VARIATIONS OF VIRTUAL REALITY IN THEATRE AND FILM:
TRUTH AND ILLUSION VIA ART AND TECHNOLOGY

DISSERTATION

Presented in Partial Fulfillment of the Requirements for
the degree of Doctor of Philosophy in the
Graduate School of The Ohio State University

By

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"The first 40 years of life give us the text; the next 30 years supply the commentary."
-- Fortune Cookie from China Dynasty, Columbus, Ohio
     Friday, May 26, 2000

"Technology is the fire around which we gather."
-- Laurie Anderson

"A work is never necessarily finished for he who made it is never complete."
-- Paul Valéry

"What is reality? Nothing but a collective hunch."
-- Jane Wagner
ABSTRACT

While the technological age has made Virtual Reality a popular buzz-word, its philosophical antecedents can be traced back at least as far as Plato. This study begins in an examination of the definitions of Virtual Reality, representation, interactivity, immersion and cyberspace. In doing so the discussion follows a trajectory from Plato, Aristotle, Horace, Rousseau, and Castelvetro to the military-industrial complex and the internet.

In arguing that theatre is one of the original Virtual Realities, I discuss specific works by Lope de Vega, Calderon de la Barca, and Luigi Pirandello, in that these plays, via the illusion of theatre are dealing with themes of illusion in art and life. I also look at how playwrights like Elmer Rice and Karel Capek have dealt with technology as a thematic concern in dramatic writings.

Expanding these arguments to film I examine three Orientalist versions of Gunga Din (including Indiana Jones and the Temple of Doom, and Sergeants 3 ) and argue that film as a Virtual Reality is a powerful means of (mis)representation in creating racist and colonialist
(mis)understandings of subordinate groups (Indians in this case). I also look at *The Lawnmower Man* and *The Truman Show* to understand how Hollywood has dealt with themes of Virtual Reality and interactivity in the technological era.

In light of new computer technologies I visit the works of theatrical masters like Craig, Appia, Grotowski, Brecht and Svoboda to examine how current theatrical production practices can be enhanced and invigorated. I closely examine the work being done by Claudio Pinhanez and the Theatre Department at the University of Kansas where computers are being used not only in the design area but also in the performative aspects of theatre.

The study concludes with a discussion about creating new critical discourses around the issues raised by these new computer technologies. Virtual Reality as a philosophical, technological and aesthetic construct has always carried with it parallel and intersecting dialectics based in ethics, values and social impact. As these technologies begin to permeate almost every aspect of human interaction, the need for a critical theory around the area of art, technology and culture becomes desperately imperative.
Dedicated to my Family:

Mahabanoo, Navroze, Nairika, Mani, and Meher

without whose patience, support, love and nurturing

I would not have been possible.

To my new brother-in-law Tommy.

And to the beloved memory of

my grandfathers, Nariman Mody and Savak Kotwal

and my late, great-aunt Jer.
ACKNOWLEDGEMENTS

I would like to thank my adviser Stratos Constantinidis whose incredible patience, constant encouragement and meticulous critiques have made this a much stronger document and myself a much more astute and succinct writer and scholar. His guidance and input to the area of study undertaken in this dissertation has been invaluable. I also owe a great debt of thanks to Carol Gigliotti whose constant love and guidance has given me great strength and freedom as an artist and scholar. She has also strengthened my writing and creativity through her gentle nudging and firm scrutiny. Both Stratos and Carol have very willingly worked with me and shared their work so generously. They have introduced me to many new ideas and new worlds of artistic and scholarly inquiry.

I owe many thanks to Wayne Carlson who consistently encourages and nurtures interdisciplinary projects and multifaceted collaborations. Eight years ago I came to ACCAD (The Advanced Computing Center for Art and Design) under his guidance to see how
the theatre and computers could collaborate and facilitate new ways of seeing and thinking. This dissertation is in essence a direct result of my introduction to ACCAD and the ideals of bringing art and technology closer together.

I would also like to thank Anthony Hill who has been my professor and teaching mentor in the area of multicultural studies. Through the courses I have taught with him I have been able to reflect and refine my work in the area of hegemony, colonial and post-colonial studies and the ways in which images and ideology function in social and cultural regeneration.

I would also like to acknowledge my other teachers past and present who have contributed indelibly to my development and growth as an artist, a thinker and a scholar. To my teachers in Bombay, India -- Mrs. Sedvelkar who taught me the unadulterated joys of painting with abandon; Havovi Kolsawalla, my first speech and drama teacher who recognized and nurtured my talents as an actor, director and public speaker; Florence Hallegua my high school English teacher who inculcated in me a deep passion for language and literature; Colonel Simeon my high school principal who taught me to box, literally and metaphorically; and Shiraz Jeffries my high school drama coach who kept pushing my creative limits.
I also owe a lot of gratitude to many of my professors at Wabash College where I received my undergraduate education -- James Fisher and Dwight Watson who gave me a lot of guidance and courage to pursue the theatrical arts; Doug Çalisch and Greg Huebner who fueled my passion for the visual arts; William Placher who taught me about cultures and traditions and how to think with clarity and a passion for knowledge; Floyd Coleman who taught me that art history is a living, breathing field of inquiry and relevant to our modern predicaments; Ola Rotimi who taught me about theatre and politics; and to Peter Frederick who gave me insights and a living example about what it means to be a great teacher.

I would also like to acknowledge Peter Watkins and Laura Mulvey who planted in me my curiosity of film and all things cinematic and Don Stredney who started me off on my voyage in the world of computer graphics and Virtual Reality.

I owe thanks to my closest friends -- my extended family -- for their help and support throughout the duration of this project and beyond -- the Nemeths (Jim, Michal, Tania, Tamar, Ron and Mary), the Milligans (Carol, Fritz, Michael, Jennifer, Cory, Jesse), Cousin Ann, Alison and Grace Goodworth, Amiel and Melissa Mansur, Halim Hanna, Sam Jaeger, Adrian Hierro, Yianni Yessios, Fereshteh Hough, Lynn and Harvey Roth, Neil Daniels and Sean Usher. I would also like to thank Gijs
Gerlag, John Carlisle, Eric Lee, Michael Lee, Kevin McBride, Tim Wilson, Andy Scahill, and Boney Dhar for their friendship and support.

Last but not the least, I wish to thank my family, who have made incredible sacrifices to ensure my pursuit of an education abroad. They have taught me more than I could ever be thankful for and their ungrudging encouragement of my pursuing the arts has been greatly appreciated. Their unconditional love has made my life much easier. My most respectful thanks to my parents Navroze and Mahabanoo, my sister Nairika, my grandmothers Mani and Meher, my great-aunt Jer, and my new brother-in-law Tommy for all that you have done and continue to do.

Above all, my deepest thanks to my spiritual lights -- Ahura Mazda and Zarathushtra who have guided me and taken care of me and mine wherever we have been.
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CHAPTER 1

INTRODUCTION

ART AND TECHNOLOGY

Film, Theatre, Computers and Virtual Reality

Computers have found their way into just about every aspect of social interaction. As computers expand their functions and impact, they allow their users access and entry into different and multiple “realities.” And in having done so, computers have brought with them new issues and questions about the definition and value of art. In June of 1991, the First Annual Conference on Virtual Reality titled “Impacts and Applications” was held in London, England. Tony Feldman, Chairman of that conference, in the foreword to the proceedings, wrote that, “there can be no doubt that within the next few years virtual reality systems are going to have a tremendous impact on many aspects of
our personal, professional and business lives."¹ Less than ten years later that statement seems less prophetic and more a matter of destiny.

Unlike film and the visual arts, theatre has sometimes been slow -- especially in recent years -- in picking up pioneering technological and artistic experimentation that would advance its performance capabilities in terms of productivity and artistic content. There have been brief and infrequent movements when the theatre became a showcase for technological and aesthetic experimentation in other art forms. For example, Russian directors like Alexander Tairov and Vsevolod Meyerhold adroitly used the constructivist and futurist art of pioneers such as Alexander Rodchenko (1891 - 1956).

In this study, I am investigating two seminal questions. What does the theatre have to offer current technologies of Virtual Reality (VR)? What do the technologies of Virtual Reality have to offer the theatre? Scholars like Brenda Laurel have borrowed heavily from the theatre to enhance the computer game industry. And a few designers have used computers to enhance the level and complexity of Broadway-esque spectacle. A third major question that I am addressing has to do with Virtual Reality as a representation of existing social

circumstances (i.e. colonial India in this particular case.) How do representations of certain cultures via the mediums of Virtual Reality help to reinforce hegemonic structures between the dominant and the subordinate. Thus ideology and technology are closely linked in light of the above inquiry. One cannot extricate ideology from technology and in fact, technology facilitates certain narratives over others. In this dissertation I am particularly interested in how technology is the medium of the colonizer over the colonized.

From the above three questions stem several secondary lines of inquiry such as: (a) How does the very definition of theatre itself change when computers are introduced into the theatrical landscape? Performance artists such as Laurie Anderson and George Coates have already shifted and altered the boundaries of theatre with their use of virtual technologies. (b) How will the proliferation of computers in the theatre affect theatre education? These changes are already obvious in design training. As the theatrical landscape transforms on account of virtual technologies, actor and director training are adapting to the dynamics of the new technology; and (c) How will the aesthetic experience of drama change under the impact of technology? The traditional narratives of live theatre have already become cinematic (e.g. David Mamet). Will these narratives of live theatre become more embedded in Virtual Reality styles and genres edging them closer to
becoming more Hollywood in form and content? (d) What do computer
games and Virtual Reality devices have to gain from theatrical theories
and narratives? The best-selling CD-rom game "MYST" is a brilliant
case in point, because it was the first computer game to use a first-
person modality in its player-interface interactivity. The creators of
"MYST" have used many elements of "traditional" drama to create one
of the largest selling computer games to date.

The secondary questions above are addressing issues of
interactivity and definitions of technology. Interactivity is a new and
controversial term. Generally, interactivity is any activity that involves
an object and a spectator. However in this study interactivity is
defined as a range of possibilities based on existing technologies.
Technology is defined as anything mechanical that is used to produce
commodities or to enhance human functions and interactions; however,
with the advent of cyber-technology, this definition of technology also
includes the "machinery" of the human body.

How does the new technoculture, which is based on the image
making capabilities of computers, alter and/or influence theatre
theory and practice? Theatre can further adapt current technologies
for the purposes of theatrical design and performance.

The work of some innovative theatre theorists and practitioners
gains a new significance in light of the new technologies and aids
computer generated realities to find new levels of dramatic potential and interactive capabilities. For example, Gordon Craig's failed, albeit avant garde, experiments with the Uber-marionettes, when re-examined within image creation capabilities of cyberspace are both viable and capable of transforming the way we view actors, their training, and the entire mis-en-scene.

I start this study in this chapter with a contextualization of the triangular relationship between theatre, film and Virtual Reality. Before one can study the relationship between these three entities, it is important to clarify and examine what defines Virtual Reality.

In the second chapter, I re-examine the issues of imitation and reality. How are current definitions of reality and imitation enriched by the capability of creating “virtual” realities? I lay the theoretical groundwork of this study by discussing the works of Plato, Aristotle, Horace, Castelvetro and Rousseau. I also reflect on some considerations of ethics in Virtual Reality technologies in the context of Carol Gigiotti's claim that ethics has “everything to do with aesthetics.”

In the third chapter, I look at theatre as the oldest form of “technology” to create “virtual environments.” The notion of theatre

being a form of Virtual Reality could be made on the grounds that
theatre is a construct whereby an audience is immersed in a world of
artificial realities, which manipulates and influences its emotions and
intellect. I look at several plays that deal with issues of imitation,
verisimilitude, and reality such as Lope de Vega’s Seeing is Believing,
Calderon de la Barca’s Life is an Illusion, Luigi Pirandello’s It Is So If You
Think So and Six Characters in Search of An Author. I also look at
Elmer Rice’s The Adding Machine and Karel Capek’s R.U.R. to examine
how dramatists have thematically and contextually dealt with the
impact of technology on human interactions and social development.

In the fourth chapter, I examine the notion of how film functions
as a Virtual Reality environment and how computers have altered the
way in which films are made. Film, like theatre, has traditionally
succeeded in varying degrees in creating virtual worlds for its
audiences. Representation in cinema, like in theatre, becomes
problematic when the images being created are false or based on
stereotypes and distorted information. Of course, the influence of
cinema has been more pervasive than that of live theatre in the
twentieth century. These images reach wider audiences at a global
level and the impact of deliberate filmic misreadings of social reality
are far reaching and detrimental to the culture of misrepresented
groups (Indians in the case of this study). In light of this I discuss
George Stevens' *Gunga Din* (1939), Steven Spielberg's *Indiana Jones and the Temple of Doom* (1984), and John Sturges' *Sergeants 3* (1962).

With the recent proliferation of computerized special effects and digital manipulation of film, it has become harder to separate the multiple realities that inhabit the celluloid screen. Robert Zemeckis' *Forrest Gump* (1996) is a great example where digital imaging manipulates history so "realistically" that fact and fiction are no longer separated in any way, shape or form. Peter Weir's *The Truman Show* (1998) examines this recent phenomenon of merging reality with fiction within electronic mediums. In the fifth chapter, I look at how Weir's film comments on the ways in which the new, technologically created, Virtual Realities are affecting communication and interaction. *The Truman Show* also seems to be staking the claim that such Virtual Realities will eventually influence human evolution. With this in mind I also examine *The Lawnmower Man*, as an early example of Virtual Reality in film and film as Virtual Reality.

In the sixth chapter, I discuss the relevance of Jerzy Grotowski's "poor" theatre, Bertolt Brecht's "epic" theatre, Gordon Craig's "Ubermarrionettes," Adolphe Appia's "Living Theatre," and Joseph Svoboda's work with Prague's "Laterna Magika" to current technologies of Virtual Reality. I examine the significance of their main
tenets and practices in relation to issues of interactivity, theatre and the modern and post-modern notions of aesthetics. I also examine prospective applications of technology in the areas of theatrical design, direction, and performance.

In chapter seven, I describe and analyze some current uses of Virtual Reality in the theatre. In particular I look at the work being done at the University of Kansas in their Department of Theatre, where new computer technologies of immersion and interactivity are being used in live performances. In this chapter I also examine how theatre is influencing the design of virtual environments. Here, the work of Claudio Pinhanez of the Media Lab at the Massachusetts Institute of Technology, is seminal and of particular relevance. Pinhanez's work blends computers and theatre in challenging new ways, especially where he experiments with human actors interacting with computers as actors.

The theatre has had to compete with radio, film, television, video, and now a new challenger -- the technologies of Virtual Reality. These technologies have created a market for themselves, and have also breathed new life into television and film. The most recent of these challengers at one level threatens what has made live theatre unique from film, painting, sculpture, and television -- i.e. the notion of interactivity. It must be noted that even in the mediums of film,
painting, sculpture, and television, there have been instances where interactivity was part of the aesthetic experience. For instance, the environmental art works of Christos where he wraps entire islands or buildings in fabric, are definitely interactive in their relationship to the audience.

I do not argue that the current technologies in the live theatre need to be jettisoned. The use of computers in the theatre has already begun but it has mainly been confined to being a technical enabler. The unexplored possibilities of the future of this nexus between computers and theatre, brings with it many promises and potential problems.

A. Virtual Reality Technologies

In the last decade or so, since Virtual Reality systems started to enter mainstream consciousness, Virtual Reality became the buzzword that defined much of the last decade of the 1900s. The popular media in particular (television, radio, magazines, and newspapers) were awash in coverage of Virtual Reality and its various applications. Tony Feldman writes that, “However, all too often the sensational aspects of the subject have been emphasized at the expense of providing any serious assessment and already myths are spreading about what Virtual Reality is, what it can do and what benefits and hazards it may
have for the future.” In the last decade, these myths and sensationalist attitudes have only grown more rampant as Virtual Reality has begun to gain in popular interest. Simon Penny, in realizing that computers are proliferating without a significant element of media literacy and critical discourse, writes that:

In art now, as in a myriad of aspects of society, a new tool, the computer, is carried forth on a wave of rhetoric, enforcing radical changes in practices. As in other disciplines, in art there has been an appalling lack of critical assessment of the changes this new tool is enforcing, which only testifies to the power of the propelling rhetoric. It behooves us to examine the history of this rhetoric so we might better assess the positive and negative aspects of the technology in an informed way and perhaps enable ourselves to apply the tool to new functions without unconsciously embracing ideologies which might erode our basic goals. (Theorists such as Lev Manovich and Erkki Huhmato are particularly useful here).  

The last decade also saw an increase in the widespread use of practical Virtual Reality systems. Moreover, like all technological applications for mass consumers, as Virtual Reality applications


became more widespread, these systems also became increasingly affordable. Feldman observed that, "The hopes of the pioneer VR researchers of the mid-1980's are beginning to be realized as hardware and software development catch up with their dreams of powerful and varied new applications."  

While Virtual Reality technologies are still in search of a definition, there are some basic aspects or components that can be set down. Eric Gullichsen of Sense8 Corporation has provided a holistic and workable definition as follows:

The rubric "Virtual Reality" has come to stand for a broad range of computer hardware, software, and interface techniques which permit humans to interact with both computer-generated objects and one another through this new medium. The central component of Virtual Reality systems is a computer-based image generation system capable of producing real-time stereoscopic computer graphics. The human participant is in the loop of a real time simulation, immersed in a world which can be both autonomous and dynamically responsive to the actions of the participant. A spectrum of sensor technologies which permit the controlling computer to track the participants' viewpoint,

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gestures, and other visceral input will be described. Other peripherals can be used to provide feedback in other modalities, such as sound and touch.\(^6\)

Virtual Reality systems made their public appearance on June 6, 1989 at two trade shows. The introduction of the public to Virtual Reality systems was made possible by the VPL and Autodesk corporations. The launching of these systems was preceded by about four months of press coverage and a public awareness campaign. Dr. William Bricken of the Human Interface Technology Laboratory at the University of Washington in Seattle observed that Virtual Reality was “in the unique position of being commercially available before being academically understood.”\(^7\) But for Bricken, what is even more remarkable is that, “any technology which has the audacity to call itself a variety of reality must also propose a paradigm shift. In essence, a paradigm shift expands the potential of an entire discipline.”\(^8\)

However, the last decade proves that this paradigm shift was not limited to one discipline, but to just about every facet of social


\(^8\) Ibid.
interaction including manufacturing, marketing, science, telecommunications, art, entertainment, medicine, media, economics, law, and politics. For Dr. Bricken, the paradigm shift can be described as follows:

Computers are not only symbol processors, they are reality generators. Until recently, computers have generated only one dimensional symbolic strings. Text and numbers. Text is a code, which when read, generates images of reality in our minds. During the 80s, we enhanced the expressability of computation by adding space and time dimensions to the realities being generated. two dimensional windows, 2D animation, solid modeling, simulation. Now, in the 1990s, computer systems can generate virtual environments, entire multisensory worlds which include us as interactive participants. Digital information can seem as-if-real, changing our notions of computation, symbolism, meaning, metaphysics, self, and culture. Virtual realities are more than real.⁹

Bricken's final statement about Virtual Reality being more than real is interesting because at several levels it suggests a contradiction -- how can something that is entirely artificially constructed be more than real? What he is suggesting is that Virtual Reality, in its sensory manipulation, has real effects, cognitively, psychologically, culturally and socially. Thus, while the nature of Virtual Reality is an artificial

construct, its ability to manipulate the cognitive and sensory facets of its immersed participants ensures that the effects and ramifications of this new medium are real and worthy of examination.

While Virtual Reality is a medium still under construction and one which promises to rapidly evolve well into the next century, it is important to identify and define some of the principal and universal characteristics of Virtual Reality. According to Bricken, “The primary defining characteristic of Virtual Reality is inclusion, being surrounded by an environment. Virtual Reality places the participant inside information.”

As Virtual Reality models evolve, the information that participants are immersed in has involved an increase in the sensory faculties being manipulated. That is, the more sophisticated the models become the more close to people's reality they are attempting to approach. This becomes possible in two ways: (1) by involving more and more senses in the immersive experience, and (2) by increasing the intensity of sensory manipulation. In the first case above, it can be seen that early Virtual Reality models focused primarily on sight and sound. Current models include motion manipulators and even olfactory and neurotropic enhancers, taken orally or intravenously. In the second

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means of enhancement mentioned above, technologies are increasing the intensity with which they manipulate their audiences. Examples of this are aplenty in the video game sector of the Virtual Reality industry, where bigger, faster, louder and brighter are the manufacturing, marketing, and design mantras.

Dr. Bricken deals significantly with issues of immersion and sensory manipulation in his research at the Human Interface Technology Laboratory. He writes that:

When we extend our field of view onto a computational environment beyond about 60 degrees, a remarkable phenomenon occurs. We shift from a feeling of viewing a picture to a feeling of being in a place. This shift is accompanied by an emotional response. It seems as though the unification of our symbolic processes with our visual processes creates a feeling of wholeness, of empowerment. We shift from external users (exercising rights) to internal participants (exercising responsibilities), from being observers to having experiences, from interfacing with a display to inhabiting an environment.11

What Bricken is referring to here is one of the fundamental tenets of the theatre -- “the willing suspension of disbelief.” Thus, Virtual Reality models, through immersion in artificial environments, seek to

trick the participant into suspending disbelief and buying into a reality that is indeed completely fake and artificially constructed.

The research in the field of Virtual Reality being done by pioneers like Dr. William Bricken, Dr. Tom Furness and Meredith Bricken has led to some seminal lessons learned. They are essential not only to our understanding of these technologies but also to our comprehension of our future with Virtual Reality.

The first conclusion that the above mentioned researchers arrived at was that "Psychology is the Physics of Virtual Reality."\(^{12}\) What this means is that "psychology, in the broad sense of behavior, perception, cognition and intention, provides the rules and the constraints of virtual worlds."\(^{13}\) Thus, reality is filtered through human psychology and as such the interface between audience and the virtual world will vary from individual to individual.

The second conclusion is that in Virtual Reality environments the body is the interface. Bricken writes that, "Interface is not something that is out there, in some machine. Interface is a boundary which both connects and separates, interface take place at the surface of our skin. From the perspective of Virtual Reality, interface is physiology, 

\(^{12}\) Dr. William Bricken, "Virtual Reality: Directions of Growth."

\(^{13}\) Ibid.
interaction is natural behavior." It is important to point out that when Bricken refers to interaction as natural behavior what he should specify is that this interaction is linear between one human and the machine. There are attempts at making this interaction multifaceted and incorporating more than one human in the same environment. Incorporating multiple participants into a singular environment is an area that theatre can both contribute to and profit from.

The third conclusion of Bricken, Furness and Bricken is that "knowledge is in experience." They claim that:

Knowledge is in experience, it is not in some abstract, symbolic representation. Data is in the environment, it is not stored away in some memory array. These observations serve to remind us that we are not the computer. To understand computation, we should participate within it, rather than writing programs to dominate it. Humans have a great skill for projecting outward, for becoming the tool we are handling. We need reminding that we are creatures who dwell inside an environment.\textsuperscript{15}

There is a direct relationship between how we read new experiences based on past knowledge and how these new experiences eventually become part of our accumulated and acquired knowledge.


\textsuperscript{15} \textit{Ibid}, p. 4.
Thus, the design of Virtual Realities is influenced heavily by experience and knowledge based in material reality.

The fourth lesson is that Virtual Reality is multi-dimensional. What the researchers are pointing out here is that in Virtual Reality we can travel through space and time. In addition, they also claim that scale is a dimension related to space. Thus, when we travel in space we change our location(s) and when we vary the dimension of scale, size is the variable being manipulated. Bricken believes that travel through time in Virtual Reality is made possible by “using any of the techniques of film editing, including slow-motion, fast forward, and temporal discontinuity.”16 Thus, Virtual Reality is indebted to the traditions of film and television as part of its inception and its continually evolving construction.

The fifth lesson has to do with experiences in Virtual Reality requiring large amounts of data and digital information.

There is a tremendous compression ratio between digital information and human experience. Very approximately, it takes a hundred million polygons to simulate what we see in one scene. Add duration, multisensory channels, and interaction, and you get a lot of digital information being transcended with each moment of consciousness. Computation will not come close to this bandwidth for a long time.

Fortunately, virtual world experience does not require the information density of physical reality.\(^{17}\)

The above quote proves that the design of virtual worlds is in essence an approximation of reality but never an exact replica of it. Because virtual world designs use less information density than physical reality, it necessitates participants to use their imagination, knowledge and experience in order to navigate Virtual Reality.

The sixth and final conclusion is that realism as a style is not necessary in Virtual Reality worlds. Michael Heim reinforces Bricken’s notion by stating that there is a certain balance between Virtual Reality being indistinguishable from reality and that Virtual Reality needs to be not real at all for its design to work. “A virtual world needs to be not-quite-real or it will lessen the pull on imagination.”\(^{18}\) While this may seem contradictory, Bricken explains it as follows. “Because our minds provide such tremendous flexibility in interpreting what is


outside us, realism in Virtual Reality is simply not necessary. Our
cognitive plasticity permits even simple cartoon worlds of 500
polygons to be experientially satisfying.”

What is valuable about Dr. Bricken's research is that he also
examines the potential pitfalls, risks and problems with Virtual Reality
as a technology. One of the biggest challenges facing Virtual Reality is
in trying to define itself. For some folks, e-mail is Virtual Reality and at
the other end of the spectrum, a total-surround, multi-sensory
environment could also be categorized as Virtual Reality. But for
Bricken there are other issues of definition that need to be pondered
and clarified as well. He asks:

Is Virtual Reality escapist? Escapism means seeking
diversion from physical reality. Virtual Reality
cannot escape being escapism, Virtual Reality is
perfect escapism. Is Virtual Reality theater, or
interactive drama, or is it more than art? Is it
scientific visualization, or physical simulation, or is
it more than science? Is it financial modeling, or the
perfect sales tool, or is it more than economics?

The proliferation of Virtual Reality has proved that it is all of the
above and more. What Bricken didn’t identify in 1991 is that Virtual
Reality is political as well. As I discuss later in this study, a film like

19 Dr. William Bricken, “Virtual Reality: Directions of Growth.”
Virtual Reality 91: Impacts and Applications (London: Meckler Ltd.,

20 Ibid.
Steven Spielberg's *Indiana Jones and the Temple of Doom* is a form of Virtual Reality that emerges as a piece of colonial propaganda and a reinforcement of the images and the perceptions of the "third-world" as savage and in need of American intervention and Western civilization. From the colonizer's perspective, the colonized nations needed to be saved from their own savage ways and were offered redemption by way of the imposition of Western ideologies, mores and values. The political aspects of Virtual Reality will warrant a lot of attention in the future as issues of media literacy come to the forefront.

A second issue that needs attention concerns cognitive manipulation. Since Virtual Reality technologies have become consumer items before they have been studied in academia, the cognitive effects of Virtual Reality remain murky and as such, any future issues will be harder to deal with because of the massive permeation of these technologies into many aspects of social interaction. For Bricken "the most complex and potentially dangerous risk is what we are calling cognitive remodeling. Those who spend a lot of time in Virtual Reality bring back to physical reality some strange habits, like navigating across a room by pointing, like bumping into walls [be]cause they aren't
just images, like dreaming in polygons."\textsuperscript{21} This behavior raises interesting questions about cognitive dissonance surrounding issues of oppression and political hierarchies. Hence, can political propaganda in film or theatre or other Virtual Reality worlds, create and reinforce hierarchies of oppression already in place in society at large? As Bricken notes, "Virtual Reality changes mental modes. We do not know the borders between the virtual and the actual. We have not yet had the opportunity to evaluate current theories of reality crossing."\textsuperscript{22}

Reality crossing is a concept that could be applied to mediums like film and theatre as well. What effects indeed do films like \textit{Gunga Din} or \textit{Indiana Jones and the Temple of Doom} have in the context of post-colonial issues of oppression and the misreadings of identity via orientalist images?

The future of Virtual Reality, according to industry reports and media projections, includes redefining our bodies, swapping perspectives and mixing senses. Bricken’s research has led him to ask, "What will a fluid self be like?"\textsuperscript{23} He answers by writing that, "We will need to understand the cognitive and behavioral effects of


\textsuperscript{22} \textit{Ibid.}

\textsuperscript{23} \textit{Ibid.}
transportable perspectives, of programmable bodies, of synthetic
sensations, of exchangeable body parts, of inhabiting arbitrary objects,
of masslessness, of negotiable communality, of complete
empowerment.”

Later in the study I use these ideas of “negotiable communality”
and “complete empowerment” in order to analyze the colonial contexts
of films like *Gunga Din, Indiana Jones and the Temple of Doom*, and
*Sergeants 3*. Depending on how a virtual world is constructed, who
feels empowered depends on the power structures being reinforced or
those being deconstructed. For instance, *Gunga Din* creates an
Orientalist view of India and as such ends up reinforcing colonial
structures and attitudes. Thus, empowerment and freedom are not
guaranteed merely by entering a virtual environment. Bricken’s claim
that Virtual Reality is “a domain which emphasizes personal freedom”
needs to be scrutinized in light of structures like colonialism, gender
issues, racism, class or other structures of social hierarchies. Bricken
is not alone in asserting the notion that Virtual Reality technologies are
inherently democratizing and automatically insure freedom at all levels.

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24 Dr. William Bricken, “Virtual Reality: Directions of Growth.”
*Virtual Reality 91: Impacts and Applications* (London: Meckler Ltd.,

For Bricken the issue of personal freedom assumes that one can choose not to enter a Virtual Reality world or one can choose to simply turn it off. Bricken writes, somewhat naively, that "Virtual Reality could be used for horrible purposes, but that negative assumes that we are strapped to a chair. So long as each individual has the freedom to reach up and turn off the experience, Virtual Reality itself is quite benign." The notion that Virtual Reality itself is benign is part of the same overly simplified thinking that argues that images of pornography and violence do not have negative effects on perpetrators of rape and violence. Moreover, Bricken chooses a bad metaphor when he writes about being strapped to a chair. The simple fact of most virtual environments, from the rides at Disney's theme parks to flight simulators for pilot training, requires that the participant be restrained in some fashion to prevent falling off, from being disoriented or from manipulation of one's sense of balance. And even if the individual is not strapped down, if the manipulation of the virtual environment is successful, simply switching it off may indeed be difficult. I would argue that the stronger the telepresence of the virtual environment, the more difficult it would be to disconnect oneself from such environments.

Problems of addiction became part of the discourse of cyberspace and Virtual Realities shortly after these technologies went mainstream. Issues of computer-related, on-the-job injuries being the number one cause of workplace injuries, and the loss of revenue to businesses to the tune of billions of dollars due to employee usage of the internet during work hours have been at the center of debates surrounding these technologies. Public interaction with these Virtual Reality technologies has proven that simply switching it off or merely stepping away is easier said than done.

The notion of telepresence is an important one to consider when grappling with the definitions of Virtual Reality. Telepresence is defined as follows: "When a VR system succeeds in creating the interactive feedback loop between our perceptions and the real environment, then we have full telepresence. The term “telepresence” comes from the Greek word tele, meaning remote, and presence, a complex notion that we understand intuitively but that takes effort to unpack."\textsuperscript{27}

Telepresence inhabits a wide spectrum depending on the "bandwidth" or amount of information that is transmitted in real time between two or more individuals, who may simultaneously be transmitters and receptors. Telephones are generally considered lower

levels of telepresence while fully immersive Virtual Realities are higher up the telepresence hierarchy. As the bandwidth increases, the complexity of telepresence is enhanced. One of the higher ends of telepresence is termed teleoperation. The recent Pathfinder mission to Mars, where a vehicle was landed on the surface of the planet in order to take photos and collect data, was considered telepresence with teleoperation. Specific to this study it could be said that theatre could be considered to display greater telepresence than its sister mediums of television and film.

Telepresence owes a lot of its current status in the discourse around art and technology to Brazilian born artist Eduardo Kac who was experimenting with the notion of telepresence as early as the 1980s when virtual technologies were barely fledgling in their development. Kac, a research fellow at CAiiA (Centre for Advanced Inquiry of Interactive Arts) at the University of Wales, Newport in the United Kingdom and a professor of Art and Technology at the School of the Art Institute of Chicago, creates pieces which often link virtual and physical spaces. Via these pieces, Kac is trying to propose alternative ways of understanding the role of communication processes in shaping consensual realities. Kevin Nance notes that in Kac's art, "people, robots and sometimes animals and plants interact mysteriously, separated by thousands of miles yet brought together by computer
networks, the Internet, telephones, video and audio equipment and high-tech virtual-reality gear."\textsuperscript{28}

There is a tendency in today’s market place to overuse and misuse the terms Virtual Reality and cyberspace. As Michael Heim reminds us:

Today we call many things “virtual.” Virtual corporations connect teams of workers located across the country. In leisure time, people form clubs based on shared interests in politics or music, without ever meeting face-to-face. Even virtual romances flourish through electronic mail. All sorts of hybrid social realities have sprung up on fax machines and computers, cellular telephones and communication satellites. Yet most of these “virtual realities” are not, in the strict sense of the term, virtual reality. They are pale ghosts of virtual reality, invoking “virtual” to mean anything based on computers.\textsuperscript{29}

Thus, there needs to be a definition that is more selective and one that allows for a more lucid study of Virtual Reality and all the issues that surround it. In many places, the media and the economic infrastructures have ambushed the term “Virtual Reality” in their


\textsuperscript{29} Michael Heim, \textit{Virtual Realism} (New York: Oxford University Press, 1998), p. 3.
attempt to create it as a buzz word and foster the sensationalist aspects of it that create headlines, sell news stories and promote products.

Jaren Lanier is credited with coining the term “Virtual Reality” in 1986. And from the halls of academia to the high-rise offices of advertising firms on Madison Avenue in New York, there is a battle over the ownership and claim to this new technology. Technologists and scientists prefer the narrower sense of the term, while advertisers and marketers strive to widen the scope of the term to sell greater quantities of products to a larger demographic.

In his book Virtual Realism, Michael Heim, one of the foremost authorities on Virtual Reality, writes that:

Researchers at the Massachusetts Institute of Technology, and at the University of North Carolina, for instance, avoided the phrase “virtual reality” in the early 1990s and instead spoke of “virtual environments.” Military scientists prefer to speak of “synthetic environments.” Researchers at the Human Interface Technology Lab at the University of Washington in Seattle refer to “virtual worlds.” Japanese researchers refer to “Tele-Existence.” In general, however, the phrase “virtual reality” still holds its own as an umbrella concept that continues to appear on grant applications as researchers concede the power of the term “virtual reality” to describe their holy grail.30

While this explains the technological view point, it should be pointed out that even within the sciences, there are varying definitions and conflicting lines of demarcation. These definitions become even harder to pin down when art and technology are brought together.

According to Heim, "VR is first of all a technology. It is secondarily an experience that describes many life activities in the information age." Heim lays out the three "I"s of Virtual Reality. They are "immersion, interactivity, and information intensity." Heim explains these three "I"s as follows:

Immersion comes from devices that isolate the senses sufficiently to make a person feel transported to another place. Interaction comes from the computer's lighting ability to change the scene's point-of-view as fast as the human organism can alter its physical position and perspective. Information intensity is the notion that a virtual world can offer special qualities like telepresence and artificial entities that show a certain degree of intelligent behavior. Constantly updated information supports the immersion and interactivity, and to rapidly update the information, computers are essential.

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33 Ibid.
While Heim is accurate about the parameters with which he meticulously attempts to give Virtual Reality a definition, there are a few things that must be considered. Firstly, Heim's notion of Virtual Reality relies heavily on physiology but never acknowledges the interplay of psychology with the other facets of immersion and interactivity. Secondly, Heim's definitions, by being so technologically heavy, are a bit misleading, so as to create the illusion that Virtual Reality is a late twentieth century invention made possible solely by the advancements in computer technology.

To deny that human psychology plays a large part in Virtual Realities, would be to ignore a fundamental aspect that makes immersion and interactivity possible and even successful. And the notion of Virtual Realities, even technologically created ones, have existed prior to the information age and the computer revolution. Heim, briefly acknowledges this when he writes that, "Devices for immersion have existed from time immemorial. Theatres and religious rituals have historically used different types of immersion experiences"
from baptism by water to theatre-in-the round.”

But Heim concludes by saying that “the decisive factor in VR technologies is the computer that handles the data.”

The notion of interactivity is fundamental to the discourse surrounding Virtual Realities. As I have noted, the aspect of interactivity is not germane to the newly developing virtual technologies. Rather, interactivity has been at the core of theatre and other art forms from their very early days. However, the degrees and forms of interactivity vary from one medium to the next. Thus interactivity in a theatre performance is different than interactivity with a computer game and interactivity with a film is different than interactivity with environmental art.

Simon Penny, in describing interactivity in the age of computer driven art, writes that there are several points to keep in mind. The first is that, “Interactive art is human-machine interaction, it is a cyborgian complex which (technologically at least) arises directly from

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35 Ibid.
the soldier-weapon research of WW2.

Penny, like Gigliotti and other scholars, reminds us that virtual technologies in having emerged form war-based technologies, means that aspects of interactivity in art and technology are indeed influenced by aspects of interactivity in war and technology. It should also be noted that while Penny speaks of machine-human interaction, I define machinery broadly to include everything from computers to paint brushes and from software to the human body.

Penny's next point about interactivity has to do with issues of control. He writes that:

At issue is a poetics of control. Interactive art can only exist if control is negotiated between machine and the user. Total user control is not interactive, nor is total machine control. As Sarah Roberts put it in 1993: "Interactive is not a bad word, but the illusion . . . is of a kind of democracy . . . that the artist is sharing the power of choice with the viewer, when actually the artist has planned every option that can . . . happen . . . its a great deal more complex that if you [the user] hadn't had a sort of choice, but its all planned."

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37 Ibid.
Issues of control and power become even more complex in the vacuum of media literacy and critical discourse that currently accompanies the field of Virtual Reality and art. Penny also includes two other aspects of interactivity that need to be considered. He writes that, "Interactive art is simulated asynchronous sociality. It is a real-time conversation between the user and the artist, the artist being represented by a machine proxy," and that, "Interactive media artists do not create instances of representation, they create virtual machines which generate instances of representation based on real-time inputs."\(^{38}\)

Future discussion of Virtual Reality and the related issues of interactivity, immersion and representation will have to strive to create a critical dialectic with the goal of building a mass media literacy surrounding these new and widespread technologies.

B. Virtual Reality Before the Technological Revolution

Most people today, upon hearing the term Virtual Reality, would almost certainly associate it with the technological type, involving computer hardware, software and a sensory immersion of the

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participant in an artificially created and manipulated world. However, a very good case can be made that Virtual Realities have been present in other incarnations during various periods in human history. In this section I discuss some of these other models of Virtual Reality and their connections to current technologically created worlds.

European scholar and Virtual Reality researcher, Florian Brody addresses some of the historical precedents to current, technologically initiated modes of Virtual Reality. Brody refers to *Trompe-l’oeil* architecture which was used to create fake spaces. As Miriam Milman describes it, *tromp-l’oeil* was used in “modifying the environment by suggesting a structurally different space.”\(^{39}\)

While *tromp-l’oeil* images have been excavated at Delos, Rome and Pompeii, it was during the Renaissance when mathematically influenced perspective drawings and paintings instilled a three-dimensional plane within 2D representations. As Brody notes:

> It was always heights that were of most interest to architectural tromp-l’oeil artists as they could now be simulated by opening up ceilings of otherwise closed rooms. The paintings were also out of reach and created a certain dizziness that could not be

rectified by touch. Here you have a perfect Virtual Reality full immersion system that works without a headmounted display.\textsuperscript{40}

Thus, current Virtual Reality systems come from traditions as varied as Renaissance perspective drawing and faux art techniques like tromp-l'œil.

Brody makes an interesting proposition that one of the predecessors to current Virtual Reality technologies are the gothic churches in Europe such as the Cathedral in Reims. For Brody these cathedrals "were designed with very clear concepts of how to achieve the desired effects of an out-of-the-world, 'virtual' reality."\textsuperscript{41} Brody uses the example of gothic church architecture as a walk-around space used by the churchgoer to experience certain messages. At the other end of the spectrum are Virtual Reality environments that are story based. Brody writes that:

Virtual Reality should be divided into systems with and without a story . . . Stories play a very important role in the generation of reality and its authors are the creators of these realities. On the other hand there are built realities that allow you to wander around at your own pace. Computer based interactive Virtual Reality systems allow this as much as gothic churches or more modern theme


\textsuperscript{41} Ibid, p. 18.
parks. The ability to wander around and the awareness of oneself being part of this environment are the major constituents for created reality.\footnote{Florian Brody, "How Virtual is Reality?" \textit{Virtual Reality 91: Impacts and Applications} (London: Meckler Ltd., 1991), p. 18.}

Brody’s distinction between narrative based realities and time based realities is a crucially defining aspect of Virtual Reality. Once again, both theatre and film are Virtual Realities that use both time and narrative based realities. In fact, many of the techniques used in theatre and film are the bases for the design of innumerable Virtual Reality environments.

Later in this study I specifically examine the triangular relationship between theatre, film, and Virtual Reality by discussing specific plays, films and their creators. Here I only touch upon some of the points of connection between theatre, film, and Virtual Reality.

The most significant sharing between theatre, film and Virtual Reality is the encouragement given to the participants to “willingly suspend their disbelief.” Brody writes that, “Art has always questioned reality by reproduction and by deconstruction. It has either created an
ideal model of reality or analyzed reality by abstraction."\textsuperscript{43} Thus, altered realities have been the very bases of theatre and film from the time of their very origins.

The theatre, through the ages, has always used technology (from the primitive to the sophisticated) to help in the creation of these realities. In the middle ages, the theatrical booths depicting hell used potent images of fire and damnation to get their point across. In the seventeenth century, elaborate theatrical machinery was incorporated into production to create a greater approximation of reality. Brody says that "machinery that made persons fly was especially favored as it added a degree of freedom otherwise unavailable."\textsuperscript{44}

It is actually worth noting that when computer animation techniques started to enter the mainstream via advertising and even simulations, one of the most popular and overused techniques was the fly through, where the participant was allowed to fly through space and time. For instance, one of the first television advertisements to use computerized animation was for Listerine mouthwash in which a bottle of the liquid, flew through the jungle, swinging on vines and flying through foliage much like Tarzan. And many of the earliest computer


\textsuperscript{44} \textit{Ibid.}
games and simulation devices were focused around flying and gliding through space. Some of the earliest architectural simulations on computers were called walk-throughs, but the motion that the computers simulated was more like flying and much less like walking.

Brody makes an interesting yet overly generalized observation when talking about the connections between theatre, film and Virtual Reality. “Today we find two movements, one towards film effects made as real as possible and on the other hand theatre of the imagination where the adventures are in one’s head and not depicted on stage.” While it is true that a lot of film is constantly trying to create models closer and closer to reality, there is a lot of film being made that isn't preoccupied with that goal. On the one hand we have films like Forest Gump where not only is creation of reality important, but the filmmakers were also trying to create realities that did not exist in order to pass them off as historical fact. The most blatant example of this is when the character of Forest Gump (played by Tom Hanks) is digitally introduced into archival footage of President John F. Kennedy at the White House where it looks like Gump (the fictional character) actually met with Kennedy (an historical figure.)

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While it is certain that theatre can't often reach the level of realism captured by film, due to issues of cost and because theatre is a live art, Broadway has often tried to create a *mis-en-scene* that is about increasing modalities of realism. Both theatre and film inhabit the spectrum from realistic effects to depictions that call upon the participant to use more of their imagination. Current applications of Virtual Reality are also available along this spectrum.

However, theatrical realities are not similar to filmic ones. While one could argue that film always captures reality more closely than theatre, it is worth remembering that theatre is a three-dimensional medium and film is only two-dimensional. Thus, even if theatre leaves more to the imagination, the space is always 3-D. With film, no matter how real the capture of three-dimensionality, the fact that the images are eventually projected on a screen flattens out the realism, so to speak.

In fact, film has understood this challenge all along its evolutionary path. If one looks at the genesis of film from its technological standpoint, it becomes clear that every innovation was geared towards making the medium increasingly realistic. When film moved from being black and white and silent to being in color and with sound, especially with spoken dialogue, the captured reality came several steps closer to approximating reality. Although 3-D film did not
catch on as a mainstream form, when it first appeared on the screen in the late 1970s, audiences were captivated by the ability of the celluloid to “pop out” at the audience.

With the invention of surround screens, the IMAX, and surround sound, the attempt was to have audiences feel more immersed in the movie, although the image still remained fundamentally two-dimensional. Digital Dolby Sound and Sony Surround Sound have both made one track and even multi-track sound systems obsolete. And new editing techniques, camera techniques (both heavily dependent on digital technologies) have tried to put audiences into the film environments as opposed to outside or in front of a two-dimensional screen.

In fact, Thomas Alva Edison’s kinetoscope, which gave rise to modern film technologies was indeed an attempt at placing the audience in the action. The kinetoscope was basically a cylinder, on the inside of which were pasted still images of a particular subject. The viewer’s eye was placed at a tiny hole midway along the height of the cylinder and when the cylinder was set rotating, the still images appeared to be in motion. Crude as this device may seem today, it was the visual precursor to not only the film technology of today, but also the Virtual Reality technologies of the twentieth century.
It can be argued that Virtual Reality technologies today are a natural extension of what the theatre had begun to struggle with, in reference to representation, immersion, and reality, over two thousand years ago. Richard C. Beacham writes that:

The crucial and definitive thing about the theatre -- theatron, that “seeing place” first conceived by the Greeks -- is that it takes up both time and space; quite literally “taking place” as a visual medium. Moreover, in one sense the art of the theatre is itself the earliest known form of “virtual reality” -- quite a sophisticated version of it actually, both for the performers as they impersonate people, places, emotions and the like which are not in fact real, as well for the spectators as they “willingly suspend disbelief”.

What Beacham and other scholars are pointing to is that one of the fundamental points of connectivity between theatre and Virtual Reality is the fact that both are dependent on live interaction or real-time action. Mark Reaney writes that:

For theatre to remain true to its form and not wander into the realms of television or film, it must be played live, not pre-recorded, with an immediate relationship between actor and audience. Likewise, VR must also be experienced in real-time, as it is generated, or it loses its unique quality and

becomes a member of the pre-recorded computer animation genre.\textsuperscript{47}

The other major similarity between theatre and Virtual Reality is that both present their "action" in three-dimensional space, real or imaginary. Reaney expands on this idea by telling us that:

Another common characteristic of VR and theatre is that both occupy 3-dimensional space and more often than not, rely on some form of illusion to suggest the form of that space. Here there is a great deal of leeway to find similar uses of real and illusory space. Just as theatre is comprised of wildly different styles of production and mechanisms of presentation, VR also has it's different styles. The best known VR interface, the head-mounted display, relies almost totally on presenting an illusion of an environment to a user's eyes. Other interfaces however, more closely resemble theatre in that they present a combination of real and fictive space to the user.\textsuperscript{48}

While there are some striking similarities between the ancient Virtual Reality of theater and the newer breed of technologically created ones, differences between the two need to be acknowledged as well. One of the most noticeable differences is that traditionally


\textsuperscript{48} Ibid.
theatre has always been presented as a group or communal activity. The sharing aspects of theatre have typically occurred in large numbers of people who have gathered together to focus on an event. Virtual Reality on the other hand, “most often is experienced by a single user, or a group of two or three.” Reaney argues that “this is due mostly to the desire that VR systems be ‘immersive’, giving users the illusion that they are within the virtual world. The head-mounted display is a good example of immersive technology that limits the system to a single user at one time.”

Reaney also identifies a second fundamental distinction between theatre and Virtual Reality in the area of control. Reaney’s point is that in the theatre, while audiences do control the action, it is to a limited degree and the “audience acts as relatively passive observers whose control is indirect, urging the performers one way or the other through their responses to the action before them.” The assumption in the theatre is that the primary control of a performance rests with


50 Ibid.

51 Ibid.
the artistic participants -- the actors, stage manager, and backstage
crew. In Virtual Reality however, the participant is in greater control of
the medium. Reaney writes that:

This interactivity is derived by navigating through
the virtual world and often by manipulating objects
within that world through special input devices such
as joysticks or electronic gloves. But in a VR-
theatre interface, who is the user? Is it the audience
who views the results or the performers
who are using the technology for their own ends? 52

However, it needs to be noted that while the participant controls
the medium, the technology itself retains much of the control by virtue
of its programmed parameters. Thus, depending on what has been
programmed into the virtual worlds, the user's control is limited and
contained by that data.

There are two other issues that need to be broached in
concluding this chapter. The first has to do with how mechanical
reproduction changes the nature and role of art in culture. The second
issue, related to the above, has to do with how the rapid changing
nature of computer technology affects the production of art and its
longevity (or lack thereof) in culture.

52 Mark Reaney. "Virtual Scenography: The Actor/Audience/
Computer Interface." <http://www.ukans.edu/~mreaney/reaney/
vrsценог.html> (12 October 1999). Also see Mark Reaney, "Virtual
Scenography: The Actor/Audience/Computer Interface." In Theatre
Although computerized art was non-existent in 1931 when Walter Benjamin wrote his seminal essay, "The Work of Art in the Age of Mechanical Reproduction," Benjamin's theories resonate deeply in this the age of computerized (re)production. Benjamin's essay seeks to radically alter our understanding of art in a post-Industrial Revolution culture. Mary Leigh Morbey, in assessing Benjamin's importance to a discussion of computer generated art, writes that:

Benjamin's observations give rise to a changing understanding of the work of art in our contemporary era focused on concerns that include: a reassessment of the history of art in post-structural and post-colonial environments, amongst others, interpretations of visual culture, and the influence of contemporary information technologies.53

In particular, there are six alterations that Morbey identifies, as presented by Benjamin in his essay. They are:

1) the demise of the halo of originality, 2) a co-existence of many copies of a single image, 3) an undermining of the concept of the artist as a genius, 4) new challenges stimulated through the independence of the art work from originality, singularity, and genius, 5) lower costs

democratizing the art marketplace, and 6) contemporary possibilities for new social meanings of art.\textsuperscript{54}

What this means is that the critical assessment that artists, scholars, critics and audiences will have to engage in, regarding art generated and aided by computers and other virtual technologies, will have to move away from traditionalist and even modernist understandings of art and culture. As Benjamin stated:

Mechanical reproduction emancipates the work of art from its parasitical dependence on ritual. To an even greater degree, the work of art becomes the work of art designed for reproducibility. From a photographic negative, for example one can make any number of prints; to ask for the "authentic" print makes no sense. But the instant the criterion of authenticity ceases to be applicable to artistic production, the total function of art is reversed. Instead of being based on ritual, it begins to be based on another practice - politics.\textsuperscript{55}

This, for Benjamin, technology in the context of art is inherently linked to the political. Of course, Benjamin was writing about the age


when photography was struggling to gain legitimacy as an art form and whose ability to be reproduced infinitely, was raising concerns about originality, authorship, and artistic control. Technological innovations have always demanded a paradigm shift, particularly in the world of art. Carol Gigliotti writes that:

Since the development of Western perspective during the Renaissance, there have been three other radical departures in technology used by artists: the invention of lithography, photography (and film), and electronic media. Each of these technological inventions has provided artists with a corresponding shift in their view of the artist's role in society. With each shift came reciprocal changes in representations of technology by artists.56

Renaissance perspective allowed artists to provide people with a representative truth not known to Western civilizations prior to that "discovery." Lithography, and the related forms of woodcuts, engravings, and etchings, allowed artists to distribute their work simultaneously to a multitude of people at cheaper prices and in large quantities. Thus, these new technologies allowed mass audiences to interact with art in ways in which prior to then, had been reserved for the elite patrons of art and culture. Printmaking allowed for a certain

56 Carol Gigliotti, Aesthetics of a Virtual World: Ethical Issues in Interactive Technological Design, dissertation (Columbus, Ohio: The Ohio State University, 1993), p. 75.
democratization of art. Following that evolution, photography and film, extended the same process of art for the masses. Benjamin writes that:

The concepts which are introduced into the theory of art in what follows differs from the more familiar terms in that they are completely useless for the purpose of fascism. They are, on the other hand, useful for the formulation of evolutionary demands in the politics of art.  

