SFB 619
Ritualdynamik

Kerstin Radde-Antweiler (Ed.)

Being Virtually Real?

Virtual Worlds from a
Cultural Studies' Perspective.

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COMMUNICATING INNER EXPERIENCE
WITH VIDEO GAME TECHNOLOGY

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Introduction

Mythology and religion form the cornerstone of culture and are important to the development of individuals and society. In general, decisions and actions undertaken by individuals from a place of 'inner peace' are conducive towards harmonious and sustainable development, and in turn the perpetuation of the species. Traditionally, religions and culture are communicated and preserved through time via mythology (e.g., textual scriptures), art (e.g., symbolism), and ritual (e.g., ceremony). Meanings are communicated largely through metaphor. The stories communicate experiences and their consequences through the use of narrative and poetry. Mythology also provides a context for one's purpose of being. Through symbolism, artwork serves to reinforce textual descriptions and also evoke emotions through the use of visual imagery and musical arrangement. Rituals also reinforce understanding by creating experiences that directly involve the individual within the mythology.

The continuing popularity of science and materialism has eroded traditional forms of communicating inner experience. Since the debates over heliocentrism in the 15th century, religion has had to reconcile interpretations of traditionally held beliefs with new scientific discoveries. Traditional religions continue to face fragmentation as technology introduces new questions which challenge traditional beliefs (e.g., abortion, genetic engineering, etc.). Furthermore, the homogenization of culture due to mass media and declining environmental conditions has resulted in a dramatic decline in traditional indiginous cultures around the world. Globalization also pits different religions and religious values against each other, often inciting intolerance and further conflict.

Whereas traditional forms of communication are based upon subjective third person stories, parables, etc., the ability to create immersive and interactive environments make video games extremely powerful for representing and communicating experience. Experiences that convey feelings and emotions can be expressed more directly and are less prone to misinterpretation when compared with traditional forms of communication which rely upon

metaphor.

As technology gives individuals and organizations ever greater power to affect the world and the lives of others, it becomes increasingly important that a state of 'inner peace' be cultivated within the population. Our challenge today is towards developing effective methods for creating experiences that cultivate 'inner peace.' We believe that digital media technologies, specifically video games, offer a solution to this problem. Digital technologies are already changing the ways in which ideas are represented and distributed. Traditional forms of content including images, audio/music, and video are becoming more accessible and no longer require significant literacy skills for comprehension.

Mythology and Inner Experience

Mythology provides individuals with a context for being. Myths are stories that explain "ultimate aspects of reality either in terms of efficient causality (creation or foundation myths) or in terms of final causality (salvation or apocalyptic myths)."[1] This narrative context helps to address the many of man's existential dilemmas, such as the meaning of life and fear of death. Myths are able to achieve this by transcending the 'physical' realm of existence figuratively and provide instruction that speaks to the 'non- physical' or 'experiential' realms. Science has confirmed that there is a relationship between the physical and non-physical/experiential realms. The facial expressions that relate to emotions are universal across different cultures.[2] Neurobiologists have also established neural correlates between 'inner experiences' and brain states using electroencephalogram (EEG) and functional magnetic resonance imaging (fMRI) techniques.[3] Biochemists have also developed a greater understanding of effects of neurotransmitters and the chemical processes within the brain. While science may eventually show that the origin of all 'non-physical' thoughts, feelings, and emotions are derived from physical properties, most believe that science is still a long way off from solving the 'hard problem' of consciousness.[4]

Over the past 20,000 plus years, early mythology has become organized and codified into today's religions as outlined in Karen Armstrong's book *A Short History of Myth*.[5] The word

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[1] See d'Aquili and Newberg 1999, 79.
[2] See Ekman 1999.
[3] See Rajapakse 2002.
[4] See Chalmers 1995.
[5] See Armstrong 2005.

