities for creating meaning.

Akin to the idea of dialogic electronic art is Relational Aesthetics, a term coined by Nicholas Bourriaud. Relational Aesthetics (RA) conceives of the artwork as a "social interstice", around which meaning is a continually negotiated construct. Relational art is, "an art taking as its theoretical horizon the realm of human interactions and its social context, rather than the assertion of an independent and private symbolic space". Indebted to Althusser's conceptions of cultural communication and power structures, Bourriaud structures artistic practice as "an art form where the substrate is formed by intersubjectivity and which takes being-together as a central theme, the 'encounter' between beholder and picture, and the collective elaboration of meaning." Like Kac, he recognizes the importance of a decentered approach that locates subjectivity and meaning in the realm of negotiated action[131]. Bourriaud's book *Relational Aesthetics* [13], discusses a number of artists work, who he describes as practicing RA. Key among these is the work of Rirkrit Tiravanija. His work, *Pad Thai* [132] (Fig. 20), can be considered a paragon of RA by virtue of its integration of public participation and the "conviviality" [133] of its interactive possibilities. In this work, the artist prepares a

meal within the gallery space and interacts directly with those in attendance. Supposedly, the informality of the event encourages interaction and discussion that critiques the institutional nature of the display space. The space becomes a place of dialogue that is completed by the participation of the viewers/visitors, rather than as an instrument of monologic communication.

Fig. 20. Tiravanija's *Pad Thai*.

This form of work was popular in the early 1990s and continues to inform the dialog of art today. In response to a perceived lack of ability for art to affect societal change,

some have responded by attempting to follow the avant-garde mantra to blur the boundaries between art and life, creating what Bourriaud calls “microtopias”. These localized utopian acts are imagined to illustrate idealized conditions if only we could imagine their existence. In effect, these are political acts meant to embed the practice of art in the everyday. Of course, there is precedent for this action in the work of Alan Kaprow and the Fluxus work of the 1960s. This work however, is much less invested in notions of aesthetic experience and authorial control. Participation is a means unto itself. The work of Sal Randolph, mentioned earlier can be considered in these terms. Her organization of group actions around an anti-capitalist “gift economy” resonates conceptually with Tiravanija’s gallery party. The goal is to involve people in an art of action, rather than critique.

While I value the concerns that form much of this work, and I similarly desire a more central role for art in culture, especially within the United States, much of this work is less than “filling” (pun intended). The goals are laudable, but the results are questionable, both as to the success of the intended action, as well as, their value aesthetically. Many participatory art projects seem to be more concerned with instrumentalizing art in the name of cultural transformation or repair than in communicating on a deeper level what it means to be “in this world”. While I too, value cultural engagement, I want to communicate on a deeper level than the creation of “microtopias”. Other than enjoying themselves, what do the participants take from an encounter with an artist preparing a meal at an opening? Yes, this practice opens new avenues for exploration, but I desire something more.

This breakdown of the distinction between social practice, culture, and art plays directly into the hands of some culture studies theorists. By dissolving any distinction between art and culture, anything is considered art. So called "social media" such as YouTube, MySpace, and Second Life become corporate art practice. Never mind the intentions behind these "works", they are considered art and can be integrated into the discursive practice of theory. While I agree that anything *can* be art, there are distinctions between what functions as art and what merely mimics art.

In *Antagonism and Relational Aesthetics* [134], Claire Bishop identifies some of the weaknesses of relational art. She claims that most of the work appears to be incomplete. Indeed, the intention is that the viewer and the context of the surrounding events complete the work. She considers this a result of a "creative misreading of post-structuralist theory: rather than the *interpretations* of a work of art being open to continual reassessment, the work of art *itself* is argued to be in perpetual flux." She points out that much of this work privileges function over contemplation and seems to be contrived to enhance the reputation of curators who act as stage-managers. In her view, RA misconstrues the optical contemplation of art as a passive, disengaged practice, and therefore posits an active approach. She argues that current critical discussion of this work is focused on ethics, rather than viewer response, experience, or artist intention. This tendency leads to the trap of evaluating art for its use value. Her most significant criticism, in my view, is related to the proclaimed ideology of RA. RA heralds itself as a new democratic approach to art that respects the viewer by subsuming the artist's authorship role. Referencing the political theory of Laclau and Mouffe, she illustrates

how consensus is confused with democracy. By removing the author and claiming that somehow consensual meaning is more valuable and democratic, RA is missing the concept that democracy is dependent, and made worthwhile, by divisions of opinion. Laclau and Mouffe term this, "antagonism". Our culture is made rich by the diversity of opinions, and by a certain struggle or antagonistic relationship with meaning and value. In my opinion, this is a most significant criticism to the ideologies of art practice that would destroy the role of art and artist in culture. The practice of "antagonism" is the fundamental role of art in society. Antagonism is what separates art from entertainment, which cannot succeed economically without forming consensus amongst consumers.

In *The Social Turn, Collaboration and its Discontents*, Bishop also identifies an element of self-flagellation in the ideology surrounding RA. The denial of authorship as the denial of self, and the public service component of some RA works that structure community art practices appeal to those who feel certain guilt about their role as artists.

> *The discursive criteria of socially engaged art are, at present, drawn from a tacit analogy between anticapitalism and the Christian "good soul." In this schema, self-sacrifice is triumphant: The artist should renounce authorial presence in favor of allowing participants to speak through him or her. This self-sacrifice is accompanied by the idea that art should extract itself from the 'useless' domain of aesthetic and be fused with social praxis.* [135]

She continues to describe how this too is founded on a misunderstanding of the role and nature of art. Referencing Ranciére, she describes how the aesthetic is the ability to "think contradiction: the productive contradiction of art's relationship to social change, characterized precisely by that tension between faith in art's autonomy and belief in art as inextricably bound to the promise of a better world to come. For Ranciére the

aesthetic doesn't need to be sacrificed at the altar of social change, as it already inherently contains this ameliorative promise." [136]

I see value in RA from the standpoint of opening discourse to include a broader range of experience. I am concerned that most of the works that fit this category of practice have been compromised by a lack of concern for the experience of the viewer. I do not believe post-structuralism demands the utter disappearance of the author. The mediation of experience through an individual contributes to the unique experience I seek. I value what individuals think, more so than what groups think. If I want to know what groups think, I'll look for a survey. As a viewer, I am not obliged to accept or agree with anything I am presented, and this "antagonism" is what enriches the experience. As someone who has experienced the cult-like mindset of religion, I am leery of the religious overtones of some RA works and the implied self-sacrifice. On the other hand, the integration of interactivity in art experience is a potentially key contribution of RA. Especially within technologically mediated environments, there are many opportunities to explore an expanded field that more fully involves the viewer in the completion of the work. The integration of participatory elements such as viewer feedback and interactivity, and especially concepts such as open-source software and the range of sociable media frameworks enriches the possibilities of digital media art. Large scale, complex works in particular would benefit from an open, participatory mode of creation that is a legacy of RA. For me, the important matter is not to confuse social work with socially engaged art. Artists can be involved in social work without the products of their labor necessarily being called art.

Remediation

The concept of remediation has been a popular description of the process of change as new technologies enter the lexicon of popular culture. In *Remediation: Understanding New Media* [137], J. David Bolter and Richard Grusin describe how new technological artifacts define themselves based on their relation to previous media. Photography initially defined itself based on its relation to painting. Film defined itself based on its relation to photography. Cinema defined itself based on its relation to theater, so, for example, initial efforts at movie-making involved pointing a movie camera at a stage. While this seems like a simple concept, not worthy of an entire book, it has important implications for understanding how technology is incorporated, shaped, and compromised by our previous understandings. As artists, it allows us to see how our initial impressions of the significance of a technological artifact may in fact be obscured by the limitations of context. With respect to *Playas*, the current trend towards forcing the video game genre to adopt paradigms from cinema is symptomatic of this tendency.

More important to *Playas*, are the concepts of immediacy and hypermediacy that extend from the discussion of remediation. These concepts provide insight into our perceptions of the relationship between images and our understanding of the meaning contained, therein. Bolter claims that immediacy is our historic drive and desire to get past the representations of the world and experience reality directly. Immediacy (or transparent immediacy) is defined as a "style of visual representation whose goal is to make the viewer forget the presence of the medium (canvas, photographic film, cinema, and so on) and believe that he is in the presence of the objects of representation." [138]

In many ways, immediacy is the desire to dissolve the distinction between sign and symbol and simplify our relations with representations, engaging in a literal reading of our complex world. Bolter associates this tendency with a conservative mindset that rejects a world of "hybridity" which he associates with multiplicity and fragmentation. Art tends to favor hybridity, while culture-at-large tends to favor transparent immediacy. This tendency can be seen in the relative popularity of Hollywood film versus avant-garde film. Hollywood film favors transparent immersion in a world that appears real, versus art film, which favors metaphorical suggestion, disconcerting cuts and viewing angles, and other forms that conflict with immersion in a "real" world. [139]

Hypermediacy is the opposite of immediacy, in that it is a style of representation that consciously reminds us of the medium. Bolter claims that hypermediacy has always existed as the complement to immediacy, but has been alternately repressed or valued in representations. Quoting William J. Mitchell, Bolter states that hypermediacy, "privileges fragmentation, indeterminacy, and heterogeneity and … emphasizes process or performance rather than the finished art object" [140]. In many respects, hypermediacy in an attempt to reflect our lived condition as opposed to a simulation of "reality." As Bolter claims, hypermediacy can be a subversive counterbalance to the cultural tendency to desire immediacy in digital technology. In this respect, he sees similarities in the practices of previous artworks such as "medieval illuminated manuscripts, Renaissance altarpieces, Dutch painting, baroque cabinets, and modernist collage and photomontage." [141]

In *Neo-Baroque Aesthetics and Contemporary Entertainment* [142], Angela Ndalianis identifies many interesting relationships between baroque and what she terms "(neo-)baroque" aesthetics. Similar to the manner in which Bolter describes mediation and remediation, she discusses characteristics of neo-baroque aesthetics, drawing parallels between the dissolution of the frame in the baroque, and the immersive, illusionistic capabilities of contemporary movies. She also draws parallels between the multiple viewpoints afforded by baroque sculpture (in contrast to single-viewpoint classical sculpture) and the fractured, multiple viewpoints of a movie such as *The Matrix* (Andy and Larry Wachowski, 1999). She quotes from baroque painter Andrea Pozzo's treatise, his claim that the perspectival distortions present as one moves through the space containing *The Glory of S. Ignazio* (1691-1694) were an intentional act meant to highlight the virtuosity of the this new form of representation. She finds similarities between this activity and Steven Spielberg's act of including a scene in *Jurassic Park* (Spielberg, 1993) which showed the reflection of a dinosaur in a rearview mirror as it chased a vehicle, with text on the mirror that said, "Objects in mirror are closer than they appear." Her primary point with regard to illusionistic deception is that contemporary aesthetics are similar to baroque aesthetics in that artists use spectacular technological virtuosity to self-reflexively manipulate and play with illusionistic immersion. This self-reflective action is in many senses an example of Bolter's hypermediacy in action. As a counterbalance to the transparent immediacy of new technology, artists willfully manipulate the effect by alternating between immersion and reflection within the work. Our senses are heightened by this alternation rather than allowing complete submission

to the virtual. Later, I will discuss how *Playas* utilizes hypermediacy as an integral part of its communicative approach.

Ontological Authenticity

It is important, that as artists, we are open to concepts and ideas from other disciplines. Often, ways in which they describe phenomena have relevance for our own understanding. The professional language that we have developed to describe art, practically and theoretically, is often described in equally obscure and parallel ways elsewhere. In the Fall of 2005, I participated in Dr. Yvonna Lincoln's Naturalistic Inquiry class at Texas A&M. During the course of a class discussion of the authenticity criteria for evaluating qualitative analysis, she described the term "ontological authenticity." From her book *Fourth Generation Evaluation*, the term is defined as, "the extent to which individual respondents' own emic constructions are improved, matured, expanded, and elaborated, in that they now possess more information and have become more sophisticated in its use. It is, literally, 'improvement in the individual's (or group's) conscious experiencing of the world' (Lincoln & Guba, 1986a, p.81)" [143]. This definition made sense related to the topic at hand. She elaborated the description and asked if we had ever had a déjà vu experience; where we were studying something and suddenly "the light bulb went off in our heads", and spontaneously we experienced a realization that confirmed and solidified our sense of knowing. This description of ontological authenticity described, for me, that sense of wonder and knowing when one encounters certain works of art. It is the déjà vu experience that gives me "chills" and impresses the work permanently into my memory. It is an intuitive response to visual

stimulus that somehow completes knowledge. It is a recognition that, now I truly know something that I should have already known, or, at least, never truly appreciated. The knowing may now destabilize other constructions, but this knowledge "seems right." In many ways, ontological authenticity is an experience parallel to the cognitive aesthetic experience, or "cognitive rush", described by Csikszentmihalyi.

REFLECTION AND IMMERSION

Immersion and critical reflection are experiential concepts that are intimately related in forms of digital media that evoke virtual space. In this section I will discuss the role of criticality in the production of works of art, and in particular the role of critical reflection. Next I will discuss immersion, paying particular attention to Benjamin and Adorno's formulations of mimesis and distraction and how these concepts interrelate with critical reflection. Related to these concepts I will discuss what I see as the fundamental problem of immersive digital media works that aspire to create the experience of art.

Critical Reflection

Critical reflection is a key issue that frames this research and, indeed, an important issue as we increasingly interact with virtual environments. Critical reflection is the focus of energy in my research because I view meaning stimulated through the process of criticality as fundamental to the creation of the experience of art. We interact with the world, creating meaning for ourselves on a daily basis, but the unique contribution of a work of art is its ability to transform our lives through the process of critical

engagement. Reflection communicates a dialogic communication process (as in a mirror), while "distance" communicates a certain detachment. Both have relevance to the type of activity I am investigating, and are appreciably similar, but I will deal with them separately, here.

Critical reflection is not a binary process. If you could measure it (and I don't think you can, nor would I if you could), some works would contain more, others less, and others none at all. We engage in critical reflection daily; it is fundamental to the way humans move through life, making decisions and selecting from a host of options. As we will discuss later, there are different types of critical reflection. For my purposes, I am interested in the role of critical reflection in relationship to the experience of art, as an intentional act. While I acknowledge that the aesthetic experience of art, as accompanied by critical reflection, can happen in any place, and at any time, my interest is in the intentional stimulation of this effect by artists. The issue of critical reflection garnered my attention as I was reading an interview [144] with Oliver Grau, a noted historian of virtual art, when he said,

> *Aesthetic experience, which relies on concepts of reflective thinking space, as proposed by Cassirer, Adorno, or more recently, Hal Foster, tends to be undermined by strategies of immersion.*

As an artist working with immersive space, this was troubling and set me off on a search to understand aesthetic experience, critical reflection/distance, immersion, and other related concepts. I began to look at Grau's work and found an earlier discussion of his thoughts in this regard in his book, *Virtual Art: From Illusion to Immersion* [145],

> *Obviously, there is not a simple relationship of "either-or" between critical distance and immersion; the relations are multifaceted, closely intertwined, dialectical, in part contradictory, and certainly highly dependent on the disposition of the observer. Immersion can be an intellectually stimulating process; however, in the present as in the past, in most cases immersion is mentally absorbing and a process, a change, a passage from one mental state to another. It is characterized by diminishing critical distance to what is shown and increasing emotional involvement in what is happening.*

In *Virtual Art: From Illusion to Immersion*, Grau limits his inquiry to completely immersive environments such as CAVE environments and similar 360-degree displays. So, granted, he is discussing immersion at the extremes of our current technology, but as he acknowledges in other parts of the text, immersion occurs in other media forms as well. Despite the medium, the process is still at work. So, is this true? What effect does immersion have on our critical faculties? Are there mitigating circumstances? Why does this happen and can we compensate?

As I write this, the latest rage in academia is the use of the virtual environment, *Second Life*™, as an educational tool. *Second Life*™ is perhaps the first major, massive, online virtual world, outside of worlds created in support of video games. Because it incorporates sociable media community building capability, many academics value it as a distributed, 3-dimensional educational tool, and have begun to organize online classes and events. If we still believe John Dewey's [146] notion that effective education and a vibrant democracy is premised on the development of a population with strong critical thinking skills, we must understand the effects of immersive environments on our perceptual and critical faculties. While they may not have agreed on everything, both Dewey and Adorno recognized the need for criticality in a functional democracy [147].

Of course there are differences in the criticality espoused by Dewey and Adorno, but both required a significant level of skepticism between the individual and the power structures that delimit personal freedom. In the case of Dewey, the focus of skepticism was government, while Adorno's focus was skepticism of "the culture industry." Whether one accepts or rejects the totality of Adornian Critical Theory, there seems to be consensus, even in alternative approaches, that artists are engaged in a practice of questioning. For some, the focus of questioning is politics, for others it is life, and yet others it is art itself. Art, like democracy, is about individual freedom. Art is not about establishing a value system. As Hans Haacke has said, "to declare art a value per se fosters a devotional rather than critical attitude and ends up in pseudo-religion." Religions are systems of agreement and demarcations of ideology that attempt to establish answers to questions (much like science). In my view, art is the opposite of religion in that it continually asks questions, often, destabilizing rule systems while refusing to establish its own rules; it is fundamentally critical. By maintaining the willingness to change, and a constant self-critical approach, it resists lapsing into ideology. Of course, given human frailty, this is rarely the case. The succession of "isms" and "styles" associated with art betray our human tendency to turn ideas into religion, but that does not change the core concept of art as freedom.

Criticality is the source of questioning that often drives the practice of art. From the viewer's perspective, a critical approach often provides the meaning that makes experience rich and multi-dimensional. I am not interested in defining art or establishing necessary conditions for art. This topic is one that is tiring and has been argued ad

infinitum since the beginning of time. I am perfectly happy with a subjective approach that focuses on my personal goals as an artist, as well as enabling artists who have similar goals for aesthetic experience. While I admire a beautifully crafted painting as much as anyone, I am personally more attracted to art that illuminates or somehow challenges my expectations and view of the world (which may, in fact, be a painting). Many other artists and viewers are attracted to art that can be described in this manner, and it is precisely this type of work that is especially sensitive to the changes in intersubjective experience characteristic of technological mediation.

In any form of communication, there are embedded, implicit meanings that form a subtext reflective of the biased context of the sender and receiver. Semiotics teaches us that our negotiation of meaning, as a process of wading through signifiers and signifieds, is more complex than we could have imagined. Subtle shifts in language and meaning can have significant impacts on our daily lives. In order to negotiate this shifting terrain, our ability to critically analyze forms of communication is paramount. Sociologist William Sumner recognized the importance of criticality, defining it as,

> *…the examination and test of propositions of any kind which are offered for acceptance, in order to find out whether they correspond to reality or not. The critical faculty is a product of education and training. It is a mental habit and power. It is a prime condition of human welfare that men and women should be trained in it. It is our only guarantee against delusion, deception, superstition, and misapprehension of ourselves and our earthly circumstances.* [148]

This ability to critically analyze messages, whether textual or image-based, has been fundamental in art since photography. Prior to photography, no one truly believed the image represented by a painting had any more than an analogous relation to reality.

With photography, cinema, and more recently, television, the separation between images and what they represent has become less distinct. Often, people simply accept a photographic image as representing "truth." This is substantiated by the frequency of fantastical "photoshopped" images that are often forwarded in email, as if they are real. When the focus of art became meaning rather than beauty, criticality became inherently more important.

With an understanding of criticality, we need to develop what it means to engage in critical reflection and its relation to critical distance. These terms are all loosely related, but embody significant distinctions. The Cambridge Dictionary defines reflection as, "serious and careful thought." [149] Critical reflection, as the term suggests, involves a process of "thinking back" or "reflecting" on an experience in a critical manner. An artwork is said to support critical reflection if it successfully communicates to the viewer the sense that there is a subtext, or deeper reading of the work. It is a term, however, not limited to the arts, but also has a well-developed history in education, as the previous references to Dewey would suggest. In fact, I believe that the most developed investigation of critical reflection can be found in the development of Transformation Theory in the field of adult education. In many ways, the goals of education and art overlap. Both fields are concerned with complex human behavior that is difficult, if not impossible, to understand empirically. Both fields are invested in understanding subjective relationships that are fundamental to making sense of human behavior as we attempt to attain knowledge. Like art, Transformation Theory (TT) is concerned with how people make sense of the world and behave in response to life experience. With

linkages to the work of Paulo Freire, Jurgen Habermas, John Dewey, and others, Transformation Theory, as espoused by Jack Mezirow, is founded on the concept of critical reflection and the importance of a critical mindset to society [150].

> *A defining condition of being human is that we have to understand the meaning of our experience. For some, any uncritically assimilated explanation by an authority figure will suffice. But in contemporary societies we must learn to make our own interpretations rather than act on the purposes, beliefs, judgments, and feelings of others. Facilitating such understanding is the cardinal goal of adult education. Transformative learning develops autonomous thinking*. [151]

While art is not directly concerned with "educating" the viewer, I find the foundation of TT in intersubjective communication and personal transformation to be an apt fit for the types of experiences engendered by an engagement with certain works of art. We have to be careful about the use of art and education as a propagandistic device. The goal is not to direct individual thought to particular ends, but to allow for an environment where individuals are empowered to question. Both art and TT accept the ideal notion that the act of questioning is the barrier that can protect us from the domination of ideology. Whether human agency is capable remains a question, but pragmatically it is our best hope. The field of art has long had ties with the intellectual domain of Critical Theory, especially the Frankfurt School variety, and as we begin to recognize the weaknesses of Critical Theory in effecting societal change, I think it is important to look to other models for inspiration. TT combines Freire's "conscientization" with Haberma's "emancipatory action" to begin to propose ways of understanding how we create meaning and instantiate meaning as action [152]. Instead

of a purely ideological critique, as typified by Critical Theory, or a psychoanalytical critique, TT brings a pragmatic constructivist approach to criticality [153].

In *Knowledge and Human Interests* [154], Habermas identified three primary knowledge domains: technical, practical, and emancipatory. As Connelly describes,

> *Mezirow states that each knowledge domain can be seen as involving a different mode of learning, respectively: learning for task-related competence, learning for interpersonal understanding and learning for perspective transformation. Mezirow agrees with Habermas that it is the instrumental assumptions of the first which have been dominant in western society, and that it is the third domain which is important in combating this dominance. Mezirow argues that his concept of perspective transformation, a process of transformative critical reflection on the constraining psycho-social assumptions which inform our identity, performs these emancipatory functions*. [152]

Mezirow interprets Haberma's communicative learning as an emancipatory process of transformational learning. Contrasted with instrumental forms of learning where "the truth of an assertion may be established through empirical testing….communicative learning involves understanding *purposes, values, beliefs,* and *feelings* and is less amenable to empirical tests. In communicative learning, it becomes essential for learners to become critically reflective of the assumptions underlying intentions, values, beliefs, and feelings."

So viewed through the lens of Transformation Theory, we begin to develop an appreciation for a form of knowing that is less empirical and more intuitive. This intuition is filtered through a sense of critical engagement and self-reflection. This knowing is informed heavily by the socio-context, history, and personality of the viewer. This knowing is dialogical, constructivist, and emancipatory. While TT formulates

critical reflection both within the context of instrumental knowledge acquisition and communicative knowledge acquisition, its conception of the later is important for art. The process of critical self-reflection, or subjective reframing, provides an inroad for a critical aesthetic experience that can affect change. "Self-reflectively assessing our own ideas and beliefs (subjective reframing) … can lead to significant personal transformation." [151]

Of course, as with any theory there are weaknesses. TT focuses on the creation of "autonomous", critically minded individuals. Post-structuralist postmodernism shows us there is no such thing as an autonomous individual. Critical Theory illustrates that the frame of reference of the individual is limited and filtered by the hegemonic structures of society. Will we not simply perpetuate hegemony through a reflective process that is innately compromised? With its focus on the individual, how can larger social networks effectively be altered? Mezirow addresses some of these by categorizing critical reflection based on type. For example, he identifies what he terms "systemic" critical reflection, which is targeted at socio-cultural forms of control [153]. Art practice targeted at these particular areas can act as a social foil. These are, however, valid questions that point to the necessity to integrate this thinking with other forms of critical inquiry such as Critical Theory. TT is not an answer, in and of itself, it is a framework which allows us to consider richer ways of knowing, and provides a way for knowledge to build upon itself without relying exclusively on empirical scientific method for validity or effectiveness. Critical reflection is a tool to create internal conflict, which like democracy itself, relies on difference in order to thrive. An ideal autonomous

individual, or experience, will never exist. He, or she, is not an end product, but is a dynamically constructed, ideal contributor to the functioning of a dialectical social system. As such, art becomes a fundamental part of society, both in terms of its content, as well as its value as an exercise ground for the development of critical thinking skills.

The process of reflection, or contemplation on the experience of a communicative event does not equate to critical reflection. Simply to reflect or look back does not include the process of analyzing the content of the experience. The conjunction of contemplation with analysis, in general, describes critical reflection. Mezirow distinguishes implicit critical reflection, where we mindlessly make choices based on cultural norms, from explicit critical reflection where the object of interest is some predisposed idea or assumption that we actively reconsider. Within the category of explicit critical reflection, there exists critical reflection of assumptions (CRA) and critical self-reflection of assumptions (CSRA).

> *When the object of **critical reflection** is an assumption or presupposition (CRA), a different order of abstraction is introduced, with major potential for effecting a change in one's established frame of reference. Assumptions upon which these habits of mind and related points of view are predicated may be epistemological, logical, ethical, psychological, ideological, social, cultural, economic, political, ecological, scientific, spiritual, or pertain to other aspects of experience. As adults, we can become critically **reflective** of our own assumptions as well as those of others. **Critical** self-**reflection** of an assumption (CSRA) involves critique of a premise upon which the learner has defined a problem (e.g., "a woman's place is in the home," so I must deny myself a career that I would love). Significant personal and social transformations may result from this kind of **reflection**.* [155]

Critical reflection works on a number of different levels. It can be the stimulus for a wholly transformative life-event, or it can encourage a simple personal awareness. It can

be targeted at external situations or focus on internal issues. Obviously, critical reflection is a complicated human activity that deserves further study, especially with respect to its relationship to aesthetic experience.