Benjamin is asserting that these technologies, in removing the aura or the halo of the fine art object, separate art from the authority of the ruling class and render useless art’s capacity for authoritarian control. In light of the emerging technoculture, radically spurred on by computer innovations, Benjamin’s arguments can be proven to be untrue. Just because art can be reproduced and disseminated widely, doesn’t mean that it cannot be used towards fascist propaganda and authoritarian control. Quite the contrary, mass dissemination of a medium also means the mass dissemination of the message. Leni Reifenstahl’s propaganda films made for Hitler and Nazi control are a perfect case in point. In the fifth chapter I examine how virtual technologies have the potential for fascism and undemocratic control over the mass audiences. In fact, recent studies have shown that hate

groups like the KKK and other neo-Nazi uprisings in Europe and America, are seeing large increases in memberships because their web sites on the internet have been able to effectively disseminate information to larger and larger demographics.

One last point needs to be addressed here regarding the fast changing world of computer software and hardware as it connects to the production of art. Moore’s Law states that memory capacities and the speed of microprocessors will double every 18 months for the foreseeable future. Thus, what seems cutting edge today, becomes passé tomorrow. Simon Penny notes that:

Many aesthetic ideas are integrally linked to their technological vehicle, indeed, this is a key precept of some artistic methodologies. This is fine if you’re dealing with clay and glaze or paint and canvas or steel and torch. But in the context of rapidly changing technologies, aesthetic ideas become obsolete along with their technological vehicle. The rug is constantly pulled out from under your methodology. Worse, the technology goes away completely and erases the art: who can play any of the early video art recorded on 1/2" black and white reel videotape? And your 5 year old computer code won’t even run on a modern machine. It’s strange to reflect that a 5 year old car is still quite serviceable, yet a five year old graphics program is utterly worthless.58

This raises many significant issues about the longevity of technologically created art as well as the creative methodologies behind such creative processes. So, if a computer generated piece of art is to survive it must either be transferred to a traditional medium, i.e. print, canvas, photograph, etc., or the technology that created it must last alongside the artwork so that successive audiences might be able to view it in its original incarnation. Penny goes on to argue that:

It becomes clear to anyone working in the field for a few years that a significant proportion of techno-art is inspired largely out of a bedazzlement with technological novelty. And that gets old very quick. Must we resign ourselves to the fact that something is art only for a period of time before it is ‘passed through’ by consumer technoculture, whether made obsolete or turned into a commodity or appliance? At which point the work becomes what: an historical curiosity? one of a history of eccentric media experiments? We confront the prospect of an art of consensual and temporary validity which negates the presumed immortality of the artistic gesture.\(^5^9\)

The discussion, in this chapter, of the genesis of theatre and virtual technologies reveals that Virtual Reality is not a new concept, although media hype and industry buzz would have us believe that

Virtual Reality is a late twentieth century phenomenon. Virtual Reality is heavily linked to theatre, film and other art forms. Embedded in this past and present, the debate about reality remains a challenging one from a philosophical, psychological, cognitive, aesthetic, and ethical standpoint. Myron W. Krueger, an internationally known scholar in the field of computers and Virtual Reality writes that:

If virtual reality were just another technology, you would not have heard so much about it. However, it is a technology that can be applied to every human transaction. Since you are completely immersed in the virtual world, virtual reality constitutes a new form of human experience - one that may be as important to the future of film, theater and literature have been to the past. Its potential impact is so broad that it may define the culture that results form its use. As a consequence, the concept of virtual reality will be as widely used as a metaphor as it is in practice.60

Thus, Virtual Reality will become and remain not just the dominant form of transactions in the future but also the mainstream form of entertainment. Regardless, Virtual Reality will always be dependent on and indebted to theatre and film for its origins.

Scholars in the field, particularly Michael Heim point out that “virtual reality is the culmination of a process that has been going on

for some time in technology and for even longer in Western thought.\textsuperscript{61}

There is a long tradition of philosophy and a sequence of human events and discoveries that anticipate and even foretell current Virtual Reality technologies.

CHAPTER 2

THE PHILOSOPHICAL ANTECEDENTS OF VIRTUAL REALITY

FROM PLATO TO THE PRESENT

The terms Super Information Highway and Cyberspace, used with
great abandon in our newly emerging technocultures, are subsets of
Virtual Reality. In the strictest sense of the term, Virtual Reality
implies the total immersion of a human subject in an artificial,
computer generated environment where one or more of the senses,
usually sight and sound, is technologically “plugged into” the system.
Certain neurotropic drugs, taken orally or intravenously, have been
experimented with to enhance brain activity and functioning while
immersed in Virtual Reality worlds. However, Virtual Reality is
becoming a more open category where any space, within the computer
or throughout the network is categorized as a virtual environment.
Thus, computer games, CD-roms (educational and entertainment ones)
and even e-mail can all be loosely placed under the all-encompassing
cyber-umbrella of Virtual Reality. Because these technologies are still relatively embryonic in their development, especially within the widespread public domain, definitions of these and related terms are not easily arrived or agreed upon.

The Super Information Highway (of which Virtual Reality is a part) originated from within the military culture because that is where there were abundant resources available to cultivate these new cyber technologies. Virtual technology scholar and researcher, Carol Gigliotti points out that:

Various critical theorists, art educators, artists and journalists, among them Morris Berman, Vesta Daniels, Donald Ihde, Beverly Jones, Doug Noble, Neil Postman, Howard Rheingold, Bruce Sterling, and Steven Wilson chart the military and corporate sources of the development of interactive technology, including virtual reality, and allude to the possible consequences of using that technology for a wide variety of other applications, such as science, entertainment, education, and art-making.¹

As wars of the twentieth century got more and more complex, and the balance of world power began to shift, the super-powers of the “developed” or industrialized nations (First World) began to search for newer and newer ways of one-upping the enemy. The Cold War, because

¹ Carol Gigliotti, Aesthetics of a Virtual World: Ethical Issues in Interactive Technological Design, Diss. (Columbus, Ohio: The Ohio State University, 1993), p. 3.
of its impending threat of nuclear annihilation, proved to be significant in that, means of communication within the U.S. and Russian forces had to be pervasive yet undetectable. Large networks of electronic information highways were set up to keep the Cold War going so that the largest peace-time war industrial machine could be kept alive. With the onset of the Gulf War came the fighting of battles with surgical precision and sanitized gore on computer screens in sophisticated war machinery and domestic television sets all across the world. The major economic powers of the world believed that Russia had lost the Cold War and that Saddam had been defeated in the Gulf War.

Critics on the other side of the fence were suggesting that communism had collapsed under its own weight rather than having been won by the U.S. and its allies and Saddam Hussein still continues to rankle the collective patience and patriotism of the Western world. Yet, the media and other experts proclaimed to the world that these wars were won by the U.S. and its allies. Thus, from the very start, technologies that helped win these wars, especially the information and Virtual Reality technologies, have been seen as protectors of democracy -- democracy as defined by the most militarily powerful nations of the world. It is little wonder then, that when these technologies start to pervade the public and private sectors in the industrialized nations, that these technologies are presented as
inherently democratic and democratizing. Carol Gigliotti points out
that, "A number of researchers (e.g., Delanda, 1991; Levidow &
Robins, 1991; Noble, 1989) outline enormous problems inherent in
accepting technology developed for military applications for use within
other domains of applications."²

The first head mounted display (HMD) was developed by a
computer scientist, Ivan Sutherland, with funding from the Advanced
Research Projects Agency (ARPA) and the Office of Naval Research.
Gigliotti reminds us that, "two of the pioneers of virtual reality
technology were more artists than scientists . . . Mortin Hellig's
Sensorium and stereoscopic devices of 1962, and Myron Krueger's
responsive environments of 1974," but it was Sutherland's HMD "that
was able to gain enough monetary support to expand into the virtual
reality systems available today."³

The military invented two systems to aid in war training,
strategizing and implementation. The first was SIMNET (Simulation
Network) which focused on interactive training technologies. In the
SIMNET, military personnel, crews and tacticians interact in virtual
battlefields and simulated wars. The level of realism and immersion is

² Carol Gigliotti, Aesthetics of a Virtual World: Ethical Issues in
Interactive Technological Design, Diss. (Columbus, Ohio: The Ohio State
University, 1993), p. 3.

highly real and complexly manipulates sensory and rational responses to the war scenarios. The second, Distributed Simulation Network went further in its “push towards synchronization of the entire industrial-military complex.” Referring to this “seamless simulation,” Bruce Sterling writes that:

Most of the means of human perception in modern vehicles of war are already electronically mediated. In Desert Storm, both air pilots and tank crews spent much of their time in combat watching infrared targeting scopes. Much of the same goes for Patriot missile crews, Aegis cruisers, AWACS radar personnel and so on. War has become a phenomenon that America witnesses through screens.⁴

Sterling’s quote adequately illustrates the idea that the Virtual Reality of war technologies becomes the medium whereby civilians gain their ideas about the reality of war itself. In talking about Levidow’s work about computers and the military, Gigliotti astutely clarifies that:

Levidow (1991) argues that a “military information society” is not a contradiction in terms because there is an inner connection between the two disciplines involved, even though the information society promises us greater freedom, while the

⁴ Carol Gigliotti, Aesthetics of a Virtual World: Ethical Issues in Interactive Technological Design. Diss. (Columbus, Ohio: The Ohio State University, 1993), p. 125.

military society suggests orders to be obeyed. The connection between them is "an internalized self-discipline, geared to making a system operate more effectively" (p. 159). In both instances, computer simulation is the mediator of systems seeking total control over human qualities reduced to calculable, mechanical operations.⁶

In light of the above, there is one other example from the industrial-military complex that is worth describing here. During the Gulf War, one of the projects developed as part of the Distributed Simulation Internet was a "fully interactive, network-ready digital replica of the 'Battle of Easting.' The actual battle took place in the desert of southern Iraq between untested US tank troops and eight year Iraqi veterans during the 'Desert Storm' war."⁷ The Americans won this battle in a short twenty-two minutes. Bruce Sterling describes this simulated war as:

an enormously interesting interactive multimedia creation. It is fast and exhilarating and full of weird beauty. But even in its sleek, polygonal, bloodless virtuality it is a terrifying thing to witness and to comprehend. It is intense and horrific violence at headlong speed, a savage event of grotesque explosive precision and terrible mechanized impacts. The flesh of the real young men was there

⁶ Carol Gigiotti, Aesthetics of a Virtual World: Ethical Issues in Interactive Technological Design. Diss. (Columbus, Ohio: The Ohio State University, 1993), p. 4.

inside those flaming tank-shaped polygons, and that flesh was burning. That is what one knows - but it's not what one sees. What one really sees in “79 Easting” is something new and strange: a complete and utter triumph of chilling, analytic, cybernetic rationality over chaotic, real-life, human desperation.⁸

These aesthetics and design principles can be abundantly seen in the computer gaming industry. If one looks at the genesis of computer games (the most primitive and earliest of Virtual Reality technologies for mass consumption) one is most likely to see that many of the most popular games have been developed around war metaphors. The images are usually violent and explosive. Targets and victims are sure fire features as are aural indicators of guns being shot, bombs exploding, and disembodied voices screaming. Both the visual and aural landscapes are electronic simulacra. It would be safe to say that most video games are distinct embodiments of male machismo -- John Wayne, Bruce Lee, Norman Schwarzkopf, Jean Claude van Damme, Sylvester Stallone, and Arnold Schwarzenegger all parceled into stock cyborg characters. Video games are a good example of how the technology which emerged from the military, when applied to seemingly unrelated artifacts, retains its memory of origin and is manifest in subsequent applications. There is a very real connection or similarity

between war machines and video games. Experience, and the creators of these technologies, has made us believe that it is “natural” to expect these war-like qualities in our video games.

Whether one is talking about war and virtual technologies or about computer games and drama, issues of representation and verisimilitude are of tantamount importance. One of the common issues that has been passionately contested in the fields of theatre and film and in the realm of Virtual Reality is the notion of “reality” and its corresponding representation or set of manifestations -- what Plato calls “instantiations.” ⁹ Embedded in any discussion of reality and representation is the concept of imitation which has been debated by a long line of critics from Aristotle (Peri Poietikes) to Horace (Ars Poetica) and from Lodovico Castelvetro (Poetica d’Aristotele Vulgarizzata et Sposta) to Jean Jacques Rousseau (Letter to M. D’Alembert on the Theater). ¹⁰

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¹⁰ Aristotle calls imitation “mimesis”, Horace refers to it as “imitation” and Castelvetro terms it “verisimilitude.” While there are semantic differences between the three, this study is interested in “imitation” at its broadest level and subsequent discussions will include all three terms and their various connotations interchangeably.
Recent discussions on the ethics and aesthetics of Virtual Reality from the computer games to the large war games of mass-annihilation stem from the above critical tradition. Likewise, the discussions about virtual worlds in cyberspace look into the elusive and complex ideas of imitation, simulation, immersion, and representation. Currently engaged in this discussion are theatre professionals who are interested in computer aided design and computer programmers and designers who are interested in more dramatic and increasingly "real(istic)" virtual worlds.

Ben Jonson's musing in his work Discoveries that "without Art, Nature can ne'er be perfect; and without Nature, Art can claim no being"\(^{11}\) is relevant to this discussion on imitation, mimesis and nature. The discussion about an object in the realm of appearance versus reality by Aristotle, Horace, Lodovico Castelvetro and Rousseau, among many others, are relevant to the issues at hand because they argue the conceptual framework of Virtual Realities despite the fact that in the time of these philosophers, the technologies were virtually non-existent. Historically, "imitation" is fraught with problems of

definition and contradiction. Broadly speaking, the term is used to mean either: (1) mimicking and copying or (2) the creating of artistic entities including paintings, sculpture, poetry and tragedy.

It could be argued that Plato is one of the earliest and first recorded Western philosophers to contemplate and sketch out models of Virtual Realities and their corresponding issues and pitfalls. For Plato, as seen particularly in Book X of The Republic, there are various types of Virtual Realities, some of them valuable to individuals and the state, and others detrimental and destructive to them. Plato proposed that these beneficial Virtual Realities (such as his notion of the utopian state) needed to be nurtured, fostered, and realized while the destructive Virtual Realities (such as theatre) be kept outside of the construction of the ideal state.

In his writings, Plato presents three levels of "being" which are directly relevant to an ancient conceptualization of Virtual Reality. First and foremost there is the realm of "ideal forms" which have no physical manifestation. These ideal forms exist only as objects within the realm of our knowledge and hence are perfect and constant. Next are "beings"\(^{12}\) which by virtue of their three-dimensionality, are

subject to the laws of causality and change and are hence believed to be fluctuant. Herein lies the idea of 'being' as characterized by the instantiations which are particulars determined by and from the ideal forms. For Plato, these instantiations are necessarily imperfect and inconstant. The third level of distinctions, according to Plato, includes the representations and imitations which are twice removed from the reality of the ideal forms.

Corresponding to this distinction between the realities and representations of forms is the distinction between the person who apprehends the realities and the person who attends only to the imitations. In light of this "quarrel between philosophy and poetry" reason would belong to the realm of ideal forms, senses would determine the particular instantiations, and emotions would lie within the chaos of imitation. All these notions about the manipulation of reason, emotions and ideal forms are the conceptual basis upon which contemporary Virtual Reality technologies are built. Thus, Plato, was proposing certain conceptual frameworks of Virtual Realities long before the technologies themselves would become a reality. In addition, he was vehemently opposed to other models and modalities of Virtual Reality that he deemed harmful to the establishment and propagation of his utopian state.
Plato's notion of the "Republic" was indeed a Virtual Reality and he was all in favor of such a Virtual Reality. However, with certain forms of imitation and representation, Plato quarreled with the ways in which humans could be corrupted and hence get in the way of the utopia being realized. In particular, Plato opposed the mode of impersonation because he believed that while acting, the actor would take a personality or a social role, and that these multiple personalities or social roles, would prove subversive to the daily operations of the state. This was especially destructive if the role itself was socially unacceptable. Plato was not opposed to all means or modes of creating Virtual Realities. The epic (or novel form) was good because it was narrative and in the third person, making it a safer and more benign form of imitation than the world of first person theatrical representation.

Whereas Plato's utopia remained a Virtual Reality, Aristotle's Athenian Republic was manifest as a reality. For Aristotle the social implications of mimesis was as a tool of social representation and also as a means of social interaction and political manipulation of the present and the future. This is where Aristotle differs with Plato on the notion of the ideal state and the functioning of representation.

Aristotle's idea of imitation is about examining the intangibles and this in turn allows them to be virtual. Both Aristotle and Plato, by
examining the intangible nature of "ideal forms" are in fact, laying the conceptual and philosophical framework of Virtual Reality unencumbered by technological realities. Aristotle bypasses the form of the "particular" and says that the representations are somehow more indicative of the ideal form. He affirms that details give specificity but those are, at the same time, transcended to give us the universals. He writes that the poet "should set them out as universals and only then introduce episodes, i.e. extend them. I mean that he might investigate what is universal in them."¹³ More importantly, the particulars or representations are perfect for Aristotle.

In order to explicate what Aristotle defines as good representation a better understanding of the notion of the "universal" is necessary. The function of tragedy, in the Aristotelian sense, is to educate and provide a certain "species" of enjoyment and it is the varying features and qualities of a particular work that promote or inhibit these two functions from having their full effect. This in turn is largely dependent upon the plot and the actions of the characters in accordance with their natures. "It is also obvious from what we have said that it is the function of a poet to relate not things that have

happened, but things that may happen, i.e. that are possible in accordance with probability or necessity.14

This notion of probability (social variation) is an important variable in the design and impact of virtual environments, particularly the more immersive ones. Aristotle calls such behavior universal when it is in keeping with the laws of probability. This in turn helps the poet make his plot more plausible. This significant point adds another level to Aristotle's defense (against Plato) of the cognitive status of poetry, because the poet must at least understand the probability of human nature or he cannot construct a plausible plot. In Virtual Realities, the understanding of human nature and its manipulation via narrative structure, plot construction and other sensory means, is of fundamental importance. Brenda Laurel links Aristotle to current day Virtual Reality technologies when she writes that:

the Aristotelian paradigm is more appropriate to the state of technology to which we are trying to apply it. In order to build representations that have theatrical qualities in computer-based environments, a deep, robust, and logically coherent notion of structural elements and dynamics is required - and this is what Aristotle provides.15


For Aristotle, reality lies in the actions of the characters as they are embodied and carried out by the performers. As a result, tragedy has a "complex" plot which is dependent on the chain of episodes. The complex plot was important because it was a projection of a future situation which could instruct the citizens of the state in a beneficial way. Aristotle argues that the actions a performer carries out are real and that this representational reality permits the audience to partake in the unfolding of a tragedy. Aristotle briefly explains why Athenians created and enjoyed performances of tragedy. Imitation, he says, is natural since "[people] tend most towards representation and learn [their] first lessons through representation."\(^{16}\) Aristotle also claims that "everyone delights in representation"\(^{17}\) in that recognizing imitation is a form of learning and man finds learning naturally pleasurable. Tragedy is the imitation of a particular action. Appropriate pleasure is one derived by the catharsis of feelings of pity and fear through imitation. A person's excellence, or standing in society, is determined through the virtue of his/her actions, and it is also determined by the environment that cultivates these actions, i.e. the virtues of others that coexist in that particular society. The latter


\(^{17}\) Ibid.
variable in determining an individual's virtue is dependent on external forces, and it is in this light that theater, with all its representational realities and emotions, serves a valid and even positive function in a society.

This is linked with the issue of appropriateness of emotions. In Plato's view, a skilled artist, through his/her skillful work is allowed to become a menace to his ideal Republic if he/she is allowed to induce false beliefs about social realities and stir up emotions subversive to reason in individuals. Plato argues that emotions are detrimental to the ideal citizens (the guardians of the state) when we stir them up and inflame them through dramatic representation. In other words, for Plato, emotion impedes critical thinking with a reflective and cool attitude. The exercise of reason is conducive to facilitate the development of personal excellence and social justice. Plato writes that "the appeal of dramatic poetry is not to the reason, but to a lower part, the emotions, which like the senses, are subject to illusions....the dramatist is concerned [with rousing] sympathetic emotion than to check its excesses, and while we enter into the joys and sorrows of a hero on the stage, the reason is held in abeyance."\(^{18}\) What Plato is setting up is the notion of the addictive nature of theatrical imitation.

By inflaming and stirring up the emotions of the citizens via theatrical mimesis the audience was being conditioned, like an addict, to keep coming back for more, and thus interfering in the realization of the ideal state. These arguments are very germane to issues of media and addiction today, where the average hours of television watched daily or the hours spent surfing on the internet are continuously going up.

Contemporary Virtual Reality technologies are similarly concerned with the concept that illusion, if effectively constructed, allows for the manipulation of emotions. In addition, reason, or disbelief is intentionally or subconsciously suspended so that the Virtual Reality can appear real, for the duration of the experience or immersion in the technology. The value, social, personal, cultural or otherwise, of immersion and manipulation by virtual technologies is still being debated and will continue to be at every level of the spectrum. The skeptics and even the luddites (such as the Amish and German-Baptist faiths) and the neo-luddites would argue along with Plato, that suspension of reason in favor of emotional manipulation, is detrimental to the individuals and the community or state at large. While the luddites and neo-luddites would dismiss technology almost completely, there are technology ethicists and some Virtual Reality scholars who
would argue that unexamined and unchecked virtual technologies could indeed have detrimental social, cultural, personal and evolutionary effects.

Aristotle concurs with the Platonic idea that the emotional experience of the audience can be manipulated and regulated. But, his justification is different than Plato's. In manifesting these emotions through particular expressions they go away for a while and it is here that we are introduced to the concept of catharsis. Aristotle is saying that poetry does in fact help people to be rational by exposing them to emotional situations and cleansing them of these emotions. Catharsis then becomes an affirmation of the rational (i.e. logical) as well as the irrational (i.e. dynamic) aspects of human behaviour. Not only does the audience receive a mental clarification or revelation, but if the appropriate amount of catharsis is initiated, this enables the audience to attain a higher realm of virtue. These arguments have been used not only in the design of virtual technologies but also in justifying their social pervasiveness and their communal impact. Thus, proponents of war-based video games would argue that the aggression released by the participants in the virtual violence of the games, would dissipate or disengage the individual's need for acting out in the real world.
In writing about Aristotle’s *Poetics* Richard Janko writes that:

by representing pitiable, terrifying, and other painful events, tragedy arouses pity, terror, and other painful emotions in the audience . . . and so stimulates those emotions as to relieve them by giving them moderate and harmless exercise, thereby bringing the audience nearer to the mean in their emotional response and so nearer to virtue in their characters; and with this relief comes pleasure.\(^{19}\)

Thus, proponents of Virtual Reality technologies like computer games would argue that immersion in these environments is cleansing for the individual and the catharsis actually allows the individual and the state to be more healthy or in balance with nature. Richard Janko goes on to say that, “Ultimately, the best representation is one which is seemingly least representational.”\(^{20}\) This is in many ways the essence that drives the design and construction of Virtual Reality technologies that are immersive.

Human actions are one of the fundamental building blocks of Virtual Reality environments and this is where Horace gains relevance in the dialectic of Virtual Realities and imitation. Horace abandons both the ethical questions raised by Plato and the social dimensions raised


by Aristotle. Rather, Horace focuses in on the nuts and bolts of the practice of so-to-speak Virtual Realities. For him the construct of what today we call Virtual Reality is set up not by imitating nature, but by the mimesis of the great Greek plays. Horace is not an innovator but a copyist in that he recognizes the Virtual Reality creation possibilities in the Greek plays and he wants to implement that to help the Romans build the new model of citizenship and ideal state. Horace was only interested in imitating the models in order to enhance the Roman statehood.

In the *Ars Poetica* Horace uses imitation to mean mimicking and the creation of artistic representations after the Greek models. He writes that wisdom is the source of all good writing. He also adds to this the idea that the subject matter of the poetry should spring forth from a base of moral philosophy. He writes that, “in the philosophy of man to excel is the prime root and spring of writing well.”²¹ Horace makes a distinction between the “learned imitator” and the “slavish herd of imitators” in his *Epistles*. Fundamentally, Horace is creating a hierarchy of bad poets (servile imitators or copy-cats) and good poets who accurately and effectively create imitations of human actions.

of the debates surrounding the design, conceptualization and utilization of virtual environments in fields ranging from education and medicine to entertainment and the military.

Horace believed that the foundation for all artistic composition lay in the powers of the artist to determine the selection of the material. Horace believed that if the artist had such astute powers to select the right material then the style and organization would become effective and lucid. The lesson that one can apply from this to Virtual Reality technologies is that while the technology is important, it is the conceptual framework and the design of these environments that actually determines their efficacy, impact and utility.

For Horace Ars consisted of three main ideas: a mastery of the craft gained through practice; an organized and systematic knowledge of theory and technique; and a capacity for objective self-criticism. Horace is adamant about the artist’s attention and duty to creating and maintaining “unity.” Unity in a work (be it painting, sculpture, dance, music or virtual technology environment) is of utmost importance.

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23 Ibid.
Horace insists that plot must be controlled by the craft of the poet. Poorly crafted plots are up for ridicule. Horace also prescribes that a plot, be it one of invention or one which is borrowed, must have consistency and appropriateness of character. He tells us that “as the human face answers a smile with a smile, so does it wait upon tears; if you would have me weep, you must first of all grief yourself; then and not till then will your misfortunes...touch me. If the part assigned you is not in character, I shall fall asleep or laugh.”

However, Horace in a tone of self-congratulatory smugness, says that slavish retelling of traditional plots is the sign of a poor imitator. Horace’s concern is with issues of believability within Virtual Reality constructs. He claims that he “shall aim at a poem so deftly fashioned out of familiar matter that anybody might hope to emulate the feat, yet for all his efforts sweat and labor in vain. Such is the power of order and arrangement.” For Horace the function of imitation is both to “teach and to please.” Horace’s bottom line is that “the secret of all good writing is sound judgement.”

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25 Ibid.

26 Ibid.
Castelvetro provides us with a different hue of Virtual Reality. He takes theatre down from its religious and festival oriented status in Greek and Roman cultures and proposes the construction of Virtual Realities for the commoners. It is akin to the contemporary transfer of theatre from auditoriums to the gaming parlors (national chains like Dave and Buster, Jillians, and Gameworks) with computer games and Virtual Reality environments proliferating all across the United States and all over the world.

Castelvetro’s biggest departure from Horace and Aristotle is that he argues that drama is created for the pleasure of the ignorant public. In light of this, imitation is more than just creating or mimicking. For Castelvetro, imitation has as its prime responsibility, the creation of credible plots and characters. Verisimilitude becomes the major objective. In fact, Castelvetro sets up the notion of verisimilitude for verisimilitude’s sake. He says that fantastical events and characters are acceptable if they are credible in the context of one’s culture. He gives the example that if he cannot believe that Daedalus can fly, then he “cannot marvel at the fact that he flies in the play.”

Castelvetro starts his argument on imitation by using history and poetry as birds of the same feather with certain significant

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disparities. He claims that "History is the similitude or likeness of poetry."\textsuperscript{28} He says that both poetry and history consist of matter and words. History "does not have matter that is given to it by the abilities of the historian."\textsuperscript{29} What the historian gives to history are words and these words are of the kind that are used in reasoning. Castelvetro gets trapped into viewing the telling of history as infallible, always objective (read reasonable) and truthful by the virtue of the fact that history "happens." This idea becomes very relevant in my arguments in Chapter 4 concerning the colonial and racist worlds created in the films \textit{Gunga Din}, \textit{Sergeants 3}, and \textit{Indiana Jones and the Temple of Doom}. In all three of these films, a virtual world is created that has the resemblance of a real (i.e. historical world). Thus, the false representation of cultures and people as "historical fact," is merely colonial propaganda and Orientalist misrepresentation. History, especially as Castelvetro argues it, is a Virtual Reality based on issues of language and the historian's integrity. Castelvetro says that poetry is distinguishable from history because it gets its matter from the

\textsuperscript{28} Castelvetro, \textit{On the Poetics in Literary Criticism: Plato to Dryden} by Allan H. Gilbert. (Detroit, Michigan: Wayne State University Press, 1940), pp. 304 - 357.

\textsuperscript{29} \textit{Ibid}, pp. 321 - 323.
imagination and the ability of the poet. Moreover, the words that belong to poetry are not those of reason, but those which are heightened and composed in measured verse.

Castelvetro tells us that "the poet's function is after consideration to give a semblance of truth to the happenings that come upon men through fortune, and by means of this semblance to give delight to his readers; he should leave the discovery of the truth hidden in natural or accidental things to the philosopher and the scientist, who have their own way of pleasing or giving profit which is very remote from that of the poet."\(^{30}\)

For Castelvetro, the audience needed verisimilitude to gain pleasure. Audiences were pleased by plays that depicted the audience's life and conditions. In that regard, the characters and plot should be identifiable by the audience and they must be able to relate to the transpiring of events on stage. Finally, the play's moral underpinnings must relate to the audience's expectations. After all, Castelvetro acknowledged that audiences were subject to their own ideological, psychological and moral world-views.

Castelvetro, was the forefather of the idea that audiences have limited attention spans and patience. Plays should be of limited length.

so that the audience is not inconvenienced. He argues, "there must always be regard to the ease of the people, for after some hours the people have to leave the theatre because of the human necessities for eating, drinking, sleeping, and other things."\textsuperscript{31} These attention spans and patience are at the crux of the design of much of modern entertainment including Virtual Reality games and immersive environments. These issues feed directly into discussion about the addictive nature of virtual environments and the ways in which this potential is exploited in the design and construction of computer games, immersive environments and other interactive technologies.

Castelvetro also refines the Aristotelian notion of imitation as the natural human impulse since childhood. For Castelvetro "the imitation that is natural to men is one thing and that which is demanded of the poet is another."\textsuperscript{32} Castelvetro says that humans learn by imitation from an early age without really knowing why they are doing it. The poet on the other hand is entrusted with a different kind of imitation. The poet's imitation, for Castelvetro, must be based in

\textsuperscript{31} Castelvetro, \textit{On the Poetics in Literary Criticism: Plato to Dryden} by Allan H. Gilbert. (Detroit, Michigan: Wayne State University Press, 1940), pp. 304 - 357.

\textsuperscript{32} \textit{Ibid}, pp. 304 - 357.
an excellent knowledge of the causes why he does what he does and must spend time in reflection and careful reasoning, to such an extent that it can securely be affirmed that the imitation demanded from the poet is not and ought not to be called directly or properly imitation, but should be or can be called the strife of the poet and the disposition of fortune, or of the course of mundane things, in finding an incident of human conduct delightful to listen to and marvelous.\footnote{Castelvetro, On the Poetics in Literary Criticism: Plato to Dryden by Allan H. Gilbert. (Detroit, Michigan: Wayne State University Press, 1940), pp. 304 - 357.}

While Castelvetro’s writings are radically opposed to Plato’s insistence on the dangers of imitation, Rousseau’s treatise on Politics and the Arts as exemplified in his \textit{Letter to M. D’Alembert on the Theater} is deeply rooted in the Platonic ideals of representation. For Rousseau, the theatre has no redeeming value whatsoever. However, it is important to note that even though Rousseau’s arguments against the theatre are very similar to Plato’s, the theatre in Rousseau’s time was radically different from the theatre in Plato’s day. In Rousseau’s time, the theatre was quickly becoming a vehicle for technology and Rousseau was not in favor of this at all.

For Rousseau the best representation would not necessarily be the absence of representation but certainly one without any women whatsoever. Rousseau nullifies Aristotle’s concept of catharsis in
believing, as did Plato, that "the continual emotion which is felt in the theater excites us, enervates us, enfeebles us, and makes us less able to resist our passions." \(^{34}\) Hence the theater, through a lack of utility is unable to do anything about improving morals but works towards changing them. Rousseau claims that there is no 'good' or 'salutary' moral effect of the theater and that even though there might be some kind of utility it is greatly outweighed by its shortcomings and drawbacks.

Rousseau's attack on the theater is not divorced from his disillusionment with the so called modern and enlightened society of his day and age. Patrick Coleman claims that the \textit{Letter to M. D'Alembert on the Theater} "is not only a pivotal work in Rousseau's intellectual development, but a challenging and enduring statement in its own right about the uneasy relationship between culture and politics in a modern society."\(^{35}\) Rousseau's attack on the theater then, is in fact a critique of a particular aspect of society which prefers appearance over reality. For Rousseau, there exists a fundamental antithesis between the nature of man and the ideal of a contemporary society. He accuses


the European society for having adopted the "superficial allure of a purely intellectual culture" while having sacrificed the moral demands of human nature. Artificiality had taken precedence over the more natural needs of mankind. He believed that societal conventions imposed an artificial uniformity of behavioral norms which in turn induced humankind to ignore their duties and consequently abandon the needs of nature. In light of this misplaced attention and newly found avenue of social degeneration, Rousseau spells out for us, what he believes to be five of the more fundamental disadvantages that would arise from introducing a theater into an unspoiled and untouched society. They are a slackening of work, an increase of expenses, a decrease in trade, an establishment of a tax structure, and the introduction of the vileness of luxury. (Interestingly, these above mentioned problems have all surfaced in one form or another with current internet technologies.) But perhaps a more fundamental and greatly stressed argument against the form of theatrical representation is that which deals with the role of men and women as prescribed and endorsed by nature which of needs be must not be disturbed from its natural state of harmony, balance, and autonomy.

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The theater, (and by extension films and other technologically virtual environments) according to Rousseau, helps people to get distracted away from themselves, and this creates an imbalance once nature's equilibrium of male and female co-existence has been tilted, toppled, or shifted from its resting set of dynamics. Rousseau asserts that once man leaves the primitive state of nature, he could never return to it. For Rousseau, like Plato and Aristotle before him, nature was reality and culture was the fiction (i.e. Virtual Reality) because the latter was a conditioning that forced people to see the world in a different way than nature intended. The introduction of the theater in Geneva was to bring an artificial product of society into a fairly unspoiled society. Rousseau assumed that all valid entertainment must "derive from man's work, relationships and needs." He also believed that entertainment must be different from his work and yet sparked by the same spirit in helping make it an inherent and integral part of man's nature. But, the theater is an artifact arising from the interaction of idleness, vanity, dangerous passions, and harmful emotions. Moreover, the theater is debilitated in any capacity it might

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possess to be able to effect moral activity amongst citizens. In that, the theater and its proponents always remain subservient to the impulses that create it.

It is with respect to this that Rousseau elucidates his tirade on the role of women in theater and how they affect the natural harmony of human co-existence. Rousseau believes that by nature, women were made weaker than men, but it is this weakness that inherently allows women to have power over the men. By putting a woman on stage and annihilating her natural modesty and self-effaciveness, she is transformed into a shameless entity who exploits love as a public spectacle. The woman, once she sets foot on stage, acquires a Virtual Reality, distinguishable from her societal persona. Rousseau would argue that Medea's ploys to revenge her husband Jason's ingratitude is a perfect example of such an imbalance in the natural order of women's roles in nature. Medea exploits love and actually kills her children and Jason's new bride and father-in-law in the very name of love. It is such a deception that would revolt Rousseau's sensibilities but more importantly he would fear the fine line that the actress would dangerously trip over in going from imitation to actual practice.

The next and final step in Rousseau's argument is that nature had charged women with the preservation and fostering of human morality. Members of the male sex were somehow able to escape from
nature by breaking out of it to become moral. If women are portrayed as immoral on stage, then we have once again sullied the harmonious balance of nature by making the woman a failure in her duty to maintain morality which nature binds her to fulfilling. It would seem here that the issue is immorality rather than verisimilitude. But Rousseau's argument works at allowing the verisimilar to converge with the immoral. That is, when the representation on stage (or in other Virtual Realities) approaches the ideal of verisimilitude, then the immorality has a far greater impact and influence. Moreover, the more convincing the immorality portrayed on stage, the easier it would become for the actress and hence the audience to leap from imitation to actual practice.

Rousseau argues that the theater detracts us away from our moral duties by abstracting us away from the reality. Rousseau's sentiments are aptly expressed when he states that:

> even if it could be denied that a special sentiment of chasteness was natural to women, would it be any less true that in society their lot ought to be a domestic and retired life, and that they ought to be raised in principles appropriate to it? If the timidity, chasteness, and modesty which are proper to them are social inventions, it is in society's interest that
women acquire these qualities; they must be cultivated in women, and any woman who disdains them offends good morals.\textsuperscript{38}

For Rousseau, a woman's morals depended not so much in particular actions but rather on the style of life that these women lead. Indirectly, Rousseau is conflating reality with Virtual Reality and he seems to have little faith in people's ability to keep the two as distinct entities.

What is more, Rousseau found comedy more loathsome than tragedy because comedy was able to corrupt those who were already corrupt beyond redemption.

When you write a comedy, you have to think of receipts, you have got to make the pit laugh. The surest way of making the vulgar laugh is to make sport of virtue, for true virtue is beyond the vulgar; and by making mockery of noble things you make them satisfied with their own vileness. This is one of the crowning abominations of the theater.\textsuperscript{39}

Because of this, Rousseau was very critical of Molière and many of his plays including \textit{The Misanthrope}.


The above discussion about the antecedents of Virtual Reality from Plato and Aristotle to Castelvetro and Rousseau proves two things. Firstly, that the nature of Virtual Reality has been a part of philosophical and human endeavours from a very early time. Secondly, and more importantly, the issues surrounding the costs and benefits of Virtual Realities to the individual and the state have long been argued, dissected and debated.

In Jane Wagner’s play *Search for Signs of Intelligent Life in the Universe* one of the central characters Trudy proclaims, “Reality is nothing but a collective hunch!” The super information highway and Virtual Reality, in many ways, are the natural genesis of a civilization in search for another equally intelligent or more intelligent form. Human fascination, through time, with the robot, artificial intelligence (AI), and other “self-thinking” technologies has lead us on a quest for the holy cybergrail. As Carol Gigliotti tells us, “The preoccupation with simulation comes to us out of the encompassing obsession with allowing truth to be based upon the powers of the mind to represent reality.”

She goes on to write that:

The attempt to simulate reality has long been regarded as one of the most efficacious ways to

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comprehend something. Though the caves of Lascaux may indicate early hunters' need to simulate the hunt either to provide confidence or as a mystical assurance of the hunt's success, it must have been obvious to the hunter that unless he actually went out of the cave to hunt he and his people would not eat. The simulation pointed back to reality.\textsuperscript{41}

Human need for certainty has engaged many a philosopher from Plato and Descartes to Kant and Wittgenstein. Contemporary life also manifests this deep need for concrete certainty. In writing about "the incredible power simulation has acquired in contemporary life,"\textsuperscript{42} Carol Gigliotti says that:

The power bestowed upon a simulation, however, is not a new acquisition but has increased in importance as the uncertainty of an existence without a central meaning has developed. What is ironic, and perhaps sad, if one acknowledges other consequences of this development, is that it originates in the desire for certainty.\textsuperscript{43}

But there is a contradiction here because while the terms simulation, imitation and Virtual Reality imply a likeness to reality

\textsuperscript{41} Carol Gigliotti, \textit{Aesthetics of a Virtual World: Ethical Issues in Interactive Technological Design}, dissertation (Columbus, Ohio: The Ohio State University, 1993), pp. 25-26.


\textsuperscript{43} \textit{Ibid}.
on one hand, on the other hand they are inherently false and nothing more than artificial constructs.

Carol Gigliotti pays a lot of attention to the Cartesian paradigm and our innate desire for certainty. She writes that:

Descartes’ influence, not only on the sciences, for which he originally began his Meditations, but on the whole of Western thought and culture, is immense, and has left us with a true fetish for accurate representation. This representation becomes the foundation upon which we are then, in the Cartesian paradigm, to build our belief and understanding of the world.44

Gigliotti’s basic premise is that the contemporary Virtual Reality paradigm is trapped within Cartesian philosophy. Computers are fundamentally simulators and B. Wooley reminds us that computers are a simulation of some ideal computer, a ‘universal machine’. Everything a computer does can be seen as a simulation, except that many of the things it simulates do not exist beyond the simulation. What then is simulation? Is it just another form of imitation or representation, fiction fort he computer age? Can anything be simulated - even reality and human intelligence?45

44 Carol Gigliotti, Aesthetics of a Virtual World: Ethical Issues in Interactive Technological Design, dissertation (Columbus, Ohio: The Ohio State University, 1993), p. 29.

But Giigliotti offers the distinction between Virtual Reality and simulation. She writes that, “Artificial reality is distinct from simulation in that it does not try to replace an already existing reality, but attempts to offer up a humanly fabricated alternative reality.”

These technologies need to be treated as the quintessential challenge to our system(s) of ethics. Mitch Kapor suggests that “life in Cyberspace might be shaping up exactly like Thomas Jefferson would have wanted: founded on the primacy of individual liberty and a commitment to pluralism, diversity, and community.” Although Kapor’s point is well taken I find it a dubious choice to canonize Jefferson, a patriarch who spoke of the ideals of pluralism, and diversity, while still maintaining slaves in private and having an affair with Sally Hemmings, his mulatto slave servant. I think Kapor’s point would be better taken were he to say Jefferson would have been very much at home in cyberspace with its pretense to plurality, diversity etc., having thus far quite firmly furthered merely the status quo.

46 Carol Giigliotti, Aesthetics of a Virtual World; Ethical Issues in Interactive Technological Design, dissertation (Columbus, Ohio: The Ohio State University, 1993), p. 41.

Virtual Reality technologies are fraught with debate about aesthetic and ethical concerns, which at a certain level are inseparable. In light of this, when these technologies impact the theatre, film, and television, they bring with them all these loaded issues. Thus, in theatre’s case, issues of power and the distribution of information and knowledge is based in the same hierarchical negotiations of the rest of the market - i.e. Broadway and Hollywood, because of their capital base, have the monopoly power. This is to suggest that as I discuss issues of computers and theatre melding, there will be a constant foregrounding of these issues of ethics, power, democratization, representation and hegemony as they relate to Virtual Reality and drama.

Equally elusive and debatable are the related notions of interactivity and the definition of technology itself. Carol Gigliotti writes that, “If there is one primary informing aesthetic quality which one might base one’s hopes for the art of the twenty-first century and its intimate involvement with technology, it is interaction.” 48 While Gigliotti is right in asserting that interactivity will be the catch-phrase

48 Carol Gigliotti, Aesthetics of a Virtual World: Ethical Issues in Interactive Technological Design, dissertation (Columbus, Ohio: The Ohio State University, 1993), p. 100.
of aesthetic activity in the twenty-first century, it should be added that interactivity has been the touchstone of art, particularly theatre, right from the beginning.

Whenever discussing technology and something related to it, one is forced to confront the many aspects of that term. Technology, depending on the context, can include a variety of objects with varying levels of "sophistication." Theatre for one, has tended to take technology for granted. I would argue that culture and art in general, have consistently been dependent on and evolved out of technological concerns. Thus, from the cave paintings of Lascaux to the multi-media performances of Laurie Anderson and Peter Gabriel, art (theatre, dance, painting, sculpture, video, film, music, literature, and now computer environments) has in many ways always had a direct relevance to the level of technology of the period in which it was produced. As a result, technology becomes not only the enabler of artistic creation, but it becomes the content of art as well. Meta-art and meta-technology, where art comments on art and technology comments on technology have become integral parts of discourses on aesthetics and technology.

For the purposes of this study, technology is that which enables the creation of an object, product, artifact, etc. It is a tool (a facilitator or enabler) or a machine. Tools would include something as
simple as the pencil to something as sophisticated as a Virtual Reality device. Machines could range from the high-tech Intelebeams (computer controlled lights that can produce dazzling and multiple effects from one instrument - often used in rock concerts) to the human body. One note on the human body as theatrical machine: even though we tend to think of machines as non-living entities, I would like to include the human body for purposes of this study because drama has always included humans, and theatre stripped away from everything else, the mere presence of an actor implies the presence of a machine capable of movement and sound (amongst other functions) or a medium of communications. In this regard, theatre itself, as a large construct, could be seen as a technology.

One last note on technology. The pervasive view of the relationship between humans and technology has been one where the tool or the technology is seen inherently as being “neutral.” Carol Gigliotti informs us that:

The pervasive view of this relationship has been based on a definition of technology that views technology as “tools”, artifacts throughout human history that have served the purposes of their users. This definition of technology has been identified with instrumental theories of technology. In these theories, technology is seen as neutral,
containing no value of its own. The ends to which it can be employed are not seen as contingent upon its design.\textsuperscript{49}

On the opposing side of the neutrality of technology, Scholars like Andrew Feenberg argue that, “Substantive theory, best known through the writings of Jacques Ellul and Martin Heidegger, argues that technology constitutes a new type of cultural system that restructures the entire social world as an object of control.”\textsuperscript{50} This tells us that the tools or technologies that we as humans choose, determine culture and impact our environments and lives in a comprehensive way. Feenberg astutely adds that, “Critical theory argues that technology is not a destiny but a scene of struggle. It is a social battlefield, or perhaps a better metaphor would be a \textit{parliament of things} on which civilizational alternatives are debated and decided.”\textsuperscript{51}

This recognition of the link between technology and culture was acknowledged by Francis Bacon, approximately 150 years before the start of the Industrial Revolution. In the \textit{Novum Organum}, Bacon wrote that:

\textsuperscript{49} Carol Gigliotti, \textit{Aesthetics of a Virtual World: Ethical Issues in Interactive Technological Design}, dissertation (Columbus, Ohio: The Ohio State University, 1993), p. 7.


It is well to observe the force and effect and consequences of discoveries. These are to be seen nowhere more conspicuously than in those three which were unknown to the ancients, and of which the origin, though recent, is obscure; namely printing, gunpowder and the magnet. For these three have changed the whole state of things throughout the world; the first in literature, the second in warfare, the third in navigation; whence have followed innumerable changes that no empire, no sect, no star seems to have exerted greater power and influence in human affairs than these changes.\textsuperscript{52}

Since Bacon, scholars and philosophers from Marx to Marshall McLuhan have adumerated upon the complex nexus between technology and culture. Neil Postman says that the relationship between humans and tools was different before and after the Industrial Revolution. “Best described as “tool-using cultures”, preindustrial cultures’ essential characteristic was that their tools were invented to do two things: to solve problems of physical life or to serve the underlying symbolic world in which the culture was based.”\textsuperscript{53}

\textsuperscript{52} Francis Bacon, \textit{Novum Organum} (p. 45) in Carol Gigliotti, \textit{Aesthetics of a Virtual World: Ethical Issues in Interactive Technological Design}, dissertation (Columbus, Ohio: The Ohio State University, 1993), p. 12.

The relationship between culture and technology is a complex and far reaching one. In this nexus between humans and tools, there is reciprocal adaptation that becomes inevitable. Carol Gigliotti writes that, "While it is true that culture adapts to technological change, it is also true that the process is reciprocal. Technology is changed as much by the contexts in which it is developed as it influences those contexts."\(^{54}\)

The above discussion leads to the conclusion that the relationship between humans and technology is by necessity, interactive. The theatre too is interactive. No matter what the medium, it is imperative to acknowledge that the construct of interactivity is problematic and elusive. Different artists will define the notion of interactivity differently. Artists of the environmental arts movement that constructed large installations, usually in natural surroundings, requiring of the spectator to walk through the art, so to speak, believed that the very presence of a viewer within the space occupied by art was interactive. Performance artists who painted with their bodies believed this to be an interactive art form between artist and medium. The street theatre of the sixties invaded public spaces and forced passersby to confront the art work (usually a

performance). Street theatre often used spectators in their improvisational pieces. This to them was interactive.

Even within what is termed as interactive technology, the notion of interactivity is being contested and debated. In cyberspace, interactivity ranges from using a keyboard to exchanging e-mail with others, and from using a mouse to playing a video/computer game. In Virtual Reality, interactivity is often seen as being an activity in which a spectator is immersed in the medium via a variety of gadgets ranging from eye wear to headphones to entire body suits with sensory devices. Future uses of Virtual Reality promise the ingestion or intravenous use of sensory enhancers etc. Thus, when talking about reinfusing the theatre with interactivity, one has to be aware of the problematic definition(s) and manifestations of the term.

Simon Penny’s work in the area of interactivity is seminal and needs mentioning here. Penny writes that:

although much has been said about cybertecture, the internet, VR etc., in a full decade of interactive art practice, little has been done to theorize what exactly is going on when a person interacts with an interactive work, let alone how this activity relates to or extends conventional notions of semiotics, aesthetics and communication in an artwork. How is kinesthetic cognition integrated into the interactive experience of changing text, images, sounds, mechanical events, etc.? And how does the desire of the user factor into the ongoing gathering of experiences? How is the idea of an artwork changed
when there is an exchange of meaning through action? What could a semiotics of interaction be?  