Myth derives from the ancient Greek word Muthos which meant an 'utterance' or a 'traditional tale.' In very early times myths were generally believed to be 'true.' Facts and accounts in religious scriptures proclaimed as 'truth' often disagree with modern understandings of the physical world as offered by scholars such as Daniel Dennett and Richard Dawkins.[6] While science has discredited literal translations of most myths, the figurative interpretations that evoke inner experiences are not necessarily invalid. However, lack of 'deeper understanding' (or faith) greatly diminishes their effectiveness.

Although religion and religious practice addresses many social and moral needs in society, our focus is on their ability to communicate the inner experiences that transform an individual's way of thinking and being. Ironically, science is beginning to validate the relevance of religious practice and its ability to shape inner experience and personal development. Many Eastern religions including sects of Buddhism, Hinduism and Taoism have developed meditative practices (considered a form of ritual) that cultivate inner experiences which can be named, duplicated, and verified physiologically using modern instruments and techniques.[7] Studies of epileptics have identified potential neurological correlates to behaviors typically associated with deep 'spiritual experience.'[8] 'Spiritually derived' medicines such as those used by shamans and holistic healers have also been validated by modern pharmaceutical studies.[9] New fields of psychology including transpersonal psychology recognize the relevance and importance of spiritual experience in personal development.[10]

The challenge facing religions today is the establishment of a language for expressing inner experience that is universal and unambiguous. Science has flourished largely due to the development of models and languages that communicate ideas in an objective and unambiguous manner. Modern science is constructed upon languages such as mathematics and logic that provide formal mechanisms for describing relationships and models. Communicating external physical phenomenon is easier as material objects can be successively decomposed into more primitive objects to which labels and semantics are attached. The repeatable nature of physical phenomena make to create a 'common semantic base' necessary for communication.

Personal experiences such as those encountered along the path towards inner discovery,

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[6] See Dennet 2006; Dawkins 2006.
[7] See Austin 2006.
[8] See Ramachandran 1997.
[9] See Mowrey 1986.
[10] See Grof 1985.

however, are much more difficult to articulate and communicate due to a lack of a common semantic reference. The use of stories and parables becomes increasingly prone to misinterpretation as one delves deeper into the subtleties of inner experience. A lack of direct experience makes it difficult to distinguish between figurative and literal interpretation. Existentialist philosophers maintain that one's understanding of a word or a term is the sum total of one's experience with that word. The argument is that since two people have different cumulative experiences, it is impossible to prove that they completely understand one another.

Scholars have long explored common themes across different mythologies, rituals, and religions in an attempt to distill their essence.[11] Traditional religions employ myths that convey factual content as well as evoke emotions as audiences empathize with the protagonist. In his seminal work, *Hero with A Thousand Faces*,[12] Joseph Campbell presents a case that all myths share the common theme of a 'hero's journey.' In this archetypal story arc the 'hero' leaves the 'common world' and enters a 'region of supernatural wonder' where conflicts are encountered and eventually overcome. The hero then returns home from this mysterious journey in possesion of new powers to share with his compatriots. The hero's journey is a metaphor for an individual's personal development. Myths also employ metaphor and symbolism to communicate ideas and inner experience, using plants, animals, geography, mystical beings, and other natural phenomena as symbols that listeners (and eventually readers) relate to. These symbols carry implicit meaning unique to the mythology.

The ability for a myth to communicate beyond the 'literal / factual' level and engender more profound experiences (e.g. 'emotional' or 'spiritual') also depends upon the quality of the delivery (e.g., the storyteller, words used, environment, visuals, etc.). Many stories such as those described in spiritual texts potentially have multiple interpretations. Julia Sweeney cites many such examples from the Bible in her one-woman show and monologue *Letting Go of God*. For example, she points out that the story of God instructing Abraham to sacrifice his only son, Isaac,[13] can be interpreted as an act of devout faith or, alternatively, as a sadistic test of loyalty. Zen Koans are also generally inaccessible to rational understanding arguably to create an inner experience outside of thought. Potentially conflicting interpretations make the communication of inner experience through myth extremely difficult. This difficulty is compounded as each individual's inner landscape is uniquely based upon prior conditioning.