In *Reflective Teaching: An Introduction* [156], Liston and Zeichner describe the timing of the reflective process. It has been apparent to me that when we talk about critical reflection, there are differing concepts of the activity based on the context in which it takes place. Often with an artwork, there is preliminary knowledge that one will investigate, for example, a project statement, a history book, an interview, etc., and this information will instigate a reflective process before having viewed the artwork. During the experience of the work, reflection will occur and meanings will arise, sometimes independently, and sometimes in direct relation to this previous information. Subsequent to the experience, the viewer will often engage in another level of reflection, thinking back on the experience in an attempt to link it all together, "bringing the work to fruition." So, obviously, critical reflection is a temporal activity that builds and recedes over time. Liston and Zeichner validate this understanding, identifying five time-based types of reflection: 1) Rapidly during an action 2) Thoughtfully during an action 3) Briefly as a review after action 4) Systematically over time after action 5) Long-term as one develops formal or informal theory. These categories correspond to my reflective experience of art, with the exception that they do not seem to consider a pre-experience reflection relating to the history one might bring. While this category is not always present, and some would reject this type of information as superfluous (especially those still wedded to autonomy), I believe it is just as important to a work as

what happens "inside." Contextual information is as much of the art as the direct experience, itself. I believe with the addition of this additional pre-experience category, this delineation of critical reflection accommodates the variety and depth of reflective contemplation that occurs during the experience of a work. Critical reflection, conceived in this manner, is also consistent with Langer's description of aesthetic experience as a gradual unraveling of content from a whole, instead of a build-up of information via a discourse framework such as narrative. I particularly like the dual types of reflection that occur during the experience, one deeper than the other. I also like the idea that feedback occurs when what is learned constitutes theory that influences future experiences.

In addition to timing issues, a number of scholars working in TT have identified other processes involved in critical reflection. Stephen Brookfield describes a four-part process of *assumption analysis, contextual awareness, imaginative speculation*, and *reflective skepticism* [157]. Elaine Surbeck identifies a process of *reacting*, *elaborating* and *contemplating* [158]. In *Learning as Transformation: Critical Perspectives on a Theory in Progress*, Mezirow identifies a group of ten activities associated with the process of transformative learning, the first several of which are instrumental in critical reflection [159]. Perhaps the most significant of these with respect to immersive virtual art is the concept of "disorienting dilemma." A disorienting dilemma is the recognition that something challenges our world-view, or preconception of "reality." While a disorienting dilemma can be subtle, it can also significantly disrupt our mental model of life. Many people are "socialized in sub-cultures that place little or no value on critical

reflection and as a result, any major challenge to their established perspective is painful since this questions their deeply held personal values and threatens their very sense of self." [160] Historically, there are many examples of this kind of response to artworks that challenged presuppositions of all types. Surprisingly, even amongst supposedly informed art students, Duchamp's *Fountain* still elicits derisive remarks and hostile rejections of its artistic merit. More importantly, though, than content induced shock, I suspect that certain disorientation in our approach to experiential phenomena is necessary to cause us to consider the experience on a deeper level. In this way, the disorienting dilemma in Transformation Theory, hypermediacy in Bolter's remediation, Kracauer's distraction, and Benjamin's shock, can be seen as addressing a fundamental behavior exhibited at the instantiation of critical reflection. In order to engage critically with a work, we must be jolted out of complacency. Once awakened, we can potentially participate in a dialog that may, or may not, challenge our assumptions about the world, however large or small that might be. Artists have intuitively recognized this action for generations. Surrealism, Dada, collage, montage, and avant-garde works of all types have capitalized on this technique.

Critical Distance

Critical distance is very similar to critical reflection, and is in fact, often used interchangeably. Critical distance is, perhaps, more commonly used when discussing the experience of art. As compared to critical reflection, the phrase denotes a passive viewpoint; a separation from the object of experience. A painting invites a physically passive viewing experience. In comparison to a digital media work that often demands

interactivity in order to communicate, a painting relies on the gaze. There have been competing theories about the manner in which the viewer should approach an aesthetic object. Jerome Stolnitz developed Kant's idea of disinterest into the theory of the aesthetic attitude [161]. He described a state of consciousness whereby the viewer frees himself from outside influence, daily life, or other distractions, and enters a zone of "distance" from the work. In his view, the goal was to evaluate a work "on its own." Edward Bullough published his approach to distance in a famous article, *Psychical Distance as a Factor in Art and as an Aesthetic Principle* in 1912 [162]. He described distance as independent of the sensation of temporal or spatial distance, and declared distance a fundamental component of aesthetics. Of course, this methodology is congruous with the evaluation of formalist works popular at the time of its writing. George Dickie rejected this notion, claiming that the aesthetic attitude was nothing more than an indication of a viewer's interest or attention to the work [163]. More recently Norman Kreitman has proposed that there are varieties of disinterestedness. In his view, disinterestedness can be classified as strong, moderate and weak. A weak form of aesthetic disinterest allows for the influence of context in the aesthetic experience, while maintaining a sense of individual communication with the artwork [164]. In general, the idea of critical distance has fallen out of favor. Its conception as a way to approach work with a minimum of external intrusion is untenable. It is now accepted that we bring external thoughts, biases, histories, and expertise to the viewing experience. While obviously there is something to be said about a person's interest in a work, and there is certainly a desire to minimize distractions that would take a way from an experience,

that is a fact of daily life in any context, much less the experience of art. Concentration is important in any act of communication. Despite claims that one might enter an ideal state of objectivity when experiencing a work, it is wholly unnecessary. Today, artists capitalize on the cultural connections a viewer brings to an experience. A viewer is just as likely to miss opportunities for meaning using this technique, as he or she is to enhance the experience.

The term distance is still a valid concept, however. Benjamin's description of aura as related to the vision of a mountain range and a tree branch communicates the idea of reflection as a function of distance. In *The Language of New Media*, Manovich does a masterful job drawing parallels between Benjamin's distance related reflection and Paul Virilio's conception of Small Optics versus Big Optics. He points out how Benjamin viewed film as a new technology that disrupts the separation of viewer and object in a similar way that Virilio views telecommunications as a disruption. With barely fifty years separating them, film is now incorporated as a traditional means of representation and is no longer considered disruptive.

> *Benjamin's and Virilio's analyses make it possible for us to understand the historical effect of these technologies in terms of progressive diminishing and finally, the complete elimination of something that both writers see as a fundamental condition of human perception – spatial distance, the distance between the subject who is seeing and the object being seen* [165]

He continues to explain how even if their viewpoints are skewed by time, their reading of distance is essentially a positive reinforcement of distance in subject object relations, privileging vision over touch. In Manovich's opinion, given the fact that

technology (in real time) will eventually allow us to touch objects remotely, and therefore destroy remotely, their support of vision over touch is warranted.

Immersion and Mimesis

Immersion is a word that is used in many contexts beyond digital media. The word originates from the term "immerse" which means to submerge or plunge into something, such as a fluid [166]. Janet Murray is widely referenced as initiating discussion of the term in the context of digital media in her book *Hamlet on the Holodeck,* in 1997 [167]. She follows the popular understanding of the term from literary theory by relating it to narrative, but emphasizes activity as part of the process. As we experience a narrative we engage the story so intensely that we lose awareness of the world around us, and partake of another world. She describes it as being "submerged in a completely other reality." She emphasizes the interaction component of immersion by stating, "in a participatory medium, immersion implies learning to swim, to do the things that the new environment makes possible…the enjoyment of immersion as a participatory activity." [168] Of course, by its very nature in relation to representation, immersion references certain elements of mimesis. Representation and mimesis are topics worthy of a dissertation alone, but in the following section I will provide a cursory examination of the topics as they relate to immersive digital media art.

There are those who believe that immersion is irreconcilable with a state of critical reflection, and those who believe otherwise. As the previous quote from Oliver Grau implies, the issue is problematic and perhaps irreconcilable. Marie-Laure Ryan, author of *Narrative as Virtual Reality* [169] discusses the issue in the introduction to her book.

She describes immersion as an issue that "at best…has been ignored by theorists; at worst, regarded as a menace to critical thinking." [170] She quotes Bolter [171] as saying, "that virtual reality cannot in itself sustain intellectual or cultural development….The problem is that virtual reality, at least as it is now envisioned, is a medium of percepts rather than signs. It is virtual television" and, "What is not appropriate is the absence of semiosis" and, "Losing oneself in a fictional world is the goal of the naive reader or one who reads as entertainment. It is particularly a feature of genre fiction, such as romance or science fiction." [172] At the time Bolter wrote this, it is obvious he had difficulty believing the situation was salvageable. Ryan counters by claiming that there exists a type of medium-aware immersion that, "media users remain fully aware of contemplating a representation, even when this representation seems more real than life." [173]

Ryan is referring to a type of immersion that extends from literature and has been used to inform the development of cinema. This type of immersion is, as she describes, a complete loosing of oneself within the experience. Within literature, this immersion takes place when one connects with the story and creates mental images of the contents in such a fashion as one can "visualize" the narrative. Immersion in this sense is very much directed by the author, but leaves room for the reader to filter the experience through his or her own experience and metaphorical capabilities. The author relies upon a certain understanding of ways in which to stimulate particular associations in the mind of the reader. This type of experience, in a perfect example of Bolter's remediation, has been extended to cinema. The primary difference being that in cinema the viewer is

provided stimulus via an audio-visual experience, rather than a textual interface. In terms of the suggestive, emotive, drive of the story, the word often used in cinema is "diagesis." Here the viewer also engages with the experience in such a manner as to forget the separation from internal dialog and the external world.

In computer science, the term immersion has associations that link to the machinery of experience. "Immersion is a psychological state characterized by perceiving oneself to be enveloped by, included in, and interacting with an environment that provides a continuous stream of stimuli and experiences." [174] Surrounding a viewer's field of vision and making proprioceptive connections with their physical sensory system, through the use of technology, can create a sense of immersion. Common techniques have been the use of head mounted displays, data gloves, and the CAVE system. Immersion is accompanied by a sense of presence. Presence has several definitions, the two most popular of which are "the sense of being there" associated with the work of Barfield, Zelter, Sheridan and Slater [175], and the "illusion of nonmediation" associated with Lombard and Ditton [176]. In either form the test of success is the ability of the viewer to engage with the environment in such a way that she forgets the fact that she is in an artificial situation. As previously described when discussing Bolter's thoughts on "transparency" in cinema, and in terms Ryan uses to explain immersion, the primary issue at stake is the viewer's ability to separate reality from fiction. The point, however, isn't that we confuse reality and simulated reality as one and the same, but that we give of ourselves in both situations such that we loose our capacity to make judgments (think critically) in the simulated environment.

In many senses, this debate is an extension of a debate that heralds back to the time of Plato and Aristotle. What are our representations of the world? Are they copies or are they a mere imitation or reflection? What is the connection between the signifier and the signified? Representation alone is a huge topic that has filled many books and absorbed many careers. In its simplest form, Encarta defines representation as, "picture: a visual depiction of somebody or something." [177] A representation is something that proposes to depict something else. While the concept of representation has meaning in many disparate fields, it is a key component in the understanding of art, and therefore digital media art. In many ways, the development of art can be traced as the development of representation. The first examples of art found in the Paleolithic caves are representations of wildlife in the natural environment. Without reciting the entire history of representation, mankind has been interested in this issue for a long time, and our exponentially increasing capacity in this regard has brought the issue to the fore, once again.

A fundamental concept of representation is mimesis. Mimesis comes from the Greek word meaning "to imitate." [178] Of course, nothing in art could remain that simple. There are ramifications to this simple act of mimicry. While the issue is certainly not resolved, and there are many additional subtleties to its conception, one of the better definitions of mimesis is from the Encyclopedia of Aesthetics, "Mimesis creates a fictional world of representation in which there is no capacity for a non-mediated relationship to reality." [179] The key issue in this definition is the idea that we understand mimetic activity to involve a mediation of the representation. The

representation is a sign (as in Sausurre's description of sign as signified and signifier) that points to a perceived "reality." During the process of signification, meaning is transformed, or mediated. Of course, a number of philosophers and theoreticians have investigated this process of transformation. With the advent of digital technology, mass media, and consumer society, the issue is even more important and increasingly blurred. Benjamin, Jameson, Deleuze, Derrida, Baudrillard, and many others have something to contribute to representation, mimesis, and the transformations that take place as we blur the lines between illusion and "reality." This is the foundation of art; how do forms communicate and what is our relation to these forms? What becomes of reality when we can simulate the experience so realistically that there is little distinction between the two? In this type of experience, what happens to art; can we maintain criticality in this environment? Baudrillard declared that we already have difficulty separating the two! If immersion can cause the collapse of perceived differences between "real" and "not real" and a critical mode of thought is banished, are we powerless against the forces of hegemony? I believe we already have the answer. We need to recognized its importance and cultivate methods of supporting its use in the experiences we create.

Distraction

Hopefully, by now, the role of critical reflection is understood. Hopefully, now, we can see the important role it has with relation to art and society, and the imperative with which we must find ways to support its creation in whatever form of media we develop. Hopefully, now, we can see that it is not the simplified, decontextualized form of contemplation to which some would reduce it. It is not important simply because

egotistical artists want to have something significant to say. It is important because it is the very foundation of a free society. So, if we agree that it is important to support critical reflection, how can that be accomplished? For the answer, we might look to the concept of "distraction."

We are well aware of the pitiful state of the Hollywood film industry. American film has, for the most part, done little to deliver the promise it once represented for Benjamin and others. It has become an extremely profitable industry that churns out formulaic movies in an assembly line fashion akin to the plants of the industrial era. While there are pockets of creativity and occasionally interesting work, for the most part, film has embodied the characteristics feared by Siegfried Kracauer when he wrote *Cult of Distraction* in 1926. Then, as now, the concern was that a potentially liberating form of representation might be subsumed, and instead be used to maintain control over the individual, rather than allow them to witness their true condition and demand equality. Continuing the legacy, today we decry the poverty of the video game, recognizing the hours lost in mindless immersion, but seeming not to recognize the lessons of the past. Kracauer recognized the positive as well as the negative aspects of distraction in the context surrounding film in Berlin.

> *While the addiction to distraction is certainly greater in Berlin than in the provinces, the tension to which the working masses are subjected is also greater and more tangible – an essentially formal tension which fills their day fully without making it fulfilling. Such a lack demands to be compensated, but this need can only be articulated in terms of the same surface sphere which imposed the lack in the first place. The form of entertainment necessarily corresponds to that of enterprise. A correct instinct will see to it that the need for entertainment is satisfied. The interior design of the movie theaters serves one sole purpose: to rivet the*

> *audience's attention to the peripheral so that they will not sink into the abyss. The stimulations of the senses succeed each other with such rapidity that there is no room left for even the slightest contemplation to squeeze in between them*. [180]

Kracauer recognized that the spectacle surrounding the film, in the form of ornate structures, movie stars, the remediation of theater and stage, all conspire to keep the viewer from recognizing the revolutionary nature of the medium. Rather than recognize the fractured nature of their existence, they are presented with pacifying narratives and mindless entertainment. The negative form of distraction was to distract the viewer from reality. The positive form of distraction was the vision of a medium that reflected the fragmented condition of modern society. Benjamin, too, recognized the potential in film and its possible compromise via negative distraction. In *Reception in Distraction* [181], Howard Eiland addresses the opposing views of distraction, and discusses how Benjamin's "habit of use" points to the ways in which we become accustomed to technology and integrate forms of perception. Benjamin, himself, recognized that modern society is characterized by an increasing ability to receive while in a state of distraction. This recognition was the source of his hope that film would instigate the transformation of social conditions that he desired. So, we have a dual mode of function, an alternation between distractedness as passivity, and a distraction from passivity to a state of reflection or criticality. Avant-garde film capitalized on this technique, assaulting the senses and constantly reminding us of the medium. Bolter's conception of immediacy and hypermediacy are, ironically, a remediation of Kracauer and Benjamin's formulations of distraction. It seems our fundamental relationship to the

world is through a fractured, alternating, flipping between states of attention and distraction.

With time, we become accustomed to new forms and become habituated to their interface. Yes, immersion can absorb our senses to the point of mindless "intoxication," but we are still receptive agents, able to receive messages from those who wish to send them. This is the role of a critically engaged art, to know when to shock, to know when to distract, and to know how to stimulate critical reflection. An artist, whether he or she is a filmmaker, a painter, a computer programmer, a musician, or any form of aesthetic experience, is only as good as their ability to know how to induce the viewer or viewers to imagine for themselves.

I suspect the concern that immersive technology destroys critical reflection is, as Salen and Zimmerman have suggested, a symptom of an immersive fallacy [182]. People want to believe that total immersion is possible and, as a result, project that on a situation, which is not realistic. We are complex beings that certainly have the capability to multi-task, especially once we are habituated to a particular experience. I believe that no matter how immersive the technology, we will still be presented with the same situation; artists will be required to adapt to the medium and determine ways to stimulate critical reflection through the process of distraction, or some other, as yet unknown technique.

Of course, the inevitable critique of critical reflection remains. How can it affect change if the negatively distracted masses are passive and unreceptive? How long can we shock and positively distract until people are habituated? Has not history proven that

this technique is ineffective? These are all valid critiques that suggest the frustration of dealing with complex human dynamics. Given the events of the past several years, as the majority of citizens in the United States have mindlessly supported the repressive policies of the Bush regime, the sentiment is understandable. Baudrillard's dystopic view of *America* seems to be true, and the rush to declare everything and anything art creates a sense of failure. I believe that art has made a difference, even if subtle. I hope that the pendulum will swing the other way, and we will eventually begin to value criticality, again. I do not believe we can wait for education to begin to value criticality and begin to produce critically engaged students. My faith is that in times of change, such as the one instigated by digital technologies, there are cracks and fissures that allow new thought to escape. Who would have thought the open source software model would have been as successful as it has been? Some of the thinking of Michel de Certeau provides optimism that we can identify means with which to critically engage mass culture and affect change. His description of "strategy" as a means of hegemonic control and his conception of the role of "tactics" in the subversion of control has promise for the act of art [183]. In my view, the practice of art is what in logic and computer science is termed an "and" operation. We take existing modes of operation, evaluate them against new forms and attempt to fit them together; an act of synthesis. Artists must leverage their strengths in the creation of critical reflection and look for new opportunities to improve intersubjective relations. *Playas: Homeland Mirage* is my commitment to that process.

GAMING AS A CRITICAL AESTHETIC EXPERIENCE

Introduction

Of course gaming is an aesthetic experience! As I have outlined previously, there are all types of aesthetic experiences. There are aesthetic experiences that occur that have nothing to do with the experience of art. There are also aesthetic experiences that one would call art experiences in the least likely of conditions. Csikszentmihalyi separates aesthetic experiences and flow experiences to delineate art and leisure activities. I would categorize practically all video game experiences as aesthetic experiences, but only a few as critical aesthetic experiences. I use the word critical to define works that attempt to communicate to the viewer through the process of eliciting critical reflection. Of course, after describing their cultural popularity and profitability, Henry Jenkins declared video games are de facto art: “Computer games are art-a popular art, an emerging art, a largely unrecognized art, but art nevertheless.” [35] I only wish it were so easy. In the end, it probably doesn’t matter. If people feel the need to legitimize what they do by adding the tag “art”, then so be it. For the purposes of this investigation, I am interested in the use of a video game engine in the production of an art installation. At one time, I considered delving deeply into the area of game studies to expand an understanding of *Playas: Homeland Mirage*, but realized that game studies, directly, has little to say about the use of the medium in the production of critically reflective aesthetic experience. In the sections that follow, I will address the essential dialogs of game studies, the primary contributors, and the most interesting areas of contribution to the *Playas* project. This is not to say that game studies are not an area

ripe with possibilities and avenues of exploration. On the contrary, especially with respect to interface design, simulation, identity, and social communication, gaming has an exciting future. My primary complaint is the lack of scholarship concerning critical reflection within the discipline. Perhaps this is an area where this research can benefit future work.

Contributory Forms

Game studies is a relatively young field, so perhaps I shouldn't expect much concerning as marginalized an activity as art. Then again, much of game studies, as one might expect, is built upon scholarship from other disciplines. The concept of remediation is certainly applicable here. That being said, relatively recently there has been a big push to recognize the unique aspects of gaming and the need to create a specialized language to describe its function and improve its scholarship. Many of the most respected names in the field have expertise outside gaming, and this breadth of expertise benefits the field.

Game studies has primary linkages with literature and film. Many game studies programs and events are linked to university English Departments. Digital media has influenced these programs much as it has other disciplines, and the movement of discourse to online hypermedia has made the linkage with video gaming a natural evolution. As one might expect, much of the discourse around video games in this context is related to extending ideas from traditional forms of literature to the gaming environment. Narrative and the structural properties of storytelling are a key issue. Many with a cultural studies focus spend time analyzing commercial games with zeal,

and a proclivity to find intertextual references between works and larger cultural phenomena. Another group are interested in the focused on the issue of violence in games. People such as Andrew Stern, Brenda Laurel, Janet Murray, Jurie Horneman, Marie-Laure Ryan, Michael Mateas, Nick Montfort, and others extend from this line of scholars interested in the discursive properties of the video game. They recognize the challenges in replicating the types of experiences they value in reading great works of literature, and seek to improve a medium that often thwarts their ability to achieve this rich experience.

One of the key issues from a literature perspective is the challenge to linear narrative structures when the dynamic interactivity of the video game is confronted. The player has relative freedom to engage the world, such that it is difficult to predict or direct his or her trajectory through space. This necessarily compromises the author's ability to tell a story. Janet Murray proposes that a key goal is to provide a sense of "electronic closure." [184] She describes this as making the structure of the game apparent, as opposed to the typical conception of plot closure. In this manner, the player always has a sense of moving from unknown to known.

Nick Montfort is doing interesting work developing interactive fiction. Capitalizing on his skills in Computer Science and research into literary and grammatological structures, he is developing a system that promises to allow stories to branch in a dynamic manner. His interactive fiction projects and the programming framework he is building simplify the daunting task of modeling patterns of human dialog providing coherent feedback. I can see where his system of dialog would be invaluable when

integrated with 3D game characters. The game player could have reasonably intelligent dialog with characters, directly influencing the development of the story [185].

Working directly within the realm of Computer Science and AI, Michael Mateas has developed what he calls Expressive AI [186]. Expressive AI is similar in some respects to Montfort's interactive fiction work in that the system is designed to institute dynamic responses on the part of characters embedded in a storyline. In collaboration with Andrew Stern, he has built an interactive drama called *Façade* that uses natural language processing techniques and what he calls a drama management system to allow authors to construct dynamic narratives [187].

While it seems a truce has been called, there existed a somewhat heated debate between those in game studies who championed the importance of narrative in defining the genre, so called "narratologists," and those who favored game play, otherwise known as "ludologists." The first issue of Game Studies Journal [188] highlighted this division between. The term "ludology," as popularized by the researcher Gonzalo Frasca [189] in 1999, became associated with game researchers whose focus was primarily directed towards gameplay. The word ludology is based on the Latin work "ludus," or game. Ludologists consider videogames a subset of a larger field devoted to "games" and forms of play. Their position reflects an understanding that games contain fundamental differences from cinema, drama or literature. Frasca believes the difference between these other forms and videogames is the difference between representation and simulation. In his view, simulation places focus on behavior as opposed to the representational emphasis on image. "This is the ontological difference that makes me

claim that games cannot be understood through theories derived from narrative." [190] Within the gaming community a dualism developed around the narratology versus ludology issue, which stifled development within the field. Frasca, has attempted to reconcile this dualism by clarifying his position and describing his view of narrative and its role in the game environment [191].

While there are many motives for the study of video games, Epsen Aarseth identified three in his essay *Genre Trouble: Narrativism and the Art of Simulation* [192]. Some are motivated by economics, speculating that improving games improves profit margins. Others are "elitist" and believe games are a form of "low culture" and should be improved to achieve "literary" status, while others have a vested interest in perpetuating a particular academic territory in order to preserve their professional relevance. My interest in this research is not based on any particular love of gaming, or an interest in literature or narrative, although, I do feel it is important to understand the significant issues. I am interested in the medium as one component of the synthesis of an overall aesthetic, artistic experience. As an artist, I believe that it is important to understand the characteristics of a medium in order to better manipulate and control it for my own aesthetic purposes. Besides the development of intelligent dialog another key area in video games is the simulation properties of the medium. I agree with Frasca that simulation is one of the key issues in the development of gaming, irrespective of one's focus on play or narrative, or whether one is interested in the medium as a generator of art experience or entertainment.

Simulation can be seen as a form of representation and can be discussed in multiple contexts. Baudrillard discusses the topic from a meaning point of view in *Simulacra & Simulation* [193]. In his view, we have created "reality" through the process of simulacra. Simulacra occur when the signified no longer points to a signifier. It is a copy without an original. In other words, we create a "reality" based on empty symbols and therefore nothing is "real." In an age where illusory images can be fabricated via the computer, this idea has particular resonance.

Simulation can also be discussed in a mechanical context. With relation to video games, this is often the context that comes to the fore. In *Simulation 101: Simulation versus Representation* [189], Frasca discusses the distinction between film and video games in this context. He draws parallels with Magritte's *The Treachery of Images*, which is primarily related to meaning, but his primary focus in on mechanics. In his view, film is concerned with narrative and the function of narrative in creating immersion through the process of illusion (representation). He views the video game genre as distinctly different because of the gaming focus on simulation. Here, the focus is on the mechanical ability of the video game to dynamically adapt and modify its behavior based on player input. Simulation, in this regard, harkens back to the educational, economic, and military uses of gaming as a simulator of complex relations or for training. Without denying the value of representation, Frasca identifies simulation as the most important aspect of video game design. In his view, players reach a state of immersion through the process of play as opposed to reliance on narrative. In this article

he calls for game studies to begin the process of studying simulation in conjunction with the well developed, more fully understood realm of narrative representation.

Support Structures

It is apparent *Playas: Homeland Mirage* is a complex work that blurs the line between artwork, video game and installation. Critical reflection is a phenomenon of complex human behavior with interlinked issues related to critical theory, film studies, game studies, cultural theory, social theory and more. As was discussed previously in Scientific Methodology and Art Evaluation, Naturalistic Inquiry (NI) makes no claims for the generalizability of research results. In NI, the goal is "transferability"; the results are trustworthy for my own research use. In order to understand critical reflection in this environment, I decided that it was necessary to attempt to narrow the focus of interest to a set of four key support structures that, based on my expertise with the work and subject matter, should have some bearing on the issue. These are conceived as structures that may, or may not, support the development of critical reflection; content, authorial control, communicability, and embodiment. These are not intended as a complete taxonomy of potential effects, but are simply areas of particular interest for me, and I hope for others.