Penny's questions lead us to the understanding that interactivity is a physical, psychological, emotional, kinesthetic, and cognitive phenomenon. It is experiential in its totality. Penny argues that:

Western visual arts has absolutely no tradition of an esthetics of interactivity. A thousand years of painting has resulted in a rich esthetics of the still image, of color and line, shape and area, of representational geometry and perspective. One hundred years of moving image has given us an esthetics of time-based image, or camera angle and movement, wipe and cut. But we do not have an esthetic language of real time interaction.  

Penny seems to be taking a very narrow definition of the term interactivity. I would argue that even before the emergence of computerized interactive technologies, arts like the theatre have indeed been models of interactivity.

In her 1993 book *Computers as Theatre*, Brenda Laurel writes:

Computers are theatre. Interactive technology, like drama, provides a platform for representing coherent realities in which agents perform actions with cognitive, emotional, and productive

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qualities...Two thousand years of dramatic theory and practice have been devoted to an end which is remarkably similar to that of the fledgling discipline of human-computer interaction design; namely, creating artificial realities in which the potential for action is cognitively, emotionally, and aesthetically enhanced.\textsuperscript{57}

While there are several problems with Laurel’s analysis by an overemphasis on the Aristotelian framework when looking at computer games there are several things in the above paragraph that are important here. Firstly, Laurel seems to be the first scholar to make a very concerted effort to make bedfellows out of theatre and computers. Secondly, she talks about two thousand years of dramatic theory and practice being used to enhance computer generated artificial realities. Or to look at it another way, she likens theatre as a Virtual Reality similar to those generated by computers today.

On the positive side Laurel is attempting to bridge the gap between science (technology) and art. Her interdisciplinary approach is valuable in that it tries to explode certain myths about technophobia -- something from which many artists (and for that matter businessmen, and doctors) retain great inertia.

On the negative side Laurel is using theatrical history, theory, literature and criticism to enhance the dramatic potential of computer

\textsuperscript{57} Brenda Laurel, \textit{Computers as Theatre}. (Reading, Massachusetts: Addison-Wesley, 1993), p. 36.
reality. She is not using the dynamic potential of computer generated realities to enhance the varying visual realities within the theatrical arenas. Thus, what she defines as the bottom line, is that Virtual Reality in film, video games, and television need to enhance their dramatic potential to create new realities in those arenas of expression. What also needs to be explored is the use of Virtual Reality, and other graphical and animation processes, in the theatre itself.

One of Laurels’ contributions to the nexus of theatre and computers is her astute bringing together of Aristotle’s notion of mimesis within the context of creating a new computer generated visual reality. Mimesis is “Aristotle’s term for the psychological resonance that enables dramas to move people emotionally.” (p. 290) And, Laurel would say that “our hearts, our hormones, our most visceral systems can be enlisted in the aid of the right kind of drama.” (p. 290) It is this “right kind of drama” that needs to be sought after within the next century. However, Laurel, like any good neo-Aristotelian falls prey to an overemphasis on a simplified view of the notions of “mimesis” as set out in the Poetics. As a result she limits the potential influence that dramatic theory and practice can have on computer generated realities. While she talks about using “two thousand years of dramatic theory and practice” towards “an end
which is remarkably similar to that of the fledgling discipline of human-computer interaction design" it is interesting and surprising that she found utility only in the work of Aristotle. It is my strong belief that in this span of two millennia, there is a wealth of dramatic theoreticians and artists who have much to add to Laurel’s quest for “creating artificial realities in which the potential for action is cognitively, emotionally, and aesthetically enhanced.”

Most importantly, by strictly referring to Aristotle, Laurel buys into the assumption that “imitation” is wholly beneficial. By ignoring some of the concerns that Plato, Rousseau and others have about the harmful aspects of imitation, Laurel seems to implicitly or explicitly assert that Virtual Reality technologies, enhanced by dramatic potential, have no negative repercussions worth considering.

Laurel is aware of her reliance on the Aristotelian model for extrapolating the convergences of computers and theatre. She writes, “people often find it quite peculiar that I turn to a theory that is over two thousand years old to gain insight into a very recent phenomenon.” Laurel says that she is aware that there are more recent theorists and practitioners who can add to her discourse on

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computers and theatre but she believes that "no one has presented a fully formulated alternative view of the nature of drama that has achieved comparably wide acceptance" as Aristotle's theories.

Current day Virtual Realities are indebted to diverse influences from Plato and Aristotle to the military-industrial complex. An examination of the philosophical antecedents of Virtual Reality presented above proves that the notions of imitation, mimesis and illusion are contentious. Even more debated is the usefulness and value of imitation to individuals and society at large.

As indicated earlier, the largest myth surrounding this technology has to do with the fact that these modes of communication are presented as inherently democratic and democratizing. Gurus of cyberspace are constantly proclaiming from atop the mountains of silicon valley that the computer chip democratizes everything it touches.

Since June 6, 1989 when Virtual Reality systems were first brought out from the hallowed halls of scientific research into the public domain, Virtual Reality has caught the fancy of the collective imagination. Conferences centering on Virtual Reality and its potential as well as its existent applications have begun to take root within

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industry and academia. Television and radio programs have begun to broadcast the “reality of the future.”

Even prior to the public debuting of these technologies the press has been abuzz with the moment to moment bytes of information as Virtual Reality begins to impact social and cultural evolution. Yet, if one looks at all this hype and media blitz, it becomes all too obvious that outside of the labs and academia, Virtual Reality has been sensationalized at the cost of providing a serious assessment and prediction of things already here and things yet to come. For instance, very little work has been done on the cognitive and psychological effects of immersion in Virtual Reality environments.

Hollywood picked up quickly and spewed out several movies on the mind-bending capabilities of Virtual Reality and the highway chase movies morphed into chases on the super information highway. Hollywood infused these movies, such as The Lawnmower Man, with a morality that only Hollywood could, prophesying that if humans were not careful, Virtual Reality would annihilate humanity for all time.

One could argue that the philosophical underpinnings of movies like The Lawnmower Man, Total Recall, Terminator, and Terminator II could be linked to the metaphysics of philosophers like Heidegger. In his book The Metaphysics of Virtual Reality, Michael Heim points out that:
Not only did he make technology central to metaphysics, but he came to see in it the root evil of the twentieth century, including the Nazi German catastrophe, which he described as “the confrontation of European humanity with global technology.” In both his life and his writings, Heidegger felt technology to be an overwhelming force that challenges the reassuring maxims of traditional morality.  

Schwarzenegger saved the Earth and Mars in *Total Recall* from the Virtual Reality demons. In *The Lawnmower Man* Pierce Brosnan fought a war of Biblical proportions with Virtual Reality control freaks. Such cinematic prophecies might lead one to believe that Rousseau’s claims about imitation, reality and human nature might indeed be correct.

Along with Hollywood, the mass culture has been responsible for the manufacture of many myths surrounding virtual technologies. Many of these academicians and scientists are some of the biggest myth-makers. Take the instance of John Perry Barlow who in 1995 proclaimed that, “in a few years, every man, woman and child in the

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world will be electronically connected. Barlow seems oblivious to the fact that there are many parts of the world where telephones and electricity are not only a luxury but practically nonexistent.

At present there exists a tripartite system of hierarchical negotiations between the producers and consumers of these new technologies. At one level we have industry involved in the discovery and inventing of rapidly advancing technologies. At another level we have academic institutions and other industries involved in experimenting with these new technologies attempting to find new applications and solutions to new and existing problems. At a third level we have the general population who consume these inventions, discoveries and applications. It is precisely within this tripartite model of interaction that there are a multitude of interactions based on power hierarchies of wealth and control which in reality have very little to do with democracy and access into social, economic, political, and cultural systems.

It is quite obvious that the industries interested in selling these products want very little to do with exploding existing myths or with

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educating the public about the dangerous curves and falling rocks along the super information highway. With the corporatization of academia, academics have been pushed towards defending and redefining their work not necessarily based on truths, but on dollar figures, which ironically come from industries to a great extent.

As we step deeper into digital realities moving into a new century, popular interest in these technologies and practical realities of such technologies are beginning to converge. Capitalism is the first partner in such a convergence and the free market economy allows for popular interest to coincide with the practical realities of virtual technologies.

The super information highway and cyberspace have increased the rate and amount of information exchanged across certain segments of the population. However, another myth that emerges from such an assessment is the notion that more information (included in here is the category of knowledge) is necessarily and automatically democratizing and egalitarian. Merely having more information (education, knowledge, etc.) has not always ensured those individuals access into existing bases of power. For example, education has been quick to infuse its curricula and classrooms with computers. However, a survey of such schools would indicate that they belong to the upper middle-class to rich segments of the population. Inner-city schools
have very few computers and television networks unless they have been installed as security systems.

Excluded from the highway are nations who still do not have access to wealth in the same way that most of the Western world does. The "developing" nations (or "Third World" for lack of a better term) still reeling from colonization are now facing a new imperialist in the guise of these new technologies. Since most of these technologies are controlled, distributed and marketed from the developed nations, there are obvious issues of power and economics already in place which suggest that the "Third World" continues to be at the mercy of the superhighway patrol of developed nations.

When discussing power it seems inevitable that issues of ethics must come into play. Leslie Shade writes that:

the ethical uses of computers and computer networks is a contentious and unresolved area, both legally and socially. There are no universal standards of governance, and it seems unlikely and quite preposterous that such a consensus could ever be reached, given both the evolving technological infrastructure, types of various information carriers and providers, and [a] variety of nationalistic notions of legal jurisprudence.63

Few scholars and individuals have, up until this point, really looked at ethical issues surrounding the super information highway and Virtual Reality. Up until a few years ago, Virtual Reality was studied and developed without any cognizance of how this was going to impact the basic fabric of culture. Today, there are traces of arguments permeating cyberspace where issues of ethics and Virtual Reality are being closely scrutinized. A few years ago no one was even asking the question “What has Virtual Reality to do with ethics?” ⁶⁴ Nowadays, there is a resounding answer, “everything!” ⁶⁵ Although these claims are being made by a somewhat hidden minority, there is no question that as popular interaction with these technologies proliferates, the legal, economic, cultural, religious, racial, and educational institutions will be forced into battles to figure out Virtual Reality’s role in society and society’s role in Virtual Reality.

A few examples of ethical issues include the notions of accountability in cyberspace. This is in accordance with what Rousseau had to say about the notion of imitation and the artist’s responsibility to culture and the state at large.


⁶⁵ Ibid.
There are many scholars and lay people who say that technologies such as Virtual Reality and television have no negative impacts on the individual and collective psyches of a culture. They also argue that "Sesame Street" has such a positive impact on kids. If indeed, such means of dissemination of information can be positive, then the negative impacts are equally probable and plausible. This is a current day incarnation of Plato's arguments about the value of mimesis and reality on human nature. No matter what the consensus on the possibilities is, there is little doubt as to the need of instituting and developing mechanisms for mass-literacy in Virtual Reality. Tony Feldman, Chairman of a symposium titled "Virtual Reality '91" stated that "it is vitally important to create a forum where the subject of virtual reality can be objectively defined, demystified and assessed in terms of it true potential for worthwhile, viable, and safe human applications."66

Scientists like Don Stredney are very interested in the effect that such technologies have on perception, cognition, and awareness. Because we have never seen technologies of its like before, we do not have the tools to deal with the potential effects of these entities on the human psyche and culture at large. Contemporary scholars like

Stredney and Ganapathy have argued that reality is really a construct of the brain. Ganapathy boldly asserts that “Reality is a myth. All that matters is perception.” If indeed it is, then we can perhaps begin to better deconstruct notions of the naturalness of these technologies and direct these same technologies to the advantage of those immersed in these worlds.
CHAPTER 3

TRUTH AND ILLUSION:

Virtual Realities in Theatre and
Theatre as Virtual Reality

Jean Genet said it best, when writing about his play The Balcony, he wrote that, “The real theme of the play is the theme of illusion.”¹ A good case could be made for the idea that theatre was the original Virtual Reality machine. As Mark Reaney notes that, “Accessing it, audiences visit imaginary worlds which are interactive and immersive. Noting that thespians used theatre to create virtual worlds when the most powerful CPU was an abacus does not disqualify it; it simply

makes the comparison more remarkable."\(^2\) This argument can be extended to film as well, as I do in chapters 4 and 5.

Reaney also writes that, "Theatre and computers functioning as virtual reality generators have remarkable similarities. Both offer fleeting metaphysical experiences. Both create fictive worlds in which intangible concepts can be given perceptible form."\(^3\) Technology has always played an integral role in the presentation of theatre from the ancient Greek theatre to the contemporary dance-drama operas of Philip Glass and Robert Wilson using 3-D glasses and digitally created visual scapes for the performance. In addition to the above mentioned relationship between the two, technology has featured prominently as the subject matter of drama.

This connection of technology and theatre, whether as medium or content, brings with it issues of reality, virtual or otherwise. In this chapter I will look at plays that deal with either issues of reality or issues of technology as the bases of their dramatic action and character development.

First I will deal with plays that explore issues of reality and representation in their plots, characters, and dramatic actions. In this


\(^3\) Ibid.
category are included Calderon de la Barca's *Life is a Dream*, Lope de Vega's *Acting is Believing*, and two plays by Luigi Pirandello -- *It Is So If You Think So* (also translated as *Right You Are*), and *Six Characters in Search of An Author*.

The second group of plays that I examine have technology at the center of their plots, their stories and their character conflicts. These plays are Karel Capek's *R.U.R.*, and Elmer Rice's *The Adding Machine*.

### A. Reality and Representation in Drama

Issues of reality and representation in art have been at the core of aesthetic discovery and discourse. As Everett W. Hesse notes, "Plato, for whom the inner life was everything, was disturbed by the distance between attainable reality and ideal perfection." The purpose of this section is not to settle that debate but to point out that representation and its impact on individuals and society at large raised some serious issues to consider and that these issues have been well and alive for centuries and will continue to occupy a prominent role in cultural theory and criticism in this, the age where art and technology are increasingly coming together.

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Playwrights have been aware of these issues of reality and representation and their influences and interaction with individuals. This awareness of the philosophical, theoretical and critical aspects of representation and reality has occasionally found its way into the subject matter of certain plays.

Before dealing specifically with the plays of Calderon de la Barca (also known as Pedro Calderon), Lope de Vega, and Luigi Pirandello it is important to explore why the theme of truth versus illusion has been such an important presence in drama. Michael Goldman, in his essay titled "The Ghost of Joy: Reflections on Romanticism and the Forms of Modern Drama," lays out a central premise that hints at this omnipresent theme of reality versus illusion in theatre. He writes that:

Here is the paradigm. First we are caught up in the campaign of the individual soul to break through to reality in what the soul perceives to be an unreal world, a campaign on the side of joy, of an inner flowering, a campaign that seems to be leading to a breakthrough, in which the campaigning soul plunges into - an absence of some sort. In the nineteenth century this is usually represented as an absence of joy, of fulfilled life. Later dramatists tend to treat it as an absence of reality. But whether it be Mrs. Alving discovering that the joy of life is impossible, or the revolutionaries in The Balcony learning that war against illusion can only be sustained by illusion, or Brecht's Shen Te finding that she can only be a good woman by masquerading as a bad man, the final revelation opens a fissure between the individual drive that makes for the
play's action - that "haunts" the main actor - and the world in which he tries to act.\textsuperscript{5}

Goldman's premise is central to my discussion below. At a very general level, what Goldman is alluding to is that the very nature of drama, acting and characterizations is that they are by their creative essence about illusion embodied as truths. Anthony S. Abbott, a student of Goldman's, takes up the premise of illusion and takes it one step further. Abbott writes that:

Human beings can achieve greatness only by discarding the illusions that society has enjoined upon them to protect them from truths about their condition . . . but the very process of discarding those illusions, like peeling away the skin of an onion, is so dangerous that it leaves the hero at the end of the process either dead or more vulnerable that he was the the beginning of the play. In order to go on living at all, the protagonist may have to adopt another set of illusions, less stifling perhaps than those that society accepts, but illusions nonetheless. In some cases we may call that second set of illusions madness, or the strategy of the truly sane for living in an insane world.\textsuperscript{6}


Thus, Abbott, sets up a framework whereby illusion and reality, and the struggle therein, are essential to not just the human experience, but also to the core of drama. I will use Abbott’s ideas about reality, illusion and the theatre to explore the plays of Barca, de Vega and Pirandello. Abbott lays out a three part framework that is essential.

First he talks about illusion at two levels. For Abbott, “the term *illusion*, that set of structures - games, rituals, masks, disguises, diversions, roles - that human beings use to keep themselves from facing reality, which if viewed nakedly, would destroy them.” This is very much in keeping with Goldman's assertion that the very nature of drama is about illusion. “On a deeper level,” writes Abbott, “an illusion may be a special strategy - a dream, ideal, fantasy, a created vision - which the individual devises to give life meaning. Such a strategy may allow the hero to face reality in a way that the more superficial games do not.”

Abbott also provides two meanings for the term “reality.” The first, argues Abbott, is the more mundane and more loosely used to

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refer to "the real world." He writes that this first definition "would imply that set of social, political, and economic structures that adult society uses to transact the business of everyday living. It would imply certainly what Freud means by the word civilization." Moving away from the mundane, Abbott says that, "On a deeper level, reality has the implication of 'truth,' the truth about the human condition." The human condition, to state an obvious fact, is in many ways at the center of all artistic enterprise.

Finally, Abbott concludes the set up of his framework by writing that:

Lastly there is the fact of the theatre itself, the illusion, if you like, that while watching an actor perform a role in a playhouse you are watching something real, perhaps something even more real than your own life. Pirandello was the first to confront this type of question fully, but in our own time playwrights like Genet, Beckett, Pinter, Shepard, and Weiss remind us almost obsessively

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10 Ibid.

11 Ibid.
that the theatre itself must be incorporated into our understanding of what is real in the plays we are watching.\textsuperscript{12}

While Abbott is right about the illusion of acting and theatre, his assertion that it is Pirandello who confronts these issues first, is mistaken. Playwrights well before Pirandello have struggled with the issues of how audiences respond to and interact with the reality and illusion of the artifice constructed on stage. Shakespeare's use of "The Mousetrap" in \textit{Hamlet} is a perfect example of a playwright making the audience and the characters in the play grapple with notions of reality versus illusion on stage and in life. The following discussion focuses on three playwrights and their work in the area of reality and illusion.

1. \textbf{Calderon de la Barca and \textit{Life is a Dream}}

Don Pedro Calderón de la Barca who wrote in the 1600s during the Golden Age of Spanish literature takes on issues of representation

and reality in his play Life is a Dream (La vida es sueno). Life is a Dream has as its basic premise that “all life is like a dream.”

Barlaam and Josephat, one of the most popular narratives of the Middle Ages, was first published in Spanish in 1608. This fable is said to correspond closely to the early part of the life of Buddha. Heinz Gerstinger writes that, “It had appeared originally in the seventh century in Greek, as a hymn of praise for the Christian way of life. In the course of the next five hundred years, variations of this narrative appeared in almost every language spoken by Christian peoples. An Islamic variation in Arabic was also known.” This narrative tells the story of Josephat, son of an Indian King, raised in seclusion from the rest of the world by his father because court astronomers had prophesied Josephat's conversion to Christianity. The fable tells us that despite his isolation Josephat learns of the suffering of the world and asks the Christian hermit Barlaam to baptize him. Barca’s play owes its debt to this narrative from the Middle Ages. Variants of this theme can also be found in Boccacio’s Decameron and in Shakespeare’s The Taming of the Shrew.

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Life is a Dream tells the story of Segismundo, a prince of Poland who has been imprisoned in a tower by his own father Basilio, the king. Basilio having consulted the stars at the birth of Segismundo (who was blamed for the death of his mother during childbirth) was told that if Segismundo were allowed to rule, he would one day govern as a tyrant and despot. Basilio having grown old and in need of a successor confesses his doubts about the veracity of the horoscope at Segismundo's birth. But the power of the prophesy lingers and before Basilio hands over the crown to Segismundo he puts the prince to a test. Segismundo is to be drugged and brought to the palace and upon awakening from his stupor he is made to believe that he is king.

In his new surroundings Segismundo begins to rule exactly as the horoscope had foretold, with tyrannical prowess and cruel disregard for his subjects. Basilio has Segismundo drugged again and returned to his solitary confinement in the tower. Back in the prison as Segismundo emerges from the drugged haze he becomes aware of the conflict between truth and illusion. Barca's conceit is that during the dream Segismundo was educated about the need to suppress his animal side and to temper his ambition and overzealous greed for power. Segismundo's new found lessons are put to the test when he is released from the tower to fight an impending invasion by foreigners. Segismundo eventually uses his lessons learnt during the dream to the
benefit of his personal evolution and towards the victory of his father and their kingdom.

At a first glance Barca's notion of the dream as educating Segismundo against his baser human instincts could be seen as a forerunner of hypnotherapy or other sorts of truth serum related therapies. At another level Life is a Dream raises the idea that a Virtual Reality can be more truthful than life and in Segismundo's case his very survival and continuity as a monarch depends on his immersion into the virtual world he was forced to enter as part of his father's plan to test the prophecies. Most pertinently and masterfully, Barca is able to wrestle with the notion of the prince not being able to distinguish between real life and what he thinks is a dream.

Everett W. Hesse, a Barca Scholar, identifies the philosophical backgrounds of the play in various ancient theological and philosophical systems from Hinduism and Buddhism to Judaeo-Christian traditions. Hesse says that:

The idea that life is but a dream has its roots in the mists of the past. The Hindus, who emphasized life's instability and illusory nature, expressed the image of the dream in their writings to underline the ephemeral aspect of life. The Chinese through Buddhist morality suppress the ego and deny the
existence of time, space and even life itself. Life is considered a dream and man does not know whether he is asleep or awake.\textsuperscript{15}

And while Hesse refers to ancient Eastern religious traditions, he also argues that there is evidence in the Western and Judaeo-Christian canons that speaks eloquently to the notion of life as a dream.

The Hebrews express similar ideas in Job X: 8 and Isaiah XXIV: 7-8 . . . The Greeks believed in the ego as the supreme gift the gods bestowed on man. They considered the vision of a sleeping man in revelation of the mysterious power of the gods. But the world of the sense was separated from the world of the spirit by a deep abyss . . . Heraclitus lamented the transience of all earthly things and the impossibility of distinguishing truth from fiction . . . Christianity views this world as a preparation for eternity, and life as a continual struggle against evil. Re-echoing the prophets of Israel, Christian writers attack the vanity and deceit of this world. Honor and glory are nothing more than vain dreams.\textsuperscript{16}

While it is impossible to gauge how much all these various traditions influenced Barca's writing of the play, what Hesse identifies is the fact that these issues of reality and representation and their influence on human behavior and interactions.


\textsuperscript{16} \textit{Ibid}, pp. 138 - 139.
As mentioned earlier, one of the main themes illustrated in *Life is a Dream* concerns itself with Segismundo’s inability to distinguish between reality in the waking realm and reality in his dream world. In his confusion he cries out “Oh, heavens, disillusion me.”\(^{17}\)

Deception plays a major role in Barca’s tale of this prodigal Polish Prince. There are many deceptions between characters that are settled as the play progresses. For instance Rosaura has been deceived by Astolfo and Violante’s seduction by Clotaldo is also a fraud. But the most significant development of the theme of deception is that of Segismundo’s trial by fiery dream and false day in the palace as king.

Heinz Gerstinger writes that:

> The fundamental idea of this play, doubt in the nature of reality, is not of Christian origin. This skepticism comes from the Orient, in which it is a common assumption in religious thought. Calderon, or perhaps one of his predecessors, translated this eastern concept into valid Christian terms. It was the Indian origin not only of the plot of this drama but also of its fundamental idea that aroused Schopenhauer’s strong interest in this work. It is

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also of interest that the motif of a man who awakens in a strange environment is of eastern origin.\textsuperscript{18}

Doubt in the nature of reality has been central to dramatic inquiry as early as Plato and well into the postmodern theatre. The images of the cave and the dark tower in Barca's play are echoes of Plato's ruminations about the philosopher and the cave. (I discuss this more in depth in Chapter 7.) Gerstinger, in delineating the themes in \textit{Life Is A Dream}, argues that some of Barca's debate about reality versus illusion presciently foreshadows modern psychoanalytic theory. Gerstinger writes that:

\begin{quote}
The significance of the images of the cave and the dark tower, and, even more, the phenomenon of truth being perceived in dream, are elements in contemporary psychoanalytic thought. Psychoanalysts tell us that much that goes on in our unconscious minds is more real in our sense of the world than reality experienced by our conscious minds.\textsuperscript{19}
\end{quote}

As a last thought, it could be noted that Segismundo's story and the tests that he is put to by his father to determine whether he is suitable for kingship could very well be adapted as a modern day computer game in the tradition of "MYST."


\textsuperscript{19} Ibid, p. 89.
2. **Lope de Vega and Acting is Believing**

While Barca’s *Life is a Dream* is a philosophical musing on representation in life and in dreams, Lope de Vega’s *Acting is Believing* (*Lo fingido verdadero*, 1608) deals with the representations of role in life versus roles in the theatre.

On the surface *Acting is Believing* is a religious drama based on the life and martyrdom of the patron saint of actors, St. Genesius. Under that religious veneer, a common feature in drama of that Spanish epoch, Vega’s play is about role playing and its consequences in human relationships. The legend of St. Genesius tells us that he was a Roman actor who was performing before the Emperor Diocletian. The performance was a farce ridiculing Christian ceremonies. Genesius allegedly was so consumed by his immersion into the performance that he suddenly converted to Christianity and when preaching to the Emperor the tenets of his new found theology, the Saint was swiftly executed.

Michael D. McGaha, a translator and scholar of Vega, writes that Vega had “given deep thought to the problem of role playing” and that
“in one sense, of course, role-playing, like game-playing, is an integral part of all human societies.”

He continues:

Each different stage in life, each social class and profession, and many different types of relationships are accompanied by the exception of particular types of language, dress, and behavior. However, if these conventions are indeed to some extent necessary for the orderly functioning of society, they also exact a terrible cost.

McGaha takes great pains to adumbrate the costs and benefits of role playing in society through his own very contemporary lens. He writes:

A heightened preoccupation with social justice and the rights of the individual in modern times made us acutely aware of the damage done by stereotyping - the refusal to acknowledge that no individual is fully defined by his or her role. The positive results of recent changes in sex roles achieved by pressures from the women’s liberation movement have brought us to a new realization of the enormous waste of human potential caused by sexual stereotyping. Watergate has reminded us of how a false sense of impunity and invulnerability can result when an individual identifies too completely with an office of power and authority.

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21 Ibid.

22 Ibid.
McGaha’s view is obviously filtered through cultural theory and criticism. In some ways, using this late 1900’s lens to look at Vega’s early 1600s work, seems superfluous and superimposed. Modern psychology has shown us how growth and development can be stifled and grave psychic disturbances can occur when a person subordinates too many of his needs and desires to the narrow, procrustean demands of a single role.\textsuperscript{23} While there is something to be said about similarities between play acting and role-playing in life as a doctor, parent, teacher, to conflate the two so completely as McGaha does is to oversimplify and in some cases miss the point.

However, when McGaha returns to a less contemporary look at Vega’s work and the themes therein, he makes some valid points. He writes that:

artists and writers have rebelled against the tyranny of imitation, demonstrating that art and reality are two very different things and that too great a subjection to verisimilitude can destroy creativity. Representational painting and “realistic” theatre, like role-playing, are in a sense nothing but clever frauds, attempts to pass of an illusion as reality . . . though we tend to think of these concerns as peculiarly modern none of them would have come as a surprise to Lope de Vega.\textsuperscript{24}


\textsuperscript{24} \textit{Ibid.}
It is this realization, that these issues are not modern inventions, but rather, they have survived and germinated through time, that is of importance.

In *Acting is Believing* Vega depicts Aurelius and Carinus, two Roman emperors who both meet violent deaths when they take on the spurious mantle of hubris. Aurelius audaciously proclaims himself the equal of Jupiter and this blasphemy leads to his destruction by lightning. Carinus who abuses his power over his people, is assassinated for betraying the trust of the masses who gave him the power to rule over them in the first place.

Genesius, Vega's homage to the Saint of the same name, is a playwright and actor who much like Barca's Segismundo has trouble distinguishing between different realities. In Genesius's case he has trouble separating role-playing from reality. *Acting is Believing* deals with two plays staged by Genesius.

Genesius first writes a play with which to win the love of the actress Marcella and humiliate Octavius, his rival in all things amorous. In the script Marcella is to run away with Octavius but before this happens Octavius's servant Pinabellus tries to steal Marcella away from his own master. The next conceit in the script is for Genesius to
arrive and save Marcella from Pinabellus’s attempted abduction and true love between Genesius and Marcella would triumph.

Things get tricky when during the performance of this play before Diocletian and his court, Genesius’s plan misfires and Marcella takes the opportunity to really run away with Octavius. Departing from the play, Genesius implores Diocletian to send his troops to intervene and bring back the eloped lovers. Diocletian himself can’t tell the difference between the play and the real events and suspecting that Genesius’s plea to send in the troops is really a ploy to get the emperor to participate in the play, Diocletian demands that the performance cease immediately. McGaha writes that, “as Genesius learned to his sorrow, the roles we play and those in which we try to cast others are often futile attempts to control the uncontrollable, to predict the unpredictable.”

After the theatrical and personal disaster of the first play, Diocletian asks Genesius to mount a play about a Christian. During rehearsal, Genesius is asked to take on a role unfamiliar to himself, that of a Christian, unlike the first play where he played a lover based very closely on his own self. Genesius struggles to get under the skin of this character and he fumbles to find the role and the words that

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would inhabit the world of this character. All of a sudden, during rehearsal, divine inspiration intervenes and begins to supply Genesius with genius about the character that initially was not forthcoming. Genesius, like all good doubters, brushes off this divinely induced virtuosity by assuring himself that he had gotten carried away during his performance, something that had happened to him with many other roles he had played in the past.

Once again, like with the first play, during the actual performance for the royal court, things begin to go awry. Genesius's fellow actors get very disoriented during the performance when Genesius begins to depart from the script time after time. In a moment of religious fervor the actor playing the angel emerges only to find that a real angel has already stepped in to play that part. The actors break out into fights and the ensuing pandemonium convinces Diocletian that the actors are merely incompetent and under-rehearsed. Genesius defends the debacle by proclaiming that he has "become" a Christian and that the audience had indeed been witness to a real conversion and not some mere performance about an actor playing a Christian. Diocletian is forced to play the role of the emperor and must sentence Genesius to death for this blasphemy. McGaha writes that "ironically, Genesius, who before had sought to make a play of his own life, now found that a role he had intended as fiction had
turned into the ultimate reality." The other actors are spared execution after a trial and interrogation because they claim that they were merely playing roles they were accustomed to and that what they did in the play had nothing whatsoever to do with reality. Genesius is executed because for him the role and reality converged as one in a stark reminder of the adage "be careful what you wish for." McGaha writes that:

*Acting is Believing* speaks to us today with an astonishing freshness and relevance. Some of Lope's other masterpieces, such as *Peribanez* and *Punishment without Revenge*, may be so deeply rooted in the culture of his time and place that contemporary audiences cannot fully appreciate them without some specialized knowledge of the culture, but *acting is Believing* requires no such introduction. It's theme is universal, and its treatment of that theme arouses a shock of recognition that is the hallmark of dramatic genius.\(^{27}\)

McGaha's assessment of *Acting is Believing* as it pertains to contemporary audiences is accurate and is a reminder that these issues of separation of roles is something that contemporary societies struggle with and future ones will continue to grapple with. In recent times there have been several cases where audiences of certain


\(^{27}\) Ibid.
television shows have blamed those shows for their actions. The most well known case perhaps was the incident where some children burned down their own home and claimed that they were imitating the title characters of the popular MTV show “Bevis and Butthead.”

3. Luigi Pirandello and *Right You Are or It Is So (If You Think So)* and *Six Characters in Search of An Author*

When dealing with themes of reality versus illusion in the theatre, it is impossible to ignore Luigi Pirandello (1867 - 1936). As Anthony S. Abbott writes that, “If there is one playwright who cries out to be included in [such a] study it is Luigi Pirandello.” Abbott goes on to say that, “Pirandello and the reality-illusion theme are almost synonymous, so much so that the unwary reader is apt to be trapped into thinking that it is his foremost concern, almost his only concern.”

In his three plays *Six Characters in Search of an Author* (1921), *Each in His Own Way* (1924), and *Tonight We Improvise* (1929), Pirandello constantly reminds his audience that they are in a theatre watching actors portraying characters on a stage. In doing so, argues Abbott,

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we are pushed by this process to reexamine our own view of what reality is. We cannot escape into the “story” of the play or the lives of the characters. In fact, in the theater plays the story becomes a kind of illusion, which we are continually forced to examine freshly from the perspective of the “new” reality of the theater itself, where we remain - not transported into the world of “art” but accosted by an action that demands of us a reevaluation of the relationship between art and life, pretense and reality.\(^{30}\)

But Pirandello was confronting these themes well before the above mentioned trilogy was ever written. In *It Is So (If You Think So)* (sometimes translated as *Right You Are*) Pirandello dramatizes the notion that reality is subjective and objective truth, if indeed it exists, often cannot be known or unearthed.

In this play we are told the story of Signor Ponza who arrives in a small provincial town to take up the position of secretary to a local official named Commendatore Agazzi. Signor Ponza brings with him his wife and his mother-in-law, Signora Frola. The citizens of the town soon begin to gossip about Ponza and the seemingly strange customs by which he and his family live. Rather than having Signora Frola live with him and his wife, Ponza has put up his mother-in-law in an apartment in the fashionable part of town. He and his wife, on the other hand, live on

the fifth floor of a tenement on the outskirts of town. Even more strange is the fact that the mother-in-law is not permitted to visit her daughter. Rather, she must communicate with her offspring by messages placed in a basket and hauled up by rope and pulley to the fifth floor of Ponza's tenement dwelling. The town is obsessed by this family's living arrangements and cannot stop talking and gossiping about the three new comers to town.

The townspeople decide that they must pursue the "truth" and agree to call in the old lady. The old lady tells the citizens that Signora Ponza is her daughter and that Signor Ponza actually believes that his wife is dead. According to Signora Frola, Signor Ponza imagines that his wife is a different person and that he cannot bear to see the old lady together with his new wife. Signora Frola tells the townspeople that she and her daughter, the still alive Signora Ponza, have made an arrangement to protect, what Anthony Abbott calls Signor Ponza's "vital lie."³¹ In other words, Frola presents the truth as Signor Ponza being mad or delusional.

Signor Ponza's side of the tale is diametrically opposed to that as told by Frola. He comes in to the townspeople and tells them that is not he who is mad, but rather Signora Frola who is insane. He argues

that his second wife is not Frola’s daughter and that her real daughter, his first wife, is actually dead. In order to protect Frola’s “vital lie,” Signor Ponza explains that he has set up this elaborate ruse and illusion to protect the old woman from the suffering she would surely endure were she to know the truth about her daughter’s demise.

These two contradictory accounts do nothing to ease the townspeople’s angst about the truth - either Signor Frola is telling the truth or Signor Ponza’s story is the reality. They must discern the truth and who in fact is truly the mad one. The only way that they can know this is to check in with the daughter, Signora Ponza. The final scene of the play is where the truth is both revealed and kept hidden.

**Signora Ponza** [after having looked at them through her veil, say with dark solemnity]. After this, what more can you want of me, ladies and gentlemen? There has been a misfortune here, as you see, which should remain hidden. Only in this way can the remedy work - the remedy our compassion has provided. **Governor** [moved]. We should like to respect such compassion, Signora. We should wish you to tell us, however -

**Signora Ponza** [with slow, staccato speech]. What? The truth? It is simply this. I am Signora Frola’s daughter -

**All** [with a gasp of pleasure]. Ah!  

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The audience, implicated with the townspeople by guilt by association, seem to have found the truth they have been seeking, but Pirandello is not done toying with the audience’s and townspeople’s discomfort in not being able to distinguish truth from illusion. The scene continues and concludes as follows:

**Signora Ponza** [without pausing, as above]. And I am Signor Ponza’s second wife -

**All** [astonished, disappointed, in low voices]. Oh! But...?

**Signora Ponza** [without pausing, as above]. And to myself I am no one. No one.

**Governor**. No, no, Signora, at least to yourself you must be either one or the other!

**Signora Ponza**. No! To myself - I am the one that each of you thinks I am. *[She looks at them all through her veil just for an instant; and then withdraws. Silence]*

**Laudisi**, That, my dear friends, was the voice of truth! *[he looks round at them with derisive defiance.]* Are you satisfied? *[He bursts out laughing.]*

Hence we get the title of Pirandello’s play, *It Is So (If You Think So).* But the truth remains hidden even at the end as Signora Ponza tells the citizens her version of the truth. Anthony S. Abbott argues that:

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What makes the play work so well theatrically is the unwitting identification of the theater audience with the townspeople until they are shamed into a more compassionate attitude at the end. We - as theatergoers - want to know the truth, but Pirandello says we can’t. We can’t because the arrangement Ponza, his wife, and his mother-in-law have made is personal, private, and subjective.\(^ {34}\)

This is Pirandello’s way of making his audience seek and confront a level of reality larger than the one depicted on stage. Pirandello is telling his audiences that the plan of the townspeople to determine the truth fails because reality and illusion are indistinguishable since truth in this case, cannot be “rationally or scientifically discovered or demonstrated.”\(^ {35}\) Moreover, the more the townspeople (and the audience by association) try to uncover the truth, the more they are thwarted and the more they suffer.

In his better known play *Six Characters in Search of an Author*, Pirandello takes this dialectic between truth and illusion one step further. Roger Oliver, in remarking on *Six Characters in Search of an Author* wrote that Pirandello is insisting on absolute realism, a realism the original audience was unwilling to accept. This audience, as


\(^ {35}\) *Ibid.*
seen by their violent reaction at the play's premiere, apparently did not want to be reminded that they were seated in a theater. Instead, they desired to be transported out of that reality into the illusion of a new reality, with a new environment and new characters whose problems they could become involved with. They paradoxically wanted "realism" in order to escape. Pirandello, on the other hand, gave them "reality" in order to confront them with insights about themselves and their lives.  

This insistence on Pirandelo's part, to refuse his audience the luxury of escaping into these Virtual Realities is indeed what Brecht would force his audiences to do as well. In Six Characters in Search of an Author, Pirandello is rebelling, like Brecht in so many of his plays, against stage realism. In Oliver's words, Pirandello has substituted "an illusion that is one step closer to the truth than the old illusions."  

Like in It Is So (If You Think So), the characters in Six Characters in Search of an Author also struggle with telling the story from their point of view. In the latter, the Father wants to tell the story from his point of view. His Stepdaughter, interferes with this desire of his, and thwarts him at every step. The Stepdaughter insists that her story be the one to be told. As the antagonist she is bent on having her

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37 Ibid, p. 68.
revenge. And like the characters in *It Is So (If You Think So)*, the Father and the Stepdaughter struggle with each other’s interpretation of the other. The father passionately entreats the Director as follows:

> And therein lies the drama, sir, as far as I'm concerned: in my awareness that each of us thinks of himself as one but that, well, it's not true, each of us is many, oh so many, sir, according to the possibilities of being that are in us. We are one thing for this person, another for that! Already two utterly different things! And with it all, the illusion of being always one thing for all men, and always this one thing in every single action. It's not true! Not true!  

The Father is pleading that the Stepdaughter not judge him on the basis of a single action - when he surprised her at Madame Pace’s dress shop. The Father wants to be understood as a complex individual. Even his Son wants to judge him simply on the Father’s initial decision to abandon his family. Arthur Ganz, very astutely notes that, “Since each observer has his own idea of the person he sees, there are in effect as many persons to be seen as there are observers.” This multiplicity of view points is what makes not only Virtual Reality, but

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reality itself, suspect and illusionary. What makes *Six Characters in Search of An Author* such an interesting dialectic on the notions of truth versus illusion is that each character struggles to determine how the play should be presented and whose vantage point should be given predominance. Anthony Abbott tell us that:

> We must remember that if the play were presented as realism, none of this argument could take place; Pirandello would simply have to select a point of view from which to dramatize the story. But because the figures on the stage are characters rather than figures in a story, they are allowed to argue among themselves as actors might discuss their roles in the process of rehearsal or improvisation. Therefore, even within the inner play Pirandello has overcome some of the limits of traditional realism.\(^{40}\)

There is one more aspect of *Six Characters in Search of An Author* which exposes Pirandello's proclivity for deconstructing notions of reality and illusion in both theatre and life. This concerns the conflict between the Father and the Director.\(^{41}\) As Anthony Abbott writes:

> The Father cannot function without adopting some special strategy...which he use to protect himself form what R.D. Laing calls the implosion of the world. He has no capacity for survival in the world.


\(^{41}\) In some translations the Director is referred to as the Manager.
The Director has the practical capacity for survival, but no real sense of what is happening to the Father, nor any inkling that the same kind of thing might happen to him. He never recognizes that the Father is a part of himself. . . The father needs the approval and protection of the Director in order to survive. That is his search. In terms of reality and illusion, we might argue that both are parts of reality that have become separated from one another and that Pirandello is showing us, as in *It Is So* and *Henry IV*, the tragic consequences of that separation.\textsuperscript{42}

The Director is incapable of handling a reality presented to him other than the one that he and his actors are accustomed to and comfortable with. The Director eventually ends up completely rejecting the characters because they conflict with his modalities of realism and truth in life, and particularly on the stage. In fact, by the end, the Director is so exasperated that he dismisses the characters as a waste of his time.

\textbf{SOME ACTORS:} He’s dead! dead!
\textbf{OTHER ACTORS:} No, no, it’s only make believe, it’s only pretense!
\textbf{THE FATHER:} Pretense? Reality, sir, reality!

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THE DIRECTOR: Pretense? Reality? To hell with it all! Never in my life has such a thing happened to me. I've lost a whole day over these people, a whole day!43

Both of Pirandello's plays discussed in this section leave the audience with many questions about reality and illusion as well as about the connections and separations between art and life. Pirandello seems to be staking the claim that art is incapable of controlling reality and paradoxically that the reality of art is no more or less subjective than the reality of life.

B. Technology in Drama Texts

The above section dealt with plays that raise issues of reality and representation that are in many ways at the center of the field of computer generated realities, especially virtual realities. But theatre has also dealt more directly with technology itself.

The onset of the industrial revolution began to transform society at every level imaginable. In fact many parallels have been made between the impact of the industrial revolution and the current, ongoing proliferation of the technology revolution. As the industrial revolution impacted the economics, politics, religion, fashion, art.

literature, scientific thought and other facets of emerging industrial societies, theatre began to reflect these changes, and drama emerged as one of the chroniclers of this particular revolution.

The examples discussed below are representative of plays that have dealt with technology in a variety of ways. But whether it is Elmer Rice’s expressionistic *The Adding Machine* or Karel Capek’s prescient *R.U.R.*, drama has dealt with technology in a rather distrusting way, with much cynicism, skepticism and even pessimism.

1. **Karel Capek and *R.U.R.*

Karel Capek (1890 - 1945) broke through as a theatrical voice to notice with his play *R.U.R.* in the early nineteen-twenties. Capek’s world view was one that warned against excessive dependence on science and technology. While Capek didn’t want to do away with technology completely, he suggested a questioning and critical evaluation and application of technology in human interaction, relations and evolution. Peter Kussi, a Capek scholar writes that, “Capek was leery of excessive faith in technology, but he appreciated modern inventions as long as they were domesticated, kept within usable bounds.”

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It wasn't just technology that Capek wanted to warn against. He was also concerned about the way in which bureaucracies, private or governmental, would collude with technologists to create technocracies, a definite dystopia in Capek's mind, acerbically depicted in R.U.R. This acronym stands for Rossum's Universal Robotics. Peter Kussi quotes Capek in his introduction to Toward a Radical Center: A Karel Capek Reader as saying:

General Director Domin shows in the play that the development of technology frees man from heavy physical labor, and he is right. Alquist, with his Tolstoyan outlook, believes that technology demoralizes man, and I think he is right, too. Busman believes that our industrialism is capable of meeting modern needs, and he is right. Helena instinctively fears all these human machinations, and she is quite right. Finally, the robots themselves revolt against all these idealists, and it seems they are right, too.\(^{45}\)

At a first glance Capek's words seem wishy washy and without conviction or consensus. But what Capek is really illustrating is the complex dilemma of delineating the costs and benefits of technology in human life as well as the sheer difficulty with which to draw limits and boundaries within which humans and machines are allowed to be separated and independent of and from each other.

It is interesting to know that R.U.R. is what introduces the word robot into the English lexicon. Kussi writes that “the expression ‘robot’ was coined from the Czech robota, meaning ‘heavy labor’.....incidentally, Karel Capek was apparently not the inventor of the term ‘robot;’ he gives credit for that to his brother Josef.”

R.U.R. was published in 1920 and first performed in January 1921. When it emerged, Capek’s views were seen as dangerous and this proved even more true when communism eventually took root in Europe. Jindrich Vodak, understood Capek’s new thinking, and wrote about Capek’s courage that:

None of our dramatists yet have had and which give his new play a unique place in our literature . . . to let fantasy go, do what others did not; to attempt a dramatic solution of the most difficult and most important common problems which disturb the thinking heads of all nations . . . There are more pressing and grave problems than marital infidelity or the muddle in a woman’s heart in relation to her lover. Honour to him who can see the problems’ urgency and puts them on the stage, even if he risks breaking his neck in doing so.

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In *R.U.R.*, Capek creates a distant island much like what H. G. Wells did in *The Island of Dr. Moreau*. On this island, an international group of people run a factory where Rossum’s Universal Robots are churned out in large quantities. These robots are the brain child of a scientist named Rossum, the Czech word *rozum* meaning “reason.” These robots are superior to their human counterparts, being physically stronger and providing inexhaustible labour power. Domin, the General Manager of Rossum’s Universal robotics, proclaims that

> In ten years Rossum’s Universal Robots will produce so much corn, so much cloth, so much everything, that things will be practically without price. There need be no poverty. All work will be done by living machines. Everybody will be free from worry and liberated from the degradation of labor. Everybody will live only to perfect himself.  

In time, Rossum and his nephew get carried away with their utopian machines and the technology begins to realize its detrimental and destructive potential.

Rossum and his nephew become incredibly wealthy, by exploiting the new technology and its market potential. However, in a case of the inmates taking over the asylum, the robots revolt against their creators and kill all the people except for Alquist, the construction

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engineer. The robots demand that the robot making formula be handed over to them, but this has been burnt by Helena, the wife of the central director. Helena burnt the formula because she could not bear the concept of soulless, unfeeling machines. Alquist fails in his attempts to save either mankind or the robots. At the end, two superior robots, endowed with superior qualities, couple together to repopulate the planet.

While Capek's play functions as a cautionary tale about people like Rossum, who want to depose God, and while it also functions as a morality play against the excesses of greed, R.U.R. is ultimately about the connections between humans and technology and the ability of the two to coexist harmoniously. But there is another issue that Capek precociously foretells in his play - the human desire to make machines more human. Today, the quest to create Artificial Intelligence (AI) that can compete with human intelligence is at the forefront of computer and technological innovation. Bohuslava R. Bradbrook writes that:

If in R.U.R. Capek expressed his admiration of the power of human brain to invent and perform near miracles, he also stressed his unchanging view of human weakness to abuse this power; the inability to control the invention and to see its final
consequences which often lead to disaster. Man must control his potential greatness with spiritual humility.\textsuperscript{49}

Capek’s critique of utopia is centered around an invention that causes a revolution in economic, social, moral, and cultural life. In this utopia, Capek sets up a tension between nature and civilization, between the natural and the artificial, between the emotional and the spiritual, between the rational and the feeling, between the scientific and religion. These tensions are all too apparent today with the onset of new virtual technologies permeating just about every facet of human enterprise. Herbert Eagle, of the University of Michigan, identifies five elements around which Capek constructs his utopian - dystopian dialectic. They are:

(1) the presence of scientific advances which make possible material abundance; (2) more efficient and rationally organized means of production; (3) the regulation of anti-social human behaviors, including “disturbing” emotions and psychic states, e.g. those related to sexuality; (4) the equalization of

human beings, as opposed to concern for individual uniqueness; and (5) belief in the validity of a single ideology.\textsuperscript{50}

The notion of the validity and enforcement of a single ideology was of course what caused all the turmoil in Europe before, between, and after the two World Wars. Herbert Eagle notes that:

The dystopic visions which Capek . . . created at the beginning of the 1920's were, as we all now sadly know, all too accurate in their projection of then current trends. Violence ensued in the efforts to certain nations to propagate a single ideology as uniquely correct and final, and the human spirit was stifled for decades in societies which claimed to have essentially achieved their utopias. Nonetheless, these literary works survive in their clarity and energy as warnings to a humanity embarking on a new millennium.\textsuperscript{51}

Dystopias, particularly when the concern humans and technology is a prevalent theme in drama, especially by modern playwrights.


\textsuperscript{51} \textit{Ibid}, p. 41.
2. Elmer Rice and *The Adding Machine*

Elmer Rice (1892 - 1967) in writing about *The Adding Machine* recounts the moment at which he was possessed to write the play that would make him famous and be taken seriously as a playwright.

Suddenly, as though a switch had been turned or a curtain raised, a new play flashed into my mind, wholly unrelated to anything I had ever consciously thought about. When I say “flashed into my mind,” mean that quite literally, for in that sudden instant I saw the whole thing complete: characters, plot, incidents, even the title and some of the dialogue . . . I was actually possessed, my brain in a whirl, my whole being alive. I sat for a while, trembling with excitement, almost gasping for breath. Then, hardly knowing what I was doing, I went to my study and began to write.\(^{52}\)

*The Adding Machine*, considered not only to be an American classic, but also a quintessentially expressionistic piece of drama. Frank Durham writes that, “Rice himself likens Expressionism to an X-ray photography. Naturally, the growing interest in Freud stimulated the Expressionist dramatists, but Expressionism was also a logical step in the playwrights' continuing effort to present the true reality, not

merely surface detail." The reality that Rice confronts in The Adding Machine has many resonances to Capek’s R.U.R.

In the play Rice investigates the loss of individualism and the submission of identity to larger forces such as technology. Ironically the very world that renders the individual superfluous is a creation of that self same individual. While R.U.R. dealt with the destruction of humans by machines, The Adding Machine is about the dehumanization of mankind by technology - in essence, the humans of Rice’s world become the robots of Capek’s dystopic vision. In addition, Rice’s play is also about the increasing inability of humans to communicate with one another in an age in which technology was supposed to bring people closer together.