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[11] See Huxley 1946.
[12] See Campbell 1949.
[13] See Genesis 22.

Role of Art and Media in Society

Art is a way of arranging and manipulating physical materials to communicate inner experience. Although a given work of art may induce different responses, each work in itself becomes a common point of reference that facilitates discussion and dialogue. In its purist form, art is a physical representation motivated by an inner experience that can be shared and referenced. Just as a good music soundtrack heightens the emotions of a scene in a movie, art enhances the experiences expressed in mythology. Religious artwork such as early Christian paintings and Buddhist iconography are rich in symbolism that reinforces the meaning of the related scriptures. Nearly all forms of artistic expression can be traced back to spiritual origins, from the Paleolithic cave paintings,[14] to the architecture of Stonehenge and the Pyramids, to the dance, music, and theater of Natya Shastra to the world's oldest song, 'The Prayer of an Infertile Woman.' Unlike myths which must be understood to be appreciated, visual, environmental, and performance based art are perceived directly and are more experiential in nature. While semiotic systems can be applied to deconstruct art for intellectual analysis, its ethereal essence or 'qualia' is ineffable.

In his book, *Art as Experience*, John Dewey makes a case that esthetic experiences (such as those derived from engaging art) are important because they help to illuminate ordinary experience.[15] Artists in this way expand the 'inner landscape' and creat the language used to reference this landscape. This language forms commonalities among people and 'culture' emerges. In addition to the role of the 'artist' and 'experiencer' of art, the medium of expression is also as important if not more important than the message as pointed out in Marshall McLuhan's classic book *Understanding Media*.[16]

Thoughout time technology has transformed art's role in society. In his book *The Goddess and the Alphabet*,[17] Leonard Shlain makes a case that the emergence of written language around 5,000 years ago reinforced the development of the 'linear,' 'left' side of the brain at the expense of the more 'holistic' 'right' side. This shift has tremendous implications on the evolution of religion, culture, and society. With the emergence of written language, male gods supplanted female gods in cultures around the world. Joseph Campbell makes the point that today's world of mass media, which has a relatively short history in comparison with religion and art, has effectively replaced the role of mythology in society.

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[14] See Spivey 2005.
[15] See Dewey 1934.
[16] See McLuhan 1964.
[17] See Shlain 1998.

Today's commercial and secular society uses media predominantly for materialistic objectives, appealing to primal instincts such as fear and lust. In addition, the constant barrage of media has a desensitizing effect. The increasing pace of life also does not provide time for contemplation and the integration of experience into being. Communicating inner experience to an audience that has been desensitized and manipulated by modern media presents a tremendous challenge for those promoting inner exploration towards inner peace.

Communicating Experience

Experience represents the combination of all sensory perception, emotions, feelings, and memories for an individual at an instance in time. For the purposes of this paper let us consider 'experience' as two overlapping concepts: 'inner experience' and 'external experience.' Arguably, all experiences are in a sense inner experiences. One's ability to perceive an external experience relies upon their having an inner experience of the object. However, such experiences are 'objective' and can be explicitly communicated in an unambiguous manner. Inner experiences are more subjective in nature and more difficult to communicate due to a lack of a common semantic reference.

Sharing experiences is vital for humans who are inherently social creatures. Interrelating and sharing experience is how we learn and grow. Shared experiences are the basis of our ability to empathize and connect deeply with others. From a social psychology perspective, our ability to recognize and value shared experiences forms the basis for the development of culture, morality, and ethics. Communicating experience is also essential to personal development. Jean Piaget's work shows how one's mind develops and evolves from an egocentric perspective (failure to take others' points of view into account) towards a sociocentric position (recognition that others may see things differently) with age.[18]