Content is, as the word suggests, the substance of the work, primarily related to the cognitive aspects of its design. The content of the work are the ideas and concepts related to the social, cultural, and historical context. What are the artist's intentions and what choices were made in its conception, construction and execution? How does the work link together to create a unified work of art? The assumption in choosing this

category as a support structure is that the content of the work has a bearing on the critically reflective capacity of the result. Questions in this category will ascertain major themes identified by the viewer.

Authorial control is an issue that has resonance for game studies, in that one of the primary issues, given the dynamic nature of simulation, is the ability of an author to direct the flow of the experience. The primary focus of interest is the relationship between the author's intention and the perception, and experience of the participant. As before, the assumption is that there is some relationship between authorial control and the experience of critical reflection. Questions related to this category will express an interest in whether the viewer understood particular concepts that I feel are important to understanding the work.

Communicability is a category that encompasses a number of substructures concerned with the ways meaning is generated. Structures of meaning understood from film and literature will be addressed. The focus will be on the metaphor, metonymy, synecdoche, intertextuality, and the ways these techniques inform the work will be addressed. Participant answers will be analyzed for the presence of these forms of meaning. The assumption is that the stimulation of meaning, independent of the author's intention, is a sign of critical engagement with the work. What capacity for the stimulation of meaning did the work exhibit?

Embodiment is the final category of interest in this study. In what manner did the interface with the installation contribute or detract from the sense of immersion? Additionally, in what ways did the interface support or subsume the effectiveness of the

work to communicate with the viewer? Beyond the technical aspects of the interface, the functioning of the work, in general, to stimulate a sense of oneness with the environment will be considered. The question, here, is whether a sense of embodiment is related to critical reflection in the work.

In the next chapter the *Playas: Homeland Mirage* artwork will be analyzed with relation to the support structures outlined above. Over a period of several weeks, fifteen individuals experienced the installation and participated in semi-structured interviews intended to learn more about critical reflection. I will first discuss other video game based projects, detailing their similarities and differences with this project. Then I will discuss the conceptualization and creation of the project and discuss my impressions of its strengths and weaknesses. This section will reference my intentions and address what I feel are the strengths and weaknesses of the project. The longest section will present the information gathered during the participant interviews followed by a discussion of the findings and results of these interviews with respect to critical reflection.

PRIOR WORK

The use of video games has become popular in art practice. A number of different methodologies have surfaced that are reflected in the final work. Some artists use the game engine as a source for the generation of three-dimensional geometry, making little use of the existing vocabulary of gaming. Others leverage the game as a self-reflective source of content. The range of works using game technology is broad, not only from a technical point-of-view, but also from a content perspective. Many works are simple

Flash animations that extend existing game tropes, all the way up to fully developed games that mirror commercial games. I've already discussed several popular games that were conceived as artworks. In this section I will focus on four games that more closely resemble *Playas* and have something in common that informs its creation, John Klima's *The Great Game*, Anne-Marie Schleiner's *Velvet Strike*, Gonzalo Frasca's *September 12th*, *A Toy World*, and C-Level's *Waco Resurrection*.

Perhaps one of the earliest artists to experiment with the video game, John Klima's 2001, *The Great Game* [194], addresses the dichotomies between game and war and observation. From a third-person viewpoint, the observer can view a topographical map of Afghanistan. The map is littered with iconography suggestive of military maneuvers and troop placements. These icons represent the deployment of forces in the United States campaign against the Taliban, subsequent to the bombings of September 11, 2001. Based on daily military press briefings, the artist updates the state of the war by moving and adjusting the artifacts of war. Green icons are Taliban troops and facilities, while blue represents U.S. forces (Fig. 21). Every 60 seconds, the map refreshes and displays a single days' configuration. Viewers can zoom in and out, as well as rotate the topography to get a better view.

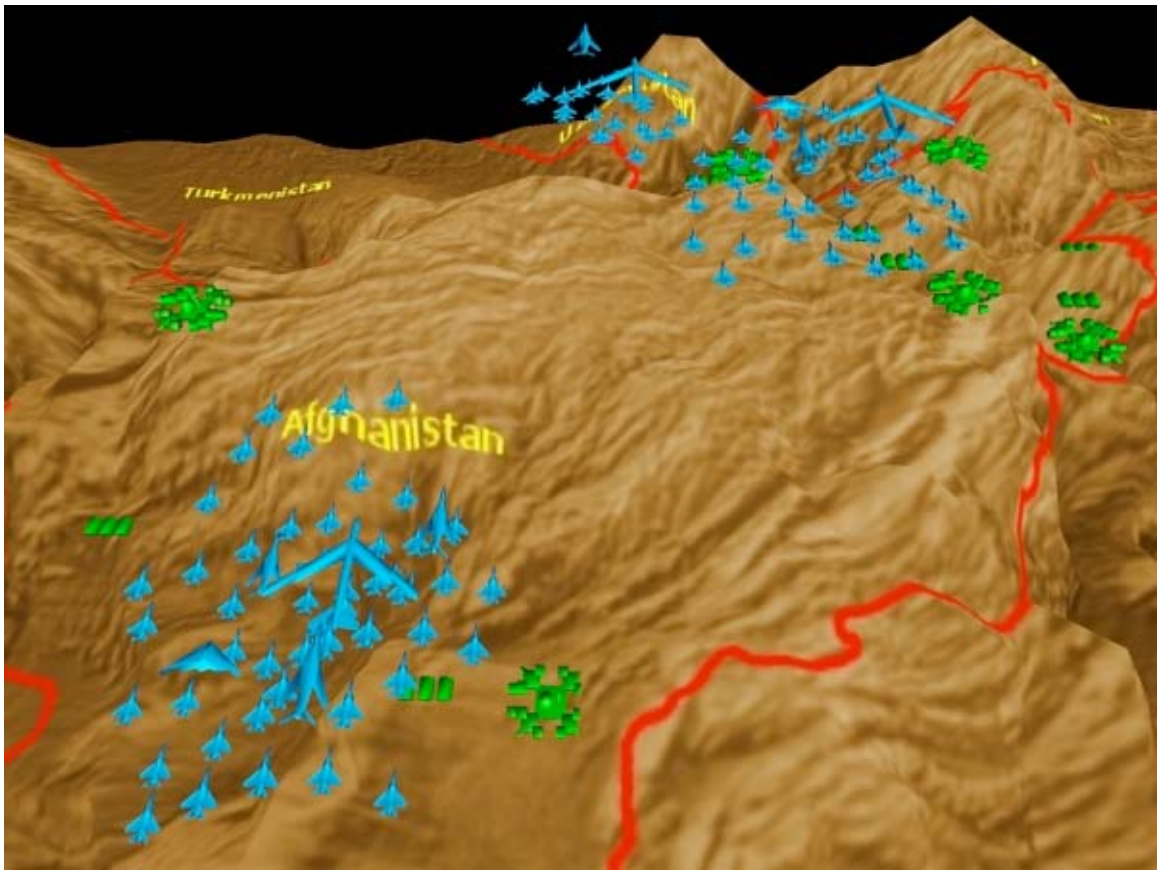

Fig. 21. A screenshot of Klima's *The Great Game*.

While the graphics are simple, the concept is reinforced as it suggests a highly mediated experience of war. As opposed to the video game-like coverage of the first Gulf War, coverage of the war in Afghanistan was highly controlled and limited. Ex-generals became television commentators and discussed strategy with the viewing public in front of large tactical maps with similar icons representing assets. In this manner, the public was shielded from the bloody fight on the other side of the world. Here, game and war are collapsed in the interest of both. We learn something about war as well as game, and the abstraction between real and simulated in the process of mediation.

Velvet-Strike, as introduced earlier in this document, is a mod (modification) to the popular commercial counter-terrorism game, *Counter-Strike*™. In many ways, Velvet-Strike is a tactical work that is less about creating a subversive video game, than it is about subverting an already existing game. By providing ready-made "sprays" that contain imagery and slogans that subvert the militaristic, male/violence dominated mode of action typical of first person shooters, it draws to the fore that tendency in U.S. society. It specifically targeted U.S. culture at a time when many were extremely angry over the 9/11 bombings, and were eager to exact revenge on Muslim extremists, and indeed, anyone who didn't fit a patriotic profile. Velvet-Strike used existing in-game technology and provided a relational form of artistic action. It functioned as a form of activated spectatorship, whereby the artist initiates a scenario for the viewer to complete. In this respect, the viewers become artists, enacting the work.

Another game with an emphasis on terrorism is Gonzalo Frasca's *September 12th , A Toy World*, from 2003 [195]. Like Schleiner, he attempts to address the militaristic response to terrorism through the video game. In this game, characters wander the streets of what looks to be a Muslim town while the game player manipulates the crosshair of a gun across the scene. You may shoot or decline, but if you shoot, not only will you bomb terrorists, but there will also be collateral damage to structures and innocents (Fig. 22). This, in turn, breeds more, and within several minutes the streets are crawling with terrorists. Frasca says, "Our games are original because they are not meant just to entertain. Through this piece we want to encourage players to think critically about the efficacy of the United States' current strategy against terrorism.

Terrorism is a terrible problem and we think it should be fought in a more intelligent way" [196].

Fig. 22. A screenshot of *September 12th, A Toy World*.

In 2003, c-level, a collective group of artists including Michael Wilson, Eddo Stern, Jessica Hutchins, Brody Condon, Peter Brinson, and Mark Allen developed *Waco Resurrection* [197]. In this game, the viewer takes on an active role as the resurrected David Koresh, infamous "cult" leader of the Branch Davidians who were killed in their compound during the FBI siege of 1993. The participant wears a headset that appears as a low-polygon model of Koresh's head (Fig. 23). The game places the viewer in the head of the leader and bombards him or her "with a soundstream of government 'psy-

ops', FBI negotiators, the voice of God and the persistent clamor of battle." The player navigates the compound emitting a charismatic aura and voicing messianic texts from Revelations. The "game" is intended as a re-examination of the conflict of worldviews embodied by the government and its battle with the cult leader.

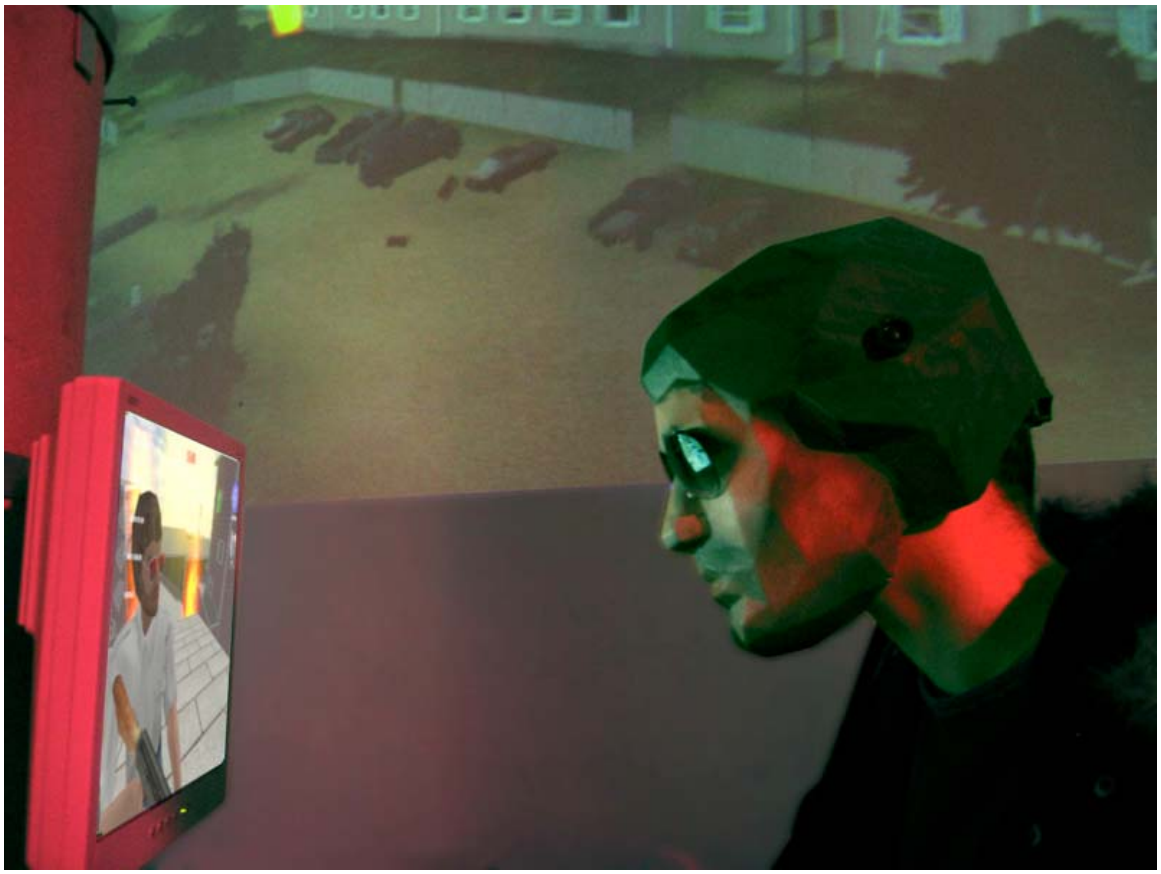

Fig. 23. A participant plays while wearing a Koresh headpiece.

All of these games are politically charged. They each claim content beyond the surface of their representation as video games, and structure the experience to support, enhance, subvert, or otherwise create a dialog with culture. They all experiment with various forms of representation and, in differing ways, address the notion of critical

reflection. While the goal of this document is not to provide a complete analysis of these projects, some initial thoughts may provide insight to their relationships with *Playas*.

The Great Game and *September 12th*, both use the third-person viewpoint to separate the observer from the action. This separation conceptually reinforces both work's attack on the distance between reality and our understanding of events. The visions they represent are from a point of view of control rather than interaction. We view the world below us, making decisions that have a bearing on real lives, yet we are insulated from the consequences of our actions. This aspect is reinforced through the level of abstraction characteristic of each work's level of representation. In *The Great Game*, through the use of icons to represent items, and in *September 12th*, through the rendering of cartoon-like characters and buildings, we view a world that references the idea of a game, or toy-like fascination with the world. In this format, there is not a great deal of immersion, and therefore, little need for distractive techniques to support critical reflection. These works are less about the experience than they are the discursive message itself. This does not imply less value, but does suggest a different tactic towards the subjective relationship. With respect to the four critical reflection supports structures identified in Chapter II, both of these works exhibit strong content. On his newsgaming.com support website [198], Frasca responds to questions that he has obviously received concerning the political message the work imparts. For some reason, people expect to view "unbiased" representations and have asked him if he realizes his games are "biased." He responds, "Of course they are. We do not believe in objective

journalism. We prefer games that encourage critical thinking, even if the player disagrees with our games' ideas."

In both games, the authorial control of the game designer is strong. Both authors are communicating a strong viewpoint that is certain to alienate some viewers. Both, however, distance their authorial role by presenting a sense of detachment from the factuality of the representation. Klima accomplishes this by claiming to, merely, present us a vision of data collected from the military. Frasca separates his role to a lesser degree by presenting us with a simulation that runs independent of the author, though of course, we know he set the rules in place. From the standpoint of communicability, Klima relies strongly on our ability to link the title of the piece, with the subject of the game. Without the idea that what we are viewing is a "great game" we would likely read little else into the scenario. In a later version of the work, Klima integrates the computer display with a monitor and arcade style child's ride that mimics a helicopter. This unit is controlled via a pedestal mounted joystick, to further suggest the remote control nature of warfare. Communicability in Frasca's work is like Klima's benefited by the title. By adding the subtitle "A Toy World", it becomes clear the position of the artist and directs the viewer to consider the work in relation to broader issues. Here, there is no direct indication of a toy, except for the nature of the imagery as what what one might expect on a Nintendo™ or Playstation™ console. We take on the role of participant in Frasca's game, more so than in Klima's, by virtue of the fact that nothing happens in September 12th, until we start bombing terrorists by clicking the mouse. This presents the conflicted position that we enjoy watching the cute animations that occur as

we lob shells, while recognizing that this action causes the eventual collapse of the game itself.

Neither *The Great Game*, nor *September 12th* engage in a level of embodiment one would call immersive. We remain external to the events and never "lose ourselves" in the scenarios. We may begin to enjoy the game play of Frasca's work to the exclusion of the message, but within the game play itself, the tension of our actions reveals itself. These are relatively simple games that suggest deeper readings. The games themselves provide a preliminary discursive position that engages our desire for cognitive aesthetic experience.

Velvet-Strike and *Waco Resurrection* approach aesthetic experience very differently that *The Great Game* or *September 12th*. This is signaled by the artist's choice of the first person viewpoint. In both we experience the typical first-person shooter game with its drive towards realism and immersion. In these games, the concept is supported by a direct experience of the game world itself. We become the characters of the virtual world. The representation is as realistic as current technology will enable and once we become accustomed to the controls, our actions have effects within the environment. As would be expected, the need for distractive techniques is greater in this type of game. Velvet-Strike works directly with distraction by making it the subject of the work itself. The immersive state of the game players is fractured when they encounter subversive, counter diagetic, "sprays" that disrupt the graphic continuity of the game environment. Schleiner's game is, in reality, not a new game, but is an interruption in the networked game play of hundreds of distributed players engaged in Counter-Strike. Her sprays

function as the source of distraction that potentially causes the players to reconsider their actions. Waco Resurrection, on the other hand, is more sophisticated in its use of immersion. The Koresh helmets immediately suggest a head mounted display and place one in the mode of an embedded character, separate from an external world. While it is hard to say, not having experience the game directly, I would imagine that Waco Resurrection is more dependent on in-game distractive techniques. Based on the project descriptions, disconcerting sounds and extreme imagery serve to shock the viewer. A melee is suggested that communicates the uncontrolled and dangerous situation of the siege at Waco. The donning of the cult leader's likeness, suggests a conflicted position with relation to the idea of "hero."

In both of these projects, like the previous two, there is strong content. *Velvet-Strike* more clearly takes a position, while *Waco Resurrection* maintains a sense of ambiguity. Interestingly, authorial control in *Velvet-Strike* seems to be weaker than in *Waco Resurrection*. Schleiner presents a dialogic platform for the creation of sprays that allow the viewer to participate in her action. She doesn't delimit what participants can spray, but leads them to create content that subverts the game with a "velvet touch." Alternatively, *Waco Resurrection* is very much in the control of the authors, but by virtue of its ambiguity, the meaning is shifted to the participants. Granted it is strongly suggested and guided, but ultimately, the linkages that are made are the result of effort on behalf of the viewer. Ambiguity is an effective technique in the stimulation of metaphor in the communicability of this work. Through the experience of the compound we begin to imagine the surreal conditions that accompanied this event and come to new

realizations about the world and the power structures that define it. Both of these projects capitalize on our sense of embodiment (such as it is developed at this point in computer/human interaction) to provide the basis for introducing distraction as a means of communication. Both works engage in cognitive and transcendental aesthetic experience. Through the use of the Koresh helmets, *Waco Resurrection* is, perhaps, more successful and experimental in this regard and begins to engage us perceptually and emotionally as well.

Obviously, there is more that can be said about each of these works. In general, though, I think they illustrate a range of approaches that inform the conception and development of *Playas*. From an experiential point of view, *Playas* is least like *The Great Game* and *September 12th*. I was not aware of *September 12th* during the conception and initial development of *Playas*, but was cognizant of the other three. I was particularly aware of *Waco Resurrection* because of its use of the Torque Game Engine, since in the beginning I was investigating what technologies I might use in order to move away from the homegrown game engine I had developed in 2001-2004 for Public News Network. By virtue of the first person viewpoint, and the reliance on the first-person shooter game type, *Playas* is most like *Velvet-Strike* and *Waco Resurrection*. It communicates within an immersive experience and struggles with the challenges that result from that situation. Conceptually, *Playas* also has an affinity with September 12th with respect to its use of simulation and subject of terrorism. Both works artistically simulate what the authors view as an unrealistic expectation that terrorism can be stopped through the use of violence. *Playas* weaves other themes within this milieu, but

like the others, through the self-reflective use of the video game trope, it draws upon our innate ability to draw linkages between the virtual and the real.

CHAPTER III

ANALYSIS OF THE PLAYAS CASE STUDY

INTRODUCTION

In the previous chapter we discussed the discourse that frames the development of the *Playas: Homeland Mirage* case study. An understanding of this discourse provides a background that supports the decision-making that informs the development of the project. We have seen work that uses video game technology in the production of significant artworks and discussed various strengths and weaknesses. In this chapter, I will focus on the *Playas* case study. First, I will discuss the architecture of the work in order to establish an understanding of its technical function. Next, I will discuss the conceptualization of the work in order to communicate the artistic goals I hoped to achieve. Next, I will discuss the content of several exhibitions of the work. This discussion will illuminate improvements and modifications of the project in response to its real-world implementation. The fourth section will focus on an evaluation of the work, including the results of user observations and interviews. The final section will summarize the findings of these evaluations and communicate my interpretation of the results.

ARCHITECTURE

In this section I will discuss the structure of the *Playas* video game and installation as well as its development and some of the decisions that were made with regard to technology. One of the key issues confronting the digital media artist are the range of options available to create work, and the difficulty of selecting appropriate tools. The primary problem is that no one solution does everything that might be required to accommodate the functional/artistic requirements of a work. Often, the largest hurdle is identifying pieces that perform specific tasks and designing an architecture that allows one to pass information between the pieces successfully. The primary architectural problem becomes one of synthesis. In reality, this diversity of choices is a good thing, because it allows a level of flexibility that enables more freedom than turnkey, mass marketed and homogenized software can allow. The challenge is researching the breadth of options and being able to navigate the obstacles that inevitably occur. Unless the digital media artist can take some measure of control over the tools, they are susceptible to leaving their work to the mercy of commercial software. As we understand from Interface Ecology, our interface with software is not a neutral activity. It fundamentally shapes our relations. We must be responsible to direct it towards our own artistic ends.

The Video Game

I discussed previously the rationale behind the choice of the Torque Game Engine (TGE). There were many other options, but most would have required either more money, more development time, or were in some way less functional that TGE. With

the experience of using TGE, however, I am well aware of its limitations and suspect that a higher-end commercial game engine would provide an easier and more stable platform for development. I had no prior experience with game mods, nor had I worked with a commercial game engine. After having completed a simple prototype during the spring semester of 2005, I decided the project held enough interest to continue development during the following summer. At Dr. Kerne's urging, the project was submitted as a proposal to the ACM Multimedia 2005 Conference, but I really did not expect it to be accepted. In any case, during the summer of 2005, I set out to investigate and develop a pipeline that would result in a navigable 3d space that loosely resembled Playas, NM. This involved determining what sequence of tools and file formats would be necessary to create the virtual world. I was also interested in the possible use of TGE in the development of PNN, so I began to investigate means of displaying video within the game environment.

The most significant problem faced during the early development of the game was the construction of the 3D geometry that represents the ground plane, streets and architecture. The game world within Torque is composed of DTS and DIF geometry. DTS geometry is a polygonal shape exported in a proprietary format specifically for the Torque Game Engine. DIF geometry is a binary space partition form of geometry that is common in the game industry because of the speed with which it can be rendered and the ease with which collisions can be calculated. DIF geometry is used for architectural elements such as buildings, roads, and other static objects; especially those which are intended to have interior spaces. If your player needs to navigate inside an object, then it

should be modeled using DIF geometry. The problem with TGE is that as a descendent of Quake, it relies on an antiquated program called Quake Army Knife (QuArK) [199] to model and create DIF geometry (Fig. 24). This program is only Windows compatible, is extremely unstable, and utilizes an arcane interface that is difficult to become familiar. It just did not work well and was a perpetual source of frustration. Within the game environment, still, there are pieces of geometry that don't align, or textures that are backwards, and either they cannot be fixed within QuArK or it is too cumbersome to attempt.

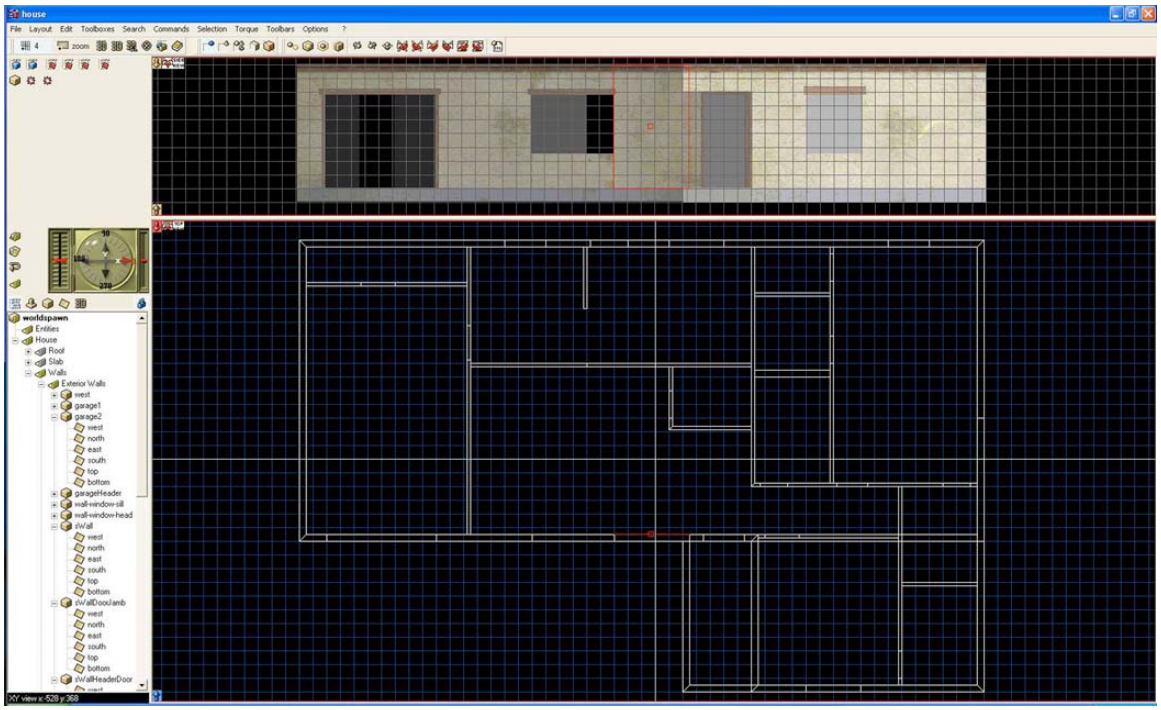

Fig. 24. House construction using QuArK.