The protagonist of The Adding Machine is the symbolically named Mr. Zero. His wife, Mrs. Zero talks incessantly about movies, the scandalous lives of the stars while she also makes jabs about her husband’s inability to earn well and provide adequately. It is actually through her diatribes that we learn about how mundane, dull, meaningless and uniform Mr. Zero’s life really is. Their marriage is as soulless as their surname would imply.

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If Mr. Zero's domestic situation is terrible, then his work leaves even more to be desired. At Work, Mr. Zero works with Daisy where the two try and find ways to release the drudgery. At work he daydreams of murdering his wife and marrying Daisy. Daisy in turn, who gets increasingly frustrated, dreams of suicide. Eventually Mr. Zero decides that he must go to his boss and ask for a raise.

Mr. Zero's request to his boss, who doesn't even know he exists, results in Mr. Zero getting fired and being replaced by an adding machine. Mr. Zero is eventually tried for the murder of his boss and deemed "guilty!" The fifth scene finds Mr. Zero in a cage, Rice's final image of dehumanization is materialized. The play ends with a scene in heaven where the dead characters congregate to settle old scores and find some sort of resolution to their plight on earth.

There is no doubt, that through The Adding Machine, Rice is telling his audiences that technological advances are accompanied by human retrogression. Rice argues that man should control technology rather than becoming a slave to it. Frank Durham notes that:

In fact, his criticism of society in The Adding Machine was in tune with the current tenor of ethical, moral, and cultural self-criticism in America - a criticism not yet splintered into the strident partisans of this or that socio-political panacea, this or that exclusive ideology. Novelists and other dramatists were typically concerned with analyzing America's moral and cultural values. Not until the
rising influence of Communism in the 1930’s was criticism to become violently partisan and social, economic, and political in tone. In 1923 it was the fashion to deplore the ugliness and moral decay of the machine age - without much thought of destroying the esthetically unappetizing capitalist; for he was not yet recognized as the villain.\(^5^4\)

Whether capitalism had been recognized as a villain or not, it is hard to separate Rice’s critique of the mechanical age from the capitalist economy in which technology was able to permeate and become a dominant force. Virtual technologies today face the same matrix of forces, whereby capitalism and the technology and information revolution symbiotically nurture and feed off of each other.

While *The Adding Machine* and *R.U.R.* are only two plays who take a rather dim view of humans and technology, there are many other plays that examine technology in a skeptical and cynical manner. While Rice and Capek were writing about the technological concerns of their own times, in eras in which modern day Virtual Reality technologies remained uninvented, their struggle to understand the nexus of humankind and technology is echoed in many of the ethical, socio-political, and cultural dialectics surrounding virtual technologies entering the twenty-first century.

Theatre, and art in general, are in the business of making illusions. The very transaction between a play and its audience is fundamentally linked to the precepts of Virtual Reality. And when the art itself (the plays by Barca, Vega, and Pirandello discussed in this chapter) is examining the nature of illusion, then the levels at which the audience and art are immersed in the spectrum of reality become increasingly interesting and complex. Art needs illusion in order to sustain itself. And Barca, Vega and Pirandello would argue that humans also need illusions in order to sustain life itself.
CHAPTER 4

FILM AS VIRTUAL REALITY

Orientalist and Colonial Incarnations of Gunga Din

One can look at cinema and see the ways in which film has dealt with technology as both a means of representation and as a means by which it’s self has been physically and graphically manifested. Film is a technology of communication and representation and by extension a Virtual Reality. With the computer revolution, the image generation capacity of cinema has been enhanced, in that new realities, hitherto only imagined, not yet realized, were now physically possible. Jurassic Park, Steven Spielberg’s 1993 film, dealt with how new developments in DNA research and cloning, had made possible the rebirth of dinosaurs. These dinosaurs were to be used as objects of entertainment in a large theme park. One of the things that made the film a cinematic landmark and a blockbuster success, was the extreme realism with which the dinosaurs were brought back to life on film. Just

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as advances in DNA technology made the story of *Jurassic Park* plausible, advances in computerized animation allowed the film to become a reality. In fact, *Jurassic Park* would not have been possible without the extreme advances in computer generated graphical capabilities in creating increasingly detailed and believable Virtual Realities.

Hollywood latched on to these technologies very early in their genesis and computer generated special effects became very popular and lucrative at a global level. Not only have these technologies been incorporated rapidly into the production processes of films, but the very subject matter of many movies has also been crowded with the proliferation of cyberscapes.

### A. Film as Technology: (Virtual) Reality and Representation in Cinema

Early films like *Jurassic Park*, *The Lawnmower Man*, *Total Recall*, *Terminator*, and *Terminator 2*, among several others, provide good examples of how these technologies impact both dramatic form and content. But, leaps in film techniques have also influenced the increasing search for “realism” in computer games and virtual environments. Hollywood and Silicon Valley are already involved in a collaboration of reciprocal influences and mutual benefits. One need
only look at recent acquisitions and mergers to see that the line between cyber businesses and entertainment companies is merging rapidly. America On Line (AOL) bought Time Warner, Incorporated, in January of 2000, not only making it the largest corporate merger in the history of the United States (estimated at 150 billion dollars), but also setting a precedent for future mergers between technology and entertainment firms.

In the next chapter, by analyzing both formal and contextual images from several films like *The Truman Show, The Lawnmower Man*, and *Forest Gump*, I argue that the virtual worlds which cinema creates are the precursors to the computer generated virtual environments. In this chapter, by examining films like *Gunga Din, Indiana Jones and the Temple of Doom*, and *Sergeants 3*, I show that these celluloid Virtual Realities are fraught with problems of racist, orientalist imagery, reinforcing colonial notions of the orientals (Indians in the case of the above mentioned movies) as savage, filthy, pagan and uncivilized. It is important to revisit these films to expose them not simply as escapist, action films, but rather as films that endorse ideologies of colonialism and hegemonic notions of racial superiority. Lastly, I make a case for the argument that theatre, if it is to remain vital in an age of increasingly sophisticated entertainment, has got to find ways of tapping into the wealth of resources in these new technologies.
Because Hollywood currently provides us with examples of how this technology will impact art forms that collaborate with it in the future, there is already a lot that can be learnt by the theatre. Included in this discussion will be issues of economics, distribution of wealth, power, technology, information and knowledge -- all of which are becoming inextricably linked to the information age.

These films, when they delve into the realm of Virtual Reality, are forced into dealing with issues of human ethics and value systems. It is the notion of theorists like Gigliotti that all aesthetic decisions and manifestations are intrinsically linked to ethical ramifications. Thus, Spielberg's action-adventure, *Indiana Jones and the Temple of Doom* is not simply an escapist piece of fiction, but rather a post-colonial misrepresentation of India, its cultures, religions and ancient traditions. As a result, modern India is subsumed by this more potent notion of the underdeveloped, sub-human and uncivilized "reality" powerfully, persuasively, and deliberately constructed by Spielberg.

Film, although a much more recent sibling of theatrically influenced representation, has become the dominant form of twentieth century modes of Virtual Reality. Film, which evolved from still photography, mesmerized audiences with its ability to capture "life" either in one moment in time or in motion. When photographs began to capture natural likeness, many viewers were swayed away from
painting and sculpture because of the novelty of the new medium and because the realities of the older mediums was seemingly too confining, limited and simply not “real” enough. As noted earlier, when film came on the scene, capturing the drama of real life, to many, the theatre began to seem obsolete and vestigial. Of course, the history of the past one hundred years has shown that cinema, most widely acknowledged as the more authentic conveyor of reality, has been more satisfying to the mass audiences than the perceived simplicity and reality limitations of the theatre. The older modes of virtual representation have thus, fallen by the wayside and made way for a cultural landscape largely littered with film and photography.

It is important to note that because film representations “seemed” so real, their effect on audiences was more powerful, persuasive and pervasive. In the twentieth century we have become increasingly dependent on images, still or moving, as the medium of mass communication. And it isn’t just Western, industrialized and capitalist societies that have become image producers and consumers. Developing and non-industrialized nations are well enmeshed and entrenched within the web of Western manufactured images. In fact, with American culture fast becoming the world-wide culture, the impact of images isn’t simply local, it is increasingly global.
B. How Orientalism and Colonialism Collaborated in Cinematic Virtual Realities

In this section I look at Hollywood images that have emerged from a colonial and racist ideology. While the earlier two films, Gunga Din and Sergeants 3 are from the 1930s and 1960s, the contours of that ideology have recently resurfaced in Steven Spielberg’s Indiana Jones and the Temple of Doom (1986) which is a perfect example of the perpetuation of false stereotypes and other cultural and imagistic misnomers.

Interestingly, Spielberg has recently given his Hollywood image a facelift by becoming an icon of social conscience and the voice of resetting history right. With his 1994 film Schindler’s List, Spielberg gained himself legitimacy in Hollywood as a director of social relevance and an astute and sensitive student of holocaust history. And as a Jew, his authenticity as a filmmaker of Jewish history was considered a fate accompli by audiences and his peers alike. More recently, with Saving Private Ryan (1998) Spielberg has re-engaged the country in a soul-searching about the ravages of war, World War II in particular. Most importantly he has emerged as the new champion of veterans’ rights and unadulterated patriotism. In light of these two recent forays into depicting Jews and veterans more accurately and extremely sympathetically, it would be interesting to see if Spielberg
would recant his ideological fallacies and iconoclastic incorrectness in
*Indiana Jones and the Temple of Doom*.

It can be argued that, Spielberg’s *Indiana Jones and the Temple of Doom*, George Stevens’s *Gunga Din* and John Sturges’ *Sergeants 3* are all political films. But, they are political not because that is what they set out to be, according to the intentions of their respective filmmakers, rather they are “accidentally political” by virtue of their filmmaker’s willful misrepresentations. What is of importance is the understanding that political cinema, intentional or accidental, has entered into a new set of relationships with something that is often seen as outside the realm of film. Graham Holderness enunciates this idea when he states that, “The linking of the two terms immediately identifies a context of cultural difference, perhaps even a binary opposition: political theatre is not the same as ordinary theatre because it displays a different kind of relationship with something other than itself - ‘politics’.*

Although Holderness is referring to theatre, his notions can easily and logically be extrapolated to film. He goes on further to ask the question as to what politics is in relationship to the arts.

Politics is normally understood to be concerned with systems of government, the processes by

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means of which such systems are changed, and the nature of social participation in those changes; with relations between those systems of government, in cooperation and competition, peace and war; and with the individuals, parties and ideas which sustain, develop, defend and overthrow governments and their ideological formations by which their power is maintained. So, to identify theatre as ‘political’ is to define a certain type of drama, but also to suggest a certain habitual relationship between theatre and politics; that they are normally very different areas of experience, which happen to become, in the activity of political theatre, interconnected.²

This chapter is concerned, in part, with the above mentioned interconnectedness. According to Holderness, this duality of theatre and politics can manifest itself in two ways. He argues that theatre can "be 'political' without becoming 'political theatre'," i.e. a theatre which is ideologically committed.³ That is, a play or film that merely addresses political issues or represents matters of politics is, in Holderness's terms, "accidentally political." He goes on to say:

politics proper is surely, however, incompatible with a detached, objective perspective: politics is about making choices, taking sides, getting things done in order to reshape the world along particular lines of development. If 'political theatre' is understood as theatre engaging in a different sort of relationship


³ Ibid.
with politics, that process must entail theatre’s becoming partisan, splitting along the lines of party conflict, lining up with one particular group, or cause, or ideology, and offering articulate opposition to another group, or cause, or ideology.  

The point is that all political drama need not be film or theatre of social protest. What Holderness also suggests is that political theatre, whether it is or isn’t “accidentally” so, takes sides, and this partisanship may span the entire spectrum of liberal to conservative politics, from colonial to post-colonial rhetoric.

Holderness claims that the concept of political theatre is “almost exclusively synonymous with left-wing theatre, socialist theatre of various types.” Holderness, almost rhetorically asks, “where is there a political theatre of the right?” However, it is quite apparent that he is speaking of political theatre in the West, and even here there are exceptions such as church-related drama, and theatre celebrating American patriotism and capitalism. More importantly, in the East, in countries such as India, Japan, and others, although much of the political theatre is based in leftist or Marxist and socialistic ideals, there is a tradition of right wing theatre that has been either

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5 Ibid.

6 Ibid.
preceded or been a reaction to the liberal tendencies. One could argue that pro-colonial stances, as evidenced in films like *Gunga Din*, *Indiana Jones and the Temple of Doom*, and *Sergeants 3*, could be seen as politics of the right wing. However, for the sake of this document, it is not necessarily leftist or rightist politics that are of importance *per se*, but a politics that reflects the spectrum of post-colonial identities.

It would be a daunting task to summarize all the literature dealing with post-colonial literature and criticism. I will mainly use Said's ideas on Orientalism and certain related theories by Gayatri Spivak and Homi Bhabha because of their relevance and usefulness to my study about the construction of Virtual Realities of theatre and film.

Said's definition of the Orient and its relation to the Occident, particularly Europe, includes issues of the colonizer and the colonized. Moreover, Said is also interested in what happens to the colonized when the colonizer leaves. Said raises the issues of the physical absence of the colonizer while other constructs of the colonizer remain within the psyche of a nation plundered and pillaged of its economic, social, cultural, religious, political, historical bases and future potential.

The Orient is not only adjacent to Europe; it is also the place of Europe's greatest and richest and oldest colonies, the source of its civilizations and languages, its cultural contestant, and one of its deepest and most recurring images of the Other. In addition, the Orient has helped to define Europe (or
the West) as its contrasting image, idea, personality, experiences. Yet none of the Orient is merely imaginative. The Orient is an integral part of European material civilization and culture.\(^7\)

Said then goes on to elaborate on the several meanings of Orientalism that he adumbers upon through the course of his book. The first meaning that Said is concerned with are those academicians - philologists, anthropologists, historians, sociologists, ethnographers, and social scientists - who teach, write about or research the orient.\(^8\) These individuals are the Orientalists and their work is the stuff that Orientalism is made of. The second meaning that Said elucidates, relegates Orientalism as "style of thought based upon an ontological and epistemological distinction between 'the Orient' and (most of the time) 'the Occident.'"\(^9\)

Said’s third signification of Orientalism has to do with a “corporate institution for dealing with the Orient; dealing with it by making statements about it, authorizing views of it, describing it, by teaching it, settling it, ruling over it; in short, Orientalism as a Western Style for dominating, restructuring, and having authority over the


\(^8\) Ibid, p. 2.

\(^9\) Ibid.
Orient.”10 It is this third meaning of Orientalism that is the most problematic and one with which I am concerned when discussing Gunga Din, Indiana Jones and the Temple of Doom, and Sergeants 3.

Images of non-whites as savages have been a mainstay of the Virtual Reality of Western cultures for many generations. In order to justify slavery, blacks were portrayed as beast-like, animalistic and violent.11 In the view of the dominant culture, such people obviously were in need of taming, even if it was by dehumanizing and violent means. Colonialism was similarly rationalized by the notion that the Europeans were merely bringing “civilization and culture” to the Asian and African continents, where people lived savage, beastly and deprived existences. All this, despite the fact that many of the earliest recorded civilizations had sprung around the Nile in Africa, the Indus river on the Indian sub-continent, and the Tigris and Euphrates in the Mesopotamian basin. In the Americas, native Indians were also “painted”12 as sub-human, pagan, scalping and beast-like demons who


12 This “painting” refers to misrepresentations of Indians as more ornamental and ostentatious than they really were; in essence a Disneyfication of the Native-American images.
had to be dealt with if the settlers were to gain any success in creating a harmonious and puritanical society, away from the religious persecution on the European continent.

These (mis)representations served to conjure up realities of the subordinate groups that fulfilled the agendas of the dominant oppressors. Film and theatre have often helped enforce and entrench this hegemonic relationship, becoming pawns in institutions like slavery, colonialism, apartheid and other ethnic cleansings and genocides. Holocaust history has often focused on the propaganda films and productions of Leni Riefenstahl for Hitler's genocidal missions. A good case can be made that films like George Stevens's *Gunga Din* and Steven Spielberg's *Indiana Jones and the Temple of Doom* are equally effective, intentionally or unintentionally, in supporting the propaganda machines of colonialism.

It is important to dissect the cinematic language of such films so that the messages and rhetoric buried therein might be revealed. T. J. Jackson Lears, a historian of the American consumer culture writes that:

> By clarifying the political functions of cultural symbols, the concept of cultural hegemony can aid intellectual historians trying to understand how ideas reinforce or undermine existing social structures and social historians seeking to reconcile the apparent contradictions between the
power wielded by dominant groups and the relative cultural autonomy of subordinate groups whom they victimize.\textsuperscript{13}

An understanding of rhetoric and the use of symbols to create systems of persuasion is key to unlocking the colonial and Orientalist propaganda in the three incarnations of \textit{Gunga Din} discussed in this chapter.

1. \textbf{George Stevens’s \textit{Gunga Din}}

\textit{Gunga Din} was produced by RKO Studios and was its most costly production, final bills coming in at $1,915,000. Initially, \textit{Gunga Din} did not earn back its investment. It was only after constant re-releases that \textit{Gunga Din} actually became a money-maker, recovering much more than its almost two million dollar budget. The review from January 25, 1939 in “Variety” tells us that \textit{Gunga Din} was, “One of the big money pictures this year, both in coin represented in its production and what it means to the exhibitor. Numerous extended runs and resounding

\textsuperscript{13} T. J. Jackson Lears, “The Concept of Cultural Hegemony: Problems and Possibilities,” \textit{American Historical Review}, (June 1985), 90, p. 568.
glosses appear certain for domestic field. 14 In addition, Gunga Din also went on to become a huge hit in international markets.

Gunga Din was initially an MGM production, but when the script got bogged down in writer’s wars, MGM’s production head, Irving Thalberg abandoned the project. In 1935 there were two other films about India that proved to be big box-office draws and that propelled independent producer Edward Small to purchase the rights for 5,000 pounds from Rudyard Kipling’s widow Caroline. Future Nobel Prize winner William Faulkner was hired at $750 a week to write the script but his writing was deemed too complex by the studios.

George Stevens was hired to direct after Howard Hawks got delayed on another production he was directing. Stevens insisted that the film be shot on location (as opposed to in the studios as was the custom in those days) near Lone Pine, California in the midst of the high Sierras, to approximate the mountainous terrain of northern India. Interiors and temple shots were shot on the RKO sound stages.

Jay Robert Nash and Stanley Ralph Ross recount an interesting event in the making of Gunga Din, where Stevens shot several scenes with Kipling (played by Reginald Sheffield) appearing at the battle scenes as a visiting journalist. Kipling was filmed writing the epic poem

after the battle scene and he was also filmed in the scene’s closing sequence, as Colonel Love reads the poem at Gunga Din’s posthumous instatement into the British military. Jay Robert Nash and Stanley Ralph Ross write that:

Kipling’s widow, Caroline, saw the film and agreed with critics that her husband’s appearance was a sop to the production, that Kipling’s presence was merely foolish filler and she demanded Sheffield’s role be eliminated. It was - one scene in a tent where Sheffield composes the poem, and where he is standing with McLaglen and Fairbanks at the end. In this final scene Sheffield was simply matted out with an optical printer. In re-releases of the film several scenes have been cut so that most prints shown today run about 94 minutes.¹⁵

Before undertaking an analysis of the film it is relevant to look closely at Kipling’s poem so that the source of the movie Gunga Din (and by extension the sources of Indiana Jones and the Temple of Doom) and the origins of the Orientalist images gain significance. Even though the poem does not deal at all with a Kali cult by the name of the Thugees, the images of Gunga Din, the waterboy, in the poem heavily influence the caricature of the character in the film.

The poem, written by Kipling who had lived in India during Colonialism, is filled with Orientalist misnomers of the Indian as savage,

subservient and in need of salvation. The poem starts with describing the work of the colonialists as “slaughter.”¹⁶ This violent image, albeit not in the service of the image of colonialism as a benign, beneficial system, is true to the savage system of oppression. Kipling’s narrator, presumably himself, who is “A-servin’ of ‘Er Majesty the Queen,” acknowledges Gunga Din as one of the “blackfaced crew.” The notion of the Indian as a “darkie,” is akin to those of images of Africans from the “Dark” continent. The darkness conveys a sense of danger, a threat to the white powers and something that has to be tamed by brute force.

In the opening stanza, Kipling describes Gunga Din as a “limpin’ lump o’ brick-dust” and a “squidgy-nosed old idol.” Later he is described as a “good old grinnin’, gruntin’ Gunga Din.” The physical deformities further feed into this dirty, debilitated and deformed image of the Indian. Kipling, in this same stanza, also refers to Gunga Din as “slippery.” This adjective, albeit a play of words with Gunga Din’s profession as a waterboy, furthers the image of the Indian as deceitful, conniving, and not worthy of trust.

¹⁶ For all quotes from Kipling’s poem, please refer to Appendix A at the end of this dissertation, pages 372 - 276.
The second verse starts with the following rhyming lines which further clues the reader into the half-naked, savage image of Gunga Din:

The uniform 'e wore
Was nothin' much before,
An' rather less that 'arf o' that be'ind,
For a piece o' twisty rag
An' goatskin water bag

In describing Gunga Din's work ethic, he is created as someone who needs to be beaten in order to perform. Kipling tells us that "we wopped 'im 'cause 'e couldn't serve us all." In the same stanza there are other references to Gunga Din as one shirking his work and who needs to be beaten into submission. We are also told that, "Though I've belted you and flayed you, By the livin' Gawd that made you."

One of the most telling lines of the poem comes in stanza three when we are told that "An' for all 'is dirty 'ide 'E was white, clear white, inside." This is probably the starkest example of an Orientalist image as one is likely to find. This explains Gunga Din's martyrdom at the end of the film when he is posthumously made a guard in the British army and it also makes clearer Gunga Din warning the British army of the savage ambush at the end which leads to the slaughter of thousands of freedom-seeking Indians. In fact, so subservient to the
Raj is he, that after he is shot at the end of the poem, we are told that, “An’ just before ‘e died, ‘I ‘ope you liked your drink’, sez Gunga Din.”

In the final stanza, the Orientalist portrayal of Gunga Din is immersed in the Christian notion that only they shall inherit heaven. It is a strange ideology to introduce at the end of the poem, but it is very much in keeping with Colonial rhetoric. After his death, we are told that:

At the place where ‘e is gone --
Where it's always double drill and no canteen;
‘E'll be squattin’ on the coals
Givin' drink to poor damned souls,
An' I'll get a swig in hell from Gunga Din!

The notion that non-Christians (and by extension non-whites) will go to hell, is further evidence of the idea of Indians (an by extension all Orientals) as pagans, heathens, and in need of salvation and redemption. Thus, even though the film takes the seed of the poem and turns it into a more elaborate “epic” with the introduction of the Thugee cult, the attitudes of the filmmakers and the colonials in the film are clearly a logical extension of what Kipling so vividly portrays and misrepresents in his poem. This is significant in that images, erroneous, racist and despicable as they might be, echo by virtue of their representation in subsequent repetitions of the original source
(the poem) in the secondary forms (the films.) Without a doubt, the longevity of images and Virtual Realities, comes from their resilience, especially in an age where electronic and mechanical reproduction is fast, cheap, and widespread.

*Gunga Din*, the movie tells the story of three swashbuckling sergeants in the Imperial Lancers of her Majesty Victoria’s service in India. The film opens with a larger than life statue of Victoria with *Victoria Regina Imperatrix* carved into the base. What is interesting about the way in which the shot is set up right at the start of the film is that it looks as though the film is a production in the service of her Majesty. This is a cinematic hearkening back to the days of Elizabeth the First, when plays by Shakespeare and Marlowe were commissioned by the Royal Courts. Intentional or not, the set up of that first shot is a subversive indication of the pro-colonialism messages to follow during the rest of the film.

The protagonists of this film are a cross between the Three Musketeers and the Three Stooges. Sergeant Ballantine (played by Douglas Fairbanks, Jr.), Sergeant Cutter (played by Cary Grant), and Sergeant MacChesney (played by Victor McLaglen) are serving under Colonel Weed (played by Montagu Love) in Northern India during colonization under Queen Victoria’s reign. The film, produced and directed by George Stevens is generally categorized as an action film
that gets mired in taking a very murky and insidious stance in favor of colonialism by the time the film reaches its final, epic battle scene. Interestingly enough, comic genius Peter Sellers would later go on to satirize this scene in his comic film titled *The Party*. In fact, in that movie, Sellers deconstructs Western notions of Indians and the popular belief that all Indians are turban-wearing, dot-headed, country bumpkins.

The screenplay of *Gunga Din* by Joel Sayre and Fred Guiol based on a story by Ben Hecht and Charles MacArthur is developed much like a Western, where the cowboys are English Sergeants and the Indians are of the Eastern variety. It is also worth noting that the entire premise is based on a poem by Rudyard Kipling17 (see APPENDIX A) who spent most of his life in India during colonial times. Thus, the very source of the movie is colonial and the film cannot escape, not that it ever tries to escape, the melodramatic proclivity towards portraying

17 Joseph Rudyard Kipling was born in Bombay (now Mumbai) on December 30, 1865, in the J. J. School of Arts, of which, his father, Lockwood Kipling, was then head. He was educated as a journalist. Before he went back to England and settled in London in 1889, he had already become famous for his verses and satirical writings such as “Plain Tales from the Raj” (1888) and “Soldiers Three” (1892). His novel *The Jungle Book* (1894-5) has now become a widely translated classic. His other novels include *Kim* (1901) and *Just So Stories* (1902). He received the Nobel Prize for literature in 1907. Rudyard Kipling died on January 18, 1936 in London. His autobiography *Something of Myself* appeared in 1937.
the good guys (the English) as entirely good and the bad guys (the Indians/Orientals) as reprehensibly evil with no saving graces whatsoever.

The film opens with a disclaimer of sorts that seems defensive in its nature. One of the first few screens reads, “Those portions of this picture dealing with the worship of the goddess Kali are based on historic fact.”18 This disclaimer, obviously inserted to give the film authenticity and greater reality in its representations, works only towards what Edward Said would call “Orientalizing” the “other” for white audiences. In fact, the depiction of Kali worshipers is so marginalized in the film and so grotesquely portrayed that it is obviously a “Virtual Reality” created towards manipulating the audience towards a pro-colonial stance. In fact, what makes this claim of accuracy suspicious right from the start is that the advisors to the film include a “Sir” and a “Sergeant,” seemingly unbiased authorities on “historic fact” about Kali worshipers. They are in essence Said’s “Orientalists,” functioning towards Gunga Din’s colonial misrepresentations of Indians in general and Kali worshipers in particular.

Gunga Din starts out as a seemingly harmless tale of three swashbuckling adventurers in the British army at their post in Mukri, a town in the rocky, mountainous terrain of Northern India. In fact, the terrain of the film is so reminiscent of the myriad of John Wayne Westerns that it is hard to escape that Gunga Din is merely of the same genre masquerading as something different. One of the opening sequences is the looting and plundering of the village of Tantrapur by dacoits and thugs who later appear as the Kali worshipers. After the town has been destroyed and the British post there has been desecrated, the audience is shown shots of Tantrapur as a ghost town. The village is eerily quiet, the dust swept roads are littered with debris that ominously moves as the wind gusts are the only living thing there, and a lonely, black crow perches atop a post, surveying the desolation and destruction.

Ballantine, Cutter and MacChesney are introduced to us with a bang in an early action sequence as they fight off many men. They instigate this knockdown-dragout barroom brawl in order to procure a map of an emerald mine away from some locals. As film critic Robert Mitchell writes, "bodies fly out windows, plummet from rooftops, and tumbledown stairs as the three comrades, grinning all the while, single-handedly subdue what seems like half the population of the teeming
subcontinent.”19 The fight is simply a ruse to inform us that these three are capable of great acts of valiance and will desecrate any opposition. It also sets up the fact that Cutter is a gold digger and will go to extremes to seek wealth, to loot and plunder and “forever pursuing the chimera of lost treasure.”20 Once this early fight has established the three sergeants as the invincible heroes, they are quickly dispatched to Tantrapur to survey the damage and solve the mystery of the dacoits.

When the three arrive in the ghost town we are introduced to Gunga Din as a waterboy, serving the needs of the thirsty soldiers in her Majesty’s employ. Gunga Din is set up as a naive buffoon of sorts who wants to better himself by becoming a soldier to serve in the British attempts to keep colonial rule in India. He approaches MacChesney and utters, in his broken English, with fawning sincerity, “Could be first class soldier, Sahib.”21 MacChesney quickly derides, “Don’t make me laugh.”22 The rest of the movie becomes Gunga Din’s


20 Ibid.


22 Ibid.
quest for validation as a worthy soldier and he achieves this through his martyrdom at the end, not as an Indian, but as a soldier in service of British might and righteousness.

While Ballantine, MacChesney and Cutter explore the ghost town they are ambushed by the dacoits who have been lying low, again a cinematic conceit in homage to the genre of American Westerns. Conventionally, the three sergeants outwit the hundreds of dacoits. The dacoits invoke the goddess Kali as they fight off the British and the image of Kali worshipers (conflated with Indians in general) as savage is reinforced, making their defeat all the more justifiable and entertaining. It is also worth mentioning that eight members of the British contingency are killed, but these eight are Indians serving in the English troops. MacChesney reports to Colonel Weed on their return to Mukri from Tantrapur that “Eight killed, three wounded otherwise all in order.” Weed is also informed that the dacoits are of the cult of Kali, “the goddess of blood.” This apparently is the follow up to the opening claim that “the portions of this picture dealing with the worship of the goddess Kali are based on historic fact.”


24 Ibid.

25 Ibid.
the Hindu goddess of death, and in the polytheistic traditions of Hinduism, she holds a venerated and revered position.

Colonel Weed’s strategy is that the three sergeants go to Tantrapur, set up a base, seek out the dacoits and bring them to justice. MacChesney, while in wait for the dacoits to attack, is itching for a fight just like Cutter. MacChesney exclaims, “Blast them, the thugs! Why don’t they come and give us a good fight.”

Cutter asks in agreement, “How can we get a nice little war going.” This is not about maintaining the British rule of law but more like vigilantism.

Bored by the wait, Cutter reverts to his gold digging side, and based on information from Gunga Din wants to go to “the Gold temple waiting to be sliced and carried right away.” MacChesney and Ballantine will have none of Cutter’s piracy and in the still of the night, Cutter and Gunga Din slip away on MacChesney’s pet elephant Annie.

The temple that Cutter wants to plunder, with no compunctions about its sanctity to the Indians or the fact that the gold is not there simply for the taking, is actually the headquarters of the dacoits and the Kali worshipers headed by their bald and evil Guru (played by


27 Ibid.

28 Ibid.
Eduardo Ciannelli). Gunga Din and Cutter watch the worship service in progress and realize that these are the very people that need to be exterminated and brought to justice.

The worship ceremony, offensively ludicrous to devout Hindus, is a representation of the "historic fact" of Kali worship and presents the worshipers as savage, uncouth and praying to pagan gods, greatly in contrast with the gentleness of Christianity. This scene in fact is not unlike representations of Native Americans and their exaggerated and misrepresented Sun Dances and other worship rituals totally foreign to the settlers and their descendants. It is quite clear that the film Gunga Din is mocking Kali worship as devil worship or some form of ritualized voodoo. In Indian mythology Kali is considered to be the symbol of eternal time and she is able to both give life and destroy it towards the goal of balance and good in the universe. She is considered to be one who is "fear removing and boon granting." Kali, is the Shakti (strength) of the God Shiva and she works towards the supreme realization of truth.\(^{29}\) None of these aspects of Kali are even remotely presented in the film. Interestingly, the Guru speaks in English to the Kali worshipers, an obviously erroneous fact, because all Kali worship is performed either in Hindi, Bengali, or Sanskrit. But this scene is far

along in the movie, away from the first disclaimer, so that everything that follows in the movie is "represented" as fact and as such left unquestioned or unchallenged in its veracity. In the audience's consciousness and subconsciousness has entered an image that is marketed as fact which in truth is wrong, oppressive and propagandistic in favor of the dominant group, i.e. the colonizer.

The Guru, rather than be portrayed as a spiritual and religious leader, is depicted as a maniacal despot in the vein of a Hitler, Stalin or Torquemada. He is bald, sweaty, his eyes are shifty, and he proclaims to his congregation, "Rise and Kill...kill for the mother Kali! Kill! Kill! Kill!" ³⁰

Cutter gets himself purposely caught by the dacoits so that Gunga Din can go back to MacChesney and Ballantine and bring the troops to their rescue and to the decimation of the thugs. When MacChesney and Ballantine arrive with Gunga Din, they are taken hostage as well and by this time Cutter is hog-tied to a pole and his back is lacerated, oozing blood, indicating the savage punishments doled out by the bandits. The Guru cackles ominously to his henchmen, "Three soldiers to be given to mother Kali....three soldiers and a

slave." In his only moment of defiance and pride, Gunga Din asserts in his broken English, "Who a slave? I am a soldier!" This notion of a servile Indian standing up to the maniacal Indian is part and parcel of what scholars of colonialism have termed the "divide and conquer" strategy, used by colonialists and other oppressors, to keep the oppressed in their positions of subservience.

MacChesney hatches a plan to confuse the dacoits and they free Cutter and are able to take the Guru hostage, using him as a pawn to keep the dacoits from attacking. They take the Guru to the roof of the temple, where lie the carved, gold wall reliefs that Cutter came to loot in the first place. A stalemate ensues on the roof of the temple and the Guru’s patience and calm, unnerves the three sergeants, especially Cutter who exasperatedly mutters to Ballantine and MacChesney that, "Is there no limit to the torture an Oriental mind can think up?" Edward Said’s "Orientalism" is overtly manifest in this exchange. It is interesting that the Guru is seen as the torturer while the colonial plunderers are seen as victims, saviors and messengers of justice, peace and civilization. There is also a subversive ideology at work in

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32 Ibid.

33 Ibid.
portraying the Guru as the villain. The term “guru” is Hindi (derived from Sanskrit) for a spiritual leader who has gained wisdom, enlightenment and who will use that towards the betterment and advancement of his followers, his people. By equating a spiritual leader with a villain, the Orientalist notion that no Oriental is trustworthy is emphasized and reinforced.

The standoff ends when in the distant we hear the bagpipes of the Scottish regiments coming to free the “three soldiers and a slave.”34 The Guru knows that he has to make a move. Apparently his war strategy was to lay in wait for the British to arrive and then defeat them by ambushing them covertly. This is the point at which the film becomes really insidious and is exposed as an obvious cog in the hegemonic machine of colonial rationalization.

Throughout the film the Kali worshipers are conflated with dacoits and thugs and as such there is no separation of identity between the two. All of a sudden, while watching the Scottish regiments approach, the Guru breaks out into a little tirade that indicates that he is a freedom fighter trying to oust colonial rule from India. He says to Ballantine, MacChesney and Cutter:

You seem to think Warfare an English invention.....India was a mighty nation...while Englishmen still dwelt in caves and painted themselves blue....I see it in your faces, who is this ugly little savage to snarl so boldly at the British lion....Well, India is my country and my faith and I can die for my faith and my country as readily as you for yours.\footnote{Gunga Din. Dir. George Stevens. With Cary Grant, Victor McLaglen, Douglas Fairbanks, Jr., Same Jaffe, Eduardo Ciannelli, and Joan Fontaine. RKO Radio Pictures, 1939.}

On the surface, it seems as though the film is making a brave stance on the side of Indians fighting for emancipation from Colonial rule. But in fact it does exactly the opposite. Because of the earlier conflation of Kali worshipers and dacoits, a third image gets merged into the earlier two. Now we see freedom fighters and emancipators as spooky cult worshipers and ruthless dacoits. Stevens seems to take on the Riefenstahl role for colonial perpetuity in presenting anti-colonial forces as dacoits. It is actually a clever stratagem because if the emancipators are seen as plunderers and ruthless, keeping the British on in their colonial role as civilizers and lion tamers seems not only a better alternative, but it justifies the very institution of British colonialism as just, necessary and in the service of the betterment of Asia.

This eulogy on behalf of colonialism is capped off in the final and epic battle sequence by Gunga Din's martyrdom. In fact, Gunga Din's
martyrdom is foreshadowed in an earlier scene at the British post in Mukri, where Gunga Din is standing behind the officer's building perfecting his soldier's march, salute and overall demeanor. Cutter stumbles upon Gunga Din practicing and is about to confiscate Gunga Din's bugle when he pleads to be allowed to keep it. Cutter also confesses that he thinks Gunga Din would make a good soldier and would serve her Majesty well.

In the final showdown, after the Guru has given his reason d'etre for his thug-like activities, he jumps into a snake pit and before committing suicide he proclaims, "Farewell India!" Following his suicide, a full-scale battle is about to ensue and the Scottish regiments are about to be ambushed unawares when Gunga Din saves the day. Gunga Din and Cutter are both wounded badly on the roof of the temple, but Gunga Din stoically climbs to the top most spire of the temple and standing there blows his bugle like a true soldier and warns the British troops in time. A huge battle ensues while Gunga Din is shot down as he stands blowing his bugle in full-view of the enemy. Gunga Din is martyred, not as an Indian, but as one in service of the British Empire and herein his stereotype as an Asian Uncle Tom is fully developed and completely manifest. His lasting image is not that of an


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Indian in search of independence, but rather his legacy resonates with unabashed and unquestioned servitude to the English Raj.

Thus, Gunga Din is presented as one who warns the British against his own people, supposed freedom fighters, and Gunga Din would prefer the British stay on and rule. The massacre of the Indian freedom fighters seems to send the message that any uprising against the British is a bad one and that any emancipators would have hell to deal with if they stood up against colonialism.

Back at Mukri, Gunga Din is given an eulogy by Colonel Weed and Sergeants Ballantine, MacChesney and Cutter. Weed posthumously appoints Gunga Din as a corporal in the British army and says, “Here’s a man of whom the regimen will always be proud” and his name be “written on the roll of our honored dead.” The Colonel recites Kipling’s famous lines: “Though I’ve belted and flayed you/ By the living God that made you/ You’re a better man than I am, Gunga Din.” The soundtrack then swells to a rousing instrumental version of “Auld Lang Syne” with an image of Gunga Din superimposed on the screen. Gunga Din is dressed in a crisp, clean white British uniform and he snaps off a crisp

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salute, grinning wildly. In fact, the film’s last frames, iconically proclaim Gunga Din as a hero who is the Indian version of an Uncle Tom or a Zeb Coon stereotype.

There are a few other things worth noting about the colonial point of view Virtual Reality presented by *Gunga Din*. Firstly, the actors playing both Gunga Din and the Guru are non-Indians. Their Indian accents range from the stereotypical to being completely wrong. More offensively, the actors are in brown face, in a period when black face had already been deemed extremely offensive in America. Secondly, it is not simply the Indians who are marginalized in *Gunga Din*. Women are virtually absent and when present are simply glamorous objects, clearly subservient to the men. In a very telling scene, Ballantine’s newly wed wife Emmy (played by Joan Fontaine) pleads with Ballantine not to go rescue Cutter, especially since Ballantine had retired from her Majesty’s service. With proud chauvinism Ballantine answers Emmy’s pleas to stay with:

> The trouble is you don’t want a man for a husband, you want a coward who’ll run out on his friends when they’re in danger. Well, that’s not me and never was and never will be. I don’t care how much I love you and I do very much. I’m a soldier. I mean I’m a man first.\(^{39}\)

Ballantine then gruffly grabs his wife and stifles her begging with a solid kiss on the lips after which he leaves her speechless and swaggers away to save Cutter and the day.

When the film was originally released it was banned in India where the local press savaged it as “Scandalously Anti-Indian.”⁴⁰ This is an interesting fact since in 1939 India was still under colonial rule, although the seeds for the struggle of Independence had long since been planted. It would seem that the British would have welcomed a film like *Gunga Din*, to bolster their position, but by this time, Independence seemed inevitable, it was only a matter of when and the conditions under which England would leave.

Outside India, the film was received very differently. The film review of *Gunga Din*, in “Variety,” from January 25 of 1939 tells us that:

> in the foreign market it should mop up if only because of actionful, melodramatic content. Picture has numerous exploitation angels and is backed by a giant bally and advertising campaign. For British territory, it should score extra big because it’s the sort of production that swells national pride in British soldiery....Production needs

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no diagram to show that heavy coin was sunk into making this click. ‘Gunga din’ undoubtedly will recoup plenty at the box office window. 41

In the United States, England, and elsewhere, Gunga Din was very widely hailed as a successful film right upon its release. Even today, its is often hailed as one of the best action films ever made and many subsequent filmmakers have tried to replicate its success. Film critic Robert Mitchell wrote that:

George Stevens’ cinematic adaptation of Rudyard Kipling’s famous poem, is one of the greatest pure adventures of all time. If there is, as it happens, little of Kipling in the end product, the film suffers not at all as a result. Writers Ben Hecht and Charles MacArthur took the title, the setting, and the last few lines from Kipling’s Barrack Room Ballad, and turned them into a full-fledged epic. 42

When Mitchell writes that, “If there is, as it happens, little of Kipling in the end product,” he misses the point. Kipling’s poem is as Orientalist as Gunga Din. Moreover, the film feeds right into the poem’s misrepresentations of India and its citizens. What Mitchell’s focus on the action elements of the film does is to detract from the political subtext of the film, and as such, the thinking goes that if it is merely


an escapist piece of action-adventure, then it couldn't possibly have a negative impact or a subversive political agenda.

Robert Mitchell’s critique of *Gunga Din* is very indicative of the ignorance with which Western eyes can misread the film. Mitchell writes:

> It would not do to overanalyze *Gunga Din*; the film is, after all, entertainment. It is great entertainment, however, and credit must go where it is due. The film’s success must be attributed to its writers, its fine cast, and to Stevens, its director. Hecht and MacArthur fashioned a terrific adventure story out of a few lines of poetry. It is full of a lot of nonsense, of course, but fantasy allows such license. The script by Joel Sayre and Fred Guiol is full of excitement, loyalty and heroism.\(^{43}\)

It is interesting that Mitchell focuses solely on the action-adventure aspects of the film and misses the colonial contexts completely. While Mitchell reinforces that the film is simply fantasy, when speaking of the Thugees and the Kali cult, he writes that, “The worship the many-armed goddess Kali (a note at the end of the credits explains that this is historical fact) and practice murder as a religious sacrament, digging graves for their intended victims before carrying

out the murder." Thus, the filmmaker's disclaimer serves its function
in edifying misnomers and orientalist misrepresentations because even
though the film was made in 1939, Mitchell is writing in 1981 and the
legacy of colonialist propaganda, subversively perpetuates itself.

Mitchell has obviously bought into the idea of the Virtual Reality of

_Gunga Din_ as "historical fact," and he is not alone.

In fact, even Mitchell is cognizant of _Gunga Din's_ later day legacy.

He writes that:

_Gunga Din_ was remade twice (Tay Garnett's _Soldiers Three_ in 1951 and John Sturges' _Sergeants 3_ with Frank Sinatra, Peter Lawford, Dean Martin and Sammy Davis, Jr. In 1962); and generous portions of the film's substance and spirit have shown up in such unlikely quarters as Richard Lester's 1965 Beatle's epic _Help!_ This far-reaching influence is testimony enough, if testimony is needed, to the durability and greatness of Stevens' _Gunga Din_.

More than anything, what _Gunga Din_ proves is that Orientalist
misreadings and colonialist images have incredible durability and are
retained in cultural memory and collective consciousness far beyond


45 With Stewart Granger and David Niven.

their time and place of inception. The far-reaching influence is ultimately a testimony to well-crafted (not necessarily in the positive connotation of the term) Virtual Realities with certain ideologies and entrenched systems of rhetorical debasement.

2. Steven Spielberg’s Indiana Jones and The Temple of Doom

Five years after Mitchell’s homage to Gunga Din was published, Spielberg would add testimonial to Gunga Din’s durability and legacy of greatness with Indiana Jones and the Temple of Doom. Released in 1984, Indiana Jones and the Temple of Doom was the second film in the Indiana Jones trilogy, the first one being Raiders of the Lost Ark (1981) and the final installment was titled, Indiana Jones and the Last Crusade (1989).

Indiana Jones and the Temple of Doom tells the story of how Indy, inadvertently stranded in India, is entreated by an entire peasant village to recover their lost Shankara Stone, stolen by Thuggee occultists at a nearby palace. Indy is also asked to rescue the village’s children, abducted by the Thugees. Journeying to the Thuggee temple and palace compound, Indy encounters the darkest of black magic before successfully ending the Thuggee oppression and freeing the child-slaves. The introduction of the sub-plot of the child-slaves, needs to be scrutinized because it plays right into Western, global

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paternalism. By presenting the leader of the Kali cult as a child-
enslaver, the filmmakers argue that Indians are incapable of treating
their children with dignity and compassion. It presents the need of a
more benevolent father in the guise of colonialists, ignoring the fact
that many of the precepts of colonialism gave rise to virtual slavery.

*Raiders of the Lost Ark* was a phenomenal, international box
office success which ensured producer George Lucas his dreams of a
trilogy. *Indiana Jones and the Last Crusade* was also a blockbuster hit
and has Indy riding off into the sunset during its closing frames,
leaving room for other sequels/prequels in the *Indiana Jones* series. In
*Raiders of the Lost Ark*, Indy is in pursuit of the Ark of the Covenant
and must prevent the Nazis from getting to it first. In *The Last
Crusade* the object of Indy's pursuit is none other than the Holy Grail,
which is also being sought after by the Nazis. In all three *Indiana Jones*
films, Indy chases down objects of great religious sanctity, and in all
three images of Orientals are aplenty. Robert Kolker writes that in
*Raiders of the Lost Ark*:

> The most resonant political representations are the Arabs, and one must recall that the film appeared at a high point of anti-Middle East feeling in the United States, just after the Iranian hostage situation and at the beginning of the Reagan regime. Even though Indiana has an Egyptian friend and protector in the character of Sallah... the Arabs are seen mostly as cunning, swarming, somewhat
dim-witted tools of the Nazis and victims of the hero’s physical prowess.⁴⁷

While the Nazis are the true villains in Raiders of the Lost Ark and The Last Crusade, and the Arabs are presented as Nazi accomplices and buffoons, in Indiana Jones and the Temple of Doom, the Indians take on the range of characteristics occupied by the Nazis and the Arabs. For the second installment of the series, Lucas envisioned a darker tale, dealing with "real black magic." This is like the misnomer of “historical fact” in Gunga Din. Spielberg said that Lucas felt that he wanted this second Indiana Jones movie to contain moments of black magic, truly evil villains. You could say that the villains in the last film were evil, but they dealt in simple force. In this movie, our villains deal in black magic, torture and slavery. So they’re real bad.⁴⁸

Lucas also wanted a quest for Indy that had less to do with possessions and more to do with actual heroism. In many ways, this doesn’t hold true in the final film. Indy is as much a gold digger here as he as in the other two installments of the trilogy. Moreover, Willie Scott, who tags along with Indy is mainly a one-dimensionional Material Girl and gold digger - she is the reincarnation of Cutter from Gunga Din. In


the opening action sequence in Shanghai, a fight over a very large and valuable diamond breaks out in the nightclub where Willie is performing. Indy is there to retrieve the diamond. During the course of events, the diamond gets tossed all over the dance floor, with Willie avidly chasing after it, and when a bucket of ice is toppled on the floor, she is flustered as the diamond (popularly referred to as “ice” in gangster terminology) blends in with the real ice. Thus, Lucas’ desire to create a film where Indy was less concerned with possessions is patently false and debunked in the opening scenes of the film.

Indy is entrusted with the rescue of the entire child population of an Indian village from slavery. Spielberg explained that Indy “is not just a gravedigger, as in Raiders, obsessed with the material object of his quest. In this one he saves lives. Many lives. Young lives.”49 Ironically, while Spielberg seems to be emphasizing the saving of young lives as his plot’s reason d’être, the extreme violence in the film would raise a debate about exactly how young an audience would be allowed to enter theatres to watch his literally heart-stopping images seeped in violence. It is also worth noting that Spielberg’s entrusting of Indy with the humanitarian mission of saving the Indian children fits squarely with what Maria Fernandez describes as “rhetoric . . . crucial for

imperialist projects since it is through such rhetoric that decent people come to willingly support imperialism.” Thus, Spielberg and Lucas, via the character of Indy, are fulfilling and reinforcing what Said astutely terms as the “civilizing mission” of colonialism.

Spielberg and Lucas are known to weave incredibly seductive action-adventure films, with lots of humor, enabling an audience to enthrall in seemingly pure fantasy. But, both Lucas’ and Spielberg’s career trajectories have shown us that the surface needs to be broken through in order to see the underlying ideologies and rhetoric, which are anything but accidental and innocent. Douglas Brode, in writing about Indiana Jones and the Temple of Doom, writes that:

In addition to drawings, Spielberg this time went a step further. Production designer Scott had built elaborate miniatures of the crusher room, quarry cavern, and mine-tunnel train. Spielberg then photographed these seventeen-inch cardboard sets, populated by half-inch cutout characters with his Nikon, studying various angles form which he could eventually photograph his live-action scenes. Four months were lavished on such meticulous

preparation, even as locations were being scouted. Spielberg was also busy supervising the building of life-size sets.\textsuperscript{51}

While Spielberg may have spent a lot of time on the perfection of each shot, the images are nonetheless inaccurate and fallible when it comes to issues of depicting the “Oriental” in all their stereotypical and racist grandeur. In recent years, Spielberg has focused a lot on the accuracy and legitimacy of the images of Jews and American war veterans that he has depicted in \textit{Schindler’s List} and \textit{Saving Private Ryan} respectively. In fact, Spielberg would never have been able to depict Jews and veterans with the same callousness and disregard with which he so nonchalantly lampooned the Indians in \textit{Indiana Jones and the Temple of Doom}. It is obvious then, that within the power and prestige of Hollywood, it is not stereotypes themselves that are problematic \textit{per se}, but certain groups are treated with greater historical accuracy and cultural finesse than others. Thus, the misrepresentation of Indians, over that of Jews and veterans, in the case of Spielberg’s cinematic ouvre, is not only tolerated but exploited for entertainment value. This imbalance of (mis)representations has to do with issues of power and economics in Hollywood - i.e. who funds and runs Hollywood.

Film scholar Robert Philip Kolker, in his book *A Cinema of Loneliness*, writes about Spielberg as a cinematic seducer of well-structured narratives. Kolker writes that Spielberg's films illustrate through their glibness and polish, their ability to excite the most accessible emotions seem to force them into a position that defies serious analysis. But that very defiance produces a critical defiance in response. Spielberg is so proficient - so efficient - at structuring his narratives, controlling his *mise-en-scène*, and positioning the spectator within these structures, that the films all but guarantee that the viewer will surrender his or her self to them at some point during the narrative.  