Through sharing experiences, we can learn from the experiences of others. However, in the case of inner experience, there is a difference between a 'conceptual' knowing and an 'experiential' knowing. For example, while reading about someone's experience of loss (conceptual knowing) creates an appreciation for their situation, it is very different from going through a personal loss yourself (experiential knowing). Conceptual knowledge must be explored and applied to become of use. Constructivist theories of learning are based upon the

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[18] See Piaget 1995.

premise that our understanding of the world we live in is constructed from our experiences. From the time we are children until the day we die, each of us generates 'rules' and 'mental models' which are applied to make sense of our experiences. Learning becomes a process of adjusting our mental models to reflect new experiences. Piaget and many others have also identified the importance of play as a way to apply ideas to create experiences that promote understanding.[19]

Since the era of prehistoric man, mythology, art, and rituals have been the primary means for communicating religious experience. The use of mythology relies upon common experiences in life to derive a semantic reference necessary for communication. Experiences such as the sense of being alive in the natural world, inate instincts, a search for purpose and meaning in life, and reconciling loss and death are shared among all people and provide a rich palette for communicating inner experience.

Mythology communicates experience through the use of information and symbolism. Emotions are evoked as the listener/reader develops an emotional attachment to the protagonist (empathy). Emotional situations confronting the protagonist elicit physiological responses in the listener/reader. Experiments in brain imaging and neurosciences provide a scientific basis for empathy with the discovery of mirror neurons.[20] With mythology, meaning is communicated through language and conveyed intellectually. This requires that the 'writer' and the 'reader' have a common understanding of the words and their meaning.

Unlike mythology which requires a common understanding of words and meaning, art applies physical materials to engage the senses and evoke emotional and visceral experiences. From a neurological perspective, visual, aural, tactile, and olfactory modalities provide alternate pathways in the brain to the limbic system, different than those used in language processing. Activity in the limbic system has been shown to be correlated with emotion and memory. Art is capable of communicating and reinforcing concepts through symbolism and semiotics. Throughout history religious art has served to express the themes and ideas within the mythology of the religion.

Whereas mythology and art are passively appreciated and absorbed, rituals physically engage the participant to induce experiences that can be direct (e.g., altered states), or symbolic (e.g., initiation rites). In shamanism, ritualistic dance and music are used to enter the altered states of consciousness of trance. Other rituals include the ingestion of hallucinogenic such as mushrooms or ayahuasca. Symbolic rituals such as communion and the haj reinforce

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[19] See Piaget 1962.
[20] See Rizzolatti 2004.

the religions by bringing a sense of physicality to the religion's mythology. Just as play is a way to integrate concepts with experience, rituals transform conceptual understanding into experiential knowing.

Figure 1:
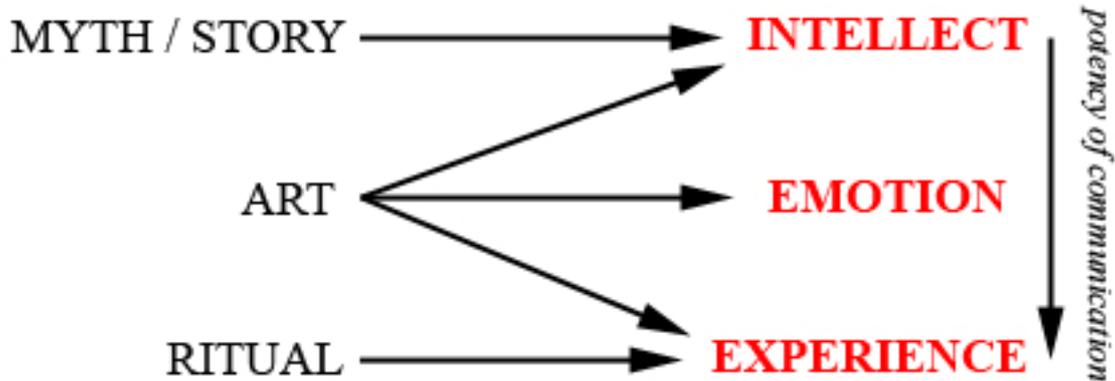
The impact of an experience depends upon the modality and the quality of the presentation (myth, art, ritual). For example, there are many ways of experiencing a football game. One can read about it in the newspaper, listen to it live on the radio, watch it on television, watch the game from the stands, or even participate on the field. Although the different modes may communicate same intellectual information such as the score, scoring, etc., the experiences and emotions are very different. In theatrical and musical performance, the design of the presentation and the quality of the performers has a major impact on the experience. Beauty and aesthetics are culturally biased but also transcend culture (e.g., natural beauty, harmony, etc.). These somewhat intangible factors influence whether the communication is engaging or boring, enlightening or offensive.