One of the first steps in creating the video game was to investigate ways of using real world data to generate the virtual world of Playas, New Mexico. Graphic Information

Service (GIS) data representing the surrounding terrain of Playas was used to model the site. This data is available through government websites and comes in a multitude of formats, none of which translate directly into the video game engine. The data must be scaled and manipulated into a format that the game engine can use to create easily navigated real-time surfaces. A great deal of effort went into constructing a pipeline that would allow Digital Elevation Model (DEM) data to be adapted and used in the construction of the video game terrain. The terrains had to be matched to the site plans of the city and streets constructed to match the sloping terrain (Fig. 25).

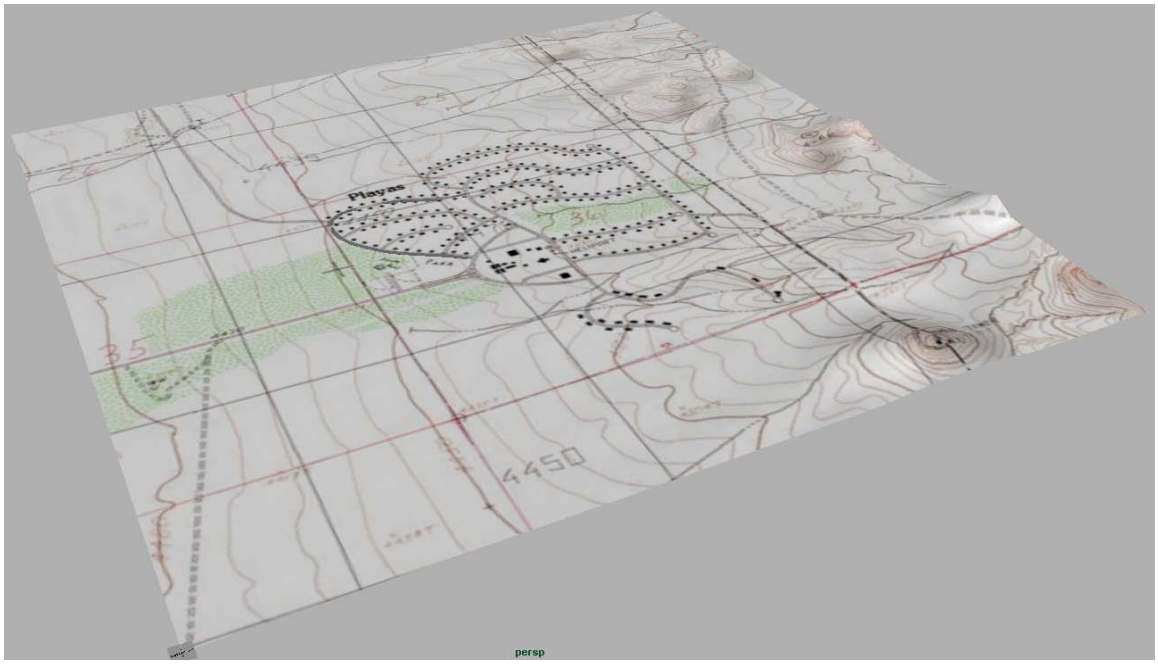

Fig. 25. Two square mile area of Playas terrain in 3D modeling program.

Once the general environment of the video game was established, it was time to being to produce the town, itself. Initially, my thought was to model the entire town, but once a pipeline was established, it was apparent that there would barely be enough time

to model a single street with nine homes. As with any commercial game development, a wide range of expertise is needed to create, develop, and assemble the array of resources needed to present a compelling environment. Models must be designed, produced, animated, textured, converted to appropriate formats, placed within the environment, and behaviors programmed. Audio must be created, recorded, converted to appropriate formats, placed within the environment, and behaviors programmed. Similarly, video, lighting, and interface development provide equally challenging and complex areas of work. In addition to asset development, of course, is the design and programming of gameplay. Behaviors and rules are developed to direct the flow of the game. All the while, the artist has to maintain a focus on the core concepts and ideas that frame the work. Needless to say, the development of only the video game portion of a project such as *Playas* is a huge challenge for an individual digital media artist. Naively, I though I could produce the entire project myself. Then, during the month of July, I received notice that Jeffrey Shaw had accepted the project for inclusion in ACM Multimedia 2005. The project would need to be completed and ready for exhibition in Singapore by November, in just four months time. I began to panic, and told Assistant Professor Yauger Williams about my dilemma. He was scheduled to teach a course combining two studio classes, Visual Studies 305 and 405, and was in the process of developing the syllabus. We talked about ways to integrate the development of the project into a worthwhile experience for the students, and decided to devote the first half of the semester to game development. This project would have been impossible to complete without the team efforts of the group of students in Yauger's class. Yauger and I

immediately set about designing a structure that would model a commercial production pipeline, and would allow students to integrate with the project in areas that interested them, or otherwise leveraged their individual talents. Fortunately, most of the technical difficulties of creating geometry for the virtual world, and an efficient sequence of tools had been established during my work throughout the summer. I had created one home, complete from start to finish, and had modeled the streets and terrain prior to beginning production during the fall. The primary task at hand was to replicate this geometry and create a sense of diversity that would make the game world seem believable and interesting.

Initially, Yauger and I thought we could simply present the project concept to the students and then monitor their progress and maintain a sense of continuity via regular critique sessions. It very quickly became apparent that this technique was not efficient. We decided that given the number of students, the varying levels of experience, and the need to provide direction for their work, we would need to find a structure that made this easier. I put together a website that contained reference imagery so they could quickly and easily access imagery for whatever purposes needed. They were also provided FTP accounts to allow them to quickly share data. Most importantly, a web-based forum was established that allowed them to post imagery and get feedback from peers during development, as well as present their ideas to Yauger and I. The forum also served the purpose of keeping each other informed of their work so there was a sense of consistency between subprojects. Even with this support mechanism in place, it quickly became apparent that there was not enough direction. I was afraid the project would end

up a mishmash of ideas that could never resolve into a finished work. After several classes dealing with issues related to consistency of concept, we introduced perhaps the single most important structural improvement. We decided to break the project into small teams, each responsible for a single home on Mesquite Street. We created nine teams, each headed by a single team leader who would coordinate the work done on his or her home and would report directly to Yauger and I. This instantly created the cohesion lacking in the previous weeks and as a side product created a sense of competition amongst the teams. Students felt as if they owned their home, and wanted theirs to be the most fully realized and interesting home on the block. Critiques were presented on a home-by-home basis, and everyone could immediately get a sense of concept associated with the imagery, video, and design of each structure. The forums were organized by homes, each with its own scenario. If a student was working on a particular element, they could refer to the concept statement developed around the home, and could refer to the image of the original site in New Mexico. This simple concept salvaged what would have been the destruction of a good idea.

In order to create a virtual replica of the city, 3d models of homes were created based on site photography taken by Steve Rowell. The images were used as textures and reference material to maintain and foster a connection to the real city. These photographs were instrumental, not only in the visual representation of the houses, but also as a stimulus for the conceptual scenarios that were built around each of the homes. For example, 01 Mesquite Street is a home that has an attached structure that looks to have been built by a handyman. We imagined that the person who lived there enjoyed

building things and constructed this addition to the home, perhaps as a woodshop. This conception led us to structure the scenario associated with 01 Mesquite as if the father who lived there worked at the Phelps Dodge copper smelter as the plant handyman or carpenter. Within the game, as one travels down Mesquite Street and approaches the information kiosk that is located outside house 01, there is a description of his role at the plant. If one enters the house and navigates to the garage, he or she will see that it appears as if it was once a shop. Inside this space is a dilapidated, broken table saw that was left behind. As the game player approaches this table saw it triggers an in-game video of an anonymous person feverishly cutting wood with a similar, "real world" table-saw. This entire scenario extended from imagery collected at the site. In Fig. 26 you can see the inset photograph of 01 Mesquite with a red square around the house addition that led to the table-saw object and in-game video. The addition to the home looked to have been built by a handyman, so we imagine that the occupant was such a person, or at least was familiar with carpentry and needed a workspace.

Fig. 26. Game imagery references real world photographs.

While not exercised in every instance, this intertextual process was often used to link and reference the “real” and virtual Playas. In one circumstance, we recreated a blue bus that was visible in video taken at the Playas ribbon cutting ceremony. In another circumstance we let skater graffiti suggest that the kids that lived in one of the homes were active skateboarders. Yet another home, is built around the idea that the family enjoyed hiking and running. This scenario was a response to finding imagery of the home that included an abandoned tennis shoe. Our goal was not to mimic the existing homes, but to use them as the stimulus for a range of ideas that would reflect upon the overall concept and would provide for a diversity of readings.

The Installation

During the initial development of the project, I began to see the need to expand the concept to include a local audience; viewers who were not playing the game, but were observing. I wanted to suggest that our fear, and the decisions we make based on fear, are collective rather than simply decisions made by those in power. I also wanted to introduce a sense of dynamic change based on the presence of observers watching the "game" and wanted to communicate the tenuous or mirage-like quality of our socio-cultural constructions. The development of these concepts expanded the original focus from a basic video game, to a video-game derived installation environment. This desire required research into how to synthesize video game imagery with a responsive installation environment, and how to map behaviors between the player, observer(s), environment and the applications. Using a scan-converter, the image produced by the computer running the video game (Game Computer) is transferred to a second computer that is in charge of the installation environment (Installation Computer) (Fig. 27). The Installation Computer, running the visual programming tool Max/MSP™ [200], uses a custom program built upon the plug-in, SoftVNS™ [201] to perform video tracking of people located within the exhibition space. The video tracking software counts the number of people within the space and creates an alpha channel image that corresponds to the profile of people moving within the space. These profiles are composited with the original image of the video game that was sent from the Game Computer. In addition to the composited profiles, the count of viewers within the space is sent to the game computer via a TCP/IP connection, and used to generate, or spawn, game characters. In

return, the game keeps track of the “threat level” determined by the number of terrorists, the length of time played, and other factors, and sends that information back to the Installation Computer, which then distorts the projected image, based on the amount of threat. This feedback loop of stimulus and response presents dynamic imagery that is never predictable or repeatable. Factors beyond the control of the player, or indeed the author, serve to create a unique experience.

As the game player approaches objects within the homes, spatialized audio is triggered that is intended to clue the viewer that the object is special and serves as a trigger for video. These sounds, as well as sounds associated with the interior of homes and the ambient sound of the external environment are presented using the stereo outputs of the game computer and played through speakers placed in the four corners of the exhibition environment. This audio is triggered by invisible zones within the game world and contributes significantly to the immersive effect of the environment.

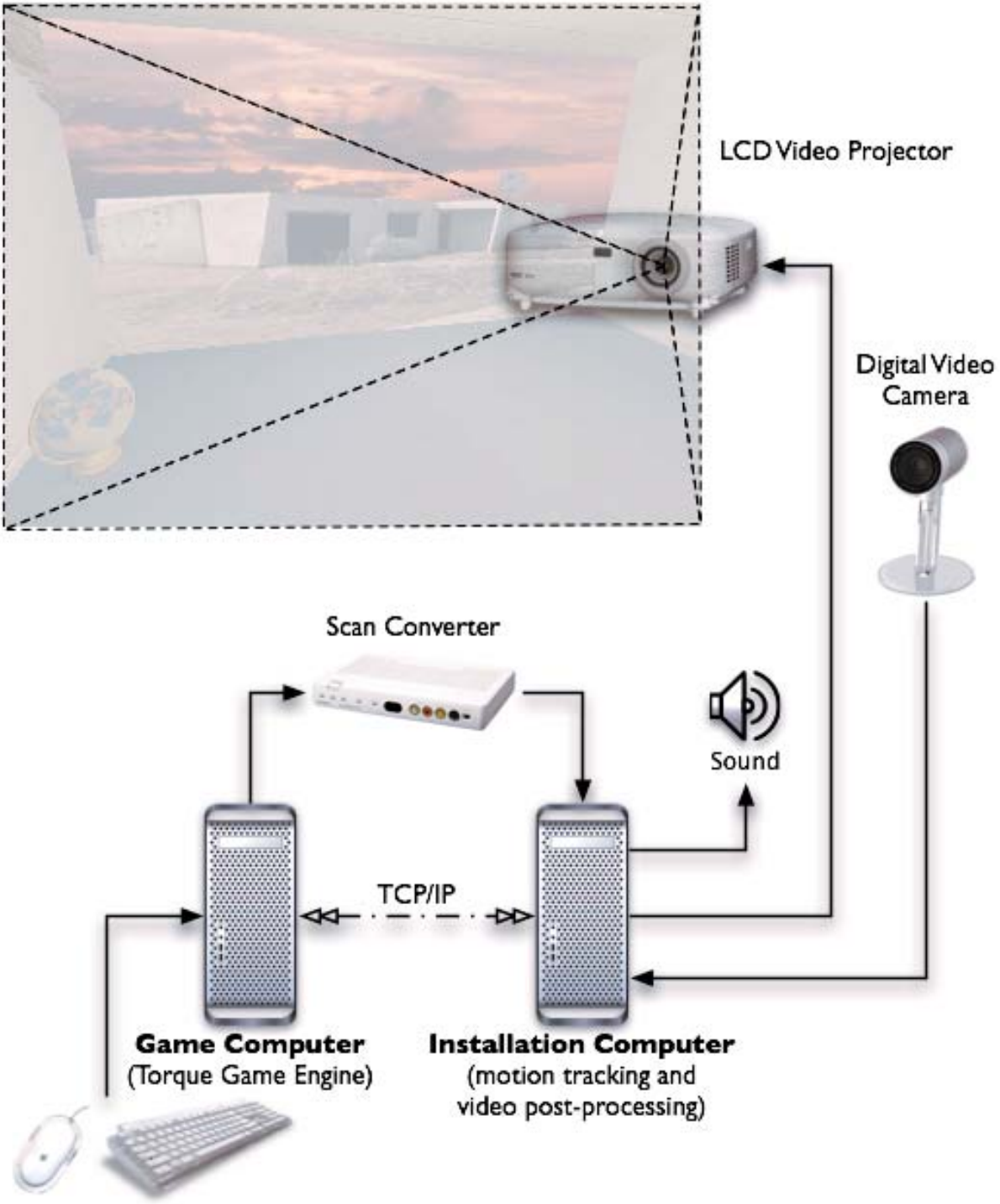

Fig. 27. Installation diagram showing required hardware.

In the initial phases of the installation, the game player operated the game using a standard mouse and keyboard. Later, it became apparent that it was preferable to use a modified game pad typical of those used to play the Sony Playstation™ or Microsoft XBox™. The game pad simplifies the motion interface by removing the complexity of multiple keys and more intuitively suggests directional motion. I will discuss this decision more fully in the next section.

It should be apparent that the complexity of some digital media artworks truly requires a breadth of knowledge concerning technologies and an ability to find ways to integrate them towards an artistic concept. This transvergent, ecosystematic method of creating art places new burdens on the artist. The investment of time and energy in creating complex works requires not only research in preparation, but also research in evaluating outcomes in order to mitigate problems that are sure to result.

CONCEPTUALIZATION

Earlier, I discussed the conceptualization of the installation, *Playas: Homeland Mirage*, and the concept behind this dissertation. The artwork is conceptualized as an experience that comments on our fear-driven society. The dissertation is conceptualized as an investigation into that particular digital media artwork as a model for practice-based artistic research. This may seem to be two different activities when, in fact, they are symbiotic. Theory and practice combine using an ecosystems approach to creativity [1]. The artwork is dependent upon critical reflection for the success of its mission and

the research attempts to understand the functioning of critical reflection. The analysis embodied in the research is evaluated against the artistic goals of the work. As faults are identified, modifications and adaptations are fed back into the work, creating a recursive feedback mechanism between art and research. The results of this research, in the end, are reintroduced into the larger system of academia with the intent of providing knowledge that might benefit the work of future artists working in a similar line of inquiry.

Artistic Concept

Hopefully, by now, the general frame of reference that informs my conceptualization of art is apparent. While the first portion of this dissertation presents my understanding of the development of art and art practice for the past century, that reflection is by no means unbiased or somehow "true." Simply by interpreting history in that manner, one can see the values I bring to art practice and what forms of expression I favor. *Playas* was conceived as an extension of my interest in work that engages society in a critical manner. Previous work I have produced has attempted to function in the same way. Work that I enjoy often engages in this same practice. This does not mean that I believe social engagement is a necessary condition for the production of art. I am in favor of a perpetually open definition of art that allows it to expand and meet new conditions as circumstances are presented. I don't believe that any work has to be timeless or universal. A work that is ephemeral can be more successful than one that is timeless. I am completely satisfied with the thought that work floats in and out of significance over

time and that the conditions that establish something as “art” at one point in time, may diminish, change, or disappear altogether.

I am a relativist, in that I believe there are various types of aesthetic experience, and at any point in time a work may engage a viewer in a way that stimulates a response that is so significant, we can only call it “art.” While this art experience can occur at any time and under innumerable circumstances, the type of art experience that interests me is intentionally produced. Myself, and others, seek this type of experience, and the system of galleries, museums, websites, exhibitions and institutions has responded by addressing this desire. Yes, they are often compromised and problematic, but they are better than nothing.

With respect to the conceptualization of an artwork, my process is to engage ideas with an open mind that allows an internal dialog to occur that suggests juxtapositions that create meaning for me. I do not create work from theory, science, politics, literature, or any particular frame of reference, as I see that as a recipe for creating work that merely illustrates those principles rather than exposing them. A broad knowledge and connection to cultural dialogs is important in the creation of a mental ecosystem that fertilizes thought. When I begin to think of a work, I mentally construct linkages and metaphors that suggest alternate meanings I had not previously considered. This mental process has, over the years, become something that I have found necessary to control in order to complete work. It is extremely easy to lapse into a tendency to continuously generate new ideas without ever executing a single idea to fruition. I suppose this is called discipline. When I am in the midst of the production of a project, I will

consciously defer unrelated ideas in order to maintain focus on the task at hand. Sometimes, this is accomplished by writing an idea down in a sketchbook, so as to save it. The necessity to defer new ideas has been the greatest source of frustration as I have been working on the *Playas* project, which has absorbed almost three years, now.

When Steve Rowell first discussed Playas, New Mexico my initial response was that it was interesting but not particularly relevant to the type of work I was doing with PNN. I had just finished an installation digitally translating a labyrinth created by Annika Erixån into the studio space at the VizLab. To me, the mystical idea of the labyrinth and its abstraction in the form of a digital re-mapping was a poetic commentary on our constructed realities, and somewhat related to PNN in terms of re-presenting and remapping the evening news broadcasts. With that experience fresh in my mind, I began to think of *Playas* in those same terms: what meanings extend from virtualizing this town, along with its attendant "baggage." Obviously, the first thing that came to mind was the parallel between the gaming and simulation exercises conducted by the military and the simulation and gaming aspects of the video game, itself. That was interesting, but in itself, not sufficient to devote much effort to a project. I began to look at the images that Steve had taken of the site, and especially the aerial shots, and was struck by the desolate nature of the place and otherworldly suburban nature of the city. As an architect, I have always been interested in the conditions that spur the development of suburbia, physically and socially. As someone who grew up in suburban neighborhoods, I have been interested in the monotony of their design, their reflection of our desire to "fit in", and their basis in the fear of crime and minorities associated with urbanity. In

2002, I had created a game-engine style project called *Sink* [202], for Andruid Kerne's Recombinant Media Ecosystems class at Texas A&M. The viewer was suspended in the middle of a 3D space surrounded by images of a suburban neighborhood. Counter to the viewers' effort to approach the boundaries of the space and view images of Americana appropriated from Walker Evans, gravity threatened to suck them to the bottom. So, I began to realize that Playas was not so much a place for anti-terrorism training, as it was a place that embodied a history that encompassed multiple levels of occupation and fear that is symptomatic of American life in general. I was struck by the fact that this city was modeled after a suburb, and yet the nearest metropolitan area was El Paso, TX, over 120 miles to the east, and Tucson, AZ, over 140 miles to the west. This conception of Playas as an environment that has undergone multiple levels of simulation throughout its existence was the core idea that interested me in the project. It seemed important to link the virtual world as closely as possible with the physical world in order to highlight disconnects between the two. From there, the goal became how to find ways to reinforce and make apparent this process of abstraction from real to virtual.

Research Concept

This analysis and evaluation targets the workings of critical reflection in *Playas: Homeland Mirage*. Of course, the experience will be molded by the perceptions and history of the viewer. Today, this is commonly understood and accepted as a source of diversity and interest in the experience of art. An aesthetic experience of the type that interests visual artists is often dependent on the ability of work to stimulate critical reflection. This type of critically engaged aesthetic experience typifies the type of work

of interest in this study. Under the umbrella of critical reflection, four primary conceptual objectives, or support structures, have been identified for study; content, authorial control, “communicability”, and embodiment. While there are surely other contributing factors to the support of critical reflection in an artwork, I decided it was more important to explore these few in depth, rather than attempt to identify all possible contributions.

An important research oriented conceptual objective of this project is to understand the social and cultural engagement of the work and the effect this has on critical reflection. Given the artistic content of the work, do viewers recognize this content and extend meaning from this basis, or do they ignore the content and substitute entirely unrelated meanings. Jackson Pollock and Marcel Duchamp were avant-garde artists whose work typifies opposing views of the role of art. Pollock, as interpreted by Greenberg, could be described as a formalist, focusing on the nature of the medium with which he worked. Except by the largest stretch of the imagination, his work was not what one would call “engaged” with the socio-cultural issues of his time. Duchamp, on the other hand, influenced much of contemporary conceptual art through a practice based on the ideas and concepts embodied in the work, more so than formal considerations. While both artists stimulated critical reflection in the viewer, my interest is more closely aligned with Duchamp than Pollock. The *Playas* project descends from the socially engaged works of the Surrealists, Dada and the Situationist International[203]. It is also related to current forms labeled as tactical media, alternative media, culture jamming and activist art. The objective with the *Playas* video game is to present a representational

space with a clear concept and strongly suggestive content. The intention is to encourage the participant to reconsider our relation to fear, and the ways fear is manifest in our social structures. By creating a strongly engaged work, the responses of the participants will be more clearly expressed and easier to study with regard to critical reflection.

The video game is fundamentally different from cinema with respect to the issue of the authorial control of the viewer. Video games allow the participant to freely roam the virtual environment, so it is difficult for the author to anticipate the actions of the user. There is an entrenched modernist viewpoint among some academics that demands authorial control as a necessary condition for the production of art. The viewpoint is even reflected in the comments of popular movie critic Roger Ebert, who claims this lack of authorial control is the reason video games will never rise to the level of art afforded certain films. "I am prepared to believe that video games can be elegant, subtle, sophisticated, challenging and visually wonderful. But I believe the nature of the medium prevents it from moving beyond craftsmanship to the stature of art." [204] Of course, what he, and others, fail to consider is that there are other forms of art that engender aesthetic response that don't rely on strict authorial control. Cage's 4'33" (1952)[205] is a perfect example of a work that cedes control to the audience, in turn, teaching us that there is no such thing as silence. The L=A=N=G=U=A=G=E [206] movement of the '70s and '80s created poetry that relied on the reader to bring meaning. More closely related to video games, the Exquisite Corpse games of the Surrealists purposely ceded authorial control in an attempt to arrive at subconscious meaning. As

discussed previously, Bakhtin's concept of dialogism and the creation of meaning through a process of contention and dialogue apply here. Negotiated meaning, with its source in the mind of the participant, can be more powerful than meaning understood through exclusively monologic forms. Digital media introduces new possibilities for the dialogic creation of meaning. Dialogic art does not negate traditional monologic forms, but it does introduce new opportunities for creating aesthetic experience that extends tradition in exciting ways. Especially with respect to the genre of the video game, the objective is not to fully control the experience, but to guide and frame it in such a way that the participant engages the work, completing the discourse. Of course, regardless of the development of dialogic forms in art, Ebert should be aware that Derrida and deconstruction have taught us that authorial control is somewhat of a myth. Symbols are always negotiated and control is tenuous at best. The research goal with respect to authorial control is to identify in what ways the intentions of the artist are matched with the responses of the viewer in such a manner that one can say the author had a measure of control over the direction of the work. Is this level adequate to effectively stimulate critical reflection?

A key component of art practice, especially since the introduction of collage, with Cubism, is the idea that conceptual linkages can be stimulated by the strategic juxtaposition of imagery. This technique is common in collage, assemblage, and in film, using montage techniques. Gregory Ulmer claims, "By most accounts, collage is the single most revolutionary formal innovation in artistic representation to occur in our century." [207] The computer is fundamentally an "answer" machine that follows a set

of rules that define a solution. An aesthetic experience is not defined by answers, but is process oriented, often leading to more questions. How does one stimulate this type of activity in an Interface Ecosystem [208], utilizing a machine that is so fundamentally structured? If one considers this activity as a form of communication between the work, artist, viewer, environment and culture, in many ways, the "communicability" of sound/image in digital media is at the heart of critical reflection. How can one create a work that provides "space" for the viewer to engage with the work and stimulate the development of meaning? Research questions will investigate the "communicability" of the work and will identify factors that contribute to the "communicability" or meaning generation capabilities of the artwork. Approaches to understanding meaning in visual art, such as metaphor, metonymy, synecdoche, irony, intertextuality, diagesis, and others, will be discussed in relation to viewer's interactions and experiences with the work, paying particular attention to how digital media may, or may not, be different than previous forms. These concepts are grouped under the term "communicability" to suggest not only their communication and language characteristics, but also the constructive, viral aspect of meaning generation.

The fourth conceptual objective with this project is to investigate the genre of the video game in an art environment on the level of interaction. Unlike cinema, the viewer/participant is engaged with the work on a physical level beyond observation. This immersion is facilitated by computer hardware such as the keyboard and mouse or a gamepad. Especially when dealing with viewers who are not familiar with the paradigm of the video game, the hardware can serve to lessen the immersion and thwart critical

reflection. The philosophies of Lakoff and Johnson [209] and Andy Clark [210] might prove useful in this regard. Embodiment posits a unification of our mind and body in our relations with the world. Rather than an empirical approach to our relationship with tools, the focus is on metaphor (as a general term), and designing a system that responds to our bodies. The research will investigate principles of embodied interaction described by Paul Dourish [211] as a means to lessen the disconnect between the content of the work and the experience.