It is this very efficient narrative structure that has made Spielberg the master of the mass audience thrillers from *Jaws* and *E.T.* to *Close Encounters of the Third Kind* and the *Indiana Jones* trilogy. Kolker's astute analysis concludes with the statement that "power like this needs to be understood; when film so easily manipulates emotion, there is every reason to find out how and why."  

In many ways, Steven Spielberg's *Indiana Jones and the Temple of Doom* is an exact retelling of *Gunga Din*, except that one swashbuckling hero has replaced three. In fact, Indiana Jones' nickname "Indy"

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suggests an independent spirit, someone who is a maverick, and someone who will go at it alone. *Indiana Jones and the Temple of Doom* is filled with plenty of proof that roughly fifty years between Stevens’s and Spielberg’s film have meant little towards rectifying the misrepresentations of the “Orientals.” Just as *Gunga Din* opened with a man beating an oversized gong, so does *Indiana Jones and the Temple of Doom* commence with the Paramount Studio logo on a gong being struck by an almost naked “Oriental.” Spielberg’s homage to *Gunga Din* is evidenced from the very first frames of the film.

In fact, *Indiana Jones and the Temple of Doom* is so accurate in its repetition of the same misnomers set up in *Gunga Din* that one could make an argument that Spielberg and his crew did not bother to ratify the claim of “historical fact” at the start of George Stevens’s film but rather accepted it completely at face value. Spielberg’s secondary research has all the flaws and inaccuracies of the original source because he has blindly borrowed from Stevens’ “research.” Inaccurate historical and cultural images are thus perpetuated via cinematic repetition.

There are some very early indications that Spielberg’s philosophy of the Oriental is the same as Stevens’. *Indiana Jones and the Temple of Doom* opens with an opulent song and dance number at a night club in Shanghai in 1935, an obvious tribute on Spielberg’s part to the
Busby Berkely musical spectacles of the past. The chanteneuse, Willie Scott (played by Kate Capshaw) is an American cabaret performer who sings Cole Porter tunes in Chinese and English combined. The opening credits role over the number “Anything Goes,” in many ways, an apt summation (albeit an unintended ideological faux pas) of Spielberg’s depiction of the “other.”

The opening sequences set in Shanghai in 1935, have no connection to the rest of the film in terms of plot and adventure. Instead they simply establish the heroism of Indy and his indomitable spirit that cannot be defeated, no matter what the odds. It also foreshadows Indy’s saving of the Indian slave-children when he rescues a little Chinese boy, named Shorty, Short Round in full, (played by Ke Huy Quan) while playing Superman in Shanghai.

While *Gunga Din* sets up its three protagonists fairly equally, *Indiana Jones and the Temple of Doom* is primarily about a solo hero. However arguments could be made that Willie Scott (the singer) and Shorty (the Chinese boy) are indeed part of Indy’s gallivanting triumvirate. They adventure together, they fight the enemy together and they survive together. It is also interesting that the only female in the group has the masculine or androgynous moniker of Willie.

Once Indy, Willie and Shorty have escaped Shanghai, through an incredible sequence of near disasters, the three end up on a raft,
floating down a river somewhere in Northern India, the same terrain of *Gunga Din*. The entire Shanghai sequence also fulfills the purpose of depicting the Chinese (and hence all “Orientals”) as gangsters. In this version of cowboys and Indians the Chinese are the out and out villains. This is particularly disturbing in that the sequences in China have no connection to the story in India, other than it introduces Indy to his two sidekicks. It is gratuitous Oriental-bashing, literally and metaphorically.

In India, the tale centers around the same Kali cult that *Gunga Din* misrepresented and vilified so successfully. In fact, the followers of Kali in *Indiana Jones and the Temple of Doom* are called *Thuggies* just as they are in *Gunga Din*. Indy, Shorty and Willie end up in a village much like Tantrapur in *Gunga Din* and the landscape is still very much like that in a Western film, with dirt roads and wind-swept desert scapes. The village is pestilence-ridden much like Thebes in Sophocles’ *Oedipus Rex* and just as Oedipus has to solve the riddles of the Sphinx in order to rid the Thebans of their plague, so must Indy solve the mystery of the stolen Shankara stone in order to establish stability in this “primitive” Indian village. It is interesting to note that the mindset of the Western audiences has not evolved at all in the time period between *Gunga Din* and *Indiana Jones and the Temple of Doom*. 
Indy is ambushed by extremely impoverished villagers who are lamenting the theft of their sacred stone, the *Shivalingum*, a smooth, black rock that protects the village from harm. This rock is even more significant because it is one of five that the Lord Shiva himself had given to Shankara, one of his disciples. The thieves who stole the rock belong to the evil Kali cult who are being harbored in the catacombs at Pankot Palace.

The village is starving and this conceit gives Spielberg free license to portray the “third-world” in all its filthy, fly-infested, dirt-poor and ignorant glory! The holy man of the village proclaims to Indy that, “we prayed to Shiva to help us find the stone. It was Shiva who made you fall from Sky.”\(^{54}\) This notion of the Indians as superstitious and pre-Enlightenment is Spielberg’s rendition of the “colored” or the “oriental” as savage and in need of salvation by the white man.

While *Gunga Din* took place during Victoria’s reign, *Indiana Jones and the Temple of Doom* is also placed in colonial India, but much later in the year 1935. The colonial presence in *Indiana Jones and the Temple of Doom* is quite marginal and presented as very benign and not intrusive. Instead, the cult of Kali at Pankot Palace is seen as the oppressor and subliminally this justifies the need for a benign, white

\(^{54}\) *Indiana Jones and the Temple of Doom*. Dir. Steven Spielberg. With Harrison Ford, Kate Capshaw, Ke Huy Quan, Amrish Puri, and Roshan Seth. Paramount Pictures and Lucas Film Ltd., 1986.
presence to keep the Indian factions from killing one another. In fact, this very rationale was used to the bitter end when India was demanding its independence. It was also this rationale that caused the British to partition India into three nations before departing; the three entities to emerge were Pakistan, Bangladesh and India. If the British couldn’t have Indian all to themselves, they were going to leave with a “divide and conquer” policy, leaving the three partitioned nations to reel from that devastation well into our present times. These strategies of divide and conquer, practiced in other colonized nations outside of India as well, meant that even though the colonizers had legally departed, the effects of colonialism lived on long after the dismantling of this brutalizing and dehumanizing system. This is exactly why I argue that the notion of the post-colonial, can never escape from its colonial roots and ramifications. As such the term post-colonial can be somewhat misleading because it suggests something “after” colonialism, as though there were a clean break and a fresh new start. Realistically, it is quite the opposite in that post-colonialism is an extension of the colonial era, and previously colonized nations have found it almost impossible to extricate the colonizer completely in their respective eras of independence.

The cult of Kali, led by Mola Ram (played by Amrish Puri) who is an almost identical reincarnation of the Guru from Gunga Din, kidnaps
the children of the village and enslaves them in underground caverns, forcing them to search for the last two of the five Shankara stones. Legend, Spielberg tells us, indicates that when all five stones are found, the owner will be all powerful.

It is important to point out that in *Gunga Din* the Guru was played by a white actor (Eduardo Ciannelli), essentially in “brown face,” masquerading as an Indian, whereas in *Indiana Jones and the Temple of Doom*, Mola Ram is played by an Indian actor (Amrish Puri), who also dons the masque of a Hollywood perception of Indianness. The stereotypes in both cases are similar, and while Hollywood may consider casting an Indian actor as an Indian character a great artistic advancement, the damage done by the image is unmitigated whether the offending performance is delivered by an Indian or a non-Indian performer.

Much like the Guru’s speech at the end of *Gunga Din*, in *Indiana Jones and the Temple of Doom* there is a similar proclamation against colonialism delivered by Mola Ram. Of course it is hard to see Mola Ram as a freedom fighter when throughout the film he is portrayed as a cannibalistic demon. Mola Ram proclaims to Indy who is being held
captive that, "Soon the Thuggies will be all powerful . . . the British in India will be slaughtered. Then we will overrun the Muslims . . . Then the Christian God will fall down."55

This preposterous introduction of Mola Ram as a freedom fighter isn't the most blatant bastardization of the "Oriental" in this film. When Indy, Willie and Shorty arrive at Pankot Palace they are given a feast by the reigning child King, named Little Maharajah (played by Raj Singh) and the Prime Minister, Chattar Lal (played by Roshan Seth). The dinner that ensues consists of the following: (1) A large stuffed boa which is sliced open and live, baby snakes crawl out which are then swallowed live by the gleeful Indian guests at the banquet; (2) gigantic bugs cooked like crabs are sucked dry like clams and mussels in ravenous fashion by the Indians again; (3) a tomato based soup in which are floating innumerable human eyeballs; and (4) desert is "chilled monkey brains"56 served in the decapitated heads of the monkeys brought to the table in all their furry glory. Even though there are white guests at the table we never see them eat these "delicacies." There is no historical fact to this notion of Kali worshipers as not only non-vegetarian but also totally savage in their diet. On the contrary,

55 *Indiana Jones and the Temple of Doom*. Dir. Steven Spielberg. With Harrison Ford, Kate Capshaw, Ke Huy Quan, Amrish Puri, and Roshan Seth. Paramount Pictures and Lucas Film Ltd., 1986.

Kali worshipers like most Hindus are staunch vegetarians and never ate monkeys or snakes in any form because they are revered in their polytheistic traditions. Ironically, the very stones, sacred to Shiva, that Indiana Jones is retrieving are in fact guarded by snakes (cobras) in Indian mythology. Another revered God in Hindu theology is Hanuman, the monkey God.

The scene where Indy encounters the Thuggies worshiping Kali in their cavernous, subterranean hideout, is very reminiscent of the scene when Cutter and Gunga Din run into the Guru and his devotees. Of course Spielberg one ups Stevens and has Mola Ram actually put his fist through the rib cage of his human sacrifice. Mola Ram pulls out his still beating heart - all with the blessings of Kali whom he has invoked by savagely crying out, "Mother Kali! Mother Kali! Give me Strength! Now his heart and soul are in my fist!" Later in the film, both Indy and Willie are both threatened with a possible ripping out of their hearts from their ribcages by Mola Ram, but the conventions of action-adventure films prevail and they both escape, in the nick of time, completely unscathed.

57 Translated from Hindi in the film by the author. *Indiana Jones and the Temple of Doom*. Dir. Steven Spielberg. With Harrison Ford, Kate Capshaw, Ke Huy Quan, Amrish Puri, and Roshan Seth. Paramount Pictures and Lucas Film Ltd., 1986.
The ending of *Indiana Jones and the Temple of Doom* is again identical to that in *Gunga Din*. A rope bridge across a huge canyon is the key to ousting the enemy and the British troops appear to defeat the Kali worshipers. The colonials have ousted the real enemy, i.e. the renegade Indians, and hence have further legitimized their staying on in India as the colonizers and saviors of the more “civilized” and “genteel” Indians.

Spielberg’s film works as a piece of post-colonial propaganda, not only because of the way in which he creates lurid facts out of pure fiction, but also by the power he wields as a film maker. Kolker points out that:

> Spielberg’s work is obviously well crafted, technologically overdetermined, dependent upon cinematic effects, and at the same time determinedly realistic and manipulative. It brings to the fore the central problem of the illusionary form, the power of American cinema to create an unquestioning location of belief and assent.\(^5^8\)

Thus, Spielberg not only reconfirms Orientalist notions in popular culture but he reinforces them as above and beyond scrutiny. The viewer becomes an accomplice to Spielberg’s racist and colonial cinematic misrepresentations by being made to feel accurate and empathic with the characters and subject matter. The viewer,

consciously or unconsciously, eventually complies completely with Spielberg’s ideology. Kolker writes that:

the ideological structures of Spielberg’s films “hail” the spectator into a world of the obvious that affirms the viewer’s presence (even while dissolving it), affirms that what the viewer has always believed or hoped is (obviously) right and accessible, and assures the viewer excitement and comfort in the process. The film offers nothing new beyond their spectacle, nothing the viewer does not already want, does not immediately accept.  

Spielberg hides the darker aspects of his film, the ideological support of colonialism and the rhetoric of white, male patriarchies behind the glitz and glamour of spectacular action-adventure, all under the aegis of historical fiction.

One of the most subversive aspects of Indiana Jones and the Temple of Doom, is the entrustment of Indy with the freeing of the Indian slave children from their evil Indian demagogue Mola Ram. First of all, the villagers, all of whose children have been abducted into slavery, are presented as dirty, ignorant, subservient and illiterate. They are religious fanatics, blinded by their own fundamentalist natures, who are searching for salvation by the white superior. Moreover, by having Indy save the children, Spielberg and Lucas create the illusion that their parents were incapable of rescuing their

offspring from Mola Ram. Insidiously, what this communicates is that left to their own devices (after Colonialism ended) the Indians would enslave their own and would once again need rescuing by the white ones, Americans this time around. This is a reinforcement of the need for the British to stay on in India, but it also establishes America’s role as the global police, allowing the third-world to see the folly of their ways. Thus, in a post-colonial era, the Indians would suppress their own people and children only to need liberation by the Americans. In either case, this sort of rhetoric suggests that when contemplating patriarchies, the British or American ones are infinitely more desirable than the Indian ones for the Indian people themselves. Such paternalism has always been the mainstay of a variety of rhetorical positions centered around institutions like slavery, apartheid, and colonialism.

It could easily be said that in *Indiana Jones and the Temple of Doom*, Spielberg is “Orientalizing” on behalf of both the British and the Americans. The racism of the film is clear in both the savage portrayal of the Kali cult and the uncivilized portrayal of the rest of the Indians. *Indiana Jones and the Temple of Doom*, like *Gunga Din* cannot simply be dismissed as escapist action-adventure, but rather should be dissected in order to expose its Orientalist and pro-colonial ideology and rhetoric. While *Gunga Din* certainly remains widely watched and popular, *Indiana*
*Jones and the Temple of Doom* enjoys an even wider viewership and legacy of popular entertainment.

Spielberg was nervous about attempting his first sequel with *Indiana Jones and the Temple of Doom*, and he stated in the press that the last thing he ever wanted to do in his life was bore an audience.\(^{60}\) Spielberg’s fears resulted in the sequel becoming the most intense film in the series, featuring, among other things, a bug chamber, a chamber-of-horrors dinner feast, and the film’s centerpiece, a human heart ripped from the chest of a man who is still alive as the heinous atrocity is being committed. With its emphasis on human sacrifice and truly dark acts of evil, *Indiana Jones and the Temple of Doom*, received a terrible backlash from the critics and concerned parents. In fact, the film went on to contribute a major change to film distribution: it engendered the creation of the PG-13 rating (by the MPAA -- Motion Picture Association of America), as a kind of midway point between PG, which *Indiana Jones and the Temple of Doom* had been rated, and R, which was deemed too extreme for the film. In England, the scene where Mola Ram pulls out the still-beating heart from his human sacrifice, was excised before its release. David Denby of *New York* magazine wrote that *Temple of Doom* was

heavy-spirited and grating. The frivolous treatment of child slavery makes you slightly sick. The lurid and gloomy trash goes on and on, without a joke anywhere, and it's not only sadistic and dumb, it's oppressively ugly. That Spielberg should devote himself to anything so debased in imagination is unbearably depressing.⁶¹

Spielberg was reportedly surprised by these types of reactions. He angrily (and somewhat arrogantly) quipped that, "The picture is not called the 'Temple of Roses' it is called the 'Temple of Doom'."⁶²

Spielberg went on to argue that:

I can remember as a child at the movies my parents used to cover my eyes in the cinema when they felt I should not be exposed to what was coming out of the screen: it was usually two people kissing innocently. There are parts of this film that are too intense for younger children but this is a fantasy adventure. It is the kind of violence that does not really happen, will not really happen and cannot really be perpetuated by people leaving the cinema and performing these tricks on their friends at home.⁶³

It is interesting that Spielberg's parents found it necessary to shield his eyes from "people kissing innocently," thus laying bare

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⁶³ Ibid.
certain Puritanical tendencies in his upbringing. The suggestion that innocent kissing is worth shielding children from, as opposed to violence exposes some of the contradictions of the American culture that are well and alive in Hollywood films. In addition, in the above quote, there is a seeming contradiction in Spielberg's notions of the "real." If the violence is not real, are we to assume that the bastardization of the the Indian culture depicted is not real as well? But nowhere does the film make any sort of internal commentary that the Indians being portrayed are a figment of Spielberg and Lucas' imagination. In fact, Spielberg claimed that, "our villains deal in black magic, torture and slavery. So they're real bad."64 Spielberg seemingly cannot decide whether his violence is real or not.

Once the new PG-13 (Parental Guidance) certificate had been implemented by Jack Valenti (President of the MPAA (Motion Picture Association of America)) who was barraged by angry parents, prompted by Temple of Doom's release, Spielberg did recant some of his naive comments about the impact of his film's violence on children. He said that he didn't want to see a 10-year-old granted admission to his film and that "the responsibility to the children of this country is

worth any loss at the box office.” While Spielberg’s concern extends only to the children of the United States, his concerns for box office receipts is more far reaching. This is evidenced when he claimed that, “I always consider the international market when I make a film.”

Of course, it is incredibly telling that audiences objected to the violence (e.g. the ripping out of the heart) but weren’t even cognizant of the inaccurate and racist portrayal of the Indians. This is an interesting commentary on the way in which American (and other Western or Westernized) audiences invest their sensibilities when it comes to Virtual Realities. Indiana Jones and the Temple of Doom was made in 1986, an era in which a similar film about African-Americans would have been booed off the screens. This raises interesting questions and concerns about hegemonic structures, which merely transpose the oppressed and misrepresented, all the time buttressing the oppressor.

Early in his career, particularly with films like Indiana Jones and the Temple of Doom, Spielberg seemed to pay little attention to historical or cultural accuracies. In talking about his film 1941, Spielberg himself admitted that, “Well, we’re taking history and


66 Ibid, p. 32.
bending it like a pretzel. I've taken this pillar of truth and shredded it into a movie that is visually madcap and quite nuts... Hypertension is fun!" Spielberg obviously found it difficult to abandon this historically callous philosophy when he went on to make *Indiana Jones and the Temple of Doom*. And, this cinematic disregard for historical accuracy allows Spielberg to manipulate his audiences with greater efficacy in that fact and fiction are, without warning, deliberately blurred in his Virtual Realities. Robert Kolker, who has written perhaps the best critical analysis of Spielberg and his work has astutely written about the filmmaker's ability to manipulate his audiences.

Steven Spielberg is the great fantasist of recuperation, every loving son, calling home to find out how things are and assuring the family everything will be fine. He is the great modern narrator of simple desires fulfilled, of reality diverted into the imaginary spaces of aspirations realized, where fears of abandonment and impotence are turned into fantasy spectacles of security and joyful action...security and joy is neither offered by his films nor earned from them, but rather forced upon the viewer, willing or not, by structures that demand complete assent in order to survive. His films are not so much texts to be read and understood, but machines to stimulate

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desire and fulfill it, to manipulate the viewer without the viewer's awareness of what is happening.\textsuperscript{68}

Thus, Spielberg is able to manipulate his audiences without their direct consent. It is in this regard that Spielberg fully understands the power of Virtual Realities and their ability to seduce.

Aside from the historical inaccuracies, Spielberg was also made aware of the racism and sexism in \textit{Indiana Jones and the Temple of Doom}. He eventually did admit that, “there's not an ounce of my personal feeling in \textit{Temple of Doom},” and that “\textit{Indy Two} will not go down in my pantheon as one of my prouder moments.”\textsuperscript{69} This is a curious confession of Spielberg's part, somehow implying that Lucas was responsible for the film, making Spielberg merely a hired hand in the process. Moreover, Lucas' reputation for misrepresenting cultures and groups, resurfaced in 1999 with his \textit{Star Wars (Episode I): The Phantom Menace}. In that blockbuster bonanza, Lucas was accused of creating a virtual “step-n-fetchit” in the character of Jar Jar Binks, who spoke like a buffoon, behaved like a Sambo and spoke in very broken English in a black, Caribbean dialect. In addition, the leaders of one of the alien groups in the film, who also serve as villains in the

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\textsuperscript{69} \textit{Ibid}, p. 110.
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service of the "dark forces," speak with Chinese accents. In the post-
Cold War era of the 1990s, with the Chinese having replaced the
Russians as the enemy, this depiction on Lucas' part was bound to
raise some ruckus and bring forth a reaction from critics and some
audiences alike. Thus, from *Indiana Jones and the Temple of Doom* to
*Star Wars (Episode I): The Phantom Menace*, Lucas' proclivity towards
cultural and other misrepresentations has changed little over a span of
twenty years. The legacies of such Virtual Realities obviously live long
and heartily in cultural artifacts and the collective public
consciousness.

3. **John Sturges’ ** _Sergeants 3_

While *Gunga Din* has been hailed as a “classic” and continues to
have wide audiences, its cinematic clone *Sergeants 3* has suffered a
more dire state of affairs. Film scholars Jay Robert Nash and Stanley
Ralph Ross have called it “a poorly made version” of and “really an
awkward, amateurish spoof of ‘Gunga Din.’”

*Sergeants 3* was released in 1962 and directed by veteran
Hollywood director John Sturges. Basically, *Sergeants 3* is a remake of
*Gunga Din*, except that the three colonial sergeants are replaced with

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70 Jay Robert Nash and Stanley Ralph Ross, *The Motion Picture

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three American Sergeants in the “wild, wild West” and Gunga Din the East Indian becomes an African-American.

_Sergeants 3_ starred the now infamous Rat Pack comprising Frank Sinatra, Dean Martin and Sammy Davis, Jr. with Davis playing the Gunga Din clone. The ‘Big Three’ of Sinatra, Martin and Peter Lawford reenact the parts played in the original by Cary Grant, Victor McLaglen and Douglas Fairbanks, Jr. The cast was rounded off by Joey Bishop. Sinatra also produced the film. There is very little information available about the United Artists release and the film was never released on video.

The basic story of the film is as follows. Sergeants Mike Merry (Frank Sinatra), Chip Deal (Dean Martin) and Larry Barrett (Peter Lawford) are inseparable Army men in 1870, stationed in Indian territory. In a barroom brawl, where the three sergeants are making merry, they meet a recently freed slave named John Williams (Sammy Davis, Jr.) Like Gunga Din, John Williams willingly becomes the buffoonish side-kick to the sergeants three.

In this film, the three soldiers are ordered to track down a tribe of fanatical Sioux Indians who are hiding out much like the Kali cult in both _Gunga Din_ and _Indiana Jones and the Temple of Doom_. Sammy Davis Jr., plays the step-n-fetchit, reincarnating Jaffe’s subservient, savage and martyred Gunga Din.
The similarities between the two films is almost scene for scene. Sergeant Barrett has a love interest named Amelia Parent, much like MacChesney’s dalliance in Gunga Din. Barrett plans to marry Amelia after he serves his last assignment. However, his two compatriots, trick him into signing a re-enlistment.

Like in Gunga Din, one of the sergeants, Deal in this case, is captured by the Indians and tortured. The other two sergeants, with the help of Jonah Williams, manage to rescue Deal and ultimately outwit the Indians and prevent them from carrying out their massacre.

In Gunga Din, right before the Gunga Din is martyred he blows a bugle and warns the approaching British Cavalry of the Kali cult’s impending attack. In Sergeants 3, this is Jonah Williams’ duty and he blows his bugle to warn the U.S. Cavalry of the Indians waiting to ambush and massacre. It is the three sergeants who are decorated for their bravery, and the savage Indians are defeated and kept in their place.

While Gunga Din has been hailed as a classic and is watched to this day, Sergeants 3 has had a less successful fate. The reviews in 1962, in an ironic sense, savaged the film and particularly Sinatra’s work in it. Philip K. Scheuer of The Los Angeles Times wrote:

Sergeants 3 many have seemed like a natural for the Rat Pack - Gunga Din done as a western, After all, hadn’t George Stevens made a rootin’, tootin’
epic of it with a starry cast in 1939?...The trouble with Kipling's poem, however, is that it is based on a single situation - and even W. R. Burnett, who adapted it and transposed it to the Dakota Badlands in the 1870s, hasn't been able to do much more than rough in the preliminaries.\textsuperscript{71}

Scheuer somehow suggest that \textit{Gunga Din} was more complex than \textit{Sergeants 3}. However, in terms of the story, there are no differences and \textit{Gunga Din} itself, is rather simple/simplistic in its view of the Indians and the cult of Kali. The Orientalist views in \textit{Gunga Din} are no more complex or less racist than the hegemonic reinforcement of American power over the Native Americans/Indians in \textit{Sergeants 3}. The \textit{New York Times} film review tapped into how the gravity of \textit{Gunga Din} had become farcical in the hands of the \textit{Sergeants 3}. A H. Weiler wrote that the film is filled with accidental comedy in that "everything is thrown but pies. The same may be said of the Indian attack on our beleaguered heroes who stand them off with fire-crackers, fists, bows, and arrows and dynamite."\textsuperscript{72}

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The review of *Sergeants 3* in *Variety* was even less complimentary of the film and of Sinatra. "Of the three, Martin seems by far the most animated and comfortable, Sinatra and Lawford coming off a trifle too businesslike for the irreverent, look-ma-we're-cavalrymen approach." But it is Hazel Flynn's review in *The Hollywood Citizen's News* that is the most scathing.

Somewhere east of the Suez the ghost of Rudyard Kipling must be whirling like a dervish in its grave. Reason is that Frank Sinatra has taken 'that lazeration ragged Gunga Din,' put him in a U.S. Cavalry uniform (Locale Kanab, Utah, circa 1873), given him another kind of Indian as the enemy and made of all this literary emasculation a movie mish-mash. It's more din than Gunga, believe me, starting with a barroom brawl and ending with a howling massacre. Frankie's film is just unbelievable from start to finish. It's downright amateurish and the technical boys evidently took everybody for a ride with sets that shake, wrong props and other things that will make you say, 'Oh no, it's just not possible!'

This indictment of the film is perhaps one of the many reasons that *Sergeants 3* has not had the longevity of its parent film *Gunga Din.* It is interesting that even though *Sergeants 3* received a barrage

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of negative criticism, none of it focused on the racism and the cultural misrepresentations rampant in the film.

Jay Robert Nash and Stanley Ralph Ross report that Sergeant 3 was compromised from day one when “legal trouble arose since no permission to use the story line was obtained by Essex Productions from RKO. Before United Artists released SERGEANTS 3, Essex fended off a plagiarism suit by purchasing the rights.”

Just as Gunga Din was made to appeal to a certain reverence for white, military might, Sergeant 3 also hoped to pay homage to the unadulterated patriotism and machismo of the U.S. Cavalry. A. H. Weiler wrote in The New York Times that, “A dispassionate viewer must admit, however, that ‘Sergeants 3’ should be spellbinding stuff to every red-blooded American boy.” In fact, the machismo of the central characters and the ‘Cowboys and Indians’ shenanigans in the film were certain to appeal to young boys all over the world, given the widespread distribution and global marketing of Hollywood films.


Jay Robert Nash and Stanley Ralph Ross probably said it best when they wrote that, "The laughs quickly diminish. The group should have loped off into the sunset much sooner in the film." 

4. The Legacy of Orientalist and Colonial Virtual Realities Via the Language of Cinema

In making the connection between new virtual technologies and colonialism and imperialism, Maria Fernandez writes that:

As the millennium comes to an end and we witness the deployment of imperial strategies in the realm of electronic visual culture, it is of crucial importance for artists and critics to learn from post-colonial studies. As the fields of electronic media ad post-colonial studies start to overlap, an urgent task for artists, critics and theoreticians is to identify areas of common interest and/or conflict as sites for future creativity and intervention. New media can be employed to challenge old histories.

In concluding this chapter I will address how and why the study of these three "colonial" films from America is problematic and what might be


done to alleviate some of those problems created by these Virtual Realities. Writing about British colonial efforts in India, Karl Marx said that, “England has to fulfill a double mission in India: one destructive, the other regenerating - the annihilation of the Asiatic society, and the laying of the material foundations of Western society in Asia.”\textsuperscript{79} This would hold true in every case of colonization. Post-colonial nations must reverse that “double mission”. That is, they too have to function within two processes, one destructive and the other regenerative. For the East, to explode the myths and realities as perpetrated by Orientalism, the material foundations of Western Society have to be questioned and altered and the Asiatic (read indigenous) societies have to emerge again from under the shadows of colonial exploitation. Thus, decolonizing, is not merely the absence of the ruling power, but rather, it is a process of a colonized people strategizing to emerge from the “system of representations framed by a whole set of forces that brought the Orient into Western learning, Western consciousness, and later, Western empire.”\textsuperscript{80} As a result, films like the three studied in this chapter cannot simply be dismissed as escapist pieces of cinematic action-adventure. Moreover, these films prove that the


colonial agenda can be reinforced not only by nations outside of the colonizing countries, but also in times long after colonialism was “officially” and “legally” dismantled. As a case in point, Spielberg’s film is quintessentially American and yet it restates colonial notions as it emerges in 1986, exactly thirty-nine years after Indian independence.

As Said informs us, the task of the day is “to provide the contemporary scholar with insights, methods, and ideas that could dispense with racial, ideological, and imperialist stereotypes of the sort provided during its historical ascendancy by Orientalism.”81 And here, it is imperative to understand the manipulative and image creation processes of Virtual Reality technologies, specifically film in this case.

The issue of cinematic language is one of prime importance and relevance in analyzing these films in a post-colonial era. Much of the cinema of the West which is considered “valuable” (both in the indigenous homeland as well as in the foreign markets) is written in the language of the colonizer - the same language that was used to dominate and exploit the “Orientals.” While many of these films are subtitled with indigenous languages when shown abroad, this is not

always the case, and the film is often screened in English. Moreover, even if it is translated, the Orientalist and colonial images cannot be countered and negated.

James Baldwin once wrote that he felt “so bitterly anomalous that a black man should be forced to deal with the English language at all - should be forced to assault the English language in order to speak...when... the language reflected none of [his] experience.” In the American context there is Ntozake Shange who has tried to develop her own syntax within English to reveal experiences that occur within spaces occupied by women of color. She writes:

i cant count the number of times i have viscerally wanted to attack deform n maim the language that i was taught to hate myself in/the language that perpetuates the notions that cause pain to every black child as he/she learns to speak of the world & the “self”.../in order to think n communicate the thoughts n feelings i want to think n communicate/i haveta fix my tool to my needs/i have to take it apart to the bone/so that the malignancies/fall away/leaving us space to literally create our own image.  

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Both Baldwin's and Shange's way of thinking applies to audiences in developing nations trying to consume the post-colonial identity of themselves manufactured under the rubric of Hollywood entertainment. The psychological, economic and sociological complexities of cinematic language structures need to be scrutinized very carefully, so as to understand more holistically why the language of the colonizer is so resilient, and moreover how this hinders the emergence of a healthy post-colonial and anti-Orientalist identity. Maria Fernandez makes some astute observations about the connections between the Virtual Reality images manufactured by colonialists and the consumption of these realities by previously colonized people. She argues that:

at present one cannot disassociate the manufacture and distribution of these technologies from economic profits made in the developed world or from an ongoing process of the colonization of knowledge that began with the book and continued with media such as film and television. In the opinion of Edward Said, these technologies are crucial for the construction of identity in formerly colonized regions since colonized peoples learn about themselves through these forms of knowledge.\textsuperscript{84}

In the *Tancred*, Benjamin Disraeli wrote that, “the East is a career.” This is particularly true for those who inhabit cultural, artistic, political, and educational institutions in the West. If the developing nations are to avoid being negotiators in a new fangled cultural imperialism, then their citizens have to strategize against this ideology of the East as a career.

The point is that de-Oorientalizing the West is costly and difficult. Orientalist attitudes, as we have seen through an analysis of *Gunga Din*, *Indiana Jones and the Temple of Doom*, and *Sergeants 3*, have a great inertia within the memory and collective consciousness of the West. Said tells us that, “more than anything else, the political and cultural circumstances in which Western Orientalism has flourished draw attention to the debased position of the Orient or the Oriental as an object of study.”\(^5\) It is precisely this position of debasement that the post-colonial nation has got to fight against - to “capture it, treat it, describe it, improve it, radically alter it.”\(^6\) However, with the power and proliferation of Hollywood across global borders, orientalist attitudes permeate even the markets of formerly colonized nations and become entrenched there as well. The first step for the East is to

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\(^6\) *Ibid*, p. 95.
see its status of debasement with all the domination and exploitation that goes with it.

Thus, it is not just the Westerners who begin to see orientalist views as true, historical fact, and authoritative, but the subjects of Orientalism (the "orientals" themselves) begin to buy into this Virtual Reality about themselves. French scholar Leroy-Beaulieu wrote that:

A society colonizes itself, when itself having reached a high degree of maturity and of strength, it procreates, it protects, it places in good conditions of development, and it brings to virility a new society to which it has given birth. Colonization is one of the most complex and delicate phenomena of social physiology.⁶⁷

While Leroy-Beaulieu is talking about the colonization of one nation by another, based on relative power, I believe that such an understanding of human exploitation is transferable to domination within peoples of the same country based on relative power issuing from class, race, gender, and religion. In fact, Leroy-Beaulieu goes on to say that:

Colonization is the expansive force of a people; it is its power of reproduction; it is its enlargement and

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its multiplication through space; it is the subjection of the universe or a vast part of it to that people’s language. customs, ideas, and laws.\footnote{Agnes Murphy, The Ideology of French Imperialism, 1871-1881 (Washington: Catholic University Of America Press, 1948), pp. 189, 110, 136.}

It is precisely this reproduction, enlargement, and multiplication through space that becomes possible through the popularity and global distribution of films like Gunga Din, Indiana Jones and the Temple of Doom, and Sergeants 3. Beaulieu and Said would argue that this has to be curtailed and aborted by developing nations in post-colonial times. The banning of Gunga Din by India during its initial release might have been one step in that direction. However, today with the technologies of the internet, video, DVDs (Digital Video Discs) and CD-roms, these images are no longer as easy to keep away from and outside of certain geographic boundaries.

Said describes Orientalism’s failure in that it did not “identify with human experience” and that it “failed also to see it as human experience.”\footnote{Edward Said, Orientalism (New York: Pantheon Books, 1978), p. 328.} The three films under discussion in this chapter are excellent examples of the failure of Stevens, Spielberg and Sturges to depict Indians (Asian or American) as human in their Virtual Realities of the sub-continent. After all, there constantly exists within Orientalism
the understanding that the Western scholar, artistic authority, entertainment consumer, or citizen is

entitled to own or to expend (or both) the majority of the world resources...Because he, unlike the Oriental, is a true human being......a white middle-class Westerner believes it his human prerogative not only to manage the nonwhite world but also to own it, just because by definition "it" is not quite as human as "we" are. There is no purer example than this of dehumanized thought.90

It is precisely this dehumanized thought system that gives birth to the "seductive degradation of knowledge"91 as Said calls it. The charge of the post-colonial nation in the developing world is to develop a personal and a world knowledge about itself, free of such seductive degradation.

Finally, it can be said that Orientalism is itself a Virtual Reality because the knowledge it creates and perpetuates is "seductive degradation." Couple this Virtual Reality of Orientalism with the Virtual Reality of cinema and it becomes evident that audiences are not only immersed in an entertainment medium, but are also immersed in


political ideologies and rhetoric. This is an important lesson, because in current-day Virtual Reality applications, the focus is mainly on artistic and entertainment immersion.

Two general notes in conclusion. First, in discussing post-colonial studies with reference to developing nations, the colonizer is blamed for looking upon the “East” as the “other” in very general terms. A monolithic structure of the “other” is set up. Similarly, post-colonial studies sees the colonizer as a large, monolithic entity as well. Such a tendency, on the part of post-colonial scholars is detrimental to real discourse on how developing and developed nations can strategize to deal with the post-colonial genesis of developing nations all over the world. After all, Hollywood films emerging from America, particularly in the post-colonial era, are rarely seen as extensions of colonialism.

Second, it is worth noting that the term “post-colonial” is an oxymoron in that it suggests something that comes after colonialism, i.e. an entirely distinct phase. Rather, post-colonialism is merely an extension of the colonial era, and as such impacts everything that comes after it. Post-colonial studies cannot inadvertently dismiss the colonial period as simply something of the past; instead, we are forced to reckon with it as a living extension into the present and the future.

The future of cinematic Virtual Realities like *Gunga Din*, *Indiana Jones and the Temple of Doom*, and *Sergeants 3* is problematic and
definitely in search of new definitions, constructs and identities. Post-colonialism as an area of inquiry has a large "market value" in Western scholarship. Two notes of caution. First, the "market value" of such scholarship needs to be raised in developing nations as well. That is, developing nations in post-colonial times need to capitalize on the demand of their own state of being as academic commodity. Second, and more ominously, with this great demand for post-colonialism and related "isms" of post-modernism, feminism, Marxism, etc., one has to warn against the "tokenization" of developing nations. For indeed, if cultural studies, re-edifies the constructs and praxis of Orientalism under the guise of more "sophisticated" and subversive "isms" then, cultural imperialism is inevitable. Maria Fernandez notes that, "Now more than ever it is crucial that those of us who have access to electronic technologies learn to identify the imperialist underpinnings of the electronic revolution in order to be able to contest the re-enactment in this new field of time-tested imperial strategies."^92

CHAPTER 5

VIRTUAL REALITIES IN FILM

From Voyeurism to Virtualizing History

In the previous chapter I argued that film functions as a Virtual Reality that defines history via its images and ideologies. In particular, by looking at three films that were "Orientalist" and pro-colonial in their ideological stances, I established that virtual technologies are not harmless and ineffectual, but rather they play a role in social reinforcement and hegemonic regeneration. Images are not benign but rather gain psychological, historical, social, cultural and hegemonic significance based on the contexts from which they emerge and proliferate.

In this chapter I look at films that either use computer technologies as their medium of generation or as the subject matter
of their stories. Here Virtual Reality becomes the medium and/or the message, to use Marshall McLuhan's dictum that "the medium is the message."

A. Technology in Film

I think that a very good argument could be made that movies such as Total Recall, Terminator, Terminator II, and The Lawnmower Man (cultural artifacts, if not art) accidentally stumble upon issues of the ethics of interactivity and virtual environments because of Hollywood's simplistic obsession with the melodramatic connotations of good versus evil, wherein the popular belief is, that good must triumph over evil because people go to the cinema to escape their every day realities. With this in mind, the very act of watching a film becomes an entrance into a virtually real world! However, even though the above mentioned films are not primarily concerned with the "real" issues of ethics in virtual worlds outside of Hollywood, I would argue that these two films are very telling about how people all over the world are beginning to adapt to virtual systems and interactivity.

Having engaged in a close critical and cinematic analysis of the images presented in The Lawnmower Man, I have come to the conclusion that the virtual and interactive worlds that are created in them have all the flaws of the world prior to the "invention" of such
“new and radical technologies.” That is, the virtual world of this film is sexist, racist, homophobic, inaccessible to the physically or mentally challenged and as a result it merely reinforces, rather than destroys, all the oppressive systems already rampant in the world. This may sound like a new manifesto on Hollywood’s responsibility to the various groups on a politically correct agenda. However, my intention is to examine a few truths and fallacies of the way in which virtual systems and technologies have dealt with these issues in the content of cinema.

One of the largest fallacies surfacing from the fast evolving technologies of interactivity and virtuality was the idea that these systems would finally create a more egalitarian society in which access to information and education would no longer be the privilege of a few but the natural right of everyone. Myths of gender, race and other equalities began to become the very seductive marketing soundbytes of these new technologies. After all, the modern world seems to have grown jaded, not necessarily wiser, about gender, race, class, sexuality, and other systems of oppressions. If technology could evict us from such a dehumanizing ghetto then all the better was the technology that claimed such humanizing and democratizing principles. Thus far, these systems seem to have reinvented these same paradigms of exclusion and privilege.
Another myth, linked closely to the above, is the misnomer of power being transferred from those that have monopolized it since the Industrial Revolution to those who have previously been held under these systems. Yet, if one looks at this, outside the false rhetoric of mass egalitarianism and democratization, one will soon realize that such a transfer of power is not only unrealistic but goes counter to all that capitalism holds near and dear. And since it seems unlikely that in order to make this transition of power, the Western economies are going to convert to socialism or a new form of economic and federal governance, one must conclude that virtual systems will indeed thrive within the already extant models of economics and government. In fact, current systems of government and business have already appropriated these technologies into their existing modalities of transaction, and as such the societal, governmental, cultural and economic hierarchies already in place are being further strengthened and bolstered for the most part. The ongoing debate between new internet companies, (referred to as “e-commerce”) and the government on whether internet trade should be taxed is a good indicator that there will be no radical shift in the transfer of power based on the emergence of these new technologies.

Therefore, before one accepts these systems as the next utopian universe, one has to deconstruct its mythology or ideology, one
has to find ways of creating a critical dialectic about these issues, and eventually one has to acknowledge that no system is inherently an utopia or dystopia. Ultimately, it is human involvement and intervention that determines the future paradigms and impacts of these technologies.

Before undertaking a detailed analysis of the content and themes in *The Lawnmower Man* and *The Truman Show*, a brief statement about Aldous Huxley's *Brave New World* is in order. Huxley (1894 - 1963) wrote *Brave New World* in 1931, well before the rise of Adolf Hitler in Germany and Joseph Stalin in the Soviet Union. After all, Huxley's novel is one of the most well known and widely read books about the human longing for a perfect society, particularly one that is technologically obsessive.

Huxley's novel, often compared to George Orwell's *1984*, describes a bad utopia by posing the horrors to come in the future. In 1958 Huxley himself said that, "The future dictatorship of my imaginary world was a good deal less brutal than the future dictatorship so brilliantly portrayed by Orwell." In many ways, Orwellian prophesies have been outdone by real world situations and historical occurrences.

Huxley’s parable is less a plot driven novel than it is a presentation of themes and ideas that troubled the author about the future of humanity under the pressures of war and the tyranny of fascism, dictatorships, and authoritarian regimes. The people of Huxley’s world, all born of test-tubes and segregated into five castes, are happy, docile and free from disease, with old age and death made as palatable as possible. There are however, parts of the world allowed to remain as they were before the birth of the new World State.

The themes that Huxley presents in *Brave New World* can be found in both *The Lawnmower Man* and *The Truman Show*. A brief description of these themes follows so that the discussion of these two Hollywood variations on *Brave New World* might prove more valuable.

The first theme that Huxley sets forth is the tension between individual freedom on the one hand and community, identity and stability on the other. Conformity and genetic engineering coupled with the caste system and religion allows Huxley to argue the issues of individuality versus the authority of the state.

The second theme, directly linked to the first, deals with science as a means of control over human beings. In that *Brave New World* is as much a science-fiction novel as it is a story about utopias gone bad, Huxley is concerned not so much with predicting the future, but with
examining the impact that science has on humanity. Huxley focuses on how the misuses of biology, physiology, and psychology to create community, identity and stability could prove detrimental at best and disastrous at worst.

Genetic engineering as a threat, related to the theme above, is not so much about the manipulation of DNA and RNA as we conceive it today, but rather is about the way in which the World State breeds humans artificially and in prescribed numbers for specified qualities. The broader concern here is about using technology, biological or otherwise, to engineer human beings, allowing humans to be controlled by technology rather than humans remaining in control of it.

As a fourth theme, Huxley is concerned with how psychological conditioning is the way in which states will brainwash their citizens in order to gain and maintain control over them. Related to this is the notion of the pursuit of happiness carried to the extreme. The society tries to achieve stability by ensuring that all its citizens are happy and that all painful emotions, deep feelings and strong passions are eliminated. It is reminiscent of the line from George Wolfe's play The Colored Museum, where one of the characters laments that the worst "kind of pain . . . comes from feeling no pain at all."2

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Soma is a drug used in the World State in order to attain happiness. The drug has all the benefits with none of the negative repercussions such as side-effects and hangovers. The use of the drugs makes the humans more malleable and more easily controlled by technology and the state.

The cheapening of sexual pleasure is the next broad theme in Huxley's work where promiscuity is a virtue in order to assure that "what we think of as true love for one person would lead to neurotic passions and the establishment of family life, both of which would interfere with community and stability."³

One of the most pertinent themes in Huxley's novel, to this particular study, is the idea of the threat of mindless consumption and mindless diversions. The World State orders its citizens to always enjoy distractions in groups because solitude would lead to instability. One of these diversions is called the Feelies - "movies that feature not only sight and sound but also the sensation of touch, so that when people watch a couple making love on a bearskin rug, they can feel

every hair of the bear on their own bodies." This is certainly a forerunner of immersive Virtual Reality technologies being pursued today.

Two other themes that Huxley sets forth are the destruction of the family and the denial of death. Both these themes are related to the larger issues of stability and control over the individuals. The final two themes in *Brave New World* have to do with the suppression of individual differences and the costs of setting up and maintaining a system such as the World State. Huxley’s position is that the emotional, psychological, economic and other costs of setting up, maintaining, and enforcing these utopias is extremely high. The epigraph by Nicolas Berdiaeff at the start of *Brave New World*, is truly indicative of Huxley’s position. Berdiaeff states that, “Utopias appear to be much easier to realize than one formerly believed. We currently face a question that would otherwise fill us with anguish: How to avoid their becoming definitively real?”

All these themes, that Huxley so presciently elaborated upon in *Brave New World*, have been replayed consistently in literature, art,

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theatre, and cinema since then. The discussion that follows, surrounding *The Lawnmower Man* and *The Truman Show*, illustrates not only the longevity of Huxley's ideas, but also the complexity with which we continue to grapple with them. In the words of Alexander Henderson, Huxley's novel was depicting a "civilization which is rapidly becoming what may be called a 'wrapped in cellophane' civilization . . . the valuing of comfort above experience, stability above experiment, so-called science above nature." Both films under scrutiny here, *The Lawnmower Man* and *The Truman Show* in particular, are about these technologically enhanced "bubble cultures."

1. **Brett Leonard's *The Lawnmower Man***

New Line Cinema's 1992 release *The Lawnmower Man* begins with the following cinematic prologue.

By the turn of the millennium a technology known as VIRTUAL REALITY will be in widespread use. It will allow you to enter computer generated artificial worlds as unlimited as the imagination itself. Its creators foresee millions of positive uses - while others fear it as a new form of mind control.

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The film attempts to portray the struggle between the millions of positive uses and the mind controlling capabilities of this new technology. As with much of Hollywood these days, it is quite simply a melodramatic battle of good versus evil. Of course, due to a lack of Hollywood originality, good triumphs over evil. The film, as the opening statement signifies, deals with the "new" technology of Virtual Reality. The film implies that the technology itself is neither good nor bad, it is the humans that have created it and that will deal with it who will make it evil or benevolent, destructive or constructive. Carol Gigliotti, in her introduction to Aesthetics of a Virtual World: Ethical Issues in Interactive Technological Design writes that, "One cannot resist viewing Frankenstein as a tale of moral fiction uniquely germane to the ethical implications of the emerging interactive technology called 'virtual reality'. The recent film version of Stephen King's The Lawnmower Man can be seen as a contemporary translation of Shelley's tale."8

This dichotomous struggle of good versus evil in The Lawnmower Man is embodied in two humans, who via their personal trajectories, play out the battle between malevolent and benevolent forces. The first is Dr. Lawrence Angelo (played by Pierce Brosnan) and the other

8 Carol Gigliotti, Aesthetics of a Virtual World: Ethical Issues in Interactive Technological Design, dissertation (Columbus, Ohio: The Ohio State University, 1993), p. 2.
is Jobe Smith (played by Jeff Fahey). The Biblical implications of the name Jobe and other themes in the film consistently conflate ethics with religious morality, ignoring ethical considerations outside the realm of church-based morality. In addition, the name Jobe Smith, serves to symbolize a sort of contemporary “Everyman.”

Dr. Angelo has developed a virtual world technology that holds the key to the evolution of the human mind. The opening segment of the film deals with Angelo’s experimental chimp, Rosco, who enters this world during an experiment, gets unstable, and escapes from VSI (Virtual Space Industries) after killing a few guards. The guards that Rosco kills in real life resemble the guards he killed in the virtual world of the computer game. The chimp arrives at the hut of Jobe who, and this is no subtle symbolism, works as a gardener and helping hand at a church.

Jobe lives in a shack on the church grounds. He is presented as child-like, dim-witted, mentally underdeveloped, and has an obsession for a comic strip which, and no subtle coincidence here either, has as its central character a chimp, wearing a Virtual Reality helmet, named Cyboman. Jobe, with all his good Christian behavior coming to the forefront gives this runaway, gun wielding chimp refuge. Angelo, his fellow scientists from VSI and several swat teams find the chimp and Jobe. After some negotiating it seems that all the “monkey business”
is going to work out and that the chimp will return safely to his 
scientist, who all of a sudden has become humane and wants the swat 
teams not to harm the chimp, forgetting that subjecting the chimp to 
his experiments was what got them there in the first place.

The chimp becomes unstable and an action-chase scene ensues. 
An army of swat officers, after some effort, shoot this lone chimp 
down. Jobe is devastated by this, not only because his chimp friend is 
dead but because he believes that his comic strip will be terminated 
too. That was the only world Jobe knew. After the chimp incident we 
find out that the church was a huge beneficiary of money from VSI and 
now, the head priest begins to doubt VSI, calling their experimentation 
"the work of the devil."9

Jobe is stripped naked, and his Christ-like torso, with ribs poking 
out through the skin, is lashed severely by the head priest for his part 
in trying to save the chimp. Back at VSI, Angelo is trying to justify the 
continuation of his research and his quest for a new subject begins. 
Jobe, martyr saint to be of guinea pigs for unlocking the mysteries to 
the evolution of the human mind, is chosen.

The rest of the movie follows Job and Angelo's journey as they 
try and perfect the Virtual Reality model. Angelo's quest is to 

9 The Lawnmower Man. Dir. Brett Leonard. With Jeff Fahey, Pierce 
Brosnan, Jenny Wright, Mark Bringleson, and Jeffrey Lewis. New Line 

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immensely speed up the process by which the human mind acquires, processes and stores information. But, Joibe gets addicted to the neurotropic drugs and craves the virtual world more than he desires to live in the real world. He acquires mass amounts of information via interactive virtual learning. It begins with innocent game playing and degenerates into virtual massacre. Joibe does evolve from a sub-intelligent human to a thinking human and eventually into a cybernetic monster. Angelo has created a virtual Frankenstein.