Conceptually, I am interested in exploring the disjuncture between what we think we know about our world, the way we conceptualize it, and the actuality of experience. I am interested in the ways we construct personal and cultural reality. Much of the focus of computer graphics has been a mimetic approach to representing the natural world. Despite the difficulties in achieving this type of representation, it is inevitable that computers will one day construct worlds that are difficult to distinguish from physical reality. As an artist, the focus of my energy is on perception and the subjective meaning we bring to these aesthetic experiences. Given these tools, what kinds of worlds can we produce, and how will we relate to them? This research will explore content, authorial control, communicability, and embodiment to understand their role in the support of critical reflection in digital media artwork.

CONTENT

In this section I will discuss some of the changes that took place as the project progressed from prototype to final installation. To date the work has been exhibited in two major venues, ACM Multimedia 2005 (Singapore), and ISEA 2006 (San Jose, CA).

A significant level of development occurred between these two exhibitions based on problems that were identified and viewer feedback. In this section I will show a number of game images and point out how the game evolved to its present state.

Spring A.I.R.

During Steve Rowell's artist-in-residence visit, an initial prototype was developed and displayed as part of a small class exhibition. The goal was to get a feel for the engine and suggest the concept of moving through a recreation of the town. In this version, there were no interiors and none of the terrain work had been done. The TGE comes with a bundled demonstration game, designed to show the major features of the game engine. This demonstration game is intended as a starting point for development, and the suggested game development process is to add and remove content from this game in order to develop your own. In Fig. 28 you can see the first iteration of *Playas*, and can see that the crossbow weapon carried by the default demonstration character is still in place. You can also see that the homes are identical, improperly scaled, missing windows and doors, and have very little texturing. The standard interface elements are also in place. This prototype was merely a proof-of-concept and attempted to become familiar with the game engine itself.

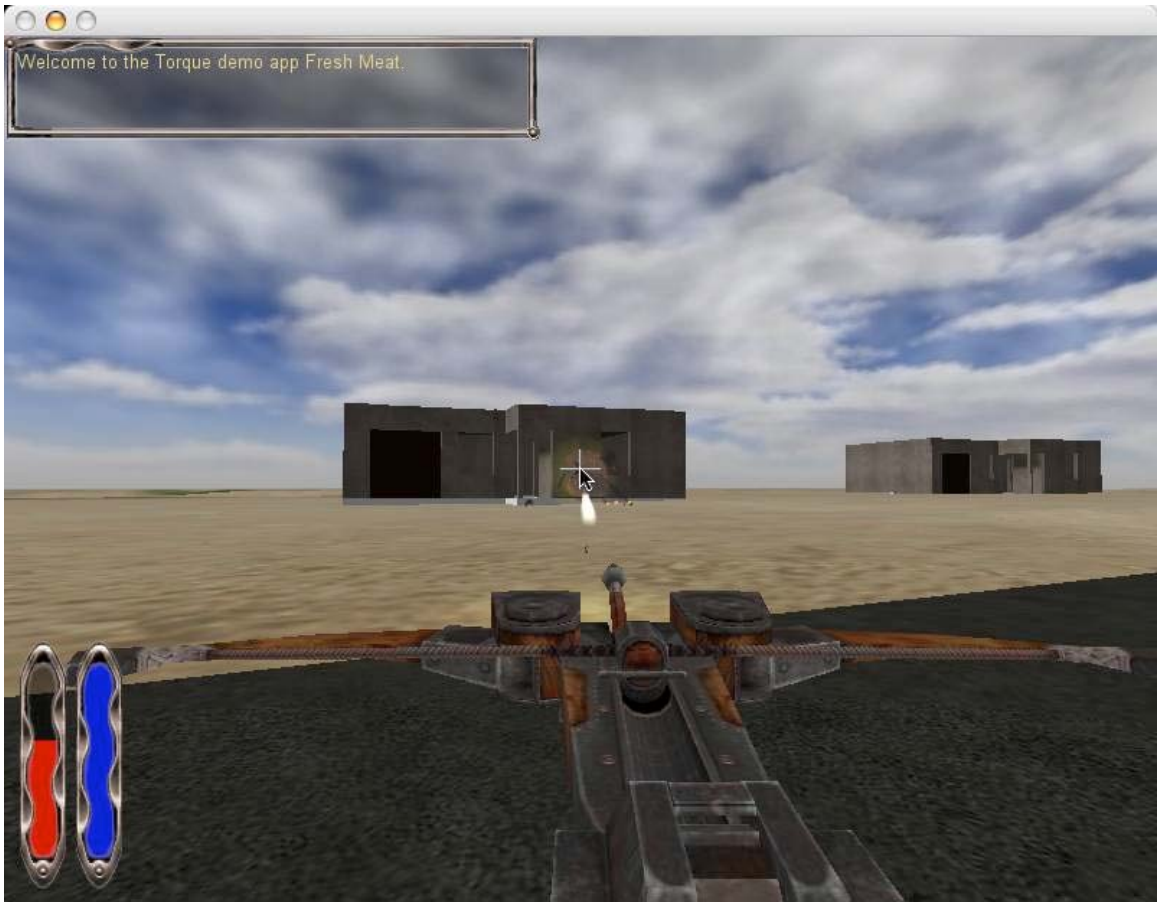

Fig. 28. Initial prototype of *Playas: Homeland Mirage*.

As a prototype, I felt more comfortable with the possibility of creating something interesting. I immediately recognized the shortcomings of TGE, but felt they could be overcome once a critical path through the toolset was identified. At this point, there was no way to play video within the game environment, and while I had developed a technique for accomplishing this in PNN, I was not sure it would work in this situation. A fellow student, Eric Aley, and myself worked on this prototype for several weeks. We had agreed that if we were successful in creating the prototype, we would continue to work on the project as part of Andruid Kerne's Recombinant Media Ecosystems II class

at Texas A&M. While I felt the problems we had encountered were surmountable, the development tools and the dispersed nature of the TGE documentation frustrated him to the point he decided not to continue.

ACM Multimedia 2005

As discussed previously, I continued to work on the project through the remainder of the spring of 2005 and into the summer. The pressure to complete development to a suitable point for this exhibition was extremely stressful. The scale of the project combined with the uncertainty of working with a large group of students had me wondering whether I had made a mistake. I found myself working less on the project, and more so in an administrative role, marshalling the work of the group. This was unsettling to me, as I have always worked in a hands-on manner. Fortunately, we made great progress and I feel, ended up with a level of development that resulted in a successful exhibition in Singapore.

In Fig. 29 you can see the installation diagram that was sent to the Alejandro Jaimes, one of the curators, and the primary organizer of the exhibition. The primary features to note are the presence of a desk in the middle of the space, with computing equipment arranged below. As you will see later, this configuration was changed and improved upon.

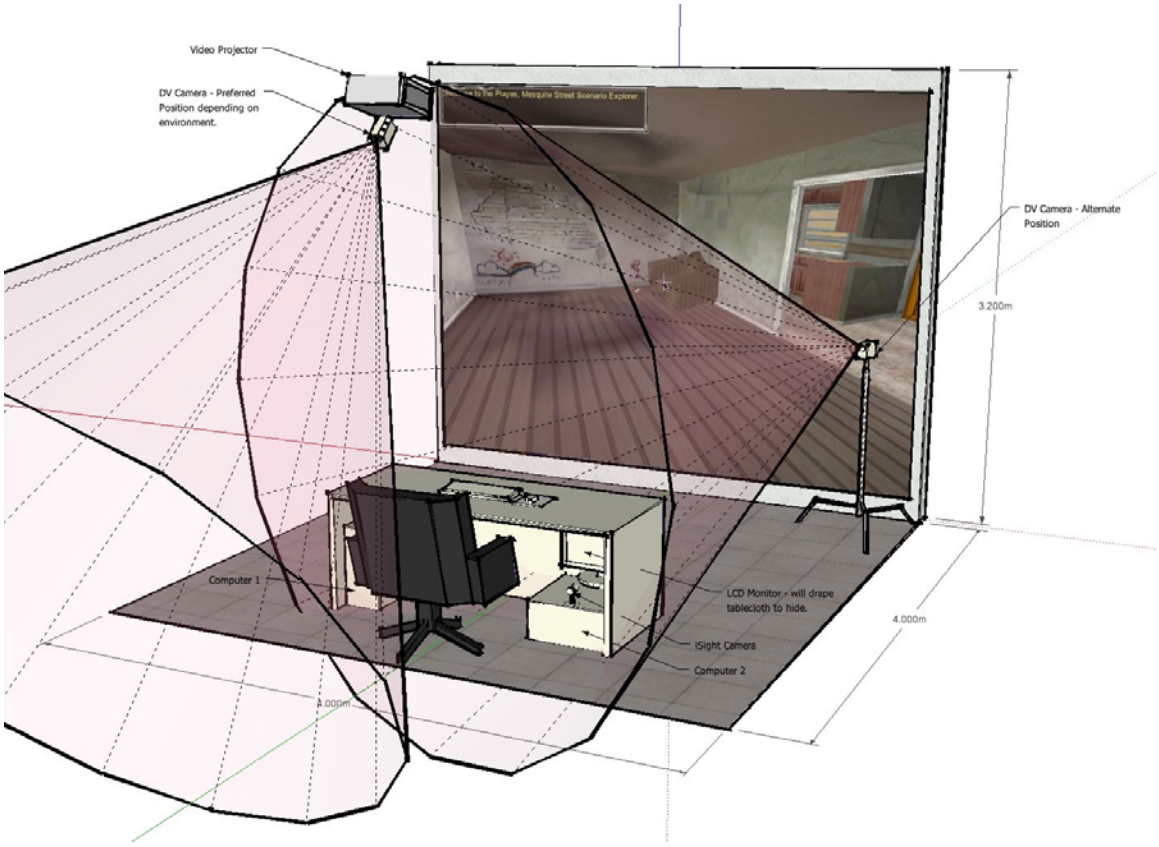

Fig. 29. ACM Multimedia installation diagram.

One of the most pressing concerns, especially considering that *Playas* would first be exhibited overseas, was that everything would work as tested in the U.S. and that we could quickly adapt to the new environment if needed. We did have hardware issues, especially issues related to the lack of power available in the gallery space. The circuits in the space were not strong enough to handle the load of the equipment associated with multiple artists, and so sporadically the power would shut off. In an installation such as this, it takes time to calibrate cameras and establish connections between the two computers running the game and installation, so this required a lot of time and meant one of us (Yauger, Andruid, or myself) would need to "babysit" the project throughout the

exhibition. While tiring, it was actually good to witness firsthand the interaction between viewers and the work, and was invaluable in finding bugs and errors that need to be addressed.

Fig. 30. ACM Multimedia exhibition view.

In Fig. 30 you can see the configuration as exhibited in Singapore. In this configuration, the game player sits at a table with a keyboard and monitor in front. The image displayed on the monitor is the direct feed from the game, with no distortion or manipulation of the image. In the beginning the project was configured this way because of limitations in the hardware setup of the system. The game imagery was fed into the installation machine using a video camera trained on a monitor below the desk.

This setup worked but was difficult to align and was prone to being kicked or shaken. Fig. 31 shows how we presented the player with a small placard above the keyboard that illustrated which keys to push to navigate the space.

Fig. 31. Installation view with monitor and keyboard.

This setup always seemed problematic for me. The use of a keyboard and mouse implied a table. With a table, it didn't seem appropriate to view the wall as opposed to a monitor. The situation resolved itself for me on the night of the opening. A young girl perhaps three or four years old, sat down at the keyboard and started randomly banging on the keys. I had never anticipated this kind of interaction, and of course, the game responded accordingly. While the keyboard had been cumbersome and difficult to

manipulate for those not familiar with video games, the fragility of the setup was apparent. At that point, I decided to begin to simplify the interface, removing the suggestion or need for participants to learn the keyboard and mouse. I also learned to disable any in-game actions that are not absolutely necessary for the functioning of the installation. Over the course of the installation, one young person who frequented the event was aware of several keyboard shortcuts that allow the game developer to manipulate the design of the virtual environment. If we weren't monitoring the installation, and this person visited, they thought it was fun to make major changes and then leave the game in a "broken" state. One cannot count on the viewer to approach a work with any amount of respect!

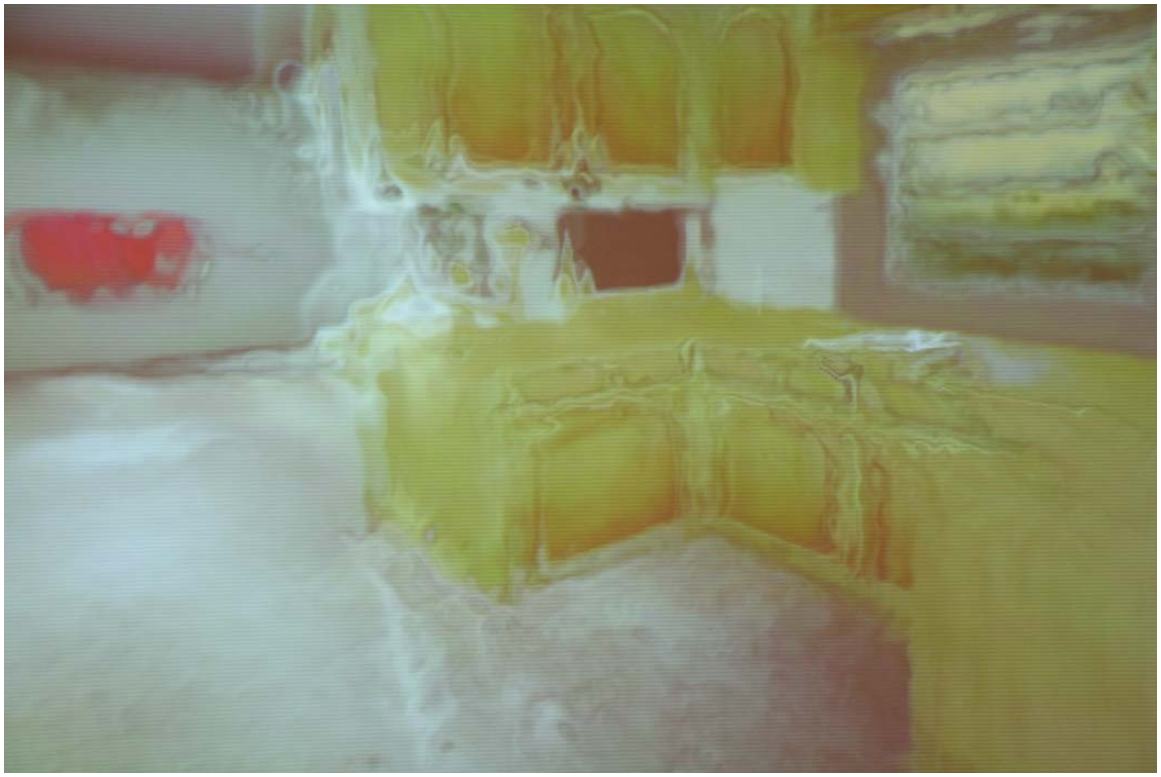

Fig. 32. View inside kitchen of home on Mesquite Street.

Another issue related to ease of use and simplification related to the ability of people unfamiliar with video games, and their inability to enter the homes. Despite instructions placed above the keyboard telling them to press “o” to open doors, many would need direct instruction to do so. It was too complicated for them to realize they had to walk up to the door to a house, press the “o” key, and then enter the house. This entire process was not natural, except to video gamers, and moreover, interrupted their immersion in the game environment. Even though the game imagery was altered and distorted from the norm (Fig. 32), I thought I could anticipate viewer and player interaction with the environment; the most important lesson learned from Singapore was the importance of user testing. There is no way a person can imagine what people will do in a given situation. You must watch and ask questions in order to understand. In the next section I will discuss some of the changes made as a result of our experiences in Singapore.

ISEA2006/ZeroOne

It was a great honor to be included in ISEA2006/ZeroOne. There was a lot of great work and it was an unbelievable opportunity to meet likeminded individuals from all over the world. Following Singapore, I knew there was a lot of work to be done in preparation. We had identified a number of minor bugs in addition to the major items described above. My first task was to replace the homebrewed video digitizing setup that relied on a camera trained on a monitor located under the table. I looked at a number of different solutions and decided to use a scan converter to capture the game imagery and feed it directly into the installation computer via firewire. Most scan

converters only have analog output, but the Canopus TwinPact100™ reflects the imagery via DV. While still suboptimal since it requires down sampling the video game to 720 x 480 pixels, the unit does so while maintaining reasonable quality. Ideally, at some point, I would like to feed DVI video, directly into Max/MSP at full resolution. That may be some years in the future, however [212]. By utilizing a scan converter, I could get rid of one monitor and one video camera and streamline the organization of the installation space (Fig. 33).

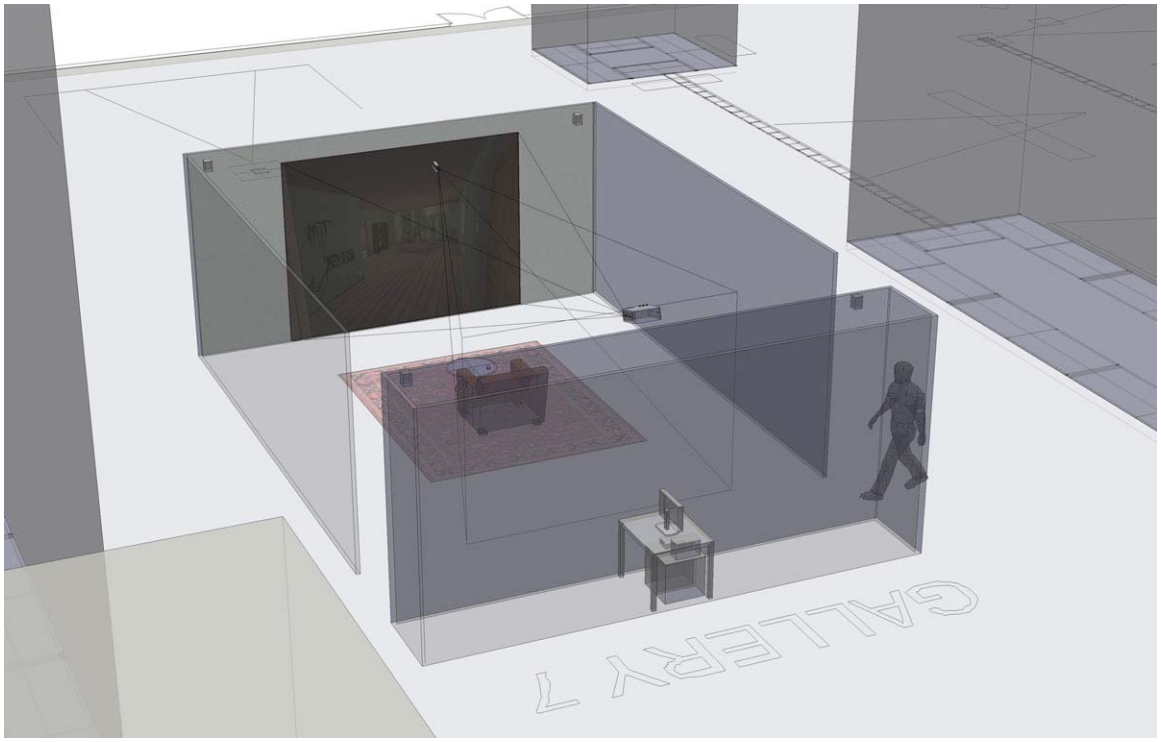

Fig. 33. ISEA/ZeroOne installation diagram.

The next improvement to be made was to change from keyboard and mouse input to the use of a gamepad. As was seen in Singapore, the keyboard and mouse simply introduced too much complexity into the interface with the game. The keyboard/mouse

combination exhibited two primary problems; it was cumbersome and presented the possibility of choices and options that confused participants. In an installation environment, participants come from a broad background. Some are knowledgeable of gaming, but most are not. Non-gamers have not become accustomed to the keyboard and mouse paradigm used in so many commercial video games. Gamers have developed the ability to couple the movements of the keys and mouse with the response of the onscreen graphics. They are able to coordinate these devices, navigating naturally while selectively producing input with the keys. Combined with the fact that installation participants typically do not spend a great deal of time with a work, certainly not as much time as one spends becoming familiar with a commercial video game, their experience is greatly diminished. This situation may be mitigated with multiple exposures to the installation, but this too is atypical. Unlike the experience of a commercial video game, they do not play again and again over a period of a month or more, learning keyboard shortcuts and acclimating to the sensitivity of the controls.

Initially, I thought this would be an easy solution, until I found that TGE did not support the use of a gamepad on the Macintosh. As a result, I had to access Apple's Human Interface Device (HID) development software. One of Apple's engineers was in the process of developing a library that works with HID devices and gratefully provided his library for my use. His library allowed me to add code to the game engine that would enable gamepad support on the Macintosh.

By moving to a gamepad interface and by reducing the amount of required equipment, I had more freedom in the design of the installation. I could now get rid of

the table needed to support a keyboard and mouse, and could avoid the use of a monitor in front of the player. This freedom led to the eventual design of the space as a simple chair and controller located in the middle of the environment. This had the benefit of providing more area for viewers other than the player, allowing more movement throughout the installation. Now that the player was able to view and interact with the same imagery as the installation observers, there became a unity of experience between the player, observers, and environment. Not only were players of all experience levels more likely to be immersed, but also they could directly experience the mirage effect and ghost compositing of others within the environment. This series of architecture changes fundamentally changed, and improved the experience of the environment.

From a software standpoint, a number of small fixes were made. The sum of small fixes served to reduce the unintentional distractions that previously confused and misdirected action within the game. Doors in this version of the game were redesigned to open automatically upon approach, removing the need for players to stop and recall a keyboard shortcut in order to enter a home. The support of video playback was made more robust by fixing some memory problems that would limit the number of times movies could be viewed. The trigger areas that turn video on were enlarged so it would be easier to control, again, reducing the amount of cognitive intentionality required to experience the content. The game was also modified in such a way that a single game server would maintain a simulation of the town in the background; the installation view became a client of the larger game that continuously ran in the background. Previously, the game simply ran as a single instance of the game, with no abstraction from a server.

While this change is subtle, moving to a server/client model allowed the installation to be streamlined in terms of the graphical interface and the amount of waiting participants had to endure as the game started up between each sequence of play. If a player were "killed" they would be re-spawned within an already running game, maintaining state rather than starting from scratch each time. While it was not exercised in San Jose, this revised structure prepares the game for network play, enabling those on a LAN or across the Internet to join a game in progress. As exhibited at ISEA (Fig. 34), the game player was never required to press buttons to start the game, or press buttons to quit. The game runs in an autonomous mode that automatically re-spawns the player when he or she is killed, or automatically restarts it when someone "wins."

Fig. 34. ISEA/ZeroOne installation view.

Of course, "winning" was new in the ISEA version of the game. Originally, I preferred the idea that there were no winners or losers in this game. For that reason, no

score was kept and there was no indication of a goal for gameplay. For ISEA, I introduced a system where the player scored ten points for every video watched (Fig. 35, Fig. 36). The player looses ten points for every time he or she is killed. By scoring 100 points, the player "wins," which results in the display of a "You're a winner" screen, and plays an edited video of the Playas ribbon cutting ceremony. This score is displayed in the bottom left of the screen. I had noticed at Singapore, that there was less sense of struggle than desired. Without a goal more definitive than the charge to "explore," game players did not feel the sense of fear or struggle that I wanted them to experience. They would simply wander around, often beyond the boundaries of the Mesquite Street scenario, and never really accomplish anything, artistically or functionally. The "wandering beyond boundaries" problem was solved in the ISEA version by introducing a perimeter bouncing effect that pushes the player back to the mission area. The bounce effect is accompanied by an audio sample, which warns the player that they are straying from the bounds of the "mission area".

Fig. 35. A video associated with a table and box of Legos.

Despite its ideological attraction, the lack of scoring and winning seemed to subvert the ultimate goal of stimulating meaning. Surprisingly, with the introduction of a scoring system, the perimeter bounce technique is rarely needed. Players are now more focused on looking in the homes and are more engaged with the environment. Because they have a goal, anything that thwarts the achievement of the goal is frustrating. They appear to have a greater sense of fear that an in-game character is going to kill them before they've been able to explore and collect points (Fig. 37).

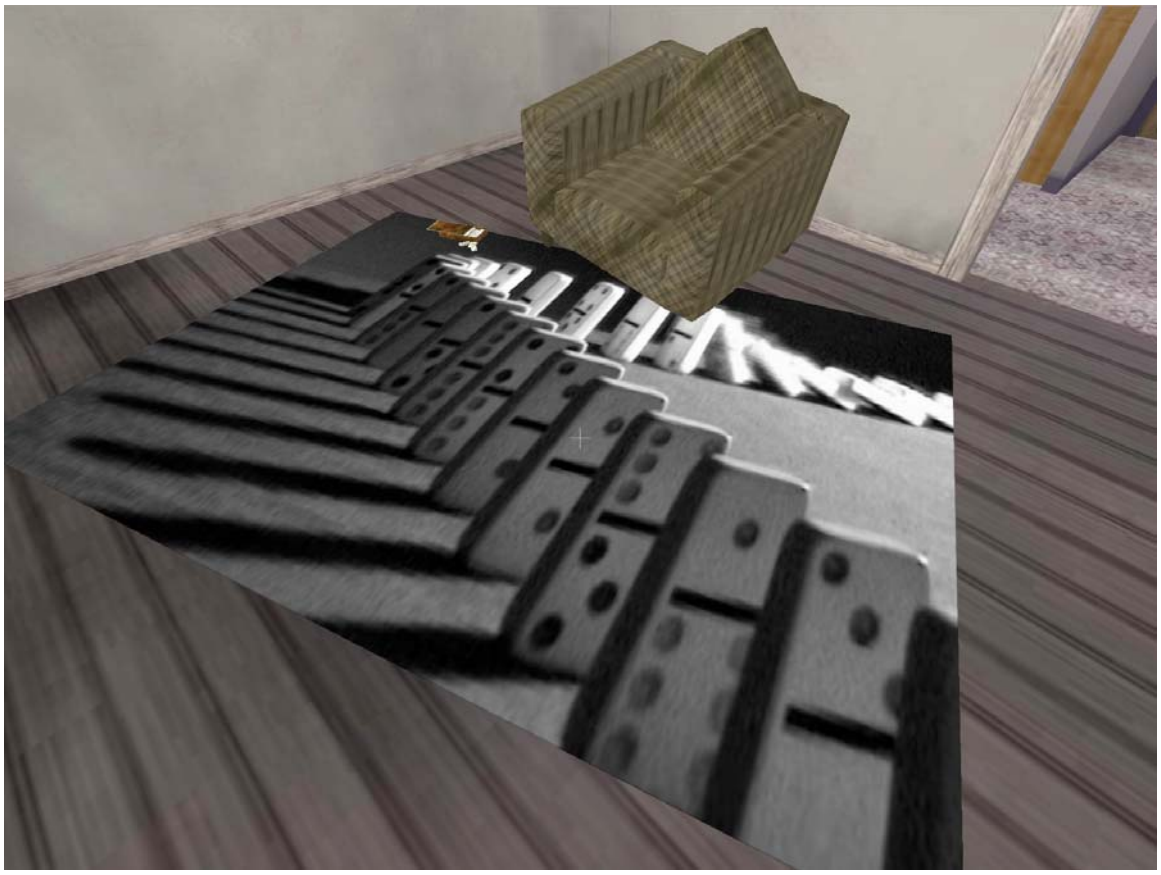

Fig. 36. A video associated with a chair and box of dominos.