As he becomes more like a “normal human being” Joibe craves sex and all those other, “normal” human functions. He becomes infatuated with a woman, Miss Burke, who coyly seduces him with a pickup line, immersed in Freudian Hollywoodism: “I’m looking forward to having my lawn mowed.”10 After sex in the real world, Joibe having just lost his virginity, the lovers presumably get tired of this reality. Real sex with true human to human contact just doesn’t suffice anymore. Joibe takes his lover into the virtual world where they engage in “technodiidionics” or “cyberdiidionics” (recently coined terms for virtual sex) and fuse into one being. This composite creature morphs into an insect and then into a monster with a composite penis and vagina head.

Eventually there is this murdering spree that Jobe goes on with his powers of "mind over matter"\(^\text{11}\) that he acquired after hours spent in the virtual world. He can make household objects kill the inhabitants of the house. All his murders are justified either by invoking Freud or through some other psychosomatic justification. The priest, Jobe’s tormentor, is set on fire, presumably a Hollywood twist on who shall truly inherit heaven and hell.

A sub-plot in *The Lawnmower Man* follows Peter, a young boy who is brought in to humanize Jobe later in the film. Peter has an abusive dad and Jobe comes and obliterates the evil dad, thus ending the vicious Oedipal cycle of Peter’s existence. Eventually the police, the FBI, and everyone else wants Jobe captured and dead. Jobe, who is only a victim of his circumstances, threatens to “enter” the mainframe computer and do something terrible. He wants complete domination over the global internet once he successfully becomes “pure matter”\(^\text{12}\) and is ejaculated into the cosmic web of cyberspace. The superinformation highway just becomes like any old highway found in B-movies, frequently traversed by the likes of Hannibal Lecter (from *The Silence of the Lambs*) and Jeffrey Dahmer.


\(^{12}\) Ibid.
Jobe does enter cyberspace via the virtual simulator but is denied access to the global network. Angelo must now enter this world as well and fight the final battle. Judgment day is approaching. A battle ensues, and at one point we see Angelo’s form in the virtual world crucified. The martyr scientist Angelo wins, but before dying and exploding all of VSI into smithereens, Jobe promises that he will be reincarnated, and when he does all the telephone lines in the world will ring simultaneously. The closing sequence is a series of world landmarks with telephones ringing incessantly, implying that there would probably be a sequel.

While the big Virtual Reality producing machine (VSI) has been destroyed, Jobe is now in the global pipelines of digital information. The ambiguous ending seems to suggest that there are no boundaries to the havoc that can now be wrought with Jobe having dematerialized his human form to become digital matter. Angelo claims that he has been given a second chance. He prophesies that, “if we can somehow increase our wisdom, not ignorance, this technology will free the mind of man, not enslave it.”

We are back to square one - will this new technology be used constructively or towards destruction?

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Even though the entire film is testimony to the fact that Virtual Reality technologies do not ensure us an escape from our current systems of oppression, there are four main segments of computer generated animation that I wish to focus on which illustrate my opinions and analysis more “graphically.”

The first sequence, relatively early in the film, is animation used to create a computer game in which the player, via Virtual Reality apparatus, enters a landscape of mountains and other geographical features and must seek out and kill the enemy based on certain signifiers that the player receives as he/she proceeds through the game. The signifiers are clearly borrowed from war technologies as they flash out, in bold, blue print, “THREAT” and “KILL COMPLETE.”¹⁴

The landscape that the player, the experimental chimp Rosco in this case, must traverse is quasi three-dimensional and the player/audience moves through space along animated paths set up within the game. There are sound effects and other visual signifiers that indicate the approach of the “enemy” and the termination of the enemy. The movement through the geographical terrain is accentuated by acceleration and deceleration and corresponding sound effects. Clearly, one message that we can get from this segment is that if

aesthetic systems are going to piggy-back ride their way into new technologies borrowed from the traditional havens of experimental money and research (primarily military), then we see a tendency for the aesthetic world to take on attributes and functions of the parent technology. Thus, children may learn from computers, but do many of the educational resources have to be framed within aesthetics and analogies of war and destruction? The point is, that borrowing technology is not merely taking on the know how. Often times, the content and structures of the parent technology subliminally or blatantly slip into the offspring technology.

Half an hour or so into the film, we see Jobe enter a virtual world in which we see him float, fly and fall through space. This environment has meteor-like objects suspended in the atmosphere and underneath is a constant undulation of hills in bright, primary and complimentary colors. His body is metallic looking and seems androgynous for the most part.

The next animated segment is when Jobe and his lawnmowing customer Miss Burke (who is also his lover) enter the same virtual world and travel through its vistas. They move along an animated path through a tunnel and eventually are catapulted into a more open space with many sharp edged, geometric objects which resemble shards of thick glass or metal. The two bodies, androgynous and metallic/shiny in
texture move through this space with clusters of shards and into
narrower and darker spaces, alternating between the two, suggesting
some sort of journey. This segment is repeated slightly later on in the
film, with similar images, except that the tunnels get longer and more
convoluted and there are white flashes that fill the screen periodically.
Moreover, the spiral of geometric shards explode from time to time
moving from organized paths of movement into more chaotic and
random modes of animation through space. These travels in virtual
worlds, as the above two segments suggest, are violent and
psychedelic experiences. Moreover, the intensity of these experiences
can be enhanced by the injection of neurotropic substances into the
jugular vein of the immersed participant.

The message is that, in the cybernetic era, real landscapes seem
to hold no fascination for humans and that the landscapes of the
future will be primarily drug-induced. It could be argued that if humans
become so engaged in and addicted to cyber landscapes, then the
environmental annihilation of natural habitats will become even less
noticed and the one thing that cyberspace will not be able to provide is
respite from global warming or mass re plantation of the rain forests.

Later in the film we are shown a human brain beginning to acquire
blisters on its surface. The texture becomes like corroded metal and
flesh and this entire brain then morphs into a cyber-hand, i.e. a
mechanical hand capable of duplicating human hand movement and functioning. This segment is perhaps the only place in the movie where the technology of computer graphics is used to critique the effects that future technologies (meta-technology or meta-graphics), or perhaps even current technologies, will have on the evolution of the human mind. For the first and only time in the film do we get an inkling that to callously assume that virtual technologies have no effect on human cerebral evolution is naive.

In another scenario, related to the above, we see a face generated via computer graphics that has for its lips and mouth a fast moving set of lawnmower blades. As the face moves through a black space it comes to a red brain and the blades proceed to devour this human organ in a very violent manner.

The next computer generated animation sequence that we see is when Jobe and his lover enter a virtual landscape together. We see hands made of liquid mercury at first followed by a whirlpool-like structure which is fiery with bright yellows, oranges and reds. This segues into slow-moving clouds and we see two characters enter this space. This time too, the characters are androgynous, but there is a size difference in the two characters. Interestingly enough, the tinier character is presumably the woman because the breasts are more defined than the other character's pectoral muscles. However, and
Hollywood strikes again, the male genitalia are not differentiable into a penis and scrotum. Rather all we see is a smooth bulge, distinctly male, akin to those found on the anatomically incorrect G.I. Joe and Ken dolls. One could assume that this might signify the castration of the male, although neither Hollywood or Virtual Reality are that bold or self-humoring. Rather, the pattern of the rest of Hollywood (and other patriarchal structures) where the penis is sacred and where the vagina is public domain, is replicated.

Androgynous as the characters may be, this is still a phallocentric world, where, interestingly enough the psychological focus is always on the male genitalia and the visual focus is always on the female genitalia. The two characters move towards each other, fuse and melt into one while embracing and indulging in "technodildonics." The unified body then morphs into an insect-like creature that flies through an icy landscape of blues, grays, and whites. Eventually, this being morphs into a four-headed creature whose head is a composite of a fairly recognizable human vagina and penis. Are we to assume that androgyny is the sexuality of the future? There are some very interesting issues raised here, perhaps none of them intended by the filmmakers. However, as the two copulating bodies become one and then transform into an insect and then into the genitalia-headed monster, are we to conclude that along with the evolution of the mind,
the humans will evolve into androgynous beings, or even
hermaphrodites? This is a variation on Huxley's *Brave New World* where
human reproduction has been completely manipulated and replaced by
technological mechanisms.

There are two other brief segments which use computer
generated imagery. In the one, Jobe opens his shirt to reveal a swirling
vortex in analogous shades of magenta and pink superimposed on his
chest. In the other, we see several official looking characters (the
villains at VSI in pursuit of Jobe and Angelo) disintegrate into a
composite of large globular molecules which eventually scatter and
swirl into space. These segments and the others described in this
section, are disturbing, not so much because of their violence *per se*,
but because in all these animations, disembodying human beings is a
rather facile and instantaneous process. It is eerily reminiscent of the
sterility and the facility with which the west exterminated the enemy
during the Gulf War, graphically brought "live" into millions of homes
across the world on television monitors. These computerized war
segments in *The Lawnmower Man*, are indicative of the seemingly
sterilized nature of the Gulf War, as the bombing was broadcast on
news segments and other programs across the world. As the bombing
targets were precisely obliterated "live" on prime-time television, war,
for the first time in modern history, became sterilized and surgical in
its impact on civilian populations in America and the other allied
countries.

The final sequence of computer generated imagery that we see
is the longest one in the film and appears towards the end of the film.
We see a multicolored whirlpool fill the screen as a glass/metalllic
textured human form is swallowed into this space. We see this form
(Jobe’s body dematerialized into “pure energy”) emerge covered with a
gold film with sparks that shoot forth from his body from time to
time. The space transforms into a honeycomb like structure with
regular, green polygons. Some of these honeycombs shoot out like
projectiles and in red and yellow, flash the message “ACCESS DENIED”.  
The frequency of these projectiles increases as does their speed of
“penetrating” the space. We see another human form, that of Dr.
Angelo’s, resembling a metallic, skeletal armature, enter this space.
This form is silver in color and the two forms engage in a battle in this
space. As they fight and grapple with each other they morph from
their respective metallic forms into their respective human
incarnations and back and forth. This is a visual representation of the
struggle of giving up the flesh and soul in lieu of transforming into
“pure energy.” Eventually we see the silver form (Dr. Angelo) on a
green crucifix while the gold form (Jobe) tackles the “ACCESS DENIED”
projectiles. This space, virtual as it may be, is ironically based on the only realities known to humans -- those into which some have access (the privileged) and into which others are denied access based on gender, race, sexuality, economic status, and disability status.

Having said all this, how then does the animation work within the context of the film? Simply put, parts of it are effective and others are merely gratuitous. The several segments where the participants in the virtual worlds find themselves swirling through vortices and whirlpools of shards and fragments suggests the chaos and uncertainty of these virtual worlds. This imagery of being swallowed into large, convoluted black tunnels and then being projectile into chaotic vortices of fire and damnation symbolizes a certain tenuous relationship between this new technology and the human race. It also suggests that if this technology is not questioned and checked from time to time, it will become destructive. With all the Judaeo-Christian signifiers in the film, these fiery vortices and whirlpools are without a doubt, cybernetic visions of hell. One of the more powerful images in the film was that of the head (with lawnmower blades for a mouth) devouring a red brain. Once again the suggestion is that over indulgence in virtual worlds will not allow the human mind to evolve, but rather to regress irreversibly or self-destruct with great force.
The final battle in cyberspace was gratuitous in that it was overly long and by this time one knew the kind of social, ethical, religious and moral justice that was going to be served. Jobe is constantly denied access into the mainframe of the computer. Eventually, when he unlocks the code, he enters cyberspace for real and VSI blows up. Angelo and Pete are saved for the sequel. The other segments of computer generated animation, especially all the murders were gratuitous, in that the filmmakers were using effects for the sake of using them. It is also interesting to note that while all the computer generated environments were cold, and blue and industrial looking or fiery and hell-like, Jobe’s initial world of innocence was in the wild, full of warm colors, nurturing and untouched by humans. This is a classic and somewhat clichéd depiction of man versus nature in post-industrialized, capitalistic economies.

Although the subject matter of the film had tremendous dramatic potential, the film makers were unable to make the message potent and thought-provoking. Issues of Virtual Reality, virtual sex, virtual crimes and other virtual misdemeanors are imminent. With great irony, Angelo convinces Jobe that he can be made smarter. Angelo claims that, “if you [Jobe] were smarter, people wouldn’t be
able to take advantage of you." And yet that is exactly what he does. The filmmakers and Hollywood seem to have missed an opportunity to make a powerful film about potentially explosive issues.

2. Peter Weir’s The Truman Show

The Lawnmower Man used Virtual Reality primarily as a technological interface in a melodramatic struggle between good and evil. In many ways, in this film, technology is merely a plot device to further a hackneyed world-view where the true nature of humanity is threatened by an unexamined proliferation of technology. Peter Weir’s The Truman Show (1998) takes on the issues of Virtual Reality as both medium and message. In this film, Virtual Reality is not only the issue under examination, it is the very basis for the worlds that the characters inhabit. In fact, The Truman Show takes the conceit of acting as life to its most extreme manifestation.

The movie tells the story of Truman Burbank (played by Jim Carrey) who was “the first human being ever adopted by a

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corporation." Truman was born and has lived in an artificial world called Seahaven, never having ventured outside this larger than life television sound stage. Truman's every move is watched by a series of over 5,000 cameras strewn though Seahaven and these are edited live for broadcast to millions of fans everywhere. The audience of the show and all the actors playing the inhabitants of Seahaven are in on the Virtual Reality game and it is only Truman who thinks that this fabricated and controlled theatrical experiment is indeed his real life. The trajectory of the movie follows Truman's journey from ignorance to knowledge as the experiment begins to go bad and as the moral stakes between life and Virtual Reality get higher and increasingly problematic.

The film takes the notion of director as god to its absurd extreme, and Christof (played by Ed Harris), the megalomaniac behind the show, controls these live puppets with all the manipulative and autocratic machinations of the gods. The movie opens with a tight closeup of Christof talking to the audience of the show and the film's spectators as well. He tells us:

We've become bored with watching actors giving us phony emotions. We're tired of pyrotechnics and special effects. While the world he inhabits is in

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some respects counterfeit, there's nothing fake about Truman himself. No scripts, no cue cards. It isn't always Shakespeare, but it's genuine. It's life.\textsuperscript{17}

The movie, from its opening shots, blatantly makes evident its desire to examine the nexus of artificiality and life via a medium (television) that we must acknowledge is a virtual technology in itself. Therefore, no matter how "real" or "genuine" Truman's life might be, the very fact that it is broadcast via television the world over, makes Virtual Reality impossible to escape or ignore. Christof's closeup and opening credo is followed by testimonials from the actress playing Truman's virtual spouse Meryl (played by Laura Linney) and from the actor playing Truman's virtual friend Marlon (played by Noah Emmerich). The actress playing Meryl tells us that, "there is no difference between private life and public life,"\textsuperscript{18} and Marlon tells us that; "it's all true, it's all real and nothing you see on the show is fake. It's merely controlled."\textsuperscript{19} In essence, the actors become mouthpieces to further the propaganda of the television corporation which is mainly interested in selling "The Truman Show" to its global audiences. The


\textsuperscript{18} Ibid.

\textsuperscript{19} Ibid.

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actors are not merely performing here, they are endorsing a product, a corporation and an entire (un)ethical system of transactions.

There are a series of episodes in the film whereby the infrastructure of the deliberate and elaborate Virtual Reality of the television show is unmasked for Truman and for the audiences of both the television show and the film. One of the first clues that we are given that the virtual world of Seahaven is not infallible is early in the film when Truman is leaving his home for work. While getting into his car "he is distracted by a high-pitched whistling sound." A lighting instrument, labeled "SIRIUS (9 Canis Major)," presumably one of thousands, has come unhinged from the elaborate, electronic network of Virtual Reality in the "sky," and has crashed right beside Truman. The bewildered Truman investigates this strange object from the heavens but cannot figure out where it might have originated. Interestingly, the actors playing his neighbors and passers by on the street, make themselves scarce as soon as they see part of the fabric of their elaborate lie, come apart. This is only the first step in the unraveling of the intricate mechanism bolstered to keep Truman a virtual prisoner in Seahaven.

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21 Ibid.
As soon as the film establishes the fact that Truman is the property of the television network and the show, and that they have no intention of letting his go, the movie soon starts to point out Truman’s desire to get away. What starts off as Truman’s wish to take a vacation to Fiji ends up in his final escape from the Virtual Reality show itself. When Truman expresses his intense desire to take his vacation, his friend Marlon tells him that, “I never knew anybody who wanted to leave Seahaven.”\(^{22}\) Truman starts to accumulate all these strange reactions and responses in his head, culminating in his final plans to escape.

Perhaps one of the most significant clues that Truman gets regarding the suspect nature of his existence is his encounter with a Homeless Man. On what would otherwise be a regular journey to work, Truman glimpses the face of a Homeless Man reflected in the window of a parked car. The Homeless Man approaches Truman and places “his hand ever so gently on Truman’s cheek.”\(^{23}\) Truman appears to recognize this seemingly out-of-place individual. Truman begins to utter the word “Dad,” when an assortment of characters swoop in on the Homeless Man and whisk him away. Truman gives pursuit but he is


\(^{23}\) Ibid, p. 25.
thwarted at every level by a well choreographed routine of humans and automobiles, frantically and very deliberately maneuvered by Christof from the control booth. The actors of the television show are sent into emergency mode and have to work hard to not let the proverbial cat completely out of the bag.

Truman recounts this bizarre episode to his mother and tells her that, “It was Dad, I swear, dressed like a homeless man. And you know what else was really strange? A businessman and a woman with a little dog appeared from nowhere and forced him onto a bus.”24 His mother eventually evades this “dangerous” line of inquiry trying not to reveal that the actor hired to play the Homeless Man was the same actor who had originally played Truman’s father before a boating accident had killed him off. It seems as though multiple roles played by the same actor can wreak havoc in this game of Virtual Reality.

The seeds of doubt have been planted in Truman’s head. The most revealing episode comes in a scene between Truman and Sylvia, an actress who has in the past played Truman’s love interest, but who has now surreptitiously come back to Seahaven to expose Truman to the falsehood of his existence. The following exchange is key to the unraveling of the puzzle.

SYLVIA: (looking over her shoulder, increasingly nervous) You must listen. Everybody’s pretending, Truman.
She points to the sky and scoops up the sea water at their feet.
SYLVIA: You think this is real? It’s all for you. A show. (frustrated, raving) The eyes are everywhere. They’re watching you—right now.²⁵

Sylvia is ambushed by men who tell Truman that she is schizophrenic and that they are taking her away for a respite from Seahaven. After this episode, Truman’s paranoia is full-fledged and he is always looking over his shoulder to see if he can catch the impostors at their game and call their bluff. Every time Truman comes close to unearthing the truth, and he confides in his family and friends, they simply try to convince him that he is having a nervous breakdown. At one point Truman tells his friend Marlon that, “I don’t know what to think, Marlon. Maybe I’m going out of my mind, but I get the feeling that the world revolves around me somehow.”²⁶

The Truman Show plays very well into prevalent cultural paranoias of “Big Brother watching” and taps into certain neo-luddite ideologies of the extreme right. But, The Truman Show ultimately pays homage to the notion that theatre is the original Virtual Reality and it

²⁶ Ibid, p. 96.
forces the audience to return to the roots of virtual environments. So, on the one hand, *The Truman Show* is an exploration of the technologies of Virtual Reality - technologies that are both human and mechanistic. And on the other hand, *The Truman Show* is a seething indictment of the dangers of losing sight of the lines that define and separate Virtual Reality from life in general.

Weir sets up his characters and locales as a contradiction between the safe and the sinister. The concept of the show within the show is set up as an “entertainment age daydream.”\(^{27}\) The picturesque and immaculate island community of Seahaven has a Disneyesque quality from its white, neo-colonial architecture to its perfect sunrises. Here even dangerous and threatening storms seem ultimately safe and thrilling in an entertaining way. Weir has set up a world that is so ordered and civil that the traffic moves with the efficiency and regimen of a military cavalry and where all the inhabitants are “as chipper as droids in a candy-bar commercial.”\(^{28}\) The meticulous world of Seahaven is a world where everything is programmed with the goal of mass audience consumption in mind. The streets and buildings of Seahaven are actually sets and the sun, moon and lightening are

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\(^{28}\) *Ibid.*
elaborate, electronically operated light shows. Film critic Owen Gleiberman writes that Weir "allows us direct access to the eerie virtual reality of Truman's world, which is portrayed as a hyper-clear dream of our own homogenized, theme-parked lives, with everything from catch phrases to love dictated by the prerogatives of corporate central."²⁹

One of the more interesting notions set up in The Truman Show is that the actors, who work around the clock, are not simply characters in the unfolding story of Truman Burbank but each one is also equipped with a camera (usually hidden in some piece of jewelry or clothing). This sets up the actor not only as a player in the Virtual Reality but also sets up the performer as a creator/director of Virtual Reality. Alternately, one can visualize the cameras as performers and the performers as cameras. This is not unlike the theatrical events of performance artist George Coates or the theatrical experiments of Claudio Pinhanez of MIT's Media Lab, where computers and cameras become performers interacting with the live actors.

Everything in Weir's movie seems to be pointing up the fact that Virtual Reality is increasingly seductive to its consumers, the more the

audience begins to blur the lines between real life and virtual worlds.

Owen Gleiberman notes that even Truman’s

memory of losing his father in a drowning ancient is like a “haunting” TV-movie tragedy. Everywhere Truman looks, he’s being filmed, observed, scrutinized; the whole world is watching him. Only he doesn’t know it. The reason the show is a hit is that although everything surrounding Truman is an illusion, his reactions are innocently, and utterly real.”

Weir’s world is littered with “totalitarians” although that term is never used in the film, deliberately I assume, to make it safer for Hollywood’s mass consumption. This subtext of totalitarianism, while never overt, is subtly laced into the events of the film. Weir and Niccol’s Christof is a variation on Huxley’s Controller, Mustapha Mond in Brave New World. One could argue that the very notion that a corporation has adopted a baby from conception and beyond, is totalitarianism at its purest because the child is viewed as a commodity of the state or some other authoritarian organization even before birth and presumably all the way through death. In addition, the actors, all willing accomplices in Truman’s mass deception, never question the ethical implications of Christof’s work and their complicity in it. Aldous Huxley, in writing about totalitarian states wrote that, “A

really efficient totalitarian state would be one in which the all-powerful executive of political bosses and their army of managers control a population of slaves who do not have to be coerced, because they love their servitude."\(^{31}\) The world in The Truman Show is exactly constructed as such. The actors are in servitude and because they love their work, the don’t question the ethical implications of their acting, but rather are glad just to be working, especially in such an inventive, popular, ground-breaking and presumably well-paying show.

In keeping with the notions of totalitarianism in The Truman Show, media researcher and scholar Nancy Paterson argues that, "Both democracy and totalitarianism recognize individualism and public opinion as sources of power. Both are strategies for coping in a relativistic world. Fascism and democracy become interchangeable in this convergence of technological control. The control of information is the real discourse of power."\(^{32}\) Thus, in The Truman Show, the public opinion of the show’s audiences further bolsters the television network’s attempts to keep Truman under their totalitarian control.

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and as such the audiences, wittingly or unwittingly, have become accomplices and cogs in the technological control of Truman Burbank.

When an actor (Sylvia), playing one of Truman’s old love interests (Lauren), invades the virtual world, bringing with her the reality of the outside world by trying to warn Truman about the falsehood of his entire existence, “actors” are dispatched to the scene to haul her off as an unstable, “schizophrenic” troublemaker and harlot. Burly men swoop in on her and, like a military coupe, carry her off and evict her from the virtual world. Instability of any kind is simply not desired in such a totalitarian reality.

There is something both troubling and interesting about the way in which Weir (and the screen writer Andrew Niccol) sets up the racial composition of Seahaven. All the inhabitants are white, with one or two exceptions. The world is so racially pure that the astute observer might conclude that this is the result of some sort of neo-Nazi fantasy come true. Of course, this seemingly all white world adds to the fascist undertones of the movie and one is tempted to try and read all sorts of meaning into the images of the film. However, Weir merely presents this world and doesn’t make any comment about why this world is so racially monolithic and homogeneous. As a result, it could also be interpreted that The Truman Show the movie is as exclusionary as the show within the film. Had Weir made some commentary about the
notion that most virtual worlds are mere extensions of their real world counterparts, the message and images would have gained a much greater potency and relevance. However, without any explanation or indication of why Seahaven is so racially pure, the attitudes towards race in the TV show and the Hollywood film become conflated and confusing at best, and disturbing at worst.

There are two segments in The Truman Show that imply that fascism is the means and end of this particular modality of Virtual Reality. About two thirds of the way through the film, we are taken outside the domed sound stage of Seahaven to witness an interview with Christof, the demagogue behind every image of Truman Burbank's life. Christof's responses to the interviewer's questions offer a glimpse not only into what makes Virtual Reality seductive but also into the truly controlling nature of Virtual Realities.

When the interviewer asks Christof how he hopes to sustain the top-ten rating status of the show along with audience interest, Christof disingenuously replies that, "as you know ratings have never been our primary goal. I imagine we'll lose those voyeurs only interested in witnessing Truman's latest torment. However, I'm certain
that our core audience will remain loyal." What exactly it is that the core audiences want, aside from fulfilling their deepest voyeuristic fantasies, is never made clear by Christof or the filmmakers for that matter.

Christof seems to be making a distinction between types of voyeurs. He seems to think that the prurient voyeurs only want to watch the emergencies in Truman’s existence. However, it should be pointed out that the entire premise of the show is purely voyeuristic and more importantly, one could argue that the most unethical aspect of the show is the fact that Truman is a human guinea pig in a corporate transaction where a life has been consumed and packaged for mass consumption and business profits without any prior consent of the main participant. The following exchange between the interviewer and Christof is an important clue into the justifications given to make palatable the corporate appropriation of a human life.

**CHRISTOF:** He was curious form birth - premature by two weeks, as if he couldn’t wait to get started.
**INTERVIEWER:** Of course, his eagerness to leave his mother’s womb also meant he was the one selected.

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CHRISTOF: In competition with five other unwanted pregnancies - the casting of a show determined by an air date - he was the one who arrived on cue.

INTERVIEWER: Who knew that a show originally meant to last one year - “Bringing Up Baby” - would turn into a “cradle to grave” concept. He is in fact he first child in the world to be legally adopted by a corporation.  

The interviewer continues his line of questioning by saying that, “recent events have been so dramatic, it does raise the perennial question. What keeps us watching this one man twenty-four hours a day - eating, sleeping, working, sitting for hours in contemplation?”

Christof simply replies that, “it has to be the reality” and then continues with “not only does he give us a glimpse of the truth, he gives us a glimpse of ourselves....we find many viewers leave him on all night for comfort. Haven’t you ever watched your child or your lover sleep?”

Christof tells us that Virtual Reality is all about truth and that the less the audience can differentiate between their own individual and

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35 Ibid.

36 Ibid.

37 Ibid.
personal truths and the truths of the show, then the more seductive (hence successful) the Virtual Reality becomes. This is one of the fundamental cornerstones of theatrical activity -- "the willing suspension of disbelief." Illusion in the theatre (and the arts in general) works best when it ceases to appear to be illusion. The following exchange further emphasizes Christof's ideology and by extension one of the fundamental pretexts of virtual representations.

INTERVIEWER: Why do you feel that Truman's never come close to discovering the true nature of his world.
CHRISTOF: We accept the reality of the world with which we are presented. As the show expanded, naturally we were forced to manufacture ways to keep Truman in Seahaven - demonstrating that every venture is accompanied by a risk.38

This notion that audiences (voyeurs) accept realities with which they are presented/confronted, is seminal to our understanding of how manufacturers of Virtual Realities struggle to "sell" a synthetic reality as the only viable and worthwhile reality.

There are two other telling moments in the interview segment that are revealing not only about the nature of Virtual Reality but also about the creators of these worlds.

INTERVIEWER: You've never actually met Truman, yourself. Never thought about doing a cameo - playing a veterinarian, or a priest, something like that.
CHRISTOF: I've been tempted. But I think it's important to retain objectivity. I wouldn't want to get emotionally caught up.39

Christof is afraid to do exactly what he expects and coerces his audiences into doing - losing all objectivity and getting emotionally caught up. Towards the end of the interview segment when the show allows followers of the TV show to call in and question Christof, the following exchange takes place.

FEMALE CALLER: How can you say he lives a life like any other?
CHRISTOF: As the Bard says, "All the world's a stage, and all the men and women merely players." The only difference between Truman and ourselves is that his life is more thoroughly documented. He is confronted with the same obstacles and influences that confront us all. He plays his allotted roles as we all do --
FEMALE CALLER: -- He is not a performer. He is a prisoner.


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CHRISTOF: And can you tell me, caller, that you're not a player on the stage of life - playing out your allotted role? He can leave anytime. If his were more than just a vague ambition, if he were absolutely determined to discover the truth, there's no way we could prevent him. I think what really distresses you, Caller, is that ultimately Truman prefers the comfort of his "cell" as you call it. ⁴⁰

Christof takes Shakespeare's metaphor for life as theatre and defines Virtual Reality and life as easily interchangeable where players (in life and Virtual Reality) can chose to enter or leave at will. Of course, this is an entirely false and oversimplified application of the "art as life" ideology. If Christof is scared of getting involved emotionally with Truman, then he knows that his audience is completely involved and cannot just tune out. More importantly, Truman is living the Virtual Reality as his actual life and so how could he possibly leave? More importantly how can he make a choice to leave something that he thinks is his life and cannot acknowledge as a virtual construct? Christof has inadvertently released the secret behind the nature of Virtual Reality. Depending on the degree to which the virtual world allows its participants to immerse themselves in that reality.

extricating oneself from that environment not only becomes difficult but is also ultimately undesirable or seemingly impossible.

Weir's film ends with Truman escaping his virtual world and stepping, literally, into the real world. Weir's optimism (probably demanded by Hollywood's proclivity towards "happy endings" and in order to ensure the greatest box-office draws possible) suggests that ultimately humanity triumphs over technology. But the ending is not so simply dismissed, because of the fact that we have to ask how Truman, who has known no reality outside of Virtual Reality, will survive in the world outside the sound stage.

The final segment in the film that reinforces the fascist notions of technology comes at the end of the film when Truman is lost on the radar of Christof's camera network. Truman, with great difficulty and sufficient creativity, manages to escape the incessant gaze of the cameras and miraculously slips out of view. Christof launches a massive search at night and all the actors march around the streets of Seahaven scouring every nook and cranny to try and retrieve Truman. Searchlights sweep the scene and the search parties march down the streets, making the whole scene very reminiscent of an army in a dictatorship attempting to squash a rebellion. In fact, the images that Weir creates here are the closest he comes to labeling Virtual Reality as a tool of fascist propaganda.
This scene is reminiscent of the SS troopers in Nazi Germany blazing down the streets of Germany, Poland, and Russia in their quest for ethnic cleansing.

Christof’s label as a demagogue is sealed in his response to Truman’s disobedience to the laws of Virtual Reality. In fact, when Christof realizes that the dark of the virtual night is impeding the search for his escaped convict, Christof proclaims to the systems operators in his room, “It doesn’t matter. Cue the sun.” In this moment of manipulating nature to serve his personal mission and that of the show’s, Christof’s God-complex is fully developed and manifest. In this Virtual Reality, the sun, moon and other elements of nature do not conform to the laws of nature. Instead, they bow to the control and prowess of technology.

Truman had lost his father in a boating accident and Truman had carried that guilt around with him all his life. In a moment of cinematic irony, his final journey in Virtual Reality also takes him back to the sea as he sets off to escape. Christof and the production crew find Truman aboard a boat sailing towards his freedom. The show which had ceased transmission after Truman’s disappearance, resumes

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broadcast and Christof is faced with his ultimate challenge as director and techno-fascist.

The following exchange between Christof, his technicians and his corporate leader Moses (no subtle name choice here) is indicative of Weir’s final statement against the need to dismantle Truman’s virtual world.

**ROMAN:** How do we stop him?

**CHRISTOF:** How else?\(^{42}\)

Christof is willing to torment his subject Truman with a real storm in order to bring him back in compliance with the realm of the virtual world.

**CHRISTOF:** Cue music...
**SIMEON:** What music?
**CHRISTOF:** Storm music...Wagner...
**CHLOE:** There’s no rescue boat in the area. He won’t know what to do.
**MOSES:** For God’s sake, Chris. The whole world is watching. We can’t let him die in front of a live audience.

CHRISTOF: He was born in front of a live audience.43

The choice of Wagner is perhaps screenwriter Niccol’s hint at Christof’s own fascism. Niccol also knows the value he can enmesh in his characters by giving them some of the most potent and patriarchal names in the Judaeo-Christian tradition like Moses and Simeon. Eventually, Christof’s technicians refuse to comply and Christof himself starts to manipulate the weather as he tries to capsize Truman’s boat. Christof’s megalomania is manifest in all its sociopathic and psychopathic glory as he takes over complete control of the show and Truman’s life itself.

Truman weathers the storm and eventually Christof calls it off. The control-room staff and the show’s global audience sit riveted as they witness Truman’s final transformation. Truman awakes to the calm after the storm and as he scans his environment he is jolted off balance as the front of the boat crashes into the cyclorama which serves as the sky and distant horizon. Truman has literally and metaphorically reached the end of his journey in the virtual world. It is perhaps Weir’s most stunning image in the film as the simplicity of the


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moment reveals the total and undeniable theatricality of Truman's entire existence. Truman has literally broken through the fourth wall and his last act is to open an escape door in the bright blue cyclorama and step out into the world beyond. The last image, very reminiscent of René Magritte's surrealist and symbolist paintings, shows Truman step into a black void away from the optimistic brightness of the cyclorama. Weir implies that the world out there may not be conducive for Truman as he leaves behind the synthetic blue of the virtual world for the verifiably darker hues of the outer world.

B. Computers Enabling Voyeurism and Virtualizing History

In both The Lawnmower Man and The Truman Show, Virtual Reality technologies are used as means of controlling human beings. Technology becomes the master, human beings the slaves. In The Truman Show, even though the audiences of the Truman television show know that everything is an act of artifice, they still remain glued to their screens, reacting along every emotion of the spectrum, as though it were indubitably real. This notion that well constructed artificial realities can indeed become sublimated in the audience's perceptions as real life, is a central concern as Virtual Reality
technologies proliferate widely through society. Virtual Realities cultivate individual and mass voyeurism, allowing reality and artificiality to merge in human consciousness.

In light of these mass conflations of Virtual Realities with reality itself, the film *Forrest Gump*, offers several excellent examples whereby history itself is rewritten and reimagined, via computerized manipulations. The danger here of course, is that because the film seamlessly merges history with fiction with the aid of computerized technologies, the audience accepts as authentic the images that are presented to them, regardless of their verifiable truths.

*Forrest Gump* tells the story of a young boy from the South, who despite his physical and mental disabilities, rises to become a success story and an American folk hero. Directed by Robert Zemeckis, the film chronicles the life of Forrest Gump from his boyhood to his adulthood. But, the story of his life in many ways becomes the story of America from the 1940s all the way through the early 1990s. Zemeckis points out the highlights in American history during these five decades by infusing Forrest’s character into those key events and happenings.

There are several key segments where Forrest’s character (played by Tom Hanks) is digitally introduced into historical, often documentary footage of actual events. The first episode worth considering is relatively benign when the young Forest is seen with a
young Elvis Presley, who apparently came to Forrest's house and played a few tunes. Forrest, in a voice over proclaims that this man eventually went on to become "the King." This episode, created primarily for humorous effect, does however set the trajectory and precedence for other episodes where the audience is asked to believe things about Forrest's life and American history that didn't actually happen.

In the next segment, Forrest, now a teenager, is digitally introduced into black and white news footage of the Brown versus School Board events where the desegregation of a school forced the National Guard to be called out to keep the peace. Forrest, the fictional character, is digitally introduced into archival footage where Governor Wallace, an historical figure, gave a speech at the school where the black students were seen entering the building.

In the third segment, Forrest, now a collegiate star athlete, is invited to the White House to meet the then President John F. Kennedy. Once again, Forrest's character is digitally placed within archival footage of Kennedy at some other White House event. We see the line of athletes, one by one, shake hands with President Kennedy. When Forrest's turn comes, he has to use the restroom because he has had too many beverages. President Kennedy asks Forrest, "How does it feel to be an All-American?" To this Forrest replies, "I believe I have to
While this scene too was created primarily for comic effect, the seamless introduction of history and fiction is astounding and should not be dismissed casually as mere entertainment.

There are two other segments where the fictional life of Forrest is merged with key moments in the Vietnam conflict and the Watergate debacle during President Richard Nixon’s administration. The implications that Forrest Gump has in the realm of “virtualizing” history, is not so much about how a Hollywood film can manipulate history, but is about how easily and convincingly images can be created where computer generated Virtual Reality is presented as historically accurate and verifiable truth. In essence, virtual technologies are another tool whereby history can be manipulated towards a particular agenda and ideology. This is not unlike what was discussed in the previous chapter about Spielberg's Indiana Jones and the Temple of Doom, and Stevens’s Gunga Din.

Hollywood visions of Virtual Reality can be characterized either by their doom and gloom approach to these technologies or by the Pollyana-ish approach that suggests that Virtual Realities are the

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panaceas to all human and societal concerns. The truths behind Virtual Reality are however, far more complex and subtle. Carol Gigliotti writes that:

The production of virtual reality implies both an unhappiness with reality as it is and a desire for the creation of a humanly controlled reality, one in which we are able to decide how and why we interact with the world. The desire is an ancient one, repeated throughout history with various shades of success and consequence....we may come to understand that the how and why of our interaction with a virtual reality of our own making will mean everything, not only to the success of that world, but to the consequences of its use in the already existing one.45

The future of Virtual Realities in our world is not as obvious or as predetermined as Hollywood might like us to believe - the brave new world is both reality and fiction all at once.

45 Carol Gigliotti, Aesthetics of a Virtual World: Ethical Issues in Interactive Technological Design, dissertation (Columbus, Ohio: The Ohio State University, 1993), p. 2.
CHAPTER 6

ART AND SCIENCE:
Theatrical Design and Cyberspace

As we enter a cybernetic era, full of trepidation and the unknown, one thing, in my opinion, is certain -- the arts and the sciences will be forced into a nexus of communication and collaboration hereto unknown. Donna J. Cox, a computer aided artist, very astutely argues that:

A prospering culture develops and exploits the most advanced technology available; artifacts reveal this process. Historically, artists also attempt to exploit the best technology afforded by his/her culture. However, the historical art object often reveals the technology rather than the artist's raison d'être. Likewise, the social impact of the artist is not always revealed by artifacts nor the ensuing culture.¹

Cox goes on to develop a theory that proposes that in the future, due to huge strides and developments in our technoscience culture, art will reveal science and likewise science will aid in revealing the arts. This process of mutual revelation suggests a paradigm whereby, perhaps the sciences will be humanized by the arts, and whereby the arts will be nurtured by the power of science.

With this philosophical prologue in mind then, how can the theatre, one of the oldest of the arts, collaborate with techniques in computer graphics, the future of the sciences? It is important to note that this coming together of technology and theatre is not a new notion in the age of computers.

In writing about the possible collaborations between the computer and theatre, Constantinidis writes that thanks to computer-animated design and figures, the designers can now see how their proposed designs and patterns will function and how they will look from various angels. Rather than build a replica of the set in order to view it in three dimensions, they can generate a graphic display which helps them view a drawing in seconds and decide quickly on how to improve the result of their production concept. They can delete, magnify, rotate parts of the drawing, specify scale, and automatically calculate and display distances between points. They can use the computer as a labor-saving device while
they bring into the prompt-copy their artistry, experience, imagination, and aesthetic values.²

In short, the possibilities and advantages are tremendous. We can indeed confer that the condition of the nexus between computer technology and the theatre is one that contains massive amounts of untapped potential.

Currently the theatre uses computer technology primarily as what I would like to term a technical enabler or a technological facilitator; that is, a device used to speed up certain processes or to make certain processes more refined and complex. The following are some examples. When the theatre first started to move indoors, we saw the advent of candlelight and other fiery sources of light beginning to illuminate the interiors. Slowly, the gas lights or ‘limelights’ began to create a new visual medium and colored lights became a stunning possibility. Many fires later and after many theatres had burnt to the ground because of the gas lights, electric lights took center stage and from there on things have evolved around that form of lighting. Before the computer moved into the lighting arenas the dimmer control panels were controlled by humans and all the lighting spectacle that transpired on stage was greatly dependent on manual dexterity.

Naturally, humans could only control so many cues and could only work at certain limited speeds and levels of accuracy. The need for something quicker and smoother was inevitable and imperative. The next time the curtain rose on the lighting stage, the computer was used to program in light cues which were then executed by the touch of a single button. Now, several cues were at the command of a single key and more importantly, the timing of each cue could be programmed to the minutest detail and human imprecision no longer interfered with the creative genius of artistic ambition. This was certainly a most influential progression in the definition of a new visual theatricalism. Lighting became much more integral to a performance than it had ever been before the introduction of computers. In fact, lighting could now replace clunky furniture and cumbersome sets to indicate locale and mood. “Less is more” became the dictum of an evolving visual reality. A single space could be transformed into several majestical vistas merely by changing the color, intensity and mood of the lighting or via the use of projections.

This evolution of the more complex lighting plots and a movement away from scenic realism has spawned a plethora of productions which have pushed the envelope in terms of lighting spectacle. Such a movement towards illusion created through illumination was particularly suited to the plays of the expressionists, the
impressionists, the surrealists, the dada performances, the futurists, and diametrically opposed to all the above, musical theatre performances. It is beyond the scope of this chapter to underscore the contribution of computer aided lighting designs to each of the above mentioned forms of theatrical expression. Suffice it to say, that this new direction in lighting capabilities, due predominantly to the use of computers, has helped in the growth and evolution of each of these "isms" or movements in the theatre. One more point. Since cumbersome sets were no longer essential to a visual reality of any relevance, it became easier to take shows on the road and to allow for more performances to influence larger audiences in many more avenues.

Stage design has used computers to a certain degree although not always to the extent that lighting design has. Once again, in the arena of set design and set execution, the computer is merely a facilitator to ensure that things have precision timing and operational dexterity. Thus, the 34-foot turntable in the musical extravaganza, "Les Miserables" which is controlled by a computer, does not necessarily mean that a new visual reality has been born. Rather, it merely suggests that what would have been done manually in the past is now slicker looking due to mechanical prowess. And although I do not want to minimize the importance of computers in the creation of
spectacle in “Les Miserables,” this is not really ground-breaking aesthetic enlightenment and rejuvenation. It is merely one of the age-old premises of industrialization within capitalistic economies -- if machines can do something better, quicker and more efficiently than humans, then they must.⁵

Here, I am most concerned with how several techniques within computer graphics can help theatre gain a new visual vitality so that the entire theatrical art form might be lifted from its aesthetical and ideological malaise.⁴

Although caveats are not always academically astute, I would like to say that there has been very little, to minimum work been done where the theatre has used the computer towards a visual renaissance. Thus, most of the issues that I will be addressing will either be proposals and hypotheses based on what I think should happen, or I will raise issues of how certain techniques have been used

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⁵ This is just a philosophical aside worth ruminating. With industrialization we actually see a homogenization of products as they are mass manufactured. What implications does this have for aesthetic experimentations in the future which will begin to use technology more heavily once artists begin to alleviate themselves from the shackles of technophobia?

⁴ Suffice it to say that theatre practitioners would not be entirely pleased with this statement or even the idea that the theatre is lagging behind in technological incorporation into its various facets.
by the other arts and how the theatre can then take those examples and apply them as deemed appropriate and necessary.

In particular, I want to address the following areas of the theatre that will have much to gain via a collaboration with computers: (1) Design. In specific I will deal with (a) scenic and (b) lighting design, but will also briefly touch upon how (c) costume and (d) prop designers might avail of the technologies as well. (2) Performance. (a) directors, (b) actors, and (c) choreographers will be addressed under this section. I will address both the advantages and disadvantages of the current techniques as well as the employment of the new computer graphic techniques that I will be raising.

In light of this I will briefly revisit the works of Bertolt Brecht, Erwin Piscator and Joseph Svoboda and talk about why computer graphics can help towards the goals and objectives of political drama and theatre of protest. Since I suggest early on in the dissertation, that the future is one of points of convergence and confluence between the arts and sciences, as a last section I would like to suggest that elements of the theatre (especially staging, lighting, and movement) can be successfully applied to other work generated via the computer. In this section I would also like to suggest future avenues for research whereby new techniques might be developed not just for the theatre but for the other art as well. Examples of this would be
holography, Virtual Reality, and other computer generated art forms. Inherent in this argument is the need for new epistemological and pedagogical concerns which have to do with the interdisciplinary training of both our future artists and scientists.

A. Grotowski, Brecht, Craig, Appia, and Svoboda in the Technological Era

Before one can look to the future of technology and theatre, one has to look at what the past has struggled with and tried to accomplish. While technology today is evolving faster and faster, other fields are in a frenetic race to keep apace. While computers are a recent addition to the technological landscape of theatre, the evolution of theatrical practice is cluttered with interesting technological

5 There is one similarity between Brecht, Grotowski, Craig, Appia, and Brook worth pondering, in that at some point in all their careers they looked to the East for inspiration. They all sought to infuse in the Western theatre a sense of ritual and spirituality from the East. I don’t want to discuss the efficacy or value of such attempts. However, in all cases, especially in Brook’s, they have been accused of exploiting the East culturally and artistically to further what Edward Said calls the exploitative study of “Orientalism.” It is interesting to note that contemporary, computer mediated interactive environments often have Eastern embodiments highly stereotyped and exploited. The most blatant examples are the Kung-fu and Ninja video games. Although there is no direct relation between the four artists and these technological artifacts, it is interesting to know that current technologies are adept and reinscribing hegemonic relationships and at enhancing the power of the status quo.
applications and ideas. Many of the important theatrical figures of the nineteenth and early twentieth centuries had very avant-garde ideas that the technology of the day could not support.

In this chapter I explore the work of some of these theatrical artists and how revisiting their work in the age of computers and Virtual Reality can provide some unique insights and new visions for theatre in the future. What relevance do designers/theoreticians such as Gordon Craig, Adolphe Appia, Joseph Svoboda, and George Coates have to the development of the notion of contemporary design in an age of interactive technology?

In the section I deal with Bertolt Brecht, and Jerzy Grotowski. In the next part I deal with Gordon Craig, Adolphe Appia, and Joseph Svoboda. While no easy categorization is possible, the first group represents a set of theoreticians who are chiefly directors. The second group are chiefly concerned with design, although they have made their vital contributions to theory as well. While each of the abovementioned artists will be examined independently, I will be drawing them together where their inter-relatedness is most apparent and valuable to a discourse on theatre and technology in an interactive age.

I would like to say that all the artists discussed here have made great contributions to the theatre and its successive practitioners. Grotowski, Brecht, and Craig were all obsessed with technology. In all
three cases many of their theories did not materialize because the technology would not allow it. As we move towards the new technologies of computer graphics and computer animation we might be able to revitalize their works so that cyberspace can once and for all, allow theatre to stake its claim in artistic progress and innovation well into the twenty-first century.

1. Jerzy Grotowski and the “Poor” Theatre

Grotowski (1933 - ) whose work with the Polish Laboratory Theatre has become legendary in theatrical circles, especially in academia. His work and theories are found in a collection of essays titled Towards a Poor Theatre written in 1968.

As an artist, Grotowski went through several phases. Scholars have identified his first phase as one in which Grotowski rejected completely the idea that theatre, in order to survive, must borrow heavily from other media, such as film and television. He felt that lavish spectacle and these “nouveau” media were denying theatre an expression of its true and unique essence. Grotowski took upon himself the challenge of reclaiming that theatrical essence by eliminating all the superfluous elements. He sought to retain only two things - the actor and the audience. Any spectacle not created by the actor was eliminated. Grotowski called his theatre “poor” because he intended to
rid the theatre of technologically rich spectacle. On another level, Grotowski lends valuable insight into his notion of stripping away superfluities in order to make a theatrical event meaningful. By focusing completely on the actor and the audience Grotowski sought to ensure the most intense of experiences, not unlike religious experiences.

Grotowski and the Laboratory Theatre were primarily concerned with the accomplishment of three things: (1) to evolve a definition of that which is quite distinctly the craft of theatre, not of other arts; (2) to provide performers with an acting technique that is based on discipline and frees the body and mind completely; and (3) to arrive at an understanding of the actor-audience relationship. Through a thorough examination of Grotowski’s tenets in *Towards a Poor Theatre* I will discuss how his ideas have immense value in the design of interactive technologies. In particular, Grotowski’s experiments with theatrical space and his views of actor-spectator interaction can lend valuable insights to technologically interactive designs.

Grotowski stripped away the proscenium and opted for large, open, flexible spaces. This breaking of the barrier between action and audience is fundamental to the interactive technology experience. He wanted to arrange the space differently for each venture so as to provide an optimal atmosphere for the audience to be completely
immersed. Interactive technologies today are constantly seeking newer and more intense ways of immersing participants by trying to break down the barriers between interface and cyberspace. Grotowski was doing the same in material space. For Grotowski and Virtual Reality, the fourth wall of the theatre must be completely shattered.

Grotowski also believed that in each performance the audience was an integral participant in the action of a piece. Once again interactive technologies seek to do the same. Participants in virtual environments are integral to the action. In fact, one could argue that without a participant virtual environments cease to exist.

Grotowski argued that audiences must not be directly involved in the action because that would make them self-conscious. He believed that the audience should be un-selfconsciously pulled into the action of a performance. Although this may have worked better in theory than in practice it has connections to virtual environments. As virtual environments get more and more complex and sophisticated they may require participants to enter those worlds in altered states of consciousness and the action will proceed within that frame of reference. The film version of Stephen King’s *The Lawnmower Man* had several scenes whereby participants entered virtual worlds under the effect of neurotropic drugs which altered their levels of consciousness.
Grotowski founded the Polish Laboratory Theatre (The Laboratory Theatre of the Institute of Actors Research) in 1959. Peter Brook, director of the Royal Shakespeare Company then, invited Grotowski to England and was shocked and amazed at the “radical” nature of his work. In an introduction to *Towards a Poor Theatre* Brook wrote that, “no-one since Stanislavski, has investigated the nature of acting, its meaning, the nature and science of its mental-physical-emotional processes as deeply and completely as Grotowski.”