The ISEA/ZeroOne version of *Playas* is much improved over the previous versions. By observing player and viewer interaction within the environment in Singapore, one could obviously see deficiencies that needed to be addressed. Of course, much was learned during the process of observation in San Jose as well, though the lessons were more subtle and difficult to elide. It is obvious at this point, that more detailed investigation into the workings of the environment will be necessary in order to get a clearer understanding of how the work functions technically as well as artistically.

Fig. 37. A Department of Homeland Insecurity agent approaches.

Upon return from San Jose, the focus of my research shifted to a process of in-depth interviews with people who have experienced the installation. These interviews have been targeted at understanding the presence or lack of critical reflection and an attempt to identify impediments to its creation. In the next section I will introduce the methodology used in the participant evaluation portion of this research.

EVALUATION

How does one evaluate critical reflection in the experience of an artwork? Experience is a complex response to stimulus, especially with respect to a concept as broad as "critical reflection." It would be impossible to distill critical reflection to a set of empirical measurements. Indeed, as I have mentioned previously, it is not desirable to understand the response empirically, for that would limit its breadth and diversity. We do not need, nor want, rules for the creation of art nor art experience. I want to be able to gain a better understanding of how works function when technological mediation plays an important role in the experience of art. If mediation impacts a fundamental element of aesthetic experience, such as critical reflection, I want to be aware of that process and uncover new ways to negotiate the conflict. Given that the influx of technology is a part of life, my goal is to preserve and adapt what I value in art, so that it functions effectively in this new culture.

Since Duchamp's *Bicycle Wheel* (1913), much of contemporary art has been concerned with concept and the communication of meaning. John Dewey, in his work on education [146], as well as aesthetic experience [213], placed value on critical thinking and the ability of these forms to enhance our knowledge of the world, providing a deeper understanding of our condition. The Situationist International dealt with similar themes through the act of détournement [214]; providing a transgressive model for the development of meaning that transforms existing content in unexpected directions. In *From Work to Text* (1971), Roland Barthes located the source of meaning in the artwork as "Text"; within the play of ideas and interchanges of experience [215]. Indeed, many

of the significant works in visual art, film, and music have contributed to our culture by virtue of their ability to stimulate critical reflection. An artwork is said to support critical reflection if by observing the work the viewer becomes aware of a subtext within the work that suggests a deeper reading of the meaning. This process has many similarities to the educational processes studied in the realm of transformative learning. Edmund O'Sullivan describes transformative learning as learning that,

> *involves experiencing a deep, structural shift in the basic premises of thought, feelings, and actions. It is a shift of consciousness that dramatically and irreversibly alters our way of being in the world. Such a shift involves our understanding of ourselves and our self-locations; our relationships with other humans and with the natural world; our understanding of relations of power in interlocking structures of class, race and gender; our body awarenesses, our visions of alternative approaches to living; and our sense of possibilities for social justice and peace and personal joy*. [216]

Conceptual art has long realized that our knowledge is enhanced when we address the world critically, and question our personal, cultural, and social predispositions before arriving at conclusions. This process of experiencing the world, and the way it is applied to the experience of art, is sometimes derided as "political" or "propagandistic." While it is true that a critical approach to knowledge can be used for various agendas with which one might disagree, there is nothing intrinsic in the process that limits the work in this fashion. Artworks can serve to transform perceptions in equally non-political ways. In fact, if one views the process as dialectical in nature, it becomes a valuable way to attain knowledge.

Recently, there has been a great deal of interest concerning the genre of the video game. As the size of the gaming industry surpassed the motion picture industry in sales,

people began to draw comparisons between the two. Critics have suggested that video games can never rise to the level of art attained by other media such as literature or cinema. Ironically, at the same time, some artists have begun to use game engines as the foundation for the creation of artworks. Obviously, there is a difference of opinion, and perhaps, a lack of understanding about the communication power and significance of this relatively new medium.

Both game designers and artists desire to create works that are capable of the type of experience engendered by the best works of literature, cinema and visual art. Great works typically communicate on a level that extends beyond the surface of the narrative or immediate imagery, and thus stimulate critical reflection in many viewers. It is this power to make connections beyond the immediate representation that produces a rich, compelling experience. Does immersion defeat critical reflection? Is it possible for the two to work together? As a medium that relies on immersion it would seem that this would be an important topic for those who wish to create video games that aspire to art. The degree to which immersion and reflection can be reconciled is one of the key areas of study with relation to certain forms of digital media and their effective use as significant works of art.

In a similar manner to the way hybrid video game/artworks can provide knowledge to the field of game studies, these types of works can benefit architecture. Lev Manovich describes space as a new data type that can be transmitted across the network, allowing us to share experiences [217]. As a medium composed of virtual space, video games provide the opportunity to transcend their existing role as entertainment and

become deeply communicative aesthetic experiences. In turn, with the architect's increasing reliance on computer systems for the design and construction of the built environment, we should understand how to utilize this tool to provide the kind of experiences that elevate mere building to "Architecture." If both disciplines seek to create aesthetically rich, embodied experiences, it stands to reason they might learn from each other. I believe lessons learned about the stimulation of critical reflection in a virtual environment will provide insight into understanding of the built environment as well. In the following section, I will introduce the methodologies used to investigate *Playas: Homeland Mirage*, and understand better how it is functioning with regard to critical reflection.

Methodology

The understanding of critical reflection, as discussed previously, is the understanding of a complex human phenomenon that cannot be reduced to empirical analysis. I have decided that the best way of understanding critical reflection and its function in the type of work that interests me, is through a combination of critical, historical, and qualitative analysis. Further, I have grounded this multiple pronged analytical approach through active participation in the creation, development, and research of the object of inquiry, itself. The nearest form of research using this technique, of which I am aware, is Naturalistic Inquiry (NI). As a research methodology, NI places the inquirer amidst the source of inquiry, and posits a give and take relationship that allows for the unfolding of knowledge that describes a situation in a rich and nuanced manner. The key distinction between NI and the research methodology employed here is the primary involvement of

the researcher in the definition of the "naturalistic" environment to be analyzed. In 2005, I discussed my proposal to use techniques of NI to analyze the *Playas* project with Yvonna Lincoln. Along with Egon Guba, they are key contributors to the development of this research methodology, primarily in the field of educational and social research. Initially, she was resistant because she felt an installation was not "naturalistic." Her frame of reference was one in which the researcher engages with an institution, such as a school or administration, and inserts themselves into a complex dialog. I explained to her, that admittedly on a smaller scale, this is very much the situation when an artist creates an installation. There are complex social forces at play upon an experience that has been instituted amongst various participants. The artist creates an interruption in the institution of culture that causes responses that need to be understood. While the experience is not naturalistic in that it congealed over time, it is still the result of a complex historical and social dialog between humans that effects their perceptions and responses in such a way, that the techniques of NI can help us understand. The experience of art is not a naturalistic occurrence for most people, but there are a significant number of people who wish to have these experiences, as the number of galleries, museums, and alternative exhibition venues would suggest. She agreed with my argument and encouraged me to proceed [218].

The primary difference between traditional NI and this inquiry is the integral role of myself, as artist and researcher. NI is usually structured with the researcher conceived as a "professional stranger." The researcher typically performs a series of interviews from a position external to the situation to be analyzed, and rarely plays a role in its

creation. While this position often works well, it is difficult for someone other than the artist to be intimately aware of the artists' intention. One of the key factors in the evaluation of this type of experience is in understanding how the artists' intent is supported or undermined by various factors (such as technological mediation). For this reason, I believe it is important that artists perform this kind of research, themselves, rather than relying on the interpretations of others. Of course, the issue of concern is "bias." NI recognizes that bias is always present, no matter how much the investigator denies it. This research will only be as valuable to others and myself as I allow it to be. It only benefits me if I learn something about this work and uncover weaknesses or areas that need improvement. If I use research as a platform to promote my own work, it will be obvious to those who approach research critically. By recognizing bias as a given, the reader is on notice to be critically engaged with the findings. This is an intrinsically more honest approach to research than hiding biases behind a veil of objectivity. At a basic level, we also have to recognize that the type of research involved, here, is not the type that involves life or death. No one should rely on these findings in a situation that might affect someone's health or safety. This research uses techniques that are suitable for the purposes at hand, rather than aspiring to some ultimate, I my view, unattainable, arbitration of truth.

I have previously discussed the critical and historical position of *Playas* and my thoughts of its conception as an artwork. I have also discussed critical reflection and the role it plays in aesthetic experience, along with four areas of interest, or support structures, that impact critical reflection in an artwork. In the following section I will

discuss the results of a period of user evaluation and the responses elicited to a series of questions targeted at understanding the behavior of the four support structures.

Four Support Structures

During the month of February 2007, a total of fifteen people participated in semi-structured interviews after having experienced the installation *Playas: Homeland Mirage*. The installation was assembled into a studio space approximately 12 feet wide by 20 feet long by 8 feet high in the fourth floor of Yon Hall at the University of Florida (Fig. 38). This space, built as part of the football stadium, was once a dorm room. At one end of the room was a cabinet and desk that housed the computers and video projector. At the opposite side of the room was a large wall to wall, and floor to ceiling projection surface that I built of canvas, electrical conduit, wood strapping and rope. The end of the room with the computers was also the end of the room that opens onto the central corridor that serves the floor. The projection wall was on the end of the space that is the exterior wall of the structure. In the middle of the space was a chair and gamepad. In the four corners of the room were small speakers, while in the upper left corner of the projection screen one could see the video tracking camera.

Fig. 38. Yon Hall installation space used for interviews.

From a space standpoint, there were compromises with this setup. The relatively short depth of the space reduced the ability of the video-tracking camera to composite installation viewers into the virtual environment. With a greater depth and width, as experienced at ISEA, the effect was much stronger and more effective. It must be acknowledged, as well, that an installation in a public space is somewhat different than an installation in a more controlled environment such as this one. I would expect that the game player would be more self-conscious in public than in the relatively private experience of a studio space. Because of compromises in this area, I did not raise questions regarding the impact of other viewers on the experience of the installation.

Respondents were invited on an individual basis to participate in the study. Eight females and seven males chose to be included. These people were chosen with no preconception as to their experience with video games or art. The respondents were chosen from connections related to my employment in the School of Art and Art History at the University of Florida, so the majority have some relationship to the field of art, whether that be studio art, art education, museum studies or administration. Several were students, though none were students currently taking my classes. All of the students' chosen were at the graduate level. The ages ranged from somewhere in the mid-twenties to perhaps the mid-forties.

Individual respondents made appointments to meet me at the installation space. When they arrived, they were provided forms required by the Texas A&M and University of Florida Institutional Review Boards. They were instructed that they would be asked to play the video game and experience the installation. They were told there was no time limit, nor was there any expectation that they should "win" or complete any portion of the game. They were told that the event was informal; they could ask questions or make comments during the experience and that I would be sitting in the back of the room taking notes and observing their actions. They were told that whenever they were finished, I would conduct an anonymous audio-recorded interview with them about their experiences. They were not told the questions in advance. Once they were informed about the process, I would proceed to tell them about the history of Playas, New Mexico and its relationship to the model presented within the video game. They were informed that for every video they see, they would receive ten points, and for every

time they die, they would lose ten points. They were told that they could score a maximum of 100 points, though it was not important that they do so. Once they understood the rules of the game, I would instruct them on the proper use of the gamepad, telling them that the left thumbstick makes the game character move forward and backward, and the right thumbstick makes the character look up and down. At this point, I would start the game and assume my position at the back of the space. Typically, the participants would experience the installation for 20 to 30 minutes before signaling that they were finished. Once finished I would turn the game off and begin to ask them a series of nine questions. I told them that there were no right or wrong answers, and that the questions were meant to be starting points for conversation, rather than limitations on what can be discussed. I told them that the questions were sometimes composed of sub-questions, but that all were meant to provide a picture that would help me to better understand the experience they had just had. The nine general questions asked were:

1. What is your general experience with visual art and installation?
2. What is your general experience with video games?
3. What are your general thoughts about this experience?
4. What thoughts crossed your mind as you experienced the game, generally?
5. What thoughts crossed your mind as you experienced specific scenes?
6. Did you notice any patterns, motifs, or ideas?
7. What elements contributed or detracted from your sense of immersion?
8. Did you feel as if you were in control of the experience?

9. Have you experienced work like this before?

The recordings of these conversations and the notes taken during observation were subsequently analyzed for content. Initially, the individual conversations were distilled into the form of an outline (Fig. 39) of key points and conversation fragments that appeared significant.

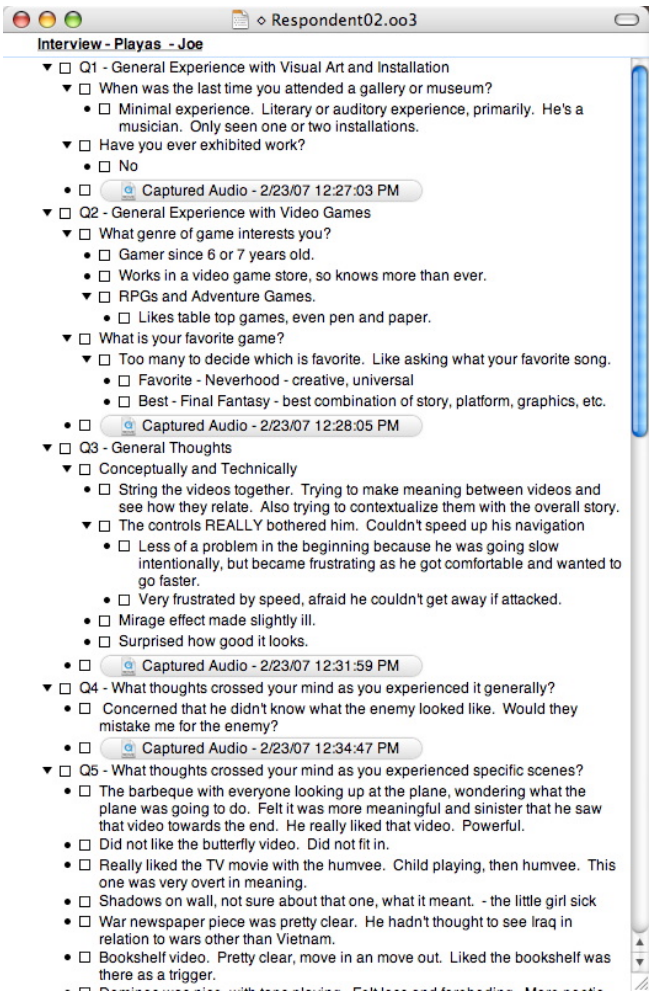

Fig. 39. Typical interview outline with embedded audio.

While this process was helpful in understanding the individual experiences of the participant, it was difficult to correlate the conversations as a whole, due to the number

of entries. In order to get a better grasp on these interrelations, I created seven visual concept maps (Fig. 40). Two of the questions were collapsed into a map because the content was sufficiently similar that it made sense to see the information grouped.

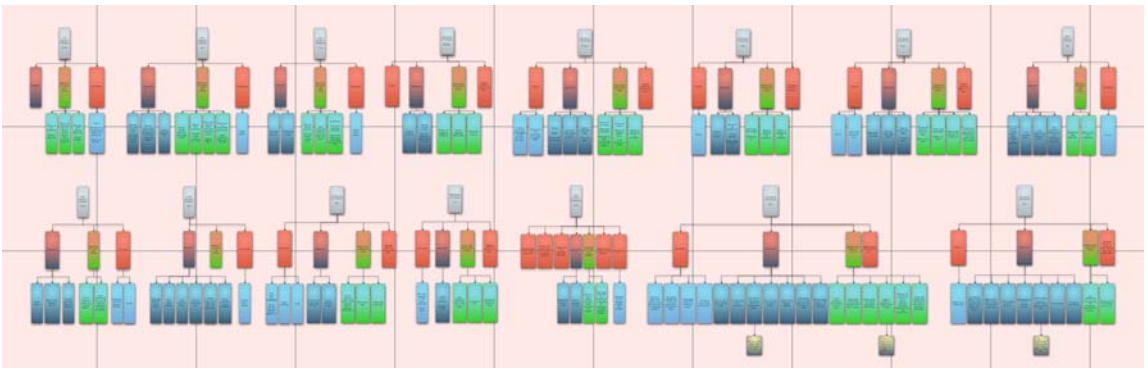

Fig. 40. Typical concept map.

These were the questions regarding previous experience and the general response to the installation and game. This grouping resulted in seven concept maps visualizing Previous Experience, General Response, Specific Response, Pattern Identification, Sense of Immersion, Sense of Control, and Relationships. Each conversation was given a number and assigned a pseudonym to mask the identity of the interviewee.

In the following sections, I will draw upon the relationships uncovered in the creation of these concept maps and discuss the conversations that took place. While not everyone answered each question with the same depth or insight, nevertheless, important insights one might not intuit were found. The answers to these questions provide insight that will later be used to evaluate the participants' response to the four critical reflection support structures of interest; content, authorial control, communicability, and embodiment.

Previous Experience

The intention of the first question was to establish a relationship between each of the respondents and their levels of experience with this kind of work. A concept map was created that assisted me in the organization and understanding of responses to this question (Fig. 41). Question 1 was, "What is your general experience with visual art?" followed by "What is your general experience with computer video games?" Depending on their response, the follow-up questions would prod for detail by asking them how long it had been since they had attended a museum or gallery, or how long since they had played a video game.

Most of the interviewees were associated with the School of Art and Art History at the University of Florida. So, most had an above average knowledge of art or art history. Of course, that doesn't mean that most approach art from the same or similar points-of-view. Betty is an art educator and Sheila is an art education graduate student, while Tina's focus in on museum studies. Their frames of reference are probably different than those who consider themselves serious artists. I would categorize seven of the fifteen respondents as seriously committed to the production of art. Of those seven, two would be considered highly experienced. Amongst the art experienced, three had negative opinions of gaming, or at least expressed reservations about their value. Sheila said she was not very familiar with video games and said, "I don't play much because I get frustrated." Barbara appeared to be hostile to the notion of video games, actually saying that she dislikes them. Her reaction was not surprising because of her experience with animation and the animation industry. Throughout her interview, she kept relating

video games with film and literature, pointing out the deficiencies in narrative and character development. Similarly, Pam, one of the most experienced artists, expressed a similar disdain for video games. She said her favorite games were *Tetris*™ and *Asteroids*™, but that she would rather go outside than play games. She said that she gets motion sickness very easily, and so that aspect of moving through virtual spaces made it difficult for her to find enjoyment. She also tended to evaluate her experiences with games in relation to narrative and literature. Paul was the most experienced artist, and also fairly experienced with video games. His favorites were *Asteroids*™ and *Battlestar*™.

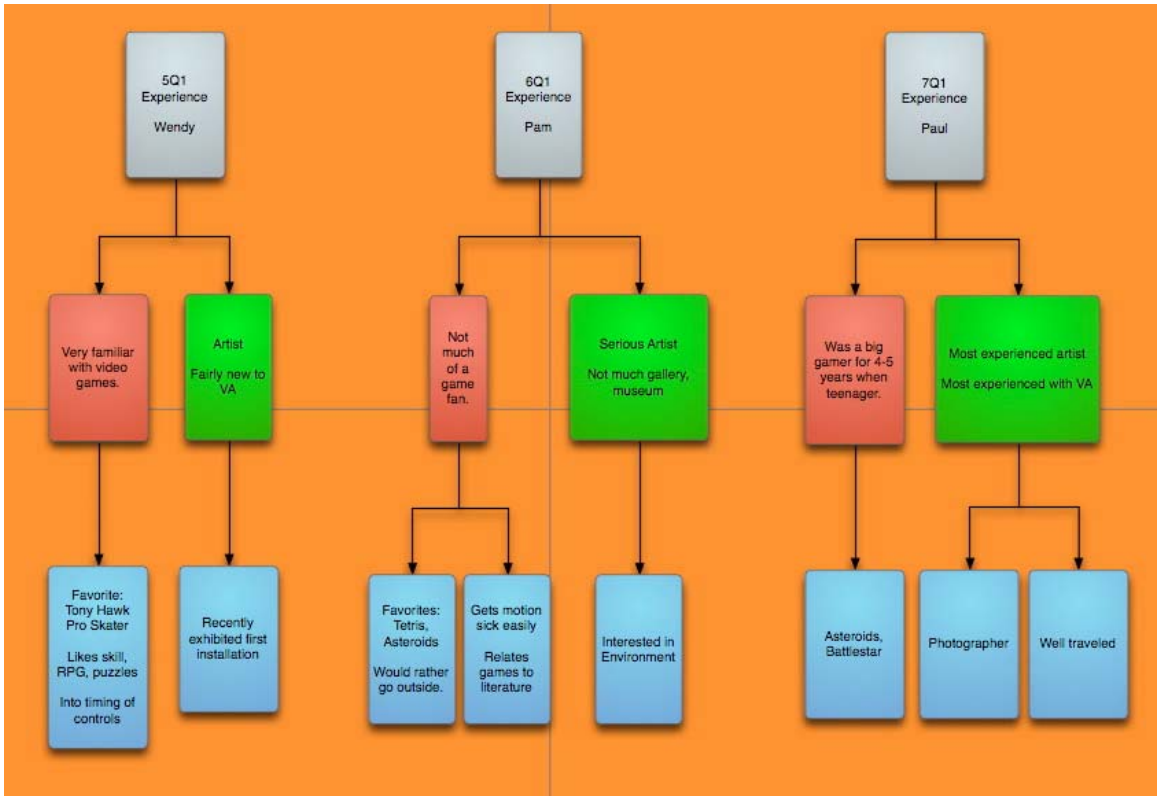

Fig. 41. Detail of concept map related to question one.

Perhaps the most common trait amongst the group was the common familiarity with video games. Ten said they were very familiar with video games or highly experienced. Most of these had played since childhood. Several of these had reduced their game playing time in the last couple of years, but kept up with the latest games and technology. Tom and John have been involved in creating "mods" for video games in the past, and were familiar with the game production process. Joe works in a video game store and could be considered an expert at the various commercial offerings. He has played since childhood and prefers Role Playing Games (RPGs) and Adventure games. His gaming experience extends beyond the virtual space to include pen and paper games and performance. His favorite game is *Neverhood*™. He claims the best video game of all time is probably *Final Fantasy*™. He stressed that selecting one game as best is difficult because of the variety of choices, and that each game has it's own qualities that may exceed others. He chose *Final Fantasy*™ as the best based on its overall synthesis of platform, graphics, game play, and content. Wendy was an experienced gamer and relatively young artist who valued games for their interactivity. She enjoys the development of timing between the interface and the game world. As a game that rewards the development of interface timing, it is not surprising that her favorite game is *Tony Hawk Pro Skater*™.

In general, the experience of the group was fairly well balanced between those with art and gaming experience. Most of the group was open to the idea that video games might have some value as art. There were differences as to how that might be possible, whether games should be adapted to previous models, or whether there was anything

intrinsically limiting in games in general. Many seemed to reflect on these relationships for the first time during the interviews. The artists seemed to be more critical of games as a worthwhile activity.

General Response

The second question was targeted at eliciting the respondents' general thought regarding the installation. The question was very broad, so as to allow them to communicate their most basic responses. If they needed more focus to the question, I would suggest they think of the question as an opportunity to discuss concepts they recognized in the work, any technical observations they may have made, or any metaphorical associations they might have come across.

I had expected that the artistically inclined people would focus more on the conceptual and metaphorical responses to the work, while the game oriented people would respond by recalling other games and experiences. In part this was true, the artists tended to more clearly describe the conceptual linkages they were constructing, but surprisingly the gamers were nearly as adept. The gamers were more likely to address the technical, interface issues with the game. It was immediately apparent that they recognized issues with the gamepad interface device. As discussed previously, based on the problems manipulating the keyboard at ACM Multimedia in Singapore, we changed to a gamepad interface for ISEA2006. The gamepad (Fig. 42) solved a lot of problems by simplifying the control system, but introduced a new, unexpected problem. Based on observing players interacting with the game, it was immediately apparent that a person's previous experience with the controller induced opposite, yet equally critical reflection defeating

results. Gamers, typically familiar with the gamepad device, would speed through the virtual world as quickly as possible, shifting their viewpoint incessantly, never stopping to reflect upon a video or truly explore. Those unfamiliar with games, older people in particular, would find the controls too sensitive and fast and would spend most of the time pinned in a corner, bumping along exterior walls, or spinning around completely out of control. Obviously, neither scenario would produce the kind of reflective, engaged experience I was seeking. To address this problem the speed and sensitivities of the various parameters associated with the controller were modified to mitigate these competing interests. The forward and aft speeds were slowed down to a point where the player could barely run faster than a pursuing terrorist. Similarly, the rotation speed of the controller was slowed so that the player would turn as if in slow motion. These adjustments made it possible for less experienced gamers to quickly adapt to the system and extract something from the experience, though still, their experience was difficult initially. The speed adjustments also made the gamers slow down and consider the environment. Videos that they previously would run past were now triggered. Instead of eyes darting about while a video was playing, the gamer would actually watch.

Fig. 42. Gamepad type controller used at ISEA2006 and during interviews.