While Grotowski evolved considerably from phase to phase of his artistic evolution, I will use the fundamentals of his theories and results from experimentation. Grotowski compiled his findings, theories, etc. in his 1968 book *Towards a Poor Theatre*. Grotowski uses the term poor to define a theatre that is free from the technological invasion of television, film, and other such media. Grotowski indicates that of the three, theatre, television and film, only theatre can be “poor.” He writes that, “through practical experimentation I sought to answer the questions with which I had begun: What is the theatre? What is unique about it? What can it do...”

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that film and television cannot?"7 Knowing that Grotowski had set out to define what was uniquely true for theatre and not other arts, his rejection of these sophisticated technologies (challengers to the theatrical throne) seems quite obvious and natural. Thus, at one fundamental level, Grotowski wanted to have nothing to do with technology. For him, theatre, like the art of acting, was to be stripped of all its inessentials. (Earlier I argued that acting uses the technology of the human body.) He said that “by gradually eliminating whatever proved superfluous, we found that theatre can exist without make-up, without autonomous costume, without lighting and sound effects, etc.”8

He sought to do away with all illusionary and exotic lighting effects. He believed that with a stationary source of raw light, the actor could work deliberately with shadows and bright spots. Grotowski believed that “the actors, like figures in El Greco paintings, can ‘illuminate’ through personal technique, becoming a source of ‘spiritual light’.”9

8 Ibid.
9 Ibid.
Grotowski believed that the actor, if well trained, could manipulate the facial muscles so that no external mask would be needed to create transformations and tricks of make-up. Grotowski found that abandoning all artifices put on in the dressing room prior to a performance was consummately theatrical for the actor to transform from type to type, character to character, silhouette to silhouette - while the audience watched - in a poor manner, using only his own body and craft. The composition of a fixed facial expression by using the actor's own muscles and inner impulses achieves the effect of a strikingly theatrical transubstantiation, while the mask prepared by a make-up artist is only a trick.¹⁰

With costuming, Grotowski wanted the actor to discard external clothing ("plastic elements which have a life of their own"¹¹) and supplant it with a highly well trained body. An actor, in merely a loincloth (and this is still a result of technology even if his actors had been weaving their own fabric) could indicate that he was wearing any kind of costume through the use of his/her body. For Grotowski, costuming had no autonomous value in and of itself.


¹¹ Ibid.
All sound in a Grotowski production was to be created by the actors. No artificial aural means were to be used, especially since television and film could do anything they wanted to with sound. He only wanted organic sound because elimination of music (live or recorded) not produced by the actors enables the performance itself to become music through the orchestration of voices and clashing objects. We know that the text per se is not theatre, that it becomes theatre only through the actor’s use of it - that is to say, thanks to intonations, to the association of sounds, to the musicality of the language.\(^\text{12}\)

Actors were supposed to make their audiences perceive anything that they wished them to without the use of illusionistic scenery and settings. Grotowski also rejected technology in that he wanted to have no part in traditional performance spaces. Since he had tried to purify and distill the theatrical experience to an actor-audience set of dynamics, the stage-auditorium model was vehemently and consistently negated in his productions and experiments. Grotowski rearranged the physical space each time in an effort to consistently keep the spectator-actor dynamics at their most intense and unadulterated levels. Grotowski was in search of defining an aesthetic of acting that would resemble religious experiences - “holy theatre” he

called it. Grotowski believed that theatre could not “exist without the actor-spectator relationship of perceptual, direct, ‘live’ communion.”

Thus, at some level, to speak of a laboratory without machinery or technology seems almost paradoxical. Grotowski was challenging “the notion of theatre as a synthesis of disparate creative disciplines - literature, sculpture, painting, architecture, lighting, acting.” The antithesis of Grotowski’s poor theatre was called rich not only because it was technically affluent (superfluous), but also because it was “rich in flaws.” For him “the Rich Theatre depends on artistic kleptomania, drawing from other disciplines, constructing hybrid-spectacles, conglomerates without backbone, or integrity, yet presented as an organic art-work.” To be fair, Grotowski was not against television and film. On the contrary, he believed that because television and film did what they did so well, the theatre could never compete. Grotowski envisioned that the theatre would always “remain technologically inferior to film and television.”

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14 Ibid, p. 65.


16 Ibid, p. 43.
2. Bertolt Brecht and the "Epic" Theatre

While Grotowski sought to liberate the theatre from realism, naturalism and the superfluities of slavish representation by rejecting technology, Bertolt Brecht (1891 - 1956) wanted to do the same, except by embracing technology. Brecht's contributions to the theatre are embodied in his conceptualization of the "epic" theatre and its corresponding concept of "alienation" or the "a-effect." He completely rejected the representational theatre of his day and worked at creating new dramas which would change the dynamics of actor-spectator relationships. However, in Brecht's case, no longer would the audience be allowed to empathize with what was happening on stage. Rather than keep within traditional modes of representation, Brecht changed his methods of staging, directing, and design so that the audience would come in to experiences hitherto unfamiliar to them, and as such, they would have to ask questions rather than merely accept established conventions of the capitalist modes of production. Brecht wanted to expose and defamiliarize capitalist ideologies, which in his opinion had been "naturalized." All these strategies were used as part of trying to give a practical reality to Brecht's conceptualization of *verfremdungseffekt* which has been varyingly been translated as "alienation effect," "estrangement," "defamiliarization," and "distancing." And to be true to the Brechtian model, all these devices
and theories were used by Brecht towards a politicizing of the theatre
and consequently, a hopeful politicization of the audience. Social
awareness and protest were the end goals of Brecht's theatre.17

In his attempts to formulate his ideas and theories, Brecht began
to experiment with various techniques. All these techniques had one
thing in common - they were to expose (lay open) to the public, the
"machinery" behind the effects. I focus on his experiments with:
lighting devices, scenic conventions, audience-actor configuration in
space, changes in dramatic structure and innovations in theatrical
narratives, the use of multiple mediums in one production, and
technology and ethics not only as part of the formal aspects of
production but also as the content of drama. Brecht's notion about
representation, the audience's immersion in a theatrical activity, and
his notions about the use of design as symbolic signifiers, has a lot of
relevance to contemporary interactive Virtual Reality technologies.

Bertolt Brecht's relevance to contemporary interactive
technologies is complex. At a fundamental level Brecht, more than any

17 While Brecht evolved considerably away from this model of
social protest, his initial experiments were certainly aimed at a theatre
of social protest. Ironically, as certain scholars have pointed out,
Brecht gains notoriety only when the West (America in particular) has
experienced his work. As such, these critics argue that he finds fame
in a capitalistic culture so far removed from the social protest issues
of Europe that one must indeed question the efficacy of his theories
and examine the disparities between theory and praxis.
of the others mentioned above, was interested in theatre of social protest and political propaganda. Through his theories and practice of the epic theatre and the alienation effect, he sought to arouse his audiences to action. He wanted them to identify with the play but not to be so immersed so as to be numbed into inaction.

Brecht's connection to contemporary performance in an age of interactive technology comes from two areas. Brecht's insistence on an episodic plot and fragmentation of time, space and narrative seems to be the forerunner of the modern video game and virtual environments.

Brecht was one of the first theatre practitioners to use multiple mediums in his theatrical designs and presentations. Erwin Piscator before him had started the use of multi-media as framing devices for theatrical representations. Contemporary interactive environments are being produced in hitherto unseen collaborations of artists from a variety of backgrounds and disciplines. Carol Gigliotti has also suggested that Brecht's relevance to contemporary performance lies in his contributions to a theatre of mutli-media.

When it came to scenic technology, Brecht believed, every bit as much as Grotowski did, that the extraneous had no place in the theatre. However, while Grotowski abandoned all spectacle, replacing it with the technique of the actor, Brecht relied heavily on his scenic
designers to “know better than anyone that whatever does not further the narrative harms it.” (This is very much a Hollywood and an Aristotelian notion found in the Poetics: “that which makes no perceptible difference by its presence or absence is no real part of the whole.”)

Brecht’s use of multi-media (advanced to great heights by Joseph Svoboda of Prague’s “Laterna Majika”) was an attempt to use emerging technologies towards defining epic theatre and the alienation-effect. As Stratos Constantinidis notes: “Brecht was aware that new technology enhanced the narrative capabilities of theatre artists and that it was new technology which made the epic production style possible -- an alternative to what he called the Aristotelian production style.”

Thus, he made lighting instruments visible. He even left house lights on during a performance or would bring them up in the middle of an act. He placed the musicians on stage, in full-view of the audience.

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He used didactic projections (following the work of Erwin Piscator who “invented” multi-media theatre in his world at the Volksbuhne). Brecht interrupted the flow of the plot with songs, narrative passages, verbalized stage directions, all in an attempt to prevent the audience from being sucked into a stupor of complete empathy for the actors and apathy for the situations. Brecht called for this “radical separation of the elements” and said that “the process of fusion extends to the spectator who gets thrown into the melting pot too and becomes a passive part of the total work of art. Whatever is intended to produce hypnosis, is likely to induce sordid intoxication, or creates fog, and has to be given up.”

Brecht was unabashedly calling complete attention to the “theatricality” of the theatre experiences.

It must be noted here that Brecht’s epic theatre and the defamiliarization effect were not just comprised of formal considerations (lights, sets, etc.) His epic theatre also sought to make content the centre of his experimentation. He called his theatre one for the “scientific” age. Thus, as Brecht studied Marx’s dialectical materialism he began to find that issues of nature and technology were near and dear to his plays. Brecht accused the bourgeoisie, brought to power by science, of appropriating wealth generated by technological

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prowess and of actively preventing the application of sciences to the study of society. He writes that "another area where darkness still reigns, namely that of the relations between people involved in the exploitation and conquest of nature . . . The new approach to nature was not applied to society."22 Thus, for Brecht, the technological ability to make this planet fit to live on has outstripped its social structures, and as such, the bourgeoisie is fully aware "that its rule would come to an end if the scientific eye were turned on its own undertakings. And so that new science which was founded about 100 years ago and deals with the character of human society was born in the struggle between rulers and the ruled."23 Hence, Brecht's politics about a new techno-culture became the very basis of the content of his plays and this content in turn was directly related to the formal considerations of the epic theatre and the alienation effect. In essence then, the technology of Brecht's epic theatre and alienation effect are intrinsically related to the political stance on technology with which Brecht infuses almost all his works.

The most blatant example of this world-view of Brecht finding its way into the subject matter of his plays is in his Galileo. For Brecht,


23 Ibid.
Galileo was a great scientist whose mission, unique as it was in that day and age, was to illustrate how science could lead humanity forward in its existence. However, the good that science can do is thwarted by a few individuals in power, who force Galileo into recanting his discoveries thus abdicating him of his responsibility to that body of knowledge. This knowledge then becomes the domain and prerogative of those who can use it not to better human existence, but will use it to destroy humanity. This viewpoint, imposed by Brecht on Galileo, is no surprise since Brecht's scientific age had given birth to atomic fusion, which was capable of creating both a constructive and a destructive energy - the latter being responsible for the A-bomb and the devastation of Hiroshima and Nagasaki. Brecht makes Galileo denounce himself for his failure and in his most vulnerable speech, Galileo says:

I, as a scientist, had a unique opportunity. In my days astronomy reached the marketplaces. If only I had resisted, if only the natural scientists had been able to evolve something like the Hippocratic oath of the doctors, the vow to devote their knowledge wholly to the benefit of mankind . . . And I surrendered my knowledge to those in power, to use, or not to use, or to misuse, just as suited their purposes.²⁴

What is interesting about this self-denunciation of Galileo is that it was added to the play after Hiroshima had been bombed. Moreover,

Brecht, was, at this time, in exile in the United States the country that produced the bomb. In hindsight, Brecht is justified in linking Galileo and J. Robert Oppenheimer together. Nonetheless, it is an oversimplification on Brecht's part to believe that had Galileo not recanted his findings during the Inquisition, history would have been different and science would have only been used towards good. The very poignant problem that Brecht presents us with is that the scientific era (of which Galileo marks the beginning) had unleashed hitherto unknown sources of energy and created a hitherto unprecedented range of possibilities. Brecht has raised the uncomfortable issue of the ethics and morality of the scientist and the obligation of science to society.

Brecht having already blamed science for its inability to create an ethics and morality for its domain, blames Capitalism for further allowing scientific progress to be used against humankind while monetary pursuit becomes the ends and the means to everything. Brecht, in what might have been involuntary foreshadowing, once prescribed five means of disseminating truth under terror: the courage to write it, the wisdom to recognize it, the ability to use it as a weapon, the proper choice of effective recipients, and the cunning to spread it.

Although anachronistic, it seems as though Galileo himself had pursued Brecht's prescriptions. Thus, Galileo remains to date one of
the most influential scientists ever, and Brecht, at least within Western paradigms, continues to influence theatrical activity. No matter what the contradictions and dualities are in the work of Brecht and Galileo, it cannot be denied that in both their lives and in both their works, science, art, and life simultaneously mirrored each other. It is this simultaneity of life, art and science that Brecht was seeking after. Carol Gigliotti writes that:

If virtual reality is to play a role in the emergence of a new cultural paradigm of interaction, one whose agenda encourages the participants to take responsibility for their actions and their world, then it is imperative that we begin to develop an interactive aesthetic based on those goals.  

What Gigliotti is suggesting is that Brecht’s insistence on audience participation and responsibility are key factors in the success of the design and impact of virtual technology worlds. Gigliotti goes on to argue that:

From Brecht, we have learned that an environment that is not completely immersive, one that provides us with reality checks, pointers to physical reality with its messiness and jumble of perception, environment, content and behavior, is one that ultimately will be the most creative and productive where it counts most, not for ourselves only, but for the desires and needs of others in the real

world. Simultaneously allowing the participant as much freedom in defining his world, developing tools, contributing his own sense of content will in turn offer the participants a confidence in the importance of their particular involvement in determining the future of our relationship with technology.\textsuperscript{26}

These notions of Brechtian design and Virtual Reality construction are of great importance in the contemporary contemplation of immersive and interactive technologies.

3. Edward Gordon Craig and the "Ubermarionette" Theatre

Gordon Craig (1872 - 1966), unschooled in the formal sense, became "educated" by reading several great thinkers who influenced his work. Briefly then, here are some of the major impacts on Craig’s artistry which eventually led him to the theatre of the "ubermarionette." From William Blake, Craig gained a fascination with symbols; James Pryde taught him that art was re-creation, not just an imitation; from Goethe his love and obsession with symbolism was reinforced. It was also from Goethe that Craig understood that art was to function in trying to express the inexpressible; Tolstoy taught Craig that the realistic theatre was an annihilation of art; Nietzche gave

\textsuperscript{26} Carol Gigliotti, Aesthetics of a Virtual World: Ethical Issues in Interactive Technological Design, dissertation (Columbus, Ohio: The Ohio State University, 1993), p. 163.
Craig the notion that all aesthetic activity involves a state of ecstasy; Italian architects and painters showed Craig the importance of color and light as opposed to form; and Wagner’s operas impressed Craig because they combined music, poetry, acting, and spectacle with emphasis on the symbolic value of aesthetic elements from gestures to sound and scenery to costuming.

All these influences, and many more, led to Craig’s experiments in the theatre. To be fair to him, Craig did not intend to drive the actor from the stage. Rather, he saw the ubermarionette as a refined actor without the egoism and other flaws of the living actor. Craig writes that, “The ubermarionette is the actor plus fire, minus egoism; the fire of the gods and demons, without the smoke and steam of mortality.” He added that:

the ubermarionette will not compete with life - rather will it go beyond it. Its deal will not be the flesh and blood but rather the body in trance - it will aim to clothe itself with a death-like beauty while exhaling a living spirit. Several times in the course of this essay has a word or two about Death found its way on to the paper - called there by the incessant clamoring of ‘Life! Life! Life!’ which the realists keep up.

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28 Ibid.
Gordon Craig is more directly concerned with technology because he comes to the theatre primarily as a designer unlike Brecht the director and Grotowski the actor trainer and director. Craig was a director in his own right, but his directing theories are highly influenced by his infatuation with revitalizing the visual landscapes of the theatre. Stratos Constantinidis makes a vital connection between Gordon Craig's work and current-day computer technologies.

Gordon Craig envisioned a future for the designer-director that computer-animated design and computer graphics made possible in the 1980s. "If you cannot make an idea pay," Craig told the theatre managers at the beginning of the twentieth century, "that but reveals your ignorance of how to handle it, and you fail at your own game - but observe, the idea has not failed. It waits for someone better fitted to develop it." (1983:35). The visual subtleties, which were beyond the comprehension and imagination of the theatre managers when Craig was first talking about "painting in light," acquired new possibilities thanks to computer-animated design and computer graphics.29

Indeed, digital art, whether for use in industry or entertainment, is about "painting in light." I would also add, that, recent development in moving light technology for the theatre such as the Intelebeams, are

also allowing for "painting with light" on live theatrical stages. These moving lights, developed primarily for rock concerts and large Broadway extravaganzas, are gradually finding their way into regional, university and even semi-professional theatres.

One of Craig's biggest and most revolutionary experiments was the notion of the "uber-marionette." Craig strongly believed that actors were slaves to their emotions and he wanted actors who used their intelligence as the controlling factor of what transpired on stage. For Craig, in order that an actor give a good performance, he/she had to be in complete control of his/her instincts so that their imagination and ability to create could lead them through the action of the play. Craig's answer to this was a giant puppet with strings controlled by the director. While this idea was terribly unpopular with actors, it is important to remember that Craig himself was an actor and was surrounded by fine actors from an early age (his mother was Ellen Terry). Thus, his lashing out against actors was not a whimsical move, but rather a result of many years of deliberation and experimentation with processes of acting.

In 1908 Craig wrote that "the actor must go, and in his place comes the inanimate figure - the Uber-marionette we may call him until
he has won for himself a better name.\textsuperscript{30} Prophetically Craig had written that he believed "in the time when we shall be able to create works of art in the Theatre without the use of the written play, without the use of actors."\textsuperscript{31} Theatre without the use of the written play has been a reality for some years now with dance-drama (Martha Graham) and multi-media performances (The Blue Man Group).

Theatre without actors is possibly not very far off, especially since film has been able to create very believable life forms through computer generated graphics and animation (refer "Jurassic Park", "Terminator 2", "The Mask", etc.) And actually, theatre without actors has been a reality at the Walt Disney theme parks for many years (especially at Epcott Center). The work of Claudio Pinhanez of M.I.T.'s Media Lab (discussed later in Chapter 7) is also making the notion of a computational uber-marrionette a reality, where the computer becomes an interactive actor, reacting to a script and other human and computer actors in a live performance.

It is interesting to note that many of Craig's ideas and models for taking theatre away from the sluggishness of realism failed, not so much because they were not well thought-out or well planned, but


\textsuperscript{31} \textit{Ibid.}
rather because Craig's time did not have the technologies to support his ideas to transform them into realities. Constantinidis makes the point, and I believe the same, that computers in theatre today have already begun to give Craig's dreams material reality. And if computers are brought into the theatre with all their new capabilities, then the notion of the ubermarionette cannot be that far off. In writing about the ubermarionette, Craig said that, "The ubermarionette will not compete with life - rather will it go beyond it. Its ideal will not be the flesh and blood but rather the body in trance."32

4. Adolphe Appia and "The Art of the Living Theatre"

Appia (1872 - 1966), Craig's artistic soulmate, had a vital impact on modern scenography, and while many of his ideas seemed ludicrous in his time, new technologies have not only made them feasible but have also made them widespread. Appia himself, made leaps and bounds in his scenography with a new technology in his time -- the electric light. Stratos Constantinidis writes that, "Computer

animated design in the 1990s offers the stage design-apparatus and the dramatic possibilities that Appia dreamed about in the 1890s.\textsuperscript{33}

Appia’s work was heavily influenced by the symbolists and this was manifest in his work with Wagner’s operas. Another vital influence and collaboration, particularly for the purposes of this study, was his work with Dalcroze and his system of eurythmics which as a performance style was most compatible with Appia’s designs.

Appia’s stretching of the concepts of theatrical space, light, texture and kinetic design have gained abundant material reality in many subsequent designers’ works. But these very same issues also have much to offer designers of Virtual Realities. Constantinidis summarizes Appia’s conceptual framework which has immense ramifications within virtual technology designs.

The ideal stage space, for Appia, was a cube with totally flexible sides (floor, ceiling, walls), thus permitting each playtext to develop its own unique performance space where emotional and dramatic possibilities could occur thanks to a continuous “play” of electric, not natural, light. Appia conceived the setting as three-dimensional static,

inanimate frame or structure that complemented the dynamic figure of the actor.\textsuperscript{34}

The notion of a flexible space, or a cube, where performance is "written" in by the performer-spectator dynamic, is one of the fundamental building blocks of interactive computer technologies, particularly computer and video games.

5. Joseph Svoboda and Prague’s "Laterna Majika"

Czechoslovakian born Josef Svoboda (1920 - ) has been regarded by many as one of the most significant designers of the twentieth century. He has written that the "union of art and science in essential and vitally necessary for our time,"\textsuperscript{35} and his prolific body of work has exemplified this throughout.

Trained as an architect, when he moved to theatrical design, Svoboda found himself stifled by the prevalence of social realism in his native land and all across Europe. It was in 1958 that he formed a partnership with director Alfred Radok and they opened two multi-media pieces “Polyekran” and “Laterna Magica.” In these two ground


breaking pieces, presented at the Brussels World Fair, live actors were incorporated with previously filmed footage of the same performers. Since that time, Svoboda’s work has always emphasized the presence and expansion of technology in designs.

Svoboda’s insistence on using theatrical design to fully explore the three-dimensionality of space, as opposed to two-dimensional scenic design, likens him to both Appia and Craig. Svoboda believes in using any and all elements possible to make a production kinetic. Svoboda has been known to create very technologically complex machinery for productions. In doing so he has pushed into the centre issues about actors and directors performing in such technologically “rich” spaces (as opposed to Grotowski’s “poor” theatre).

Through an examination of Svoboda’s most significant designs one can trace his influence on subsequent theatre technology and design. But Svoboda’s work is also proof to the fact that with the appropriate technologies, the unfulfilled dreams and experiments of Craig, Appia and Brecht can become material realities. Svoboda’s work also has immense value to designers of interactive technologies in that he forces issues of space and dynamics to the front. Jarka Burian writes that:

Svoboda’s name is chiefly associated with a full-scale artistic exploitation of the latest mechanical, electronic, and optical devices, many of which he
and his staff have developed themselves with the so-called kinetic stage with wide-ranging use of sophisticated lighting and projection techniques, and with radical assaults on the limitations of the still dominant proscenium theatre.\textsuperscript{36}

This shattering of the proscenium has been an obsession of many artists from Brecht and Appia to performance artists like Laurie Anderson and Tim Miller. Interactive technologies have taken this dissolution of the proscenium or the fourth wall to the ultimate degree where the interface between user and medium is fluid, flexible, dynamic and manipulated by both humans and technology.

Svoboda's work also relates to the work of Soviet theatricalists like Tairov and Meyerhold with respect to their concept of stage-as-mechanism. In addition, Svoboda takes Piscator's blending of film footage with live action to an even more technically and narratively sophisticated means. Barka observes that, "his work represents a synthesis, a refinement, and a masterful application of the theories and practical experiments that are considered the coordinates of modern stage design and production . . . he embodies a union of artist, scientist, and professional theatre worker."\textsuperscript{37}


\textsuperscript{37} \textit{Ibid}, p. xx.
Svoboda, in speaking about the fluidity and plasticity of space, expounded that:

In the old theatre the scenery was erected and usually remained fixed without change throughout the entire scene. But what is fixed in the stream of life that we see represented on the stage? Is the room in which we declare our love the same as the one in which we scream curses? . . . That’s why we abandon a static space with its restricted means and instead create a new one . . . more appropriate to the life-style of the present and the mentality of our viewers.\(^{38}\)

Svoboda’s notion of a dynamic space versus a static environment is what designers of immersive and interactive technologies are consistently striving for. He continues:

I don’t want a static picture, but something that evolves, that has movement, not necessarily physical movement, of course, but a setting that is dynamic, capable of expressing changing relationships, feelings, moods, perhaps only by lighting, during the course of the action.\(^{39}\)

Svoboda’s ideas allude to the psychological and emotional manipulation via spatial and lighting means, something that virtual environments incorporate holistically.


\(^{39}\) *Ibid.*
The work that Svoboda has done with multi-media, dynamic spatial treatments, and other technological experimentations has had a significant impact on theatrical design, particularly on Broadway. A lot of what Svoboda has been experimenting with since the 1950s, moved to Broadway in productions as varied as “Kiss of the Spiderwoman,” “RENT,” “Master Class,” and “Beauty and the Beast.”

B. The Present and Future of Theatrical Design in Cyberspace

In examining, the work of the artists listed above, it becomes clear that the trajectory, not only of theatrical design, but also of the design of virtual technologies, has always been dependent on the nature and state of technology available. The future of theatrical design will be much the same - intrinsically linked to the state-of-the-art technology. Stratos Constantinidis talks about this relationship between the future of the art of theatre and its relationship to technology.

The relationship among designers, playwrights, and directors has not remained static, but it has not improved the status of designers in logocentric play productions either. Theatre artists, often afraid of taking chances or permitting changes, have deceived themselves that artistic conformity stands for financial security. Despite the compromise, however, the precarious world of theatre continues to threaten their sense of order and security which is fostered by the social and
artistic patterns that they are familiar with. As social and aesthetic conditioning foreclose any alternative patterns or responses, these theatre artists are losing their capacity to change the art of theatre over time.\textsuperscript{40}

The following is a discussion about the future of the art of theatre and the roles computers can play in creating new dimensions in drama.

1. Computer Graphics for Designers

Mark Reaney of the University of Kansas, one of the few designers extensively experimenting with virtual technologies and design writes that:

Imagine designing scenery in a magical theatre. That is to say, even more magical than usual. Sitting in your favorite seat, you look upon a set that was conceived only minutes before. It seems to you that the stage left wall needs to be a foot taller and invisible carpenters rush in to stretch the offending scenery to the desired height. After a few more such adjustments, you notice that the color of the cyclorama doesn’t look the way you imagined, so the paint begins to change from one color to the next until you see one that suits your fancy. Still, the mood isn’t right. You motion to mystical electricians, and in an instant the stage is awash with soft blue light. Add a little white side light and the scene is complete. It’s time to check sightlines. With a snap of your fingers you are

transported to another seat on the far side of the theatre. A wave of the hand starts you levitating towards a seat in the balcony. You then continue on floating up into the fly loft so that you can see how your set will appear in a groundplan. Returning from this never-never land is easy. Rather than clicking together ruby slippered heels or stepping out of a looking glass, simply remove your head mounted display and power down your computer, for you have been designing scenery in the electronic fantasy land of virtual reality.41

While Reaney is defining a design scenario still relegated to the fantasy world in most theatrical workshops, there is a lot of potential to such a future in design. It seems to me that the computer can offer ways in which the lighting and scenic designers can work within three dimensional graphic models to allow the set and lights to interact before they gain manifestation on the stage. Traditionally designers in the theatre have relied on the reliable and age-old tools of art -- paper, pencils, inks, paints etc., and so far they have done well. Scenic designers will often sketch their visualizations of the set and scenic elements. Then they will move towards building a model and will then build this in the actual space where the theatrical event will gain its performative significance (or lack thereof). Lighting designers will do a

light plot based on the script, the directorial concept, the set and the costume designs. The usual theatrical practice is to hang the lights, erect the set, focus the lights, have a few rehearsals and anticipate the opening night. I am not suggesting that this does not work. Obviously it does in some cases and it does not in others. It seems to me that although theatre is a collaborative process, the above process that I described, regarding the way lighting and set designers work, shows that that collaboration is not being manifest to the best possible outcomes, especially in light of computer technologies available today. In light of the above, Mark Reaney writes that:

The traditional instruments used in the execution of a stage design are sketches, painted renderings, drafting, and scale models. While this overall approach has served the theatre well for centuries it has several shortcomings. Perhaps most importantly, these instruments are labor intensive and require many hours of work. A scale model of a multi-scene show by itself can devour 100+ man-hours and many expensive materials. Unfortunately, modern theatres run on tight schedules and even tighter budgets. Stage designs typically have to be completed and sent to scenic studios for construction in a very short time, often only a few weeks. What stage designers need is a new instrument that will allow them to visualize a design quickly and more accurately. Ideally, it would also facilitate communication amongst theatre artists. What stage designers need is virtual reality.\footnote{Mark Reaney. "Virtual Reality on Stage." \url{http://www.ukans.edu/~mreaney/reaney/vrworld.html} (12 October 1999).}
It seems to me that the computer can offer ways in which the lighting and scenic designers can work within three dimensional graphic models to allow the set and lights to interact before they gain manifestation on the stage. Often in the theatre, when the lights, costumes, and set come together there are inevitably certain issues that pop up which had been unanticipated. Issues of how a certain colored light bounces of the textured surface of a certain set piece. Or how a certain set piece creates a shadow due to lighting which in turn raises problems for actors who were to act in that area. Obviously, staging a show is a complex endeavor, to say the least, and hence it is not possible to imagine all the probable outcomes, especially when all the elements do not come together till very late in the production process. Given the state of computer graphic techniques and software available, set designers can, after sketching and story boarding, develop their set or a facsimile thereof, in the computer. This set design can be as elaborate or minimal as desired. For instance, scenic elements could be created with all their textures, transparencies, metallic qualities, and other surface attributes. The lighting designer could then incorporate the lighting plot into the same three dimensional computer space in which the set model exists and the two could begin
to interact together. Mark Reaney discusses the value of Virtual Reality to the lighting design process.

Lighting is another production element greatly enhanced through the use of virtual settings. Traditionally, a lighting designer's concepts are communicated through a series of sketches, known as a lighting storyboard. This tedious method of rendering three-dimensional lighting in a two-dimensional medium is inexact at best. Virtual settings allow the designer to concentrate directly on lighting, without having to redraw the scenery over and over again. Light sources within virtual settings can be moved, colored and focused, with considerable accuracy and the effects are immediately evident within the virtual world. Each lighting effect can then be saved for future reference and shared with the other members of the production team.\footnote{Mark Reaney. “Virtual Reality on Stage.” <http://www.ukans.edu/~mreaney/reaney/vrworld.html> (12 October 1999).}

If necessary, human figures could be introduced to see how the set and lighting would interact with the performers. In fact, architecture has adopted this medium, having almost completely moved away from the two-dimensional blueprints of yesteryear.

The advantages of doing this are as follows. First, it would allow a longer process of collaboration with the set and the lights, as well as other elements of the production. Designers could view the set up from various points of view. In a proscenium arch setting this is perhaps not so revealing since the audience is only along one side of
the performance. However, in productions that are done either on a thrust stage (audience on three sides) or in the round (audience surrounds the performance area), this becomes very beneficial. Designers can check for consistency so that certain sides of the audience do not miss out on the visual experience of the production. Reaney observes that:

Another boon to designing in a virtual environment is the aspect of three-dimensionality. A staged drama occupies space and is viewed from a variety of angles. Stage designers must always monitor sightlines. Can the audience see the actors? What happens when the actors sit or lie down? How is the view from the back of the balcony? How about from under the balcony? Just as important, can audiences see things they shouldn't? Whoops, there are some stagehands playing pinochie in the wings!

Thus, the eye of the computer becomes the designer's and the audience's eyes before the actual designs gain manifestation allowing potential problems to be dealt with. Reaney compares the designer's sketches to Virtual Reality models.

Unlike a designer's sketch, a virtual setting enables me to occupy any seat in the house, checking the sightlines. Moreover, I easily move from a seat on the right side of the orchestra to another in the left side mezzanine. I even check the view an actor might have from the wings! Upon entering, will the actor be able to see the conductor in the orchestra?

pit? Even a traditional scale model does not depict sightlines as accurately or easily as a virtual model. It is often just too difficult to get one’s eyes into the proper position. Just consider that in 1/4 inch scale, your eyes can be as far apart as 12 feet!\(^{45}\)

In addition to the above there are many more aesthetic and practical advantages from using virtual models in designing for the theatre. Reaney notes that in using Virtual Reality systems in the design process he can generate a virtual setting in a fraction of the time required for a traditional model. Most of my virtual settings are generated in 3 - 4 hours -- when I have a relatively clear design concept before starting. The process takes longer when I use VR to search for a strong idea. In those instances, computerized set modeling proves invaluable in other ways. A virtual world is a great conceptual playground. The license to create new virtual scenic units on a whim, move them about on a virtual stage, and effortlessly change their size, color, or texture, frees even the most stubborn design inspiration.\(^{46}\)

However, as Reaney points out, using Virtual Reality in the design process is not only a means of problem solving, but also a means of furthering aesthetic creativity. Within the computer, designers can begin to explore visual realities which are constrained within traditional


\(^{46}\) Ibid.
art mediums. A good example of this would be the use of unusual surface attributes or shapes for objects etc., that can be manipulated via the computer. Via animation processes the designers could actually tour their spaces within the world of the computer.

The disadvantages of this are based primarily in the budgetary and time limitations of various theatrical entities. This could provide a good motivating point for the arts to push the technology to develop further. Computers need to become faster and more specifically, software needs to be developed where lighting designers can have different kinds of lighting instruments within the computer’s 3-D programs. In the theatre the frennel projects light with very different attributes from the spot, etc. The computer needs to allow for these differing kinds of light sources. Eventually costume designers and property designers could enter this process as well. In fact, because the theatre is such a collaborative art form, computer technologies have a lot to offer in the enhancement of such a set of relationships. Reaney concludes that:

Virtual reality provides, understandably, excellent means for communicating. The accurate communication of a designer’s concepts to others is particularly important in theatre. Theatre is a collaborative art, created through the synergistic contributions of many creative people. Just as they strive to communicate their mutual artistic intent to an audience, so must they strive to
communicate with each other in order that each production element can harmonize with the others. In the past, I shared my work with collaborators by showing sketches of proposed designs. Now, through VR technology, I invite my fellow artists to "walk" through the virtual stage set. the result is an astounding leap in effective communication.  

2. Computer Graphics for Directors, Actors, and Choreographers

Whereas lighting and scenic designers are concerned with visual attributes regarding color, texture, lighting, surfaces, shadows, directors, actors and choreographers are concerned with the visual attributes of motion and the interaction of the human body within the spatial contexts of the set, the lights and other environmental factors.

Computer graphic techniques that would aid the director are ones that allow human motion to be mapped into the computer's three dimensional space. The director, much like the choreographer is interested in body language. Like Merce Cunningham, Alvin Nikolai and Murray Louis, pioneers in dance who use the computer to choreograph works, the directors of the theatre could stretch the human body to new dimensions of motion. Russian theatrical practitioners like

Vsevelod Meyerhold were interested in a system of biomechanics that insisted on training the human body to be the perfect instrument of aesthetic creation. Currently there are motion choreography systems, such as the ones developed by Simon Fraser in Canada, which would allow the body to be challenged by studying the potential of the human body. However, these systems are not entirely sophisticated and what is needed are programs and techniques that simulate with greater accuracy the mechanics of the complex human motion system.

Like dance, theatre too has a problem of not being able to accurately document human motion and movement during a production. Like the Labanotation system, the theatre too could use techniques that allow for the documentation of human dynamics in a production outside of video recordings, notes and journals. Pedagogically and aesthetically some practitioners are opposed to documenting human choreography and motion for the sake of being able to accurately reproduce these pieces in the future. According to them, art should never be about reviving, in all its complexity, something that existed in the nexus of a particular time, space and human event. However, for future scholars and students of dance and theatre, such documentational and graphic systems would prove invaluable in creating a performative ethnography of a certain time and place.
In the previous section I spoke of creating a system whereby the lighting and scenic designers could interact their respective environments within the computer. As a further option the director could animate his performers through those conditions of light and space to gain a more holistic understanding of the eventual performance. Stage managers, who are the primary recorders of human interaction on the stage could also use graphic techniques invaluably to document and further their work. Currently, stage managers use copies of the stage's floor plan to document the blocking of the actors and actresses. Within computer graphic techniques they could document this on a three dimensional mapping of the stage and even have facsimiles of human forms animated through that space. Once again the theatre must push the computer scientists to develop more sophisticated programs and techniques to enable such progress in the theatre.

3. Computer Graphics for Theatre Historians and Scholars

The design capabilities of computer technologies are offering theatre historians new opportunities to excavate the past. With the simulation possibilities of graphics programs, the computer is allowing archaeologists and historians to "dig deeper" as it were in reconstructing the visual realities of theatres of the ancient past. In
this area, perhaps the most important work is being done by Richard C. Beacham with the School of Theatre Studies at the University of Warwick in England.

In one of his projects Beacham is investigating “many examples of Roman skenographic wall paintings to analyze the evidence which (according to Vitruvius) they might provide for the nature and decor of Roman stages.” 48 Beacham is also using computer modeling to investigate this process “virtually” in order to “draw out the architecture from these often problematic paintings to determine and then test the performance spaces which hypothetically they represent.” 49 Beacham expands the value of such inquiries when he writes that:

Essentially the value of creating such models is that they facilitate three-dimensional perception and greatly help both to distinguish between plausibly “real” and “fantasy” architecture in the paintings, and to compare the type of stage sets depicted in a great number of paintings. Taking the model derived from a painting in the Villa of Oplontis near Pompeii, for example, it was easy to assess the architectural and staging potential of the space


49 Ibid.
(as well as the “style” it might suggest both for performance and translation), and then relatively straightforward -- with to be sure the generous application of much money -- to fashion a full-scale version of this, and stage my translation of Plautus' *Casina* upon it at the Getty Museum.\(^50\)

Such investigations are not only important in that they help to “discover” new aspects of the past, but they also help to dispute certain dubious aspects of past historical research and archaeological reconstruction.

Beacham has also used computerized simulations in the “Pompey Project.” This is a collaborative project undertaken with his colleagues in architecture, computer technology, and archaeology where they investigate the great Theatre of Pompey, built in Rome in 55 B.C. The theatre of Pompey is probably the largest Roman theatre ever constructed and “was one of the first and most influential ‘imperial’ buildings at Rome, remained in constant use for over five centuries as one the great show-places of the City, and was a major ‘tourist’ site during the middle ages.”\(^51\)


\(^51\) *Ibid.*
What remains of the the Pompey Theatre today is a fraction of the original and most of that is buried underground. Beacham’s strategy to reconstruct and “virtually” resurrect this ancient wonder is as follows.

My project involves initially the creation of a computer model of the site based on existing information (by no means negligible) and plausible hypothesis. This model will then be systematically tested and continuously refined in the light of new evidence or analysis emerging and incorporated incrementally into it. It enables the viewer to explore the site in some detail, and eventually will incorporate links to primary and secondary written accounts, allowing many decisions and choices made in creating elements of its design to be evaluated and alternative possibilities scrutinized. It can provide both a demonstration of a methodology, and its results.\(^5\)

This very complex project, a collaborative endeavour that is interdisciplinary, is ongoing and expensive. Work like that which Beacham is engaged in is important not only in that it reveals history but it can also correct past misconstructions of theatre historiography. New technologies are helping unearth the marvels of old technologies.

4. **Computer Graphics for New Production Realities**

Visual realities in the theatre have been stagnating within the past decade or so, and new technologies could rejuvenate the visual aspects of the theatre. Theatres need to jump onto the cutting edge of technology and push for further innovation to develop new realms within current aesthetic methodologies and practices.

If the theatre is to compete with television, motion pictures, and other electronic modes of entertainment transmission, then the theatre needs to use the same weaponry that their "enemy" uses. One has to know and understand the enemy to fight it! The theatre can rejuvenate its visual and perceptual aspects by using holography and projections. Techniques and systems whereby live actors interact with projections of animation on the same stage are close to becoming widely possible and computer-actors, like those developed by Claudio Pinhanez, are gaining a reality in theatrical activities as well. Virtual reality will eventually have a place on the stage and in the audiences of the future.

However, for now, while techniques of holography and Virtual Reality progress and advance, the computer graphic techniques can also be used very effectively to produce multi-media projections and environments for performances. The current realism and bulkiness of
scenery can be controlled and enhanced via such uses of computer generated graphics. Using editing, sound, live video and other imagery, one can also produce exciting montages for use in theatrical productions. Cinematic devices could be introduced to enhance the theatre. Bertolt Brecht and Erwin Piscator, in the early twentieth century, were very interested in using film and slides in their productions of social protest. The present-day theatre has much to gain from such multi-media assimilation within its aesthetic concepts. And although one can use such montages in theatre that is not propagandistic or blatantly political, the use of the computer itself as an artistic tool becomes a statement of our times and the eras to come.

Although I am dealing predominantly with graphic techniques here, I would also like to propose that computer aided and computer generated music has a largely unexplored role to play in the theatre of today and tomorrow. Robert Wilson's theatrical productions and Laurie Anderson's performance art pieces have explored the possibilities of such computer-generated aural landscapes. Laurie Anderson's performance art pieces such as "United States I-IV" tend to use computer graphic applications as humorous and poignantly disturbing visual beckonings to critique an impotent society whose infertility and hope for fertility lies in technology. Anderson's performances have
their roots in Marinetti’s Futurist performances and in the Dadaist and Surrealist aesthetic sensibilities of the early 1920’s. George Coates, another performance artist, uses projections in his pieces, some of these produced by computer graphics. Robert Edgar, uses the computer as theatre in which the machine becomes the actor and the user the spectator. This interactive use of the computer is perhaps the most cutting-edge use of the technology within the theatre.

In conclusion, it is evident that while computers are transforming theatrical landscapes in dynamic ways, the true potential of the nexus of theatre design in the cybernetic era yet remains to be fully realized. Stratos Constantinidis summarizes this well when he writes that:

> Computer-animated design has opened new possibilities for restructuring hierarchical roles in play production. Although computer-animated design does not ban improvisation and artistic innovation form the stage, many designers and directors who abhor detailed stage composition before rehearsals and detest lectures on productivity of the jargon of marketing and engineering felt threatened. They claimed that the mind of a good-designer or director is cheaper, if not faster, than a cost-reducing computer; that the work of improvisational directors may be more time-consuming and costly than when it is assisted by a computer, but it is often more creative and it is worth it.\(^5^3\)

Whether future artists will think that this nexus of computers and theatre is "worth it" remains to be seen. However, if the current popularity of interactive technologies and virtual environments is any indication, the theatre will definitely be pursuing these new technologies in trying to define the nature of the art of theatre into the twenty-first century.
CHAPTER 7

COMPUTERS AND THEATRE IN EDUCATION AND RESEARCH AND DEVELOPMENT

The proliferation of computers in education in the United States has been fast paced and almost ubiquitous. Not only have computers become one of the most widely used educational tools, but computers have also become resources, replacing card catalogues with “url” (uniform resource locator) addresses and on-line databases. Most radically perhaps, computers have decentralized education allowing distance learning and outreach education where students potentially never leave their homes, rarely meet their professor and seldom interact in real time and real space with their fellow students.

The computer has replaced the calculator in math courses. In physics, simulations are used to demonstrate principles from the laws of thermodynamics to the laws of nuclear physics. In medicine, the virtual cadaver has allowed for new ways of looking at the body and
also compensated for the shortage of cadavers being faced by medical schools all over the nation.

Computers are not just being used in the hard sciences. The arts have found themselves plunged into this educational computer revolution as well. In architecture programs in many parts of the world, virtual blueprints allow for students to “walk through” their models and designed spaces before they ever reach the construction phase. In the visual arts, new departments have sprung up focusing on computer generated art, computer graphics and animation. One of the problems with traditional dance education has been a total lack of documentation of choreography by the great masters, other than film and video taped versions. In dance programs today, computers are being used with the system of Laban Notation, to document choreography, helping archive detailed versions of dances for future choreographers and dancers to study and recreate.

Computers in the theatre have also found a wide array of functions and applications ranging from phases of pre-production to post-production. The introduction of computers in the theatre occurred in the area of design first. Computers were used to increase the precision of lighting, sound and scenic effects on stage. For instance, the popular and long-running musical “Les Miserables,” uses a computer to control the 34-foot steel turntable that is the central
scenic element that unifies all the other aspects of the mis-en-scène. Increasingly computers began to be used in scene design for drafting, much like in architectural drawings. With the advent of Virtual Reality models, theatre programs are beginning to experiment with the computer as a performative medium. In this chapter, I will examine the use of computers in theatre in two broad categories: the use of computers in design based applications and the use of computers in the performative aspects of theatre.

A. Computers in theatrical based performance

In this section I explore some work being done in the areas of computers and theatre performance at the university level. In particular I look at The Virtual Theater Project (part of the Adaptive Intelligent Systems (AIS) Project) at Stanford University in Paolo Alto, California. First, I examine the work being done at The Institute for the Exploration of Virtual Realities (abbreviated as "i.e.VR") at the University of Kansas.

The Institute for the Exploration of Virtual Realities at The University of Kansas is exploring many of the issues described in this chapter. However, i.e.VR has also chosen to mount plays from the traditional dramatic canon by using these new technologies to reinfuse the old with the very contemporary. More importantly, the research
being done at the University of Kansas in the area of computers and theatre is actually being done in the Department of Theatre and Film and not in a technology or media arts program as at Stanford and New York University. The institute defines its goals as follows: “To explore the uses of virtual reality and related technologies. While the primary application currently under study is theatre production and performance, the possibility of exploring VR applications in other fields is also being actively pursued.”1 However, it is also important to acknowledge that this research by the theatre faculty is being generously supported and sponsored by a number of corporations including Artifice, Inc., MetaCreations and The Vitus Corporation as well as The United States Institute of Theatre Technology and The University of Kansas Instructional Technology Fund. Without such external funding opportunities, particularly in the arts, such academic initiatives and experiments would be virtually impossible and unfeasible.

The primary mission of i.e.VR “is to explore new real-time graphics technologies in live performance. The culmination of our various research initiatives is the occasional live performance before a theatre audience. Each production is a showcase and a testing ground

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for new ideas, techniques and technologies. The department has thus far worked on five productions with varying degrees of interactive technology incorporated into the larger context of traditional dramatic praxis.

The first production that the department mounted with these technologies was Elmer Rice’s *The Adding Machine*. The production was directed by Ronald A. Willis with Mark Reaney serving as the designer and technologist. The production was presented April 18-30, 1995 in the Crafton-Preyer Theatre on the campus of The University of Kansas.

In this production of *The Adding Machine*, audiences were able to interact with live actors and computer generated actors who dramatized the script in an environment which was three-dimensional and created technologically. Reaney describes this virtual world as follows:

> The paths taken within these “virtual worlds” were not prerecorded, but improvised on the spot through the actions of the crew! Virtual worlds were created through the combination of real-time computer graphics and theatre quality projection equipment, which the audience interfaced through wearing polarized glasses. This exciting new

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technology allowed for the realization of fantastic locales and special effects never before possible in a live theatre milieu.³

In some ways The Adding Machine is the perfect play within which to analyze the implementation of computer technologies into the theatre. In an interesting meta-theatrical notion, the use of new technologies in Elmer Rice’s play about the dehumanization brought about by mechanization with the Industrial Revolution, raises reflective notions about man’s nexus with technology at many levels.

Rice’s play is an expressionistic depiction of the plight of Mr. Zero, trying to find his own definition and identity in the mechanization at the turn of the last century. The Adding Machine was first produced in 1923 and perhaps begins to resonate once again with the turn of this century, when computer technologies are creating the new revolutions. According to director Willis and designer-technologist Reaney, their production “attempted to demonstrate ways in which virtual reality technology can be used to illuminate an existing dramatic text. Used not merely as spectacle for its own sake, but as a new and

exciting scenographic medium in the service of the script, virtual
reality becomes another component of the collaborative theatre art."

In Scene 2 of the play, when Zero is fired by his boss, the former
is played by a live actor on stage and the latter is played by an actor
off-stage whose image is projected onto a projection screen on stage.
The technique of projecting the image of the Boss was also used
metaphorically in that as the Boss becomes more threatening to Zero,
the image on the screen symbolically grew larger and more ominous,
eventually filling the entire screen.

Mark Reaney, in an article in Theatre Design and Technology
wrote extensively about the challenges and rewards of mounting The
Adding Machine within the framework of these new virtual technologies.
Reaney writes that:

The over-arching technical consideration in the
planing of this production was the need to devise a
practical method of presenting virtual
environments to a theatre audience. In order to find
a suitable audience/actor/virtual-world interface,
traditional methods of staging plays and presenting
virtual realities had to be examined for any

\[\text{\textsuperscript{4} Mark Reaney. "i.e.VR: The Institute for the Exploration of Virtual Realities." <http://ukanaix.cc.ukans.edu/~mreaney/machine> (12 October 1999).}\]
similarities that could be exploited and any conflicting differences for which compromises would have to be found.\textsuperscript{5}

These difference between theatre and Virtual Reality are at the crux of present and future experimentation in bringing theatre and computers closer together. The challenges are both practical and based in economics. In the case of The Adding Machine, Reaney writes that, "the focus of the project was to create a theatre piece enhanced by VR and not to produce VR artwork using theatrical methods."\textsuperscript{6} In order to elaborate the work that goes into incorporating Virtual Reality technology into traditional theatrical frameworks, Reaney elucidates some of the practical problems faced.

The production which was held at the Crafton-Preyer Theatre seats 1800, has an orchestra and balcony with a 40-foot proscenium configuration. This entire space had to be redesigned in order to bring traditional theatre practices and Virtual Reality technologies closer together. Reaney describes the transformation of the Crafton-Preyer theatre as follows:


\textsuperscript{6} Ibid.
In order to put the audience in close proximity to actors and projection screens, the audience was turned 180 degrees and moved to the read of the stage house. To enhance sightlines, seating platforms were built at a steeper rake, rising 1 foot every 3 feet horizontally. Original plans called for an audience of 150, but later revisions increased the number to 190. Black velour stage drapery was hung at the stage’s cyclorama positions. This drapery then surrounded the audience behind and on either side, eliminating views of the stage house, focusing the audience on the playing area and enhancing the illusion of immersion within the virtual world.

This process is indicative that if any serious integration of Virtual Reality technologies and theatre is to occur, then it requires a reconfiguring, not only from an aesthetic and philosophical perspective, but also from a very practical and physical aspects as well. Perhaps, in the future, as this marriage between theatre and Virtual Reality technologies gets stronger, new types of theatrical spaces will have to be built.

In March of 1996, i.e.VR experimented with Samuel Beckett’s Play. This was a more experimental venture held in the design studio of KU’s Murphy Hall. The production was directed by graduate student

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Lance Gharavi and was presented to an audience of six. Each audience member wore "i-glasses!" in order to experience the new audience/VR interface being experimented with.