Of course, as always seems to happen, this solution introduces other problems. Experienced gamers are immediately aware that the response they expect from a gamepad has been altered. This is apparent in the interviews where the most common comment from game experienced participants is that the controller feels different. Joe said the controls "were driving me crazy." I asked him to elaborate and he said that in the first part of his session it was not a problem because he was looking through the environment slowly, exploring. As he began to score points, became more comfortable with the layouts of the homes and got closer to 100 points, he wanted to speed up. The limitation frustrated him in this regard. Additionally, he said, I was "afraid I couldn't get away if I was attacked." Another relatively experience gamer, Bob, had a similar experience. With regard to the slowed rotation speed he said, "It had one effect, I'm not

sure if it was intentional or not, but it kinda increased the tension…I wasn't sure if I could get away if they came after me." Jerry, another experienced gamer said the controls were "wonky", but that he got used to them. He felt he had to plan his movements more in order to navigate. Wendy, during play, looked at the controller, laughed and said, "how to create anxiety!" She also mentioned the effect in the interview saying that navigation was frustrating, yet also "scary." "I was afraid to be trapped." Paul, who is a very experienced artist as well as somewhat experienced with games, was very frustrated by the controls. He recognized that they were different than the norm and that this was probably intentional, but was unsure whether it was appropriate to frustrate the viewer in this manner.

Several of those inexperienced with gaming also commented on the controls. Typically, their comments were that it took a while to become accustomed, but once they did, they were comfortable. Barbara was the only participant who seemed to have been completely incapacitated by the navigation system. I'm not sure if it was because of a predisposition against video games, or if she fundamentally cannot coordinate the physical manipulation of the controller with the virtual onscreen character. She spent most of her session fighting the controls. I don't think there is any modification to the controls that would have made her experience better.

Another common theme was the interest in the juxtaposition of the real and virtual. Both inexperienced and experienced gamers commented that this was a key area of intrigue. Those with artistic backgrounds were more conceptual in their descriptions of this tactic and were eager to discuss its implications. Betty was "intrigued by the

historical overlay." She liked the idea of a visual art context in a virtual world. From her viewpoint, it was an interesting space with which to experiment with montage and collage. She saw it as a dream world combined with a real world. She felt she had "stepped into a simulation that wasn't real." She felt the need to confront the "bad guys." "How can you do this to me?" She recognized a voyeuristic aspect that conflicted with her internal knowledge that people were dying outside. "What does that say about me?" she asked. This led me to ask her how she might have responded had she known there was something she could do to help the people outside. She said she felt resigned that she couldn't help and would have tried had she known. She said she felt guilty that she made no attempt. She described the overall feeling metaphorically as a "cat and mouse feeling."

Sheila, the art education graduate student, had a similar reaction. She started out by saying "I don't like the war thing." Obviously she was drawing linkages between the militaristic training exercises and the current war in Iraq. "If the intent of the video game is to make a statement against the war, it works…it is accurately reflective of what's happening now." Picking up on the theme of pervasive fear she said, "The Insecurity agents are more threatening than the terrorists." Later she said, "It's kinda scary. If I get nightmares I'm coming back to see you." She metaphorically described is as like a nightmare and like Betty, expressed empathy for the in-game characters. She was approached by a young girl, and said that she felt empathy for her and didn't want her to get killed. She said she wanted to "shaker her hand." During her play, she was

killed very close to the beginning of her session. That immediate recognition of threat amplified her emotional response as she continued to play.

Like Betty and Sheila, Wendy felt empathy for the innocent characters in the simulation and recognized the broader implications of the game. She described it as "VR on fear culture." She also recognized that the concept implicates the player as well as culture by saying, I'm an "elitist, yet as a player (funny that it's P-L-A-Y-A-S), I am a part of it." She stated that she consciously attempts to separate herself from immersive environments while experiencing them. Periodically she would look away from the screen towards the wall. In addition to drawing a parallel between the name "Playas", and the game, she also said "I felt like I was drugged, as a player." She described the feeling of not being able to escape something as if you are locked in place as witness. She said the experience "brings terrorism home."

The two most experienced artists, Pam and Paul, like the others, acknowledged the social message embedded in the work. The both appreciated the linkage with the real world. They liked the idea that a real space had been virtualized. Paul said he "likes the inverted nature of the piece." He enjoyed the thought that an actual town had been turned "virtual" by the government, and then re-virtualized. In some respects, this tactic is reflected in his own, personal artwork. Both he and Pam preferred the live footage to the abstract imagery of some of the videos. Paul extended the metaphor of the game to include Iraq. He imagined what it might be like to live there, in an insecure neighborhood. He said that he felt safer indoors, and he liked that, but never really felt safe because of the ambient sound of outdoor gunfire. Pam was particularly interested in

the constructed nature of Playas. She found it interesting how an industry can create a social system or place. She linked the idea of a town constructed by industry as "very much the true sense of the mirage." Like Paul, she also referenced the recursive nature of the "simulation within a simulation." Metaphorically, having recently been house hunting, she recognized the "poignancy of empty rooms." She still maintains her suspicion of video game, however, claiming that she wants to "feel the heat and color" of the city. She says it happens somewhat, but not enough. She wishes the experience were more "filmic" and wants to "get more lost in the spaces."

Tom is a long time gamer who has experience creating his own "mods." He said he wasn't particularly thinking of the concept as he was playing, though he did identify several concepts. His primary interest seemed to be the variety of the work, the fact that each home was somewhat unique, and the level of development of the game. This seemed to be a common comment from the experienced gamers. Joe, the gamer that works at the videogame store said, "I'm surprised how good it looks." He expected that an artwork posing as a video game would involve less development in terms of the diversity of textures, characters, and the execution of the in-game videos. Like most of the gamers, he seemed to focus primarily on technical issues initially, but often had interesting observations the longer he played. Tom commented on how game play becomes a performance due to the special nature of the chair centered in the installation space. He enjoyed what he described as a "sense of falseness" to the virtual space. He also recognized that the work was making a game out of training. Like most of the gamers, his metaphors tended to be intertextual relationships with other games. He

referenced several online shooter games and said he thought this game felt a lot like Counter-Strike™. John, another heavy gamer, also referenced Half-Life II™, but also suggested that Counter-Strike™ was the most similar.

Tim was an experienced gamer that also focused on the technical aspects. He, too, was impressed with the visual qualities and level of development of the game, suggesting that it might impress serious gamers. He said, "I wouldn't know how to do this." He did reflect that he "would have gotten that it was anti-terrorism, or a critique of homeland security." But he said that he would not have had that understanding without having heard the back-story provided beforehand. Illustrating a level of critical engagement that is perhaps the first level of recognition that this experience was to be something different, his first comment was "Why can't I have a weapon?" Almost all of the gamers asked how they could fight back and seemed concerned that running was the only solution. Most of the experienced gamers seemed to recognize the significance of the menacing appearance of the DHI agents. Because the agents were threatening, and they could not distinguish innocent from terrorist, they simply attempted to avoid any character that approached them. The primary exception was Julie, who "liked to watch people killed." She would watch a group of characters from a position hidden in the bushes or around the corner of a house, and wait for shots to be fired or a bomb to detonate. Then she would approach the dead character, inspect it, and wait for it to dissolve away.

Jerry recognized that the "houses had personalities," and enjoyed that aspect of the experience. He said the game, in particular the controls, reminded him of the "slo-mo

mode" of a game called Perfect Dark™. Bob described the overall feeling as a "town wasted by terror." He said he enjoyed exploration of the site and the focus on "piecing meaning together." Joe, who works at the video game store, echoed his thoughts. Regarding the embedded videos he said, "I was trying to string them all together, you know, I was trying to build meaning out of that." He said he was looking for linkages with Iraq and the Department of Homeland Security. Perhaps because of his background in literature, his strategy was to create a narrative linkage or thread between each of the videos instead of seeing them as independent entities. He was afraid because he could not discern the enemy, and was concerned that they would mistake him for the enemy. Of all the game experienced respondents, Joe was the most deliberate in investigating spaces, characters and videos. He paid particular attention to the textures, stopping to look at graffiti, approaching paintings and posters, and obviously trying to establish a mental model of the spatial layout of the homes.

In terms of the groups' general response to the installation, there was a distinct difference in the ability of the respondents to engage the work on a level beyond the surface. Those with art training were more likely to discuss the work in abstract terms beyond the identification of surface and technical attributes. They were obviously looking for linkages with culture-at-large and formulating a response. Barbara's response was to reject the installation as a whole because of its use of the video game, which in her view does not appropriately replicate the experience of film. Pam, similarly, voiced this concern, but went further by suggesting that the experience was deficient by not matching the experience of the "real" world. Pam was, however, able to

separate this issue from her evaluation and still engage with the work critically, on its own merits. The other art experienced participants seemed eager to engage the work and suggested readings that seemed to appropriately extend from my intentions in creating the work. In some cases, their conceptions were more varied and rich than I could have imagined.

In contrast to the art experienced, the gamers were less likely to discuss metaphorical associations or communicate conceptual parallels. Their frame of reference was to draw relationships with other video games, or to describe technical features of the work. For example, they linked the noticeably different controller behavior with certain intentionality on my part. They recognized that this intervention disrupted their experience and had the side effect of increasing their level of fear and futility within the scenario. They recognized that the blurring of the screen had the effect of making the edges of geometry smoother than in typical video games. Their response to this technical realization led to them considering that this imagery was "dreamlike." They never communicated if they thought dreamlike imagery was appropriate for the subject matter, or if it suggested a particular reading of the work. With only a few exceptions, most of the gamers were primarily focused on task-oriented manipulation of the environment. They wanted to score points as quickly as possible, or at most, "explore" the entire scenario in the shortest amount of time. I suspect that like their artistic counterparts, who assume gaming should remediate film or literature, the experienced gamers remediate their experience of commercial video games and transfer their expectations on the artwork. They have been conditioned to approach the medium in

such a way that critical reflection is not a priority. They expect a particular experience, and simply miss alternative possibilities as they navigate a virtual world that appears to present a familiar interface and mode of interaction. Distraction techniques, such as blurring, ghost compositing, controller manipulation, and others, impact their experience and institute a level of reflection, but at least within the group analyzed here, never to the general conceptual level one would describe as critical.

In the next section I will discuss the more specific responses individuals had to the work. These responses tended to be directed at their recollection of video imagery and memory of what they saw, but also include meaning extracted from, and metaphors associated with, their recollections.

Specific Response

The third question was intended to identify any particularly strong responses to specific scenes or elements of the game. There was a great bit of diversity in response to this question, and even if they did not suggest a linkage to the overall general concept, their specific insights were illuminating. The most common response among the respondents was that the neighborhood was distinctly suburban and middle class. The second most common response was with regard to the "Butterfly video." This video is an animation of a butterfly skimming along a field of flowers, and is associated with a 3d refrigerator that has a picture of a butterfly pinned to its front door. Of all who saw the video, or mentioned it, only Tina liked it. Overwhelmingly, others felt it was "out of place", "corny" or somehow inappropriate. Tina said it was her favorite video because she liked the reinforcement of the video and the image on the refrigerator. Jerry thought

it was “lighter” than the other videos and perhaps too childish. Because of its proximity to the kitchen, Bob initially thought it was a “flying pork chop.” As mentioned elsewhere, others simply preferred live action video rather than an animation in this context.

Wendy was the most complete in describing the various videos she viewed. I was surprised that she could remember each video considering the number she had seen. Wendy described how the common thread between the videos was a sense of place and time. She viewed the videos as, “a residual memory or aura of the place.” In addition to the overall concept, she thought of them as a “double, virtual level of emotion.” Referencing the video of the children playing in the backyard, that is associated with a barbecue grill and bag of charcoal, she said, “The children laughing really hit home.” I believe this video and associated objects are perhaps the most successful. I was amazed to hear her mention the poetic moment when we hear a jet plane fly overhead, and the little girl in the video points to the sky. That moment always seemed special for me, in relation to the context, and to hear someone else had a similar response was gratifying. Wendy also discussed that the sound of birdsong in one of the pieces made her think of her childhood home. She mentioned the video of the, “architect, throwing his ideas out.” Tina mentioned this video as her least favorite. She said she was not sure what was happening but correctly surmised that the person was “struggling through creative block.” Wendy also described the video of Legos™ and toy green army men displayed on a tabletop in one of the bedrooms as a process of, “building and infiltration.” She restated her overall feeling of anxiety and uncertainty and said that it was nice that

everything was not “happy go lucky,” that it fell like real people lived here. Referencing the video associating a birdcage and someone attempting to unlock a door, she misinterpreted what she was hearing and thought she heard “someone screaming and being taken away.” Her least favorite video was one of a bass guitar located in a closet. She must not have recognized its relationship to the theme of the house, which had multiple band posters throughout.

Sheila said she thought “the videos had a fine art feel.” In her opinion this would normally be problematic, because they are so distinct from their embedded environment, but in the context of an installation, she thought it was okay. She thought the birdcage video was the most jarring and unsettling. Like several others, she liked the video of a person reading series of newspaper headlines valorizing our history of warfare. She liked the “forgotten war” slogan that appears towards the end. Referencing the same video, Bob liked the part that said, “War for the Hell of It.” Joe said that this video was very clear for him. Remember, he was searching for intertextual meaning between the videos. He said that he hadn’t “thought to see Iraq in relation to other wars than Vietnam” before seeing this.

As an experience gamer, Joe hadn’t described a much general conceptual recognition in the previous question, and in this more specific area of recognition, he still was not as engaged as some of the artists such as Wendy. He was, however, more responsive than might have been expected based on the previous results. With his linear approach to meaning, he felt that his viewing of the barbecue grill video, as the last video before his game ended, was especially meaningful. After having seen the previous videos, and the

reinforcement of pervasive fear from house to house, his final scene with “everyone looking up in the air, wondering what the plane was going to do” was more meaningful and sinister at the end of the experience than if he had seen it first. He felt it was a particularly powerful ending to his session. In the same house there is a shadowy video that suggests a child has become ill. He correctly identified the content despite saying the video was unclear to him. Tim, on the other hand, thought this video suggested that possibly domestic abuse was occurring. Joe identified a number of videos that he said had clear overt meaning. He recognized that the video of people moving in and out of a home was based around a view of a bookshelf that also happened to be the 3d trigger object within the game space. Like several others, he enjoyed the video of dominos falling accompanied by the sound of *Taps*. Betty described the thought that “something from far away can start a series of events we can’t control” while Jerry and Bob associated the video with the domino effect, referencing The Vietnam War. Despite his stated intention to establish the meaning of each video, Joe said that his favorite videos were, like the domino video, more metaphorical and poetic in nature. He said the domino video provided a sense of loss and foreboding that was more successful that the overt videos.

Pam echoed the same sentiment. While some preferred the ease of understanding afforded the more overt videos, she thought it was stronger in the context of the work to avoid direct meaning. She felt that the videos of banal everyday life, juxtaposed with the shooting going on outside, and the omnipresent fear, were a more successful and poetic integration of the concept. To her, the everyday next to violence was a stronger

statement. Pam also mentioned that while watching the barbecue video, she wondered if the footage was of my daughter. This response seems natural, and is in keeping with her preference for the "real."

Jerry was very willing to interpret what he was seeing. Continuing his recognition that the "houses had personalities," he thought the "creepy house with the ominous graphics was disturbing." Based on his interpretation that he heard a motor noise while viewing the video of the architect and his drafting table, he extended the meaning to include "factory work." He thought of it as, "cranking out the work because you have to." He related this to a struggle between art and work. Relating a video to the overall concept, Jerry described the Legos™ video as "GI Joes™ taking over. What are we teaching our kids?" He saw parallels between games teaching our young about violence and video games continuing the same activity.

Betty described one house as "The house of feet." She recognized that both videos in one house were taken from a low vantage point, at foot level. One video was of people moving in and out of a home and was associated with a bookcase, while the other was of someone jogging along a path, transforming into a group of people milling about and then the dispersal of the group at the sound of gunfire. This video was associated with a tennis shoe found on the floor. Betty mistakenly thought the gunfire was "real" gunfire just outside the home. She thought it was pure serendipity that the gunfire occurred at the same time as the people in the video scattered.

Of course, Barbara, the person who hates video games had little significant response. Her expectations were, perhaps, too narrowly defined to allow her to consider what the

game might offer. Tim, the somewhat experienced gamer and young artist didn't really comprehend much. In his drive to score he admitted, "I watched them, but not with the same detail I might have." Jill, who is probably the least experienced with regard to video games or art, enjoyed the bright colors of the sewing video. She said she wanted to get onboard the 3d model of the bus.

Overall, I was pleasantly surprised by the associative ability of the group with respect to the individual scenes and videos with which they interacted. Compared to the general response question, the art-experienced group was still more willing to extend meaning beyond the confines of the immediate representation. However, the game experienced people were much stronger at recognizing the direct meaning of the videos. It was obvious that gaming itself does not preclude critical reflection in those willing to participate. The videos, with varying degrees of success, disrupted the immersive world and viewers were able to recognize the significance of the work both at an immediate (video) and global (artwork) level. Obviously, the questioning itself institutes a reflective stance on behalf of the respondent, but even so, there were distinct differences in the ability and willingness of the groups to engage in this activity.

In the next section, I will discuss the viewers' ability to recognize patterns with in the experience. This information is helpful in understanding the participants ability to piece the work together as a whole and indicates their level of awareness of the larger picture of the game.

Pattern Identification

The fourth question was “Did you notice any patterns, recurring motifs, or ideas? Everyone except Barbara, who spent most of her time bumping into things, recognized that the houses had similar or mirrored floor plans. Several associated this with the monotony of suburbia and a sense of malaise. Tim called them “cookie cutter houses.” Joe described it as a pattern or repetition of emptiness, both indoors with the homes, and outside, where the vast terrain and arid vegetation dominate. Julie described this as a feeling of abandonment and decay combined with sadness. Tom extended the feeling to describe a linkage between the videos. He felt that they all had some relationship to decay or transition. He suggested that the repetitive suburban aspect of the city communicated a sense of selfishness. He understood that people keep making choices that serve their own interests rather than the broader good. He also described a sense of sorrow that the new version of Playas was no better off than the previous. Several people contributed the sense of decay to the dispersion of graffiti throughout the homes. Bob noticed the 1970s interior décor of the homes, suggesting that they had been abandoned at about the same time.

Joe thought of the blurring and distortion of the screen as a repetitive technique. He said he initially thought it was a bug in the game, but it “took on more meaning as I thought about it.” Paul also recognized the repetition of the blurring. He suggested that it might be interesting to turn the blurring off once the viewer was inside the homes, and re-enable it once they go back outside. Tina thought there was a pattern between the videos and the outdoor space functioning as a contrast of, “homey versus chaos.” Sheila

and Pam noticed the repetitive nature of the vegetation. Jill noticed a pattern in her movements through the homes. She always went out the back doors in order to avoid being seen, and thus shot. She also noticed that all of the houses were some shade of beige, again, reinforcing the monotony of the place. The most significant pattern for Wendy was that she kept getting shot!

While the question concerning patterns may not seem significant, I think the reason is because the game was successful in its ability to evoke a particular emotional state through the use of repetition. Everyone recognized these patterns and attributed to the environment an appropriate reading of its state. Had this not been successful, this question may have indicated deficiencies in the messages being communicated to participants. Ironically, Barbara, who is obsessed with character development, only noticed one pattern. She noticed that the characters in the streets were similar to each other; something that would never happen in her idealized narrative world.

In the next section I will discuss participants reports concerning their sense of immersion. What factors contributed or detracted from their sense of immersion? In order to understand the functioning of critical reflection we need to understand whether immersion is conflicting with the process and if so what process of distraction can be used to maintain a sense of critical engagement with the work.

Sense of Immersion

This series of questions provoked a great deal of discussion amongst respondents. Each was very clear about things that interrupted their sense of being “in the game.” In order to get a better understanding of this issue, I broke the question into three parts.

The beginning question was “What elements contributed or detracted from your sense of immersion?” As expected, people were quicker to identify things that detracted rather than contributed. The second question was “With regard to immersion, how do you think this compared to a book or movie?” I was surprised at the differing viewpoints obtained by this question. The third question was “Where you aware of what others around you were doing?” I rather expected the results received to this question.

There were distinct differences with respect to immersion between the groups of participants. Inexperienced gamers identified the controls as an impediment to immersion, but said they quickly became accustomed and soon felt comfortable. Those with gaming experience unanimously identified the controls as the foremost detractor from immersion. Rather than the controls functioning as they expected them to, the controls fought their desire to navigate at a particular pace and were not optimized for quick movement throughout the environment. All but Paul said that they quickly became accustomed to the controls but that the initial interface made immersion difficult. Joe had a slightly nuanced position stating that he became accustomed quickly, and during the initial phases of the game, when he was taking his time to explore, the controls did not inhibit him. Instead, his frustration rose the longer he played and wanted to speed up his navigation of the space in order to win. As opposed to Joe, who felt the controls were appropriate to the content and goals of the installation, Paul remained skeptical. While he recognized that fast controls might be difficult for those inexperience with video games, he was unsure whether the way to solve the problem should impede the experienced gamer.

Most of the other elements identified as having detracted from immersion were also technical issues. Several people reported being able to see through things that they should not be able to see through, such as walls, the helicopter and bus. These reports primarily came from inexperienced gamers during their initial phase of getting used to the controls. In order to make navigation easier for the largest number of people, the bounding box that defines the main player was reduced in order to minimize its ability to get hung on doors and corners. The byproduct of this adjustment sometimes results in the players' ability to view through a wall if the bump into it is certain circumstances.

Pam identified that she becomes motion sick when experiencing video games, and obviously that detracts from immersion. Wendy was unusual in that she said she consciously attempts to control immersion in games and movies. She would periodically look away from the screen before continuing. Betty commented that some of the colors were too intense and therefore less realistic than others.

Several people identified that certain aspects of the installation detracted from immersion. Tina pointed out that the ghost compositing of people in the installation space removed her from immersion. While experiencing a home or video several times she would notice her composited outline or the outline of myself taking notes in the back and this would interrupt her immersive experience. She also mentioned that unexpected sounds, such as the embedded trigger zone audio indicators would "drop her out." Julie said that she noticed several misaligned textures that reminded her that the environment was not perfect. John said that he "lost respect" for the bots towards the end of the game because he had figured out how to avoid them. Several people found a bug within the

game environment that makes it difficult to enter a house from the end of the front porch. Unless the character enters the front door via the sidewalk, they cannot step up onto the porch. This causes them to have to back up and navigate around the obstacle, frustrating and in turn dropping them out of immersion. Several people also mentioned that at times they were aware that they were being watched. This performative aspect of the installation obviously separates one from total immersion. Bob recognized several items that caused him to separate from the space. He recognized jerky motion at times, as models switched to alternate between low-resolution textures and the higher resolution textures displayed up close. He also pointed out that a lack of peripheral vision often detracts. He also felt that the need to reposition his character to see some of the videos from a better vantage point unnecessarily detracted. Finally, he suggested that the bots should speak, especially when they approach the game player.

The most frequently commented element that contributed to immersion was the sound. Almost everyone mentioned that as extremely helpful. There are several bugs with regard to audio, such as a couple of places in the environment where the environmental audio does not reset its volume after leaving a house. The immersive power of audio is extremely obvious when the outdoor environmental sound disappears. The second most commonly mentioned contributor to immersion was the size of the screen. Interacting with a moving image of the size utilized in the testing environment comes close to filling the viewers cone of vision. This combined with the sound creates a space conducive to immersion.

I was surprised to hear a great deal of disagreement over the relationships between video games, literature and film. Most people thought that books were the most immersive form; while others felt movies were more immersive. No one said they thought games were the most immersive medium. Those who claimed books were the most immersive also tended to laud the freedom of imagination inherent in the way we make meaning from text. Joe called this "the freedom to see things in your head." Several people mentioned that they could read the same book multiple times and get something different at each reading. Sheila said that when she reads a book, "she becomes a part of it, telling others about it, and dreaming about it." She recognized that her experience with an installation is shorter duration and that she probably wouldn't dream about this experience. She also recognized that because of the non-narrative nature of the installation she would not tell people about it in the same manner she might a book. She would not relay a series of chronological events in relaying the message. She might simply describe the concept and overall feel. Tina is a "big reader." She never watches a movie more than once, but will read books multiple times. She uses movies as background noise while she plays The Sims™. She felt there were more similarities between a video game and a book that a movie. Of course, Barbara said, "games are not nearly as interesting." To her, nothing is better than character development in the form of a linear narrative. Unfortunately, she did not say, nor did I ask, whether she preferred books or movies. I suspect the answer would have been movie. Pam is less interested in movies and "really gets lost in books." She identified

that the biggest difference between movies and games is the sense of realism in movies. Of course, nothing is more immersive than nature.

Paul was one who saw relationship between all three but situated games as independent. Similar in this regard were Joe and Betty. They all saw linkages but seemed to be most willing to allow the game to contribute in its own way. Paul recognized that the dynamic nature of the game was its distinguishing factor. Both books and movies have fixed endings. Even a non-linear narrative eventually resolves in some fixed manner. Joe pointed out that games can manipulate information. They change with each viewing based on a build up of experience. In his view, games are a specific medium that builds upon the others. He pointed out that books and movies have a hard time conveying urgency. In this particular example, urgency is a prime characteristic. For Betty, the strongest resemblance between a video game and a movie is the aspect of the screen. Other than that she sees some relationship with literature through the use of narrative, but this is weakly linked. Jerry commented that interactivity was the key difference between games and the other two mediums.

It was interesting that most people assumed that the goal of a work such as this was to maximize immersion. They assumed that more immersion is better than less immersion. Barbara, for example, seemed to relish the idea that games could never be as immersive as a movie. Pam mentioned several times the fact that nature is the most immersive experience. During the interview of some respondents were initially reluctant to tell me about things that interrupted immersion. They were afraid these issues were weaknesses, or that it would sound as if they were being overly critical. If I

sensed this predisposition, I would clarify that they needed to be straightforward in their assessment and not attempt to anticipate what they thought I wanted to hear. I would tell these particular respondents that my goals may not have been to maximize immersion, so if they noticed issues that thwarted it, I would like to know. This often resulted in the respondent, opening up, and telling me that they noticed the controls, ghost compositing, distortion effects, a particular video, or some other effect reduced their immersion within the environment. The seemed relieved that they could tell me what was happening. It is obvious that the human drive for complete immersion is strong, and large portions of society have been acculturated to media forms that satiate the desire. This is one of the primary reasons the general population does not appreciate avant-garde film or many forms of contemporary art. These experiences thrive on the manipulation of immersion and frustrate viewers who approach the work from a subjective viewpoint framed by conventional immersive techniques. Based on the interviews, the intentional techniques developed in this project functioned as intended, dropping people out of complete immersion and shifting their viewpoint when necessary. Of course, this was modulated by the predisposition of the viewer, so in some cases there was nothing that could be done. If someone refuses to engage, then there is nothing to shift and no communication to modulate. I do not view this as a weakness in the work because I am not attempting to create a universal experience.

One area that affects immersion and needs improvement is the control system. The issue of interface controls spans the topic of immersion and the next section, Sense of

Control. In this section I will discuss the findings of these interviews and discuss issues related to this aspect of the experience.

Sense of Control

The sixth primary question was "Did you feel as if you were in control of the experience?" The question was qualified by asking, "Could you go where you wanted to go?" "Did you feel you knew where you were going?" and "Did anything thwart your goals?" These questions elicited responses in two contexts: game play and mechanics. Most would assume I meant, "Did you feel in control of the scenario?" A few thought I was referring to the control afforded the gamepad. As discussed previously, there were more issues with the gamepad from the point-of-view of the game experienced, so I expected that to be manifest here, and it was. I expected the gamers to show a propensity to interpret the question as related to the control mechanism and this was overwhelmingly the case. The majority of the experienced gamers mentioned the mechanical elements of control and either failed to address the game play aspects, or only mentioned them subsequent to mentioning the tools. The less game experienced overwhelmingly discussed the game play control issues as the primary reflection of control in the game.

Perhaps because I have been working on the game for so long, I rarely feel a sense of urgency or fear as I play, unless there is some task I need to perform and I am in a hurry. For this reason, I was pleased that most said they never felt in control of the game. Most respondents referenced an omnipresent sense of fear that kept them in suspense. Sheila said that for the most part she was always afraid of "uncontrollable circumstances." Joe

said, “Yes and no, the terrorists were beyond my control.” He said, “I was able to think for myself and go where I wanted.” Sheila also said she could go where she wanted, but said that she became lost in one of the houses at one point. Tina claimed she was never in control of game play. She “died” several times and was in constant fear it would happen again. Wendy said she was likewise out of control. She mentioned that she felt constricted because of the slow motion of the controls and was afraid she could not back out if she went in some of the spaces. Paul referenced this same issue. I think this issue is problematic with respect to the controls. I want people to feel as if their speed is limited, but it should be so slow as to discourage their exploration of spaces. It could be that a small rotation speed increase might resolve this issue.

Paul also said something that I think is important with respect to control. He said that he felt like he was “being served a sense of control.” While I empathize with his frustration at the speed limits and restricted rotation speeds from a “gamers” point-of-view, this recognition of illusory control, and the idea that it is being manipulated is an important realization that fundamentally supports the concept of the work. Paul also suggested something that I think is quite appropriate. He thought it would be beneficial to create a sense of “graduated fear” by changing the forward and rotation speeds based on the players location in the virtual space. For example, if movement was faster outdoors than indoors that would be the first step. Then, the grassy, sandy terrain might be the next level in speed, followed by the fastest area confined to the street or sidewalks, themselves. Since most of the in-game characters violent action occurs in the street, the tradeoff between the desire for speed and the fear of death would require the

player to make a decision. I think this is an excellent suggestion that warrant further inquiry.

Tim said, “I felt reactive. I felt like I was in control, but I wasn’t.” Betty felt she had no control and kept wondering how the bots were targeting her. Julie felt like she was in control, but said there was always a sense that something random was going to happen. Even though she thought she was safe while watching a video, she still sensed fear that maybe she was wrong. Bob, Jerry, Tom, and John primarily discussed control in relation to the game pad. They all discussed the rotation speed limits and forward speed restrictions that kept them from moving as quickly as possible. They all said that they felt comfortable with the controls once they acclimated, and that given more time they could improve their performance. None of them felt the controls inhibited them in going where the wanted to go. The controls only impacted their desire for speed. Jerry said that he “just accepted that he needed to learn the controls,” and that once he did they weren’t a problem. Several respondents of both groups mentioned they had difficulty positioning themselves to watch the videos. These tended to be those with less experience. This problem would be exacerbated by the lack of precision when the controls are faster. Positioning was a major problem for all experience levels when the game was installed at ACM Multimedia, and early on, at ISEA2006.

One issue that several people mentioned was the issue of orientation. Half of the respondents mentioned orientation as a problem, or an issue that they were able to resolve after initial confusion. John said that he felt disoriented until he went into the street and could see the bus. As long as the bus was in view he knew which houses he

had seen and which way he needed to go to progress through the homes. Tom also mentioned this strategy, recognizing that a helicopter was at the opposite end of the street. Most of the others could not keep track of which homes they had seen and relied on entering the front door of a home and assessing the décor before deciding if they had seen it before.

Barbara, not surprisingly, said that she felt no sense of fear or lack of control from game play. She continued to attempt to relate the experience to film and story development. As far as mechanical control, she had obvious orientation problems. She did not appear to exhibit the capacity to form a mental map of the space within her mind. Pam only mentioned her lack of familiarity with the interface of games. She noticed that she kept getting caught on doorways and corners as she moved through the space.

The sense of control is a difficult issue with respect to games and art. In another artwork, this issue might be even more problematic than it is here. Here, the slow motion effect, and the molasses-like movement works with the blurring and distortion of the screen to suggest a dream state that references our own experience of dreaming. This, in turn, supports the concept of the art in the sense that I am communicating that there is a lack of reality in our "real world" actions. I am intentionally playing with the boundary of real and virtual. The slow motion has the byproduct of making space for critical reflection that is missing when players zoom through environments, scoring points. Other game works, without this intentional speed manipulation will have difficulty resolving the issue of critical reflection if they choose a game pad as the primary interface. In summary, I think that *Playas* is fairly well tuned with respect to

the control mechanism. I think, perhaps, that the rotational speed might be increased slightly so players are not discouraged from exploring. At this point, I think there is a fairly good balance between control and experience level especially combined with the need to support critically reflective experience.

In the next section I will discuss the relationships respondents drew with respect to other artworks or video games.

Relationships

The final question was intended to see what linkages respondents could draw between this experience and previous experiences. They were asked "Have you experienced other work like this before?" and "How do you think this work relates to others you have experienced?" and finally "Compare this work to other works of art." I was hoping to get more insightful comments in response to these questions. Perhaps because it was the last question asked towards the end of a long discussion that did not happen. The responses segregated as one might expect into categories of art or video games based on the interest of the respondent. Those with art experience tended draw relationships with artworks they had seen. Those with video game experience would reference games they had played in the past. Often they would select multiple games based on individual characteristics of feel and game play.

Most of those with art experience mentioned a relationship between *Playas* and video installation. Most said they had never experienced anything closely resembling it, but that certain qualities reminded them of video installation. Sheila said it was most similar to a video installation "except this one has several videos." She also mentioned

an interactive children's museum she had attended. In this exhibit, cameras tracked children and projected their outlines on a screen. Pam has experienced a CAVE system before, and said there were some similarities, but the intention was entirely different. Jerry said he thought he had seen some video installations that were informative, but could not recall by whom or where. He along with Barbara thought there were similarities with the work of Dali. Both mentioned the painting, *Persistence of Memory*. Joe said that he had seen a video installation where the artist had videotaped himself playing the game, *Tomb Raider*™. Betty mentioned the work of Natalie Bookchin, who is a well-known video game based artist. She also said she felt there were similarities with the work of Vito Acconci. She described an installation he had created, where a series of walls upon which flags of various countries were painted. In order to raise the walls, people would team up and pull on ropes attached to the ceiling via pulleys. She also mentioned a generative work she had seen at the Banff Centre. She couldn't recall more about this piece.

As the most experienced artist, Paul had the most to say about relationships with other work. He said he had never seen a piece like this one, especially one related to an actual place. He said he had experienced a number of pieces that he thought were related. He mentioned the work of Joe Deal who produced a number of photographs of houses with vacant back yards and scenes of the Southwest (Fig. 43).

Fig. 43. Albuquerque, New Mexico (1975) a photograph by Joe Deal.

Related to Deal's imagery of the Southwest, he thought of Jim Jarmusch's *Dead Man* and its Western sensibility. He thought the "high-tech wildness" of that work was interesting in relation to *Playas.* He thought of the expansive vistas of Canaletto's canals. He also thought of the desolate spaces photographed by Jeff Wall, which he thought had a similar immersive feel to them. Most directly, he thought of the work of Paul Pfeifer, who modeled and photographed a reproduction of the movie set of haunted house in *The Amityville Horror.* He felt this work was the closest in terms of playing with the idea of the real also being virtual.

Two of the artists, Pam and Wendy asked similar questions about the intended audience. Recall that Pam is not a fan of video games and prefers the "real" to the

virtual. She asked, “Who are these games for?” She suggested that maybe they were just for gamers, or that this might just be an artistic bandwagon. Wendy was more concerned about the reception of the audience. She said that she evaluates art based on whether her grandmother or a child would like it. She wondered if culture would understand and if the audience might be too restricted. While these are time-honored questions in art, they are somewhat misdirected. The audience is the same audience that has always related to a work of art: those who are interested. Just as certain movies attract certain viewers, and vehicle marques attract particular followings, this artwork functions in the same way. As Dave Hickey describes it in *The Invisible Dragon* [219], art is going underground. Referencing Duchamp, who said one day all artists would move underground, art, is like Jazz. A select group of people will care about what it means and what it says. “This is preferable to everyone hearing about art about which no-one gives a damn.” While audience is important to me, as this dissertation attests, I believe that very often protestations based on who work will reach is a vestige of a modernist desire for universality. I accept that art is a professional language, and not everyone speaks the language. There is nothing intrinsic in art that should require it to simultaneously communicate with young and old, or different cultures. Yes, we should be aware of our audience and should not needlessly restrict access, but we should not compromise work in order to speak to the broadest possible audience. This returns to the idea of diversity. Do we value diversity, such that we support it, or do we attempt to totalize experience so we can all communicate with each other from some idealized position?

The gamers saw relationships with other games. Both Joe and Tina, who were friends, mentioned a game called *Neverhood*™. They saw it as similar in that it encourages exploration and trial and error more so than the typical video game. Others, for similar reasons, mentioned *Myst*™ and *Riven*™. Joe remarked that video games are "distinctly different" in that they "are a collaborative form that combines other forms into one." He thinks of video games as incorporating multiple media forms such as music, literature, visual art and film. Several gamers mentioned *Counter-Strike*™ and *Silent Hill*™. The former is a classic first person shooter militaristic game; the later is a dark, mysterious game of the same genre. Tim could not identify any relationships and Barbara practically gleamed as she said it reminded her of an amusement ride at Epcot. She obviously felt this reference was a derogatory indictment of games in comparison to her beloved cinema.

The relationships people drew with the work were, like the rest of the input, highly contingent on their experience and predispositions. The most experienced artist had worthwhile linkages with other works and experiences and it was impressive how easily he could contextualize the work with no forethought or preplanning of his answers. The parallels he drew provide many interesting avenues of artistic exploration for future work and, indeed, avenues where this work might be strengthened. The most experienced gamer, Joe, had informative things to say about the work in relation to video games and in particular the collaborative nature of the medium. I think this question might be addressed more fully, and with richer results, by asking the question sooner in

the sequence of events. It might be worth exploring independently with a select group of experienced artists and gamers.

SUMMARY OF RESULTS

The information gathered during the collection and analysis of personal interviews provided insight an artist would rarely receive given the current structure of art evaluation. In this section I will discuss the significant findings in relation to Content, Authorial Control, Communicability, and Embodiment. What did I learn about the functioning of these structures with relation to critical reflection?

Significant Findings

Content, as intuition would suggest, is fundamental in the creation of a work that has any chance of communicating with viewers. If a work has nothing to say, suggests nothing in particular, or makes no external references, it is less likely to interactively engage viewers for very long, much less stimulate critical reflection. At the least, with nothing specific to communicate, there is no way to evaluate whether the meanings generated are by virtue of the experience, or simply random associations. In general, viewers easily recognized the content of *Playas: Homeland Mirage*. None of those interviewed responded to questions involving the content of the work and responded inappropriately. Everyone appeared to digest the substance of the work and were able to link significant themes, to some extent. Many participants immediately recognized that the paradigm of the "first-person shooter" (FPS) video game type was violated. The game player is typically afforded a weapon in these games, and the context of *Playas*

clearly communicates that it is modeled after an FPS. Often, the first thing a person would ask was, “Where’s my weapon?” They immediately recognized a violation of their expectation of the norms of this experience. This instantaneous recognition that something was out of the ordinary is an indicator of the possibility of a reflective experience.

The primary finding with regard to content and critical reflection was the difference in response between those familiar with contemporary art and those with little or no experience in this regard. Those experienced in art were clearly more likely to engage the work critically. They invariably had more to say, both positively as well as negatively. They were more likely to suggest improvements that were conceptual in nature, rather than technical. This engagement with the content of the work suggested a greater level of critical reflection than the less experienced demonstrated. Those who were experienced gamers, in particular, tended to focus primarily on issues of a technical nature. Gamers were least likely to describe critically reflective thought that occurred while they were playing the game. During gameplay, they were intently focused on success and the achievement of tasks, rather than evaluating what they were viewing. Subsequent to gameplay they engaged in critical reflection, not unlike the other respondents, though as mentioned previously, they tended to focus on technical issues. Of course, one would expect that those with art experience would be more attuned to an artist’s intentions. I did not expect, however, that the disparity between their willingness to engage critically would be so greatly expressed.

Authorial control and its adverse effect on critical reflection is an issue that I believe was demonstrated to be a myth. *Playas* is a perfect example that despite the lack of strong narrative direction, viewers still interact with a level of critical reflection. In fact, in some respects, the lack of authorial control allows for greater flexibility in critical response than other forms that exhibit strong authorship. This flexibility opens the contextual dialog in a manner that presents a greater opportunity for the creation of personal meaning than otherwise might be available. Despite the lack of a strong narrative, most participants were able to identify embedded themes. In general, most participant responses were consistent with my intentions. There were two primary challenges related to authorial control with which I struggled. The first of these was the short-term nature of participant interaction within the environment, versus the repetitive play characteristics typical of the traditional video game experience. As discussed previously, this was mitigated by the use of a gamepad interface, but I feel this issue is still not fully resolved. This will always be an issue as digital media artists use new forms of interaction. The second challenge is perhaps the most difficult to address. In fact, there is probably little an artist can do except attempt to manipulate the effect judiciously. Many players assume maximum immersion is the goal of video game experience. Players with this disposition are not unlike those who reject avant-garde film; they often react negatively when events occur that disrupt immersion. Rather than reflect critically, they become frustrated and may reject the work. This circumstance also impacts communicability, which I will discuss next, but I suspect there is little that can be done except educate the viewer. In general, the notion that video games lack

authorial control betrays a lack of understanding of the dialogic nature of the medium. There are many subtle, yet powerful ways an author can suggest and lead meaning without the traditional discursive, narratological mode of expression.

Perhaps the most significant finding related to authorial control was the importance and role of rules-of-play. As discussed previously, earlier iterations of the game did not include a scoring system for ideological reasons. The player was verbally encouraged to "explore" but there was no incentive, such as a scoring system. It was apparent, even before interviewing participants, that the lack of rules-of-play had a detrimental effect. Often, participants simply did not engage the work for very long, certainly not long enough to present an opportunity for reflection. Of course, rules-of-play are not required for all digital media works that utilize the video game engine, but for this work, they were absolutely crucial as a pre-requisite for the development critical reflection. They initiated a sense of engagement that subsequently presented opportunities for dialog. In some respects, rules-of-play perform the role of narrative in cinematic forms. They create a structure that directs the behavior of the viewer; they become a tool of authorial control. In comparison with narrative, rules-of-play are biased towards the viewer as opposed to the author, providing the former with more freedom to construct meaning from the experience. Within the bounds of the overall structure, the player is free to engage the work with less sequential, spatial, or orientational intervention. Much as Cage's *4'33"* provided reflection within a loose set of constraints, the video game presents similar opportunities by encouraging the player to engage on his or her own

terms. Rules-of-play are fundamentally important to the creation of a critically reflective, interactive video game.

Communicability encompasses a number of ways in which meaning is created. In evaluating the interviews, I was sensitive to indicators that suggested particular forces at work in this process of critical reflection and meaning generation. Viewers would describe metaphorical associations during and after experiencing the environment, or would describe intertextual relationships with other games or artworks they had seen. It was clear, that as a function of their willingness to engage critically, those familiar with contemporary art were more likely to describe metaphorical associations as well as other forms of communicability. This was especially true when discussing the thoughts that occurred as they played the game. The embedded videos, with their non-linear structure left much of the interpretation to the viewer. The art-experienced excelled at this activity and were also more likely to describe the work in conceptual, "big picture" terms. Their responses tended to communicate the feelings and emotions they were experiencing, and attempted to describe these by referencing similar experiences through analogy. The experienced gamers tended to cite intertextual relationships with other video games, and occasionally with movies. Unlike the art-experienced, I question whether they truly recognized the multiple layers of signification that were developed within the work. Supporting the findings related to authorial control and immersion described in the previous section, those with the predisposition to expect a strong narrative structure were less likely to release that tendency and engage in a critically reflective manner. Rather than attempt to find meaning in loosely related, suggestive

content via communicable processes, they were more likely to loose interest if they could not quickly identify a strong storyline. They seemed to exhibit less wonder and curiosity than others who were more flexible in their expectations. Significantly, but to a lesser degree with those locked into the expectation of narrative, distraction techniques seemed to be effective in inciting critical reflection. The selective blurring and displacement of onscreen graphics were often mentioned as an element that interrupted the viewers' immersion and caused them to consider the surreal nature of life and/or the experience itself. It was often these shifts in expectation (flashing video, unexpected sounds, etc.) that were the source of inspirational thought for participants.

Embodiment and issues surrounding the interface with the work were one of the most challenging areas of development in this project. A poorly considered interface destroys any opportunity for the development of critical reflection. This issue was powerfully demonstrated by the differing experiences of those who interacted with the work in Singapore, and those who experienced it in San Jose. I would go so far as to say that the work developed little critical reflection in the first exhibition, due to interface and gameplay issues. It was clear that immersion itself does not preclude critical reflection, but it did appear that without the use of distraction techniques, reflection was diminished. Participants who described themselves as fully immersed still reported communicable activity, but these responses seemed to be more richly described when stimulated by distractive elements. For example, players would describe how they felt a sense of fear that ebbed and flowed as they traversed the site. They described how they imagined this must relate to life in a war zone. They experienced this emotion and made

this cognitive linkage while immersed within gameplay, absent any form of distraction. In contrast, others would describe particular imagery associated with a video that conjured thoughts of a child playing in the backyard. They would relate how this thought communicated a sense of innocence and disconnect from the real, violent world. This association is a type that has less to do with the tenor of the environment, and more to do with a distractive element (video) they happened to view during the course of exploration.

One finding with respect to embodiment is significant in that I am still not sure how it can be resolved. Existing navigational controls can rarely accommodate the range of participants who will experience an installation environment, which by its nature is a short-term event. It was, and still is, a problem. Tuning the in-game navigation to accommodate one level of participant capability excludes many others with different capabilities. There will always be those who are experienced with a particular medium, and those who are not, so this is not a unique problem. Unfortunately, it is a problem that is endemic when working with new technology. Finding a balance between experienced and inexperienced participants is extremely difficult but is absolutely necessary. In this particular project, I desired a certain level of frustration due to the controls in order to heighten the sense of fear that one could not escape, or that one was not fully in control. I am ambivalent about whether this tactic was successful, however. This technique was adequate to the extent that it did enhance the level of fear and lack of control, but I suspect experienced gamers missed the point, deciding it was a bug rather than a feature.

In certain cases the significant findings of this research validated my intuition with regard to the workings of the project from the perspective of critical reflection. I was surprised by the speed with which experienced gamers approached the environment. I was disappointed that this focus on speed, dexterity and problem solving often limited their ability to engage the work critically (in-game) from a conceptual viewpoint. Despite this, I was pleasantly surprised that they were able to effectively engage the work critically, post-experience, even if the focus tended to be *Playas*' relation to other video games. Perhaps the most gratifying finding was the recognition of embedded concepts described by the art-experienced participants. One always hopes that people notice particular elements or expand the work in unexpected ways, but rarely does the artist view this first hand. From this standpoint, I feel the project was successful, though because of the sample population chosen for this research, I am unsure how effective the work is with a more diverse group of participants.

In general, the four support structures, content, authorial control, communicability and embodiment provided an effective means to categorize areas of interest that might have an effect on critical reflection. An ability to create (content), direct (authorial control), manipulate (forms of communicability), and stimulate (sense of embodiment) responses within these categories of behavior is crucial to the development of critical reflection. Of these, the interface (hardware and software) and its effect on an embodied relationship to the virtual environment, presented *Playas* the most significant challenge in the stimulation of critical reflection. One cannot mindlessly accept, for example, that a video game works adequately using a keyboard and mouse. The interface controls the

dynamics of communication, of which, critical reflection is a key component in works of art. The interface is potentially the most significant impediment to critical reflection in digital media artworks, if not accounted for properly. Artistically, with an awareness of certain limitations and challenges, video games can function as art quite well with respect to content, authorial control and communicability, but work remains to overcome the negative impact on critical reflection due to our limitations in creating truly embodied experience.

Future Work

There are a number of directions this project could take that would provide more knowledge about critical reflection in digital media art. Each of the four primary support structures would individually be worthy of focused investigation. In fact, separating them and developing targeted instruments to evaluate participant response could be very valuable. *Playas* was primarily conceived as a location specific installation environment. I anticipate if it is developed further, networked gameplay will become more important, therefore, the work will be increasingly dialogic in nature. This would present changes likely to introduce new issues with regard to critical reflection, not to mention the concept of the work itself and how it might be evaluated. The issues identified in this type of change might prove useful in a comparative study between the two versions of the project. For example, is a work that is primarily dialogic more effective in the stimulation of critical reflection, or less so?

One issue with this particular study is the lack of diversity in the study group. Here, the group was composed with little regard for age, experience, gender, or other factors

that may have a bearing on response. Because the primary sample population consisted of students at an art school, the results are obviously biased towards whatever disposition this might lend. While this situation is adequate for the purposes of this investigation, the same set of interviews could be conducted, evaluated and analyzed with more targeted, or more generically representative sample groups.

Another future direction might be to use this project as a test bed for the evaluation of experimental interfaces. This inquiry would be targeted at better understanding the embodiment aspects of aesthetic experience. It would be interesting to evaluate the effect on critical reflection of a head-mounted display, a camera tracking setup, or a motion floor system, among others. Of course, the project could also be adapted to a fully immersive environment such as a CAVE. Using this technology, the focus might become more distinctly targeted at the empirical relations between critical reflection, immersion and presence using one or more of the presence measures that are available, or possibly develop a new instrument that relates the three.

Perhaps because I have worked on *Playas* for so long, I am ready for a change. I am excited about using what I have learned with this project and adapting it to new works that extend it conceptually and technically. As an artist who continually looks to the future, it could be that the work that develops from this project will in certain aspects be an oppositional response to what I have learned here. For example, I am considering working with the idea of creating a purely contemplative space that involves no interaction at all. In removing interaction, what new challenges arise and what issues remain? Perhaps the most significant thing I have learned in the process of this research

is the contextual placement of myself within art, culture and technology. It is further defining, reflecting, and exploring these relationships that provides the most exciting personal impetus for the future.

CHAPTER IV

CONCLUSION

In the preceding pages of this document, I have described the conception and development of a complex ecosystem extending well beyond the written representation of thoughts capable of distillation on paper or screen. Despite the weakness of our methods of communication, the model of research-based arts practice presented in this document provides insight into the dynamic interaction between technology and aesthetic experience. I have described how the work, *Playas: Homeland Mirage* is situated within the dialog of art and culture, and how it was conceptualized and developed to relate to this context. I have described how artists might engage the creation of complicated digital media works through a process of collaborative development. I have illustrated how works of this type might be improved through an iterative troubleshooting sequence of experimentation, exhibition, participant observation and interviews. I have described how this research facilitates knowledge using the methodology of Naturalistic Inquiry. Holistically, this process situates digital media art as a part of an ecosystem that is recursive in nature, providing feedback that nourishes not only art, but also society in general.

The target of inquiry was specifically the function of critical reflection in this hybrid, video game and installation. I described the role and nature of critical reflection from an art-historical viewpoint and discussed how critical reflection is contingent upon the subjective viewpoint associated with aesthetic experience. I traced how that viewpoint

has shifted within the dialog of art and related this shift to the broader socio-cultural manifestations of change. Calling for a reconciliation of polarized positions, I proposed that the work of digital media artists might be better served by unifying the discourse of thought concerning monologic and dialogic subjectivity. This structure unifies Critical Theory and culture studies around the common desire for interference and cultural change. In this manner, the important role of art and artists is maintained but provides new opportunities to engage society without reducing art to the anthropological study of culture.

I also discussed the stimulation of critical reflection through the process of distraction, and how this idea relates to other conceptions such as hypermediacy, the disorienting dilemma, and antagonism. These concepts extend from various discourses such as art theory, media studies, education and politics, but converge with the idea of inciting critical reflection within the individual. While each of these discourses may not specifically address art, they all contribute by uncovering the mechanisms of transformative meaning generation that are the hallmark of fulfilling art experience. An understanding of these mechanisms provides insight that may enable us to visualize means of interference as suggested by Foster.

In evaluating the work I identified how critical reflection was manifest, how it was thwarted, and how the project was improved to overcome fundamental challenges. Four structures in support of critical reflection framed a series of questions designed to evaluate its presence and absence. The results of these findings recognized a myth at work with regard to authorial control, and demonstrated a disparity between the aesthetic

experience of gamers and non-gamers. It was recognized that rules of play are a fundamentally important pre-requisite to the stimulation and maintenance of critical reflection in video game based works that require interactivity. Similarly, the interface (software and hardware), as a mediator of communication, has an extremely important role to play in the support of critical reflection.

At the outset, I never imagined I would learn so much. I expect that there will be additional lessons that manifest themselves as a result of this inquiry, as I continue to develop my work. I now have a clearer understanding of the critical issues that inform digital art practice, as well as a better conception of the interplay between digital media and traditional art. Through this process, I have gained a better understanding of the workings of critical reflection in digital media art, and a vision of future directions that might produce the kinds of rich aesthetic experience I seek. This recursive process of creation and research, and the way that it has facilitated my own discovery, is example enough that there is value in this approach. I hope that others find this work useful or inspiring, and similarly choose to share their research as we prepare art for a changing culture.

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APPENDIX A

APPLICATION

Below are links to the downloadable versions of the Windows and Macintosh OSX distributions of the *Playas: Homeland Mirage* application.

1. http://playas.homelandmirage.net/Playas.zip (Windows) ~350MB
2. http://playas.homelandmirage.net/playas-ub.dmg (Apple OSX) ~350MB

Please check http://playas.homelandmirage.net for more recent versions, videos, images, and detailed installation instructions.

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