Actors were videotaped in 3-D prior to the performance. During the actual performance, these 3-D recordings were super-imposed over a 3-D virtual world which could be navigated in real time. The director also played the part of "The Light" who was

a love character that manipulated the audience's view of the performance. In costume and makeup, Lance was visible through the translucent screens of the i-glasses!. By manipulation of lighting conditions and the composition of the virtual worlds, Lance appeared as a ghostly figure looming over and behind the three characters.  

Between December 2 and 10 of 1996, the institute produced Arthur Kopit's *Wings*, once again directed by Ronald A Willis, with Mark Reaney serving as designer-technologist and Lance Gharavi serving as video director. The i-glasses! from the experiment with Beckett's *Play* were carried forward into the production of *Wings*. These i-glasses! allow the audience to see live actors and projected images on a screen at the same time.

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The creative team continued what they had done with the projections in *The Adding Machine* but added the i-glasses! (created by "Virtual i-O") also referred to as a head-mounted display (HMD). Another level of complexity was created here when computer graphics and live video images were also projected within the HMDs themselves. Reaney writes that, "The 'see-through' technology of i-glasses! made it possible for the user to see through and around the built-in video screens. Using these new non-immersive HMDs, the audience still maintained a strong connection with the live actors. Furthermore, the communal nature of the theatre experience was not lessened."⁹

Reaney raises one of the biggest concerns that traditionalists have with the entree of computers in the theatre - will the audience's relationship to the live actors diminish as things like projections, HMDs and other contraptions become part of the theatrical landscape?

The use of the i-glasses! was crucial in this production. Reaney writes that:

> i-glasses! allowed us to present virtual-worlds, computer generated objects and video images directly before the eyes of an audience. Symbolic devices, realistic locals, expressionist images, or even close-ups of the actors were superimposed over the view of the actors. The script chosen for the experiment was *Wings* by Arthur Kopit. By

equipping the audience with i-glasses! we sought to devise an exciting and innovative method of communicating the main character's chaotic state of mind as she suffers a stroke and fights for recovery.¹⁰

The next venture taken on by i.e.VR was Tesla Electric by David G. Fraser. The production ran February 12 - 20, 1997 in the William Inge Memorial Theatre at Kansas University and was directed by Lance Gharavi with Mark Reaney serving once again as designer-technologist. Tesla Electric chronicles the life of inventor Nikolas Tesla, using surrealism, vaudeville, carnival sideshows and magic. Like The Adding Machine, this play has as its subject issues of technology during the Industrial Revolution.

In this production, the experimentation was towards making the theatrical experience more immersive. In this production, the directors and designers "created computer generated scenes that did not move but were lavishly detailed and textured. In order to add life to the scene we experimented with interjecting animated objects into the scenes."¹¹ The live actors acted in front of a panoramic triple screen


used for rear projections. Artifice Inc. provided sunglasses that the audience wore in order to view the scenes, created by stereo imaging, in 3-D. The creators were also concerned with creating images that had high resolution when projected, and images whose luminosity could work with the other lights being used in the productions.

Finally, i.e.VR has just finished producing Machinal (also produced as The Life Machine), a play in nine episodes by Sophie Treadwell. It was first produced in 1928 and published in 1929. The setting of Machinal is 1920s New York hotel by the seaside. The play is inspired by a notorious murder case and aroused considerable attention in Russia.

The heroine of Machinal, referred to as the Young Lady, is stultified by a banal society and a mechanized world, represented by a profusion of offstage sounds in this expressionistic play. The role of the lover was played on Broadway by the then-unknown Clark Gable. Mark Reaney writes that:

Our production of this American classic drew upon, and further refined the techniques we discovered in past i.e.VR productions. The main scenic elements consisted of virtual environments projected in stereoscopic 3-D onto rear-projection screens. This production employed new Digital Light Processing
projectors, powerful computer workstations and state-of-the-art VR software. We also incorporated a variety live and recorded video images.\textsuperscript{12}

\textbf{Machinal} as produced by i.e.VR has built on all the previous productions at KU that incorporated immersive and other computer technologies into theatrical productions.

The aims of the Virtual Theatre Project at Stanford University is to “provide a multimedia environment in which users can play all of the creative roles associated with producing and performing plays and stories in an improvisational theater company. These roles include: producer, playwright, casting director, set designer, music director, real-time director, and actor.”\textsuperscript{13} Collaborating with Stanford’s Virtual Theater Project, is Ken Perlin of the Media Research Lab at New York University (NYU).

Below is an overview of some of the experiments and productions presented via the work of the Virtual Theater Project. Creatures called \textit{woggles} inhabit a graphical world in a project titled “Animated Puppets.” These \textit{woggles} move about, talk and play with one another. The computer controls one \textit{woggle} while the participant controls


another *woggle*. These creatures have the ability to use "Intelligent improvisational ability to chose interesting behaviors."\(^{14}\) Ruth Huard is adopting the concept of the *woggles* in her work in children’s story crafting.

In the next project, titled “CyberCafé,” users interact via avatars with autonomous characters set up in the virtual world. The CyberCafé is a multi-agent based system and in a typical scenario, “two users take the forms of customers in the CyberCafé, while the computer directs the actions of the waiter.”\(^{15}\) Daniel Rousseau has used the CyberCafé to study models of personalities in synthetic characters. Rousseau’s work is about determining how actions vary based on personality parameters in the computerized models.

The third project of the Virtual Theatre Project is titled “The Forest Sauvage.” The goal of this experiment is to create “believable characters with broad, abstract domain knowledges, and placing them in virtual environments that provide specific domain details in the form of embedded annotations.”\(^{16}\) As part of this project, the creator’s have come up with an autonomous and synthetic character named


\(^{15}\) Ibid.

\(^{16}\) Ibid.
Merlyn (based on the old magician in T. H. White’s *The Once and Future King*). Merlyn is capable of acting independently of the participant and can “can scan his environments for actions and information about them, communicate with the user, suggest activities, play with the user, and develop a model of the user across multiple sessions by observing the user’s action and preferences.”

The fourth experiment titled “Tigrito” is being adapted towards teaching English and/or Spanish as a second language. In Tigrito, the creators have come up with an animated stuffed tiger who can be interacted with by participants who enter the virtual world.

Finally, in a project titled “Master/Servant Scenarios,” the Virtual Theater Project seeks to study how “two autonomous agents interact with one another without human intervention.” In this case, the entire world is virtual and the characters are moving towards an artificial intelligence as they are prodded to react to various physical stimuli and emotional variations all manufactured by the computer.

The Virtual Theatre Project summarizes their work as follows:

> In a typical production, animated actors perform the play in a multi-media set, all under the supervision of an automated stage or story manager. Actors not only follow scripts and take interactive direction from the users. They bring

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"life-like" qualities to their performances; for example, variability and idiosyncrasies in their behavior and affective expressiveness. They also improvise, thus collaborating in the creative process. Each time the actors perform a given script or follow a given direction, they may improvise differently. Thus, users enjoy the combined pleasures of seeing their own works performed and being surprised by the improvisational performances of their actors.\textsuperscript{18}

While the Virtual Theater Project uses theatre as its primary focus, the research and applications are by necessity interdisciplinary and the objectives are educational, commercial and social. Current and future research of the Virtual Theater Project is to build synthetic characters who can take directions from a participant or from the environment and react to the directions in consistence with their own parameters of mood, emotions and personalities. These "virtual actors" will be crucial in defining the future of computers and theatre.

B. Computers in theatrical based design

The work of theatre designers has been radically affected by the introduction of computers. One of these partnering between the high-tech industry and artists has resulted in the CAVE (Cave Automatic Virtual Environment) project which is a Virtual Reality theater. The

CAVE's name is also a "reference to 'The Simile of the Cave' found in Plato's 'Republic,' in which the philosopher explores the ideas of perception, reality, and illusion. Plato used the analogy of a person facing the back of a cave alive with shadows that are his/her only basis for ideas of what real objects are."\(^{19}\) Plato records from memory a dialogue between his elder brother, Glaucon, and Socrates. In the simile Plato describes a cavelike chamber in which ordinary people are destined to lead their lives in obscurity. Outside the cave, a veil has been hung over the entrance. As the world passes outside the cave, the inhabitants of the cave are only able to discern the outside by shadows thrown on the veil by the weak light of a fire within the cave. Since the cave dwellers have only the experiences of within the cave, they believe that these shadows represent reality. Plato's idea, via Socrates, was that the philosopher has a duty to venture outside the cave to understand the world outside. Then, when the philosopher has reached a certain understanding and level of education, he must return to the cave to share his knowledge and findings with those still trapped within.\(^{20}\)


The CAVE is an environment which utilizes surround-sound with a surround-screen and the entire system is projection-based. The viewer is surrounded by a cube (10’x10’x9’) that is comprised of display screens on which are projected 3-D computer graphics. Images are even projected on the floor of this room. The walls are rear projection screens (used widely in the theatre) and the floor is a down projection surface (now being widely used in MTV music videos and cutting edge television commercials). The projection cube of the CAVE theatre itself sits in a light tight room (30’x20’x13’). This cube creates the sense of immersion which is further enhanced by “head and hand tracking systems to produce the correct stereo perspective and to isolate the position and orientation of a 3-D input device.”

While the CAVE is similar in many ways to some surround-screen, surround-sound video arcade games, CAVE dwellers experience Virtual Reality without helmets. Rather, they wear lightweight stereo glasses.

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and walk around inside the CAVE as they interact with virtual objects. The other innovative feature of the CAVE is that multiple viewers can share and moderate the experience at the same time. However, this shared-experience is hierarchical in that the active user controls the stereo projection reference point while the other users are passive. This is an area of great relevance to the theatre and one that theatre can contribute greatly to. In the live theatre, multiple participants can equally affect the performance by giving or withholding their attention, responses and active participation. However, most live performances are based on fixed scripts and as such audience manipulation is limited.

The genesis of the CAVE lies in it being used as a tool for scientific visualization developed jointly by EVL, the National Center for Supercomputing Applications, and Argonne National Laboratory. When the CAVE premiered at the ACM SIGGRAPH 1992 conference, it gained a national reputation "as an excellent virtual reality prototype and a

22 The technology of the CAVE includes the following hardware and software. Electrochrome Marquis 8000 projectors throw full-color workstation fields (1024x768 stereo) at 96 Hz onto screens, giving approximately 2,000 linear pixel resolution to the surrounding composite image. Computer-controlled audio provides a sonification capability to multiple speakers. The head and hand tracking devices are Ascension tethered electromagnetic sensors. Stereographics' LCD stereo shutter glasses are used to separate the alternate fields going to the eyes. A Silicon Graphics Onyx with three Reality Engines is used to create the projected images. The projectors' optics are folded by mirrors.
compelling display environment for computational science and engineering data.”

CAVE applications in the arts have not kept pace with scientific ones, once again pointing out the divide in the arts being slower in picking up computer innovation, primarily due to issues of cost and financial feasibility.

The development of the CAVE was fueled by the following goals, which could also direct future applications of such a system in the arts. These goals were:

1. The desire for higher-resolution color images and good surround vision without geometric distortion.
2. Less sensitivity to head rotation induced errors.
3. The ability to mix virtual reality imagery with real devices (like one’s hand, for instance).
4. The need to guide and teach others in a reasonable way in artificial worlds.
5. The desire to couple to network supercomputers and data sources for successive refinement.

Goals (1) and (3) above are the ones which have the most direct resonance with theatrical design and applications. While rear projections have been popularly used in theatrical design from the

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24 Ibid.
designs of Josef Svoboda of Prague’s “Laterna Majika” to many of the spectacle heavy Broadway musicals like “Kiss of the Spiderwoman” and Andrew Lloyd Weber’s “Evita,” designers have struggled greatly with making these projections clear and visible in light of the projections not being washed out with the other stage lights being used. Moreover, rear projections in theatrical design are mainly limited to still images and as such are still merely used as backdrops.

The second goal of mixing Virtual Reality imagery with real devices could lead to interesting interactions between actor, stage design and the audience. Projection devices, where actors actually manipulate and directly interact with the projections are limited and clunky in their current synthesis. Even more difficult and potentially more interesting would be developments where the audience is directly able to manipulate and interact with Virtual Reality imagery. Developments in computerized stages, hyper- and computer-actors coupled with innovations like the CAVE could lead to new potential in both the design and performative aspects of the live theatre.

Claudio Pinhanez of the MIT (Massachusetts Institute of Technology) Media Lab is one of the pioneers in the use of computers as part of the performative aspects of the production. His work is crucial in evaluating the nexus of theatre and computers. In specific Pinhanez’s work focuses on computers as actors. Pinhanez argues
that "until recently theatrical performances involving human and computer actors was not possible due to the lack of appropriate computational models for action representation, recognition, and generation."\textsuperscript{25} PINHANEZ believes that action is the crucial component of creating viable and effective models of computers as actors. In fact, one of the biggest challenges in computerized animation has been the simulation of human movements. Animation, even with the earliest Disney films, somehow managed to create animals with believable motion. Moreover, since many animations have focused on animals who speak, believability in motion or otherwise has never been a large issue. However, when animation has dealt with humans, motion, including the shaping of the lips during speech, has been problematic and not based in reality at all.

In the 1996 film "Toy Story" by Pixar Productions, all the toys were created with great detail including the way they moved. However, because they were toys, Pixar artists had liberty in determining the reality of their movements. In the same film, which was also the first feature length animated film to be created entirely on computers, the human counterparts were not very human at all. Most of all their motion was stilted and unrealistic. Even today, with great

advancements in computerized effects and animation, human-like motion is the most complex and elusive.

For Pinhanez, the term computer theatre refers to "situations which involve human performers and audience in the same physical space."\textsuperscript{26} Pinhanez goes on to say that he restricts the term to "performance situations (ruling out, for instance, user browsing and story-telling)."\textsuperscript{27} This notion of computer theatre as a live theatre performance actively mediated by the use of computers is an integration of theatrical and technological elements at various levels. Pinhanez summarizes four categories within which computers can be used in the live theatre.

Computers can be used as electronic puppets, where a human puppeteer controls a computer graphics character displayed on a stage screen. More novel is what I call a computer-actor, where the computer automatically controls a character, establishing a true interplay between man and machine. A third possibility is expanding the body of an actor on stage, enabling the actor to produce sound, images, or music as expansions of his voice and body - a hyper-actor. Finally, the most common example of the use of computers in theater has


\textsuperscript{27} \textit{Ibid.}

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been computerized stages, where the space as an element of the performance (set, lights, and ambient music) is controlled by a computer.\textsuperscript{28}

Pinhanez's research has led him to define what he calls a "hyper-actor" as "computer theatre systems which aim to enhance the actor's body and therefore his expressive capabilities."\textsuperscript{29} The hyper-actor is one who is connected or linked to some sort of technology. Pinhanez writes that:

A hyper-actor expands an actor's body so he is able to trigger lights, sounds, or images on a stage screen; to control his final appearance to the public if his image or voice is mediated through the computer; to expand its sensor capabilities by receiving information through earphones or video goggles; or to control physical devices like cameras, parts of the set, robots, or theater machinery.\textsuperscript{30}

Dance and music have explored the notion of the hyper-actor moreso than theatre. Some artists who have used these ideas of the hyper-actor include Laurie Anderson who uses a Synclavier to process her voice and singing during a performance. Anderson's performances such as United States I-IV also use computer graphic applications as a


\textsuperscript{29} Ibid.

\textsuperscript{30} Ibid.
commentary on our relative impotence in a technologically-driven society. Rose Lee Goldberg notes that Anderson’s performances have been heavily influenced by Marinetti’s Futurist performances and Dada-Surrealist works from the early 1920s. Another performance artist, George Coates, creates live performances with his actors who receive scripts from internet users during the show titled “Better Bad News.” Christopher Janney’s performances where a dancer and musician played with the sound of their heartbeats are another example of the use of hyper-actors in dance and music.

In the theatre, the use of the hyper-actor has been very limited. One strong example of this is Mark Reaney’s “Virtual Theatre” piece. “In a typical scene an actor on stage plays with an off-stage actor whose image is seen by the audience on two large stereo-graphic video screens (the audience wears special 3D-goggles). The off-stage actor’s image expands and contracts according to the play’s events and is used to symbolize and enrich the power struggle portrayed in the scene.”31

Pinhanez’s research has led him to classify a computer-actor, separate from a hyper-actor. Pinhanez writes that, “the distinction between hyper- and computer-actors is important because computer-

actors require a control system which decides what to do 'independently' of the desires of human partners.\textsuperscript{32} Thus, the computer is placed in the position of independently being able to follow a script and react to other performers based upon the definition of its own role. Of course, such computer-actors approach what in the greater cyber culture is referred to as artificial intelligence (AI).

Pinhanez describes such applications with the following examples:

A straightforward implementation of computer actors would be human-like or cartoonish characters displayed on a stage screen. Most of the interesting examples come from research oriented towards direct user interaction with computer-generated characters. Worth of mention is the world of Bruce Blumberg in building a computer graphics generated dog which interacts with the user, obeying simple gestural commands ("sit," "catch ball") while satisfying its own agenda of necessities ("drink water," "Urinate"). The interaction occurs through a large video screen which simulates a mirror where the user and the dog occupy the same space.\textsuperscript{33}


\textsuperscript{33} Ibid.
Hence, the notion of the computer actor can take on many forms, from images generated via computers to the computer itself being a player in the action, occupying the same space as other human and computer actors.

Currently under development are certain theatre systems called computerized stages. These electronic and digital platforms are concerned with expanding the possibilities of the stage, set props, lights, costumes and sound. Pinhanez writes about one such experiment in computerized stages at Arizona State University.

A stage can react by changing illumination, generating visual and sound special effects, changing the appearance of backdrops and props, or controlling machinery. An example is the Intelligent State project at Arizona State University which enables the mapping of volumes in the 3-D space to MIDI outputs. Movement and presence of dancers are monitored by 3 cameras, triggering music and lights accordingly.34

In some ways what Pinhanez is talking about is not entirely new or revolutionary. Stages, for all practical purposes, especially on Broadway, have been computerized for over two decades now. The first applications of the computer in stage craft were used to make lighting designs more vibrant and more precise. Then, with large

musicals like Andrew Lloyd Weber's "Starlight Express" and "Cats," computers were used to control stage scenery and special-effects machinery. Today, most theatres, even down to some high school and community theatres have technologized to use computerized lighting boards.

However, there are new directions that computerized stages are being focused towards where the action on stage, through actors and dancers, interacts with technology to transform the *mise-en-scene* instantly and in real time. Although there is much work to be done in the area of hyper-actors, computer-actors and computerized stages, the possibilities for theatrical form and function are potentially new and vibrant. The most obvious obstacle faced here will be one of funding and finances and audiences are not likely to see these new developments unless industry and the arts find new ways to partner and innovate together.

Another theatrical performance that used Virtual Reality is the French production of "Cybersuite" by *Theatre Fantastique*. In fact, "Cybersuite" utilizes some of the notions described above such as hyper-actors and computerized stages. Arthur Shafman International Ltd., the promoters of "Cybersuite," tout the show as "a magical
voyage into a virtual reality."\textsuperscript{35} The story of "Cybersuite" involves a unique relationship between Webster, a computer nerd, and Valerie, an immaterial creature who exists inside of a computer. She is the product of man's imagination and technology's promise. The only way that Webster can meet the object of his desires is by trying the utmost to making Valerie real. Via a computer, he enters a virtual world.

The production takes place on two planes - that of the stage and that of a projection screen. Webster's character is seen simultaneously on the stage and the screen, and as such when reality mixes with the virtual, a disjunction is created in space and time where the audience is uncertain as to which realm they are in at any given point.

Webster tries to construct a body for Valerie from a variety of materials but fails with each one. "Paper rips, foam rubber is too soft, colored lines do not have a third dimension, stones are inert, and metal is too cold."\textsuperscript{36} Webster, having been unsuccessful at giving Valerie a material reality, decides to go join her in her cybernetic universe.


\textsuperscript{36} ibid.

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The story of “Cybersuite” was inspired by a myth of the Omaha Indians of North America. The myth says that:

All creatures, including man, were once thought swimming in space. They were searching for a place where they could come into existence. They tried the sun, but it was too hot. The moon was too cold. They came to earth but it was under water. One day an immense boulder broke the surface of the ocean and land was created. the spirits of vegetation descended, followed by spirits of animals and finally that of men who made the transition to solidity and achieved bodily form.\textsuperscript{37}

Theatre Fantastique, since its inception in 1983, has had a reputation as a company which innovatively integrates art and technology. The actors, like hyper-actors are able to create music and sound with their bodies (like in the global extravaganzas “STOMP” and “TAP DOGS”) and are also able to transform the spectacle on stage. Webster’s character is able to be on stage and on screen at the same time by the use of cameras. Eventually, Webster's choice is to be transformed into a character made up of “pixels” so that he might be united with his “beautiful, virtual love.”\textsuperscript{38}


\textsuperscript{38} Ibid.
Richard Zachary, director of “Cybersuite” used the challenge of integrating live actors with computers as the starting point of “Cybersuite.” He has said that:

Ultimately our goal is to create a wonderful theatrical experience. Traditionally all kinds of means have been used in the theatre: make-up, costumes, decor, stage machinery, not to forget the highly trained actors. These tools are used to create an illusion, magic or new reality. Computers are another tool to be used, a tool that opens doors to incredible possibilities and makebelieve worlds.  

In “Cybersuite,” computers are mainly used in three different ways. “(1) To create a kind of Virtual Reality, (2) to create computer images, animations and video sequences, and (3) to create ‘Virtual Music’.”  

What follows is a brief summary of the way in which actor and computer interact in “Cybersuite.” This section better elucidates Pinhanez’s notions of the hyper- and computer-actor and the computerized stage.

The Virtual Reality sequences of “Cybersuite” use a system called the “Mandala,” designed by the Vivid Group in Toronto, Canada. The actor’s image (Webster in this case) is filmed by a camera and this


40 Ibid.
is in turn digitalized and entered into the computer in real time. The process of “digitalizing” involves changing the image into bits of information that the computer is able to understand and work with. The result is that the actor is now able to interact with and become a part of the computer generated world. Because all this happens in real time, a huge challenge for both the humans and the technology, the audience witnesses two things: “the actor moving around in empty space, and at the same time on the projection screen, the actor moving and interacting inside a synthetic world created totally with a computer.” The actor is able to interact with objects that exist solely in the computer and on the projection screen. These episodes are however not continually present throughout the performance.

“Cybersuite” also uses a variety of on screen projections of objects, landscapes, and animations that are generated entirely by computers. The producers of “Cybersuite” acknowledge that, “It is only in the last few years that computer equipment and programs have evolved to the point where a small theatrical company, and not a

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television or movie production house, could afford to be using them and as a result be creating 3-D animations, non linear montages, etc.\textsuperscript{42}

The third significant use of computers in "Cybersuite," is a specific application in one scene towards the creation of "virtual music." During this sequence, two clowns are clothed in costumes that are equipped with MIDI (Musical Instrument Digital Interface) triggers and a MIDI interface. The triggers consist of minute switches that react to pressure and vibration when they are touched, tapped or otherwise manipulated by the actors. The triggers in turn send a signal to a MIDI interface that converts the pressure into a MIDI signal that is then sent via a wireless system to the computer. The computer, in turn, tells the synthesizer what note or sound to produce. The key to this is that the actor is actually creating the music - by tapping on his body - just as a pianist creates the music when he presses on the keys of a piano. The computer allows us to change, instantaneously, the instrument or sound that is produced.\textsuperscript{43}

Thus, "Cybersuite" is an excellent example in the use of computers in a rather holistic way, as a player in the performance, as opposed to being merely a technical enabler. However, the


\textsuperscript{43} Ibid.
incorporation of computers, as in the case of "Cybersuite," is an arduous task and one that needs continued research and development. As Richard Zachary writes that:

While the use of computers opens the doors to amazing possibilities, at times it can seem like opening Pandora's box. After figuring out what kind of computers and programs to buy, we have been faced with many obstacles. Learning how to use them correctly has taken many months. There have been any sleepless nights when the right cable was missing - or incorrectly hooked up. We have not been immune to bugs and viruses. This can truly be like fighting phantoms. If something breaks down on an electronic level it's basically back to the factory. And when everything works we are continually amazed at what can be produced with a "machine" and how it gives us the freedom to tell stories in ways that have not been possible until now."

Claudio Pinhanez understands both the challenges and the gratification that lies in the work of creating interactive human and computer-actor environments. Pinhanez developed an experiment in 1996 to delve further into notions of human actors interacting with computers as performers and as environment. In *Sing Song* the objectives were to experiment with "how well current interactive technology can build autonomous computer-actors able to follow the

script of a play while interacting with human actors." Sing Song was produced in the summer of 1996 at the ATR Laboratories in Kyoto, Japan. This short piece focuses on the comical antics of a human clown trying to conduct a chorus of computer-controlled singers who misbehave.

Pinhanez acknowledges that, "More than a theatrical play, the objective was to build a fully automated system where the fundamental dramatical concept of action is embodied in the computer. I wanted a computer theater piece which would unfold as a result of the computer and the human actor's actions (and not gestures or commands)." This interaction manifests itself in several ways. Initially, when the clown requests silence the singer doesn't comply and later the singer refuses to get in key unless the conductor subserviently, kneels and pleads. Finally, after obeying the command to sing in key, after the singer is applauded, it rebels again.

Pinhanez explains the genesis of this piece as follows:

Why comedy, clowns, and singers? Under the technological constraint of speechless interaction, Sing Song was inspired by -- and attributed to -- the early days of movies, which witnessed comedy and


\[46\] Ibid.
pantomime as creative solutions to cope with the absence of sound and with undeveloped editing techniques.\textsuperscript{47}

Pinhanez is borrowing heavily not only from theatrical traditions like commedia del \textit{art\`e} and puppetry, but also from films indebted to clowns like Charlie Chaplin. In fact, Pinhanez makes many comparisons between early film techniques with the current state of interactive technologies in the theatre.

This is quite similar to the current state of the technological apparatus for building interactive, immersive systems which I regard as primitive as the Lumiere camera and the early studios, and matching our present (lack of) understanding of the language of interactive multimedia -- comparable to movie structure before Griffith and Eisenstein. In spite of the very interesting works of the recent years, immersive interaction is still an infant medium struggling to find workable genres and appropriate narrative techniques.\textsuperscript{48}

The true testimony of the primitive nature of these immersive, interactive technologies lies in the fact that many of these pieces are very short in duration and use a lot of hardware and software, seemingly disproportionate to the length of these new breed of plays.


\textsuperscript{48} Ibid.
In *Sing Song*, Pinhanez used the computer vision software *pfinder* developed at the MIT Media Laboratory. Pinhanez writes that:

The most challenging problem was the development of an incremental and flexible language to represent scripted action for a computer. The issue of script and interaction representation relates to one of my fundamental concerns in this pursuit in computer theater. Computerized actors must be highly reactive to the actions performed by the human actor, to preserve the essential “tension” present in performance. Also, computer characters must be able to rehearse, e.g. to try different articulations of the same action as the human actors are going through the discovery process of rehearsal.  

In 1985, John Jerusun created a piece titled “Deep Sleep” in which live actors on stage interacted with filmed actors projected on a screen. Meta-theatrically the two sets of actors debated about who was real and who was virtual. Today, with technology increasing in its scope of rendering lines between reality and virtuality more and more blurred, Pinhanez’s work is about creating actors who are born in Virtual Reality but can intelligently, autonomously and independently inhabit real space and time.

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Having described some of the current uses of and experimentations with interactive technologies in the theatre it is important to note that some of these uses are still in their infancy while others are expanding. More than anything else a few things become very clear when looking at the current nexus of computers in the theatre. The collaborations are by nature multi-disciplinary and across fields of study. The use of computers and theatre raises not only questions about art and technology but also about philosophy and psychology. The introduction of computers into the theatre brings about changes in action, conflict, text, the mis-en-scene, and the audience-actor relationship. Indeed, even the relationships between actors and directors changes and designers and technologists become integrated in different ways than in traditional (for lack of a better term) theatre. It is painfully obvious that these technologies are going to take a while to become more prevalent in the theatre, partly because of the cost and investments necessary and partly because traditionalists still have a stronghold in theatre departments across the nation.
CHAPTER 8

CONCLUSION

(Virtual) Reality and Beyond!

There is a recent explosion in what industry experts called "reality-based" programming. Examples of this are the Fox network produced show "Who Wants to Marry a Multi-Millionaire," which aired on February 15, 2000. In this program 50 potential brides were put through a series of tests and events in order to win the hand of a secret groom who was a multi-millionaire. In another show to air during the summer of 2000, several individuals have been stranded on an island and in this virtual world, their survival skills are being put to the test to see which one will make it to the bitter end. These are only two examples of such programming that increasingly broadcasts our collective desire to seek more and more intense modes of "reality" in our entertainment and in our lives. It would be fair to say that computers and other technologies have aided in this quest for more
and more reality in our information and media-based cultures. But there is a great irony here -- as we seek more and more reality in our "infotainment" culture, the more separated we get from reality itself.

Take for instance the story of a New York Times reporter who was working on a case where a man accused of murdering his pregnant wife had blamed the assault on an unknown, African-American assailant. The reporter asked the neighbour of the couple, having known the two of them, whether she accepted husband's alibi. "I don't know," answered the woman, "I'm dying for the movie to come out so I can see how it ends."¹ This woman is not alone in her understanding that a made-for-television movie would provide her with a better reality or truth than her own set of experiences with the couple. In keeping with the Platonic model set forth in the second chapter, this woman is an example of a bad citizen who is ultimately detrimental to the progress of the utopian state.

Take another example as narrated by Nancy Patterson in her article "Curly, Larry & PoMo."

In a kind of a replay of H. G. Wells' 'War of the Worlds' broadcast, on February 20, 1998 satellite transmissions from CBS to numerous television stations across the U.S. carried 'practice' stories about the 'next' Persian Gulf War. For 20 minutes,

Dan Rather and Pentagon war correspondent David Martin described the first attacks, in full make-up, complete with theme music and 3D graphics of cruise missile routes, targets and ‘actual’ video footage of bombed out buildings in Bagdad. In addition to being viewed by several stunned television technicians who had picked up the feed, the broadcast was also viewed by individuals monitoring the G4 satellite.\(^2\)

The greater the reality we simulate via technology the more disorienting it seems to be in trying to separate virtuality from reality. Mark Slouka astutely summarizes this when he writes that, “More and more of us, whether we realize it or not, accept the copy as the original. Increasingly removed from experience, overdependent on the representations of reality that come to us through television and the print media, we seem more and more willing to put our trust in intermediaries who ‘re-present’ the world to us.”\(^3\) I would argue that, while Slouka is correct that cyber technologies and the information age, have sped up this hallucinatory disorientation, theatre was the first form that chose to “re-present” the world to audiences looking for entertainment and enlightenment.


The notion of reality, coupled with its illusionary opposite, has engaged scholars, philosophers, scientists, artists and lay people in intense debates and lengthy modes of inquiry. This dialectic has not been resolved. If anything, the current technologies of cyberspace and Virtual Reality, have added dimensions to such a discourse that will keep it fueled for a long time to come.

A. Discussion of Key Findings

The theatre is one of the most significant predecessors to modern day Virtual Reality technologies. Theatrical endeavour has always been about creating Virtual Realities and as such theatre itself is a technology of Virtual Reality.

Since the theatre is a medium of representation and mimesis, the dialectic on the philosophical ramifications of Virtual Realities can be traced back all the way to Plato, Aristotle, Castelvetro, and Rousseau. Their musings on the nature of reality and Virtual Realities have much to offer current day discourses about the value of these technologies to individuals and the state. Plato, in contemplating the utopian state as a Virtual Reality, was laying he conceptual groundwork for the many reincarnations of Virtual Realities to come in the centuries after him. Plato, along with thinkers like Rousseau and Heidegger also lead us on a path to question the value of these
technologies on the course of human affairs. While their views were
heavily biased against certain forms of Virtual Realities, particularly
technologically enhanced ones, it is important to recognize that these
issues of the ethics and values behind Virtual Realities are still being
contested today. The notions of the detrimental effects of
representation on the human spirit (i.e. addiction) as propounded by
Plato and Rousseau is echoed in Nancy Paterson’s notion of “cultural
cannibalism.”

In the late stages of capitalism, in the latter half of
the final decade of this millennium, perversity characterizes entertainment. We can’t watch
enough sex, death and automobile accidents. And if
the actors are having sex with dead people, or
during car crashes - even better. In the fall-out
shelters of our nuclear families we have become so
estranged from authentic experience that reality
has ceased to exist. In our media-saturated world,
vicarious experiences are the standard against
which “reality” is judged.⁴

Through my analysis of the plays of Calderon de la Barca, Lope
de Vega, Luigi Pirandello, Karel Capek and Elmer Rice it became evident
that the themes of reality and illusion in the realm of human affairs
has been consistently exploited. Interestingly, in plays like Acting is

⁴ Nancy Paterson. “Curly, Larry & PoMo,” Astrolabe Online Journal,
cgrg.ohio-state.edu/Astrolabe/journal/inaugural/ fernandez.html> (2
March 2000).
Believing and Six Characters in Search of An Author, the illusion of theatre is itself used to examine the larger underpinnings of representation and multiple realities. In examining Elmer Rice’s The Adding Machine and Karel Capek’s R.U.R., these playwrights were confronting aspects of the impacts that technology would have on the future of human progress and social development. Both Capek and Rice, take a rather dim view about the future of man’s coexistence with technology.

I also examined a very particular aspect of film as a Virtual Reality, in that I am interested in the way in which images created by filmmakers like Steven Spielberg, John Sturges and George Stevens are epitomal examples of colonial and Orientalist reinforcements of the “other.” All three films perpetuate the ideals of the civilizing mission of colonialism as it was practiced by England, Spain, France, Holland, and Portugal in places like India, Africa and East-Asia. Moreover, because a virtual technology like film, has global influence, these misrepresentations of Indians, are sold as being “real” even to the very subjects of these racist and Orientalist films.

Continuing with the notion of film as a Virtual Reality, it was worthwhile examining how virtual technologies feature when they are the subject matter of films like The Lawnmower Man and The Truman Show. Both these films, critique the impact of virtual technologies on
human affairs, taking an approach that Aldous Huxley prophesied in
*Brave New World*. Michael Heim’s connection of Heidegger’s
metaphysics to the impact of technology on mankind is a good
synthesis of the viewpoints of *The Lawnmower Man* and *The Truman
Show*. Heim claims that:

> What Heidegger called “the essence of technology”
infiltrates human existence more intimately than
anything humans could create. The danger of
technology lies in the transformation of the human
being, by which human actions and aspirations are
fundamentally distorted. Not that machines can run
amok, or even that we might misunderstand
ourselves through a faulty comparison with
machines. Instead, technology enters the inmost
recesses of human existence, transforming the
way we know and think and will. Technology is, in
essence, a mode of human existence, and we could
not appreciate its mental infiltration until the
computer became a major cultural phenomenon.⁵

The idea that computers and Virtual Realities will go so far as to
affect human evolution, is at the core of the philosophy behind *The
Lawnmower Man* and *The Truman Show*.

In the sixth chapter I looked at the impact that computers have
had on theatrical design and production capabilities. While looking at
the future of theatrical design in a technological age, I also examined
what past practitioners like Bertolt Brecht, Jerzy Grotowski, and

⁵ Michael Heim, *The Metaphysics of Virtual Reality* (New York &
Joseph Svoboda have to tell us about design, theatrical representation and technology. In particular, issues of interactivity are of prime importance in going from Brecht to current technologies of Virtual Reality immersion.

Finally, I described some of the most recent developments in the nexus between theatre and computers. This is of vital importance, because theatre is being used to enhance the potential of computers as opposed to computers merely being used to enhance the scope of theatre. The work of Claudio Pinhanez of the M.I.T. Media Lab and the Department of Theatre at the University of Kansas is extremely important as we see a vital repositioning of the computer within the theatre and an equally significant influence of theatrical ideals within the design and production of virtual technologies. It is evident that art and science have been forced into a collaboration hitherto unknown or underutilized.

B. Suggestions for Further Research

The impact of computer-based communication and information technologies on society is currently garnering a lot of academic, media, public, governmental and corporate interest. But as these technologies begin to permeate increasing aspects of human interaction and endeavours, there are groups and individuals (especially information
culture critics like Michael Benedikt, Timothy Druckery, Donna Haraway, Nicholas Negroponte, and Sherry Turkle) calling for a variety of controls and means by which to better evaluate the impact of these technologies on a global scale. Carol Gigliotti, who insists on an ethical evaluation of these technologies, tells us that:

Current virtual interactive technology relies heavily on representations or simulations of information (i.e., two-dimensional images, three-dimensional animations, virtual environments on the World Wide Web, including sound and video). The virtual nature of these representations and simulations, now used for applications in areas as diverse as shopping, entertainment, medical consultation, or urban planning, offers both developers and users an environment in which the information being conveyed cannot always be separated from the means of conveying it. This increasing reliance on virtual technologies raises issues of the reliability and validity of information and communication conveyed in this way.⁶

The notion that Virtual Realities had to be verifiable and reliable has been at the foundation of discourse surrounding Virtual Reality all the way back to Plato. As these technologies proliferate rapidly, our ability to verify their reliability and validity becomes more complex and increasingly difficult, particularly in the vacuum of mass media.

literacy. One of the recently emerging concerns about the lack of time and resources to process the impact of these technologies is being termed “technocolonialism.” Scholars like Maria Fernandez, Simon Penny, and Carol Gigliotti define technocolonialism as “a term describing the similarities and links between the goals of imperialism as practiced through colonization and the goals underlying the advance of technology throughout all areas of contemporary life.”

Mary Leigh Morbey prefaces her work in this area with the comment that, “On the surface, a connection between emerging theory of the electronic media arts and post-colonial discourse appears untenable.” She goes on to ask, “Will emerging information technologies lead to a new global cultural imperialism, a neo-colonialism, for the arts as they strongly and ever more rapidly influence the shaping of contemporary culture towards and enveloping technoculture?” Indeed, there are many


9 Ibid.
connections between interactive technologies and a post-colonial discourse, especially in the context of an increasing globalized economy.

What makes the nexus of culture and technology even more problematic in some ways is a lack of a comprehensive and inclusive development of theory and criticism corresponding to the mass proliferation and permeation of these technologies into the culture at large. Roger Malina, editor of the periodical Leonardo, argued that “the area of electronic computer-based visual art suffers from insignificance because of a lack of adequate theoretical, historical, and critical framework.” Speaking about Simon Penny’s work, Mary Leigh Morbey, tells us that he “argues that our structures of power and communications systems have altered although the worldviews and critical systems that direct many of our institutions remain pre-electronic, and often preindustrial.” Babara Maria Stafford agrees with Morbey and Penny when she writes that:


This paradigmatic shift from linear text to overall pattern is fretted with radical epistemological, pedagogical, political, and organizational consequences. Yet, ironically, the drive to visualize almost everything appears to have gone largely unnoticed by our profession [professional visual artists and theorists and historians of art] . . . the very field of scholarship whose historical raison d'etre has been thinking with, about, and through pictures has not grappled with the profound intellectual ramifications of the digital revolution.\textsuperscript{12}

If indeed Marshall McLuhan is correct when he writes that the modern age can be characterized as “inebriated with the potential of new technology,”\textsuperscript{13} then the need for a concurrent critical discourse is all the more essential. It is important to note that there has not been a complete vacuum of critical theory surrounding art and technology. Maria Fernandez acknowledges that:

\begin{quote}
In fact, electronic media theory has been quite eclectic. This eclecticism in conjunction with recent debates around topics such as multiculturalism, colonialism, the 1992 quintcentennary, identity politics, and “whiteness studies” make it ever more
\end{quote}


striking that post-colonial studies and electronic media have developed in parallel to one another but with very few points of intersection.\textsuperscript{14}

Fernandez explains that this lack of intersection has been because post-colonial studies and electronic media theory have had contradictory and opposing goals. She writes that, "Post-colonial studies have been concerned primarily with European imperialism and its effects: the construction of European master discourses, resistance, identity, representation, agency, gender, and migration among other issues."\textsuperscript{15} On the other hand, electronic media theory during the eighties and nineties has focused on establishing the electronic as a valid and even dominant field of practice. Many theorists were knowingly or unknowingly doing the public relations work for digital corporations. This often involved the representation of electronic technologies, specially the computer, as either value-free or as inherently liberatory. Some arguments created a utopian universalism constructed around the


\textsuperscript{15} Ibid.
concept of electronic connectivity: anyone in the world only had to be connected in order to be "free."  

The future of virtual technologies begs the answering of questions surrounding the implementation, proliferation and imposition of these technologies along lines of gender, class, race, culture, social-status, economic structure, and national identity.

Simon Penny of Carnegie Mellon University makes the case that “all imperialist waves are borne on a technological differential,” and that “the technological wave which is the computer, is carrying an ideology along with it.”  

Carol Gigliotti formulates four themes that require attention in the future.

1. The underlying desire in various uses of imperialism, technological and otherwise, to dominate and control.
2. The major impact of market economy goals on the developments of technological media.
3. The willingness to fetishize technology to our detriment.

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4. The need for an aesthetics that recognizes, addresses, and shifts these themes for the purposes of an inclusive and better solution.¹⁸

To compete with film, television, and video the theatre can no longer afford to live away from the cutting-edge of technologically enabled aesthetic exploration. During the early part of this century, Bertolt Brecht explored notions of multi-media theatre. In fact, Erwin Piscator before him had already started to use projections in his political propaganda theatre. Currently, Hungarian designer Joseph Svoboda of Prague’s Laterna Majika is exploring what Brecht and Piscator had begun.

Even within the use of projections and multi-media forms in the theatre, the “fourth wall” syndrome of centuries past still remains dominant. The breaking down of this invisible barrier in order to enhance the perceptual and visual experiences of theatre going audiences has started to occur. It has been suggested that “cyberspace” will eventually break down this barrier, and indeed it has begun to do so in the fantasy worlds of Disney and Hollywood and in the work of experimenters like Claudio Pinhanez.

Yet, for the time being, while cyberspace develops force enough to shatter the fourth wall, there are capabilities within current technologies that can excite a new visual reality. Computer created and manipulated images and filmed action can become integral parts of a theatrical expression, rather than remaining merely vestigial. In the future, holograms and projected animations will be able to interact with live performers. And, as in all endeavors of pioneering effort there are two things essential to make the journey worthwhile and to actually complete the voyage - resources and pertinacity.

Demographically speaking, computer innovation and usage in the theatre has occurred more on Broadway than in educational and regional theatre. Moreover, theatre, and the arts in general have had to piggy-back ride technological innovation in computers developed for other purposes such as military, medical and industrial product manufacturing. Thus, proponents of the “new theatrical order” should seek to find ways of tapping into those resources and incorporating those technologies into the theatre.

The second requisite for a fruitful voyage is pertinacity. Within the theatre, as in other walks of human endeavors, tradition is hard to escape. And, within this tradition there is a long-standing technophobia
that artists have had to overcome. Indeed, it will take a lot or pertinacious thinking on the parts of future artists to give birth to this new theatrical order.

It is not my opinion that what we currently have in the theatre needs to be completely jettisoned in order to let the technological era take over the visual realities. Quite obviously there is good work being done in the theatre. However, there is also much work that needs enhancement and rejuvenation.

Currently the use of computers in the theatre is minimal and that too at the level of being a technical enabler. In the future, there are many avenues that will allow for a vibrant collaboration between theatre and computer technology. The theatre will have to completely abandon its technophobia and begin to see the possibilities that exist. The arts, like many other things, will fall prey to the test of the survival of the fittest. In the future, the fittest theatre will be one that acknowledges the computer as a means, not an ends, by which it may leap into new dimensions. Practitioners have to make compatible these seemingly incompatible partners. After all there can be a lot of drama in technology and there needs to be more technology in drama towards creating more vital and vibrant experiences for a new age of theatre goers. As Brenda Laurel so aptly says, "reality has always
been too small for human imagination.”¹⁹ We need, now more than ever, a new reality to fill the void within those imaginations!

Future artists and scientists will have to be trained in entirely different pedagogical and epistemological environments so that the two fields might actually complement each other. An interdisciplinary training is the need of the future. Through my arguments in this dissertation, I hope that it is also clear that other artists using computer graphics as their medium, such as sculptors, industrial designers, etc., have much to gain from collaborating with theatre practitioners. Thus good art, still or animated, must understand and inherently embody issues of staging, movement, lighting, composition, etc.

Donna Cox, a computer graphics artist, refers to the technoscience era as one where a collaboration within the arts and sciences must take place for a variety of reasons. However, technoscience is inclusive only of technology and science, two birds of similar feathers. I would like to coin the term “artscience” to refer to such an era of artistic and scientific collaboration. Like conscience, “artscience” suggests a larger human involvement in the betterment not only of the aesthetic and scientific worlds that we inhabit, but also

of the spiritual, pedagogical, and epistemological universe that we must seek to understand and enhance for the future. After all, it is not sufficient to merely possess the “tools of the future.” One is charged with the responsibility of enabling and ensuring a sound and better future.

At present, the production process involves each artist working independently and coming together from time to time to put the ideas together. By the time all the elements physically come together in the same space (actors, blocking, lights, costumes, etc.) it is a few days before the show opens. As such, these processes are random and unity is scarcely possible given the time-frame. Computer aided design would allow all elements to exist in a single space (cyber space) much before they became material realities. This would aid tremendously in a greater sense of unity and errors could be minimized thus reducing costs at the level of executing designs and concepts.

There are many reasons why it is so hard to find practitioners within the theatre who are engaging in new discourses with evolving computer systems to create a greater perspicuity in the vision for a dynamic theatre for the present and the future. Through my research I can say that there are just a handful of individuals who are committed to using computers as a new tool for the theatre, and many who entered the profession with such ideals have been pulled away to film
and other forms of expression where the use of computer graphics, animation and Virtual Reality are more feasible and have proven themselves to work. Representation is a fundamental part of human desire for knowing, certainty and pleasure. Hence, our fascination and intense involvement with virtual technologies, which promise increasingly more realistic modes of representation and immersive experience, is certain to keep growing. Theatre was one of the original Virtual Realities and will continue have a lot to offer the new virtual technologies of the future.
APPENDIX A

GUNGA DIN
by
Rudyard Kipling

You may talk o' gin and beer
When you're quartered safe out 'ere
An' you're sent to penny-fights an' Aldershot it;
But when it comes to slaughter
You will do your work on water,
An' you'll lick the bloomin' boots of 'im that's got it.
Now in Injia's sunny clime,
I used to spend my time
A-servin' of 'Er Majesty, the Queen,
Of all them blackfaced crew
The finest man I knew
Was our regimental bhisti', Gunga Din.
    He was "Din! Din! Din!
    You limpin' lump o' brick-dust, Gunga Din!

' Although, Kipling scholars have translated this word as a "water-carrier," the author would like to note that in Hindi, there is no such word.
Hil Slippery hitheraol\textsuperscript{2}
Water get it! Panee laol\textsuperscript{3}
You squidgy-nosed old idol, Gunga Din!"

The uniform 'e wore  
Was nothin' much before,  
An' rather less than 'arf o' that be'ind,  
For a piece 'o twisty rag  
An' a goatskin water-bag  
Was all the field-equipment 'e could find.  
When the sweatin' troop-train lay  
In a sidin' through the day,  
Where the 'eat would make your bloomin' eyebrows crawl,  
We shouted "Harry Byl!"\textsuperscript{4}  
Till our throats were bricky-dry,  
Then we wopped 'im 'cause 'e couldn't serve us all.  
\hfill{It was "Din! Din! Din! You 'eaten, where the mischief 'ave you been?  
\hfill{You put some juldee\textsuperscript{5} in it  
\hfill{Or I'll marrow\textsuperscript{6} you this minute  
\hfill{If you don't fill up my helmet, Gunga Din!"

\hfill{\textsuperscript{2} Translated from Hindi (by the author) as "come here." In Hindi syntax this is the more rude command for a beckoning. The right transliteration would however be "ither aao."

\hfill{\textsuperscript{3} Translated from Hindi (by the author) as "bring the water."

\hfill{\textsuperscript{4} Although, Kipling scholars have translated this as "O Brother!" the author would like to note that in Hindi this should have been transliterated (by Kipling) as "Arree bhai!" "Harry Byl!" means nothing in Hindi.

\hfill{\textsuperscript{5} Translated from Hindi (by the author) as "be quick" or "hurry up!"

\hfill{\textsuperscript{6} Translated from Hindi (by the author) as "hit" or "wallop."
'E would dot an' carry one
Till the longest day was done;
An' 'e didn't seem to know the use o' fear,
If we charged or broke or cut,
You could bet your bloomin' nut,
'E'd be waitin' fifty paces right flank rear.
With 'is *mussick*" on 'is back,
'E would skip with out attack,
An' watch us till the bugles made "Retire,"
An' for all 'is dirty 'ide
'E was white, clear white, inside
When 'e went to tend the wounded under fire!
It was "Din! Din! Din!"
With the bullets kickin' dust spots on the green.
When the cartridges ran out,
You could hear the front-ranks shout,
"Hi! ammunition-mules an' Gunga Din!"

I shan't forgit the night
When I dropped be'ind the fight
With a bullet where my belt-plate should 'a' been.
I was chokin' mad with thirst,
An' the man that spied me first
Was our good old grinnin', gruntin' Gunga Din.
'E lifted up my 'ead,
An' he plugged me where I bled,
An' 'e guv me 'arf-a-pint o' water green.
It was crawlin' and it stunk,
But of all the drinks I've drunk,
I'm gratefulllest to one from Gunga Din.
It was "Din! Din! Din!"
'Ere's a beggar with a bullet through 'is spleen;
'E's chawin' up the ground,
An' 'e's kickin' all around:
For Gawd's sake git the water, Gunga Din!"

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7 Although, Kipling scholars have translated this word as a "waterskin," the author would like to note that in Hindi there is no such word.
'E carried me away
To where a dooli\(^8\) lay,
An' a bullet come an' drilled the beggar clean.
'E put me safe inside,
An' just before 'e died,
"I 'ope you liked your drink," sez Gunga Din.
So I'll meet 'im later on
At the place where 'e is gone --
Where it's always double drill and no canteen;
'E'll be squattin' on the coals
Givin' drink to poor damned souls,
An' I'll get a swig in hell from Gunga Din!
      Yes, Din! Din! Din!
You Lazarushian-leather Gunga Din!
      Though I've belted you and flayed you,
      By the livin' Gawd that made you,
You're a better man than I am, Gunga Din!

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\(^8\) The author would like to note that in Hindi, there is no such word. What Kipling was probably referring to was a "dholee" which is a small drum or to a "dholkee" which is a small cot. The former makes more sense in the context of the poem than the latter.
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