Today's digital media has made art and media globally accessible, empowers individuals to create, and enables the visual presentation of previously unimaginable stories (e.g., computer animation and visual effects). Historically, new forms of communicating media borrow from previous forms. Theater synthesizes the stories of myth with the emotion and presence of music. Film and television use the visual language of painting and the richness of theater. Video games represent an entirely new medium for communicating experience that combine the strengths of traditional media forms with natural and intuitive practices of play and interaction/relationship with others.

Video Games for Communicating Experience

Over the past forty years, video games have evolved with the continued advancements in computer technology. What started as a 'garage industry' has grown to become the second most popular form of home entertainment behind television and a mass media phenomenon. Computer technology continues to improve at an exponential rate, enabling the creation of new experiences through new platforms such as mobile phones, within web browsers, and as massive virtual communities. High-end video games today feature photo-realist graphics, high-quality surround sound, and lifelike non-player characters. With the recent emergence of massively multiplayer online virtual worlds, such as *Second Life*[21] and *World of Warcraft,*[22] video games have also become a new mode of social interaction in addition to entertainment. As of March 2007, *Second Life* boasted over five million registered accounts,[23] and *World of Warcraft*,[24] an online adventure game, was eight and a half million players strong.

Unlike passive forms of media, video games require active participation. This interactivity differentiates the medium from other contemporary forms of mass communication. The causal nature of game environments reinforces the player's illusion of immersion. Video games impart a sense of agency, a feeling of responsibility for the virtual world and its inhabitants. The player is, in a way, responsible for the on screen characters, this connection can go as far as saving a virtual character's life such as in *Final Fantasy VIII*.[25] Sherry Turkle, after numerous case studies, concluded: "It is easy for players to fall in love with the worlds they have constructed or with their performances in the worlds created for them by others." [26] In addition, video games provide a metric for personal development. As one plays their skill increases, and their abilities increase. With increased ability comes increased responsibility in the lives of virtual characters. As a medium for communication, video games can communicate mythic narratives, provide a rich palette for artistic expression, and directly involve the participant in an active manner akin to ritualistic behavior.

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[21] See Linden Lab 2003.
[22] See Blizzard Entertainment 2004.
[23] http://en.wikipedia.org/wiki/Second_Life.
[24] Blizzard Entertainment press release see http://www.blizzard.com/press/070307.shtml.
[25] See Square Enix 1999.
[26] See Turkle 1984.

Video games to convey narrative

In conveying narratives, video games operate in the same way as traditional media, such as literature and film, by causing the participant (or viewer in the case of massive media) to empathize with the characters of the story (emotional attachment). This attachment is enhanced in game play due in part to the in time investment players make in completing in game narratives. Unlike films which are rarely longer than three hours, some narrative video games, such as those in the *Final Fantasy* series, can take over one hundred hours to complete. With this extended relationship to game characters comes greater emotional bonding. In one game, entitled *Sims 2*,[27] the player literally follows a single character from the cradle to the grave. Once a character has passed away the player can, if he or she chooses to, continue playing as the deceased character's children and eventually grandchildren. Video games have the ability to directly put the player into an virtual character's shoes, so that the player literally sees out from the character's eyes. This level of immersion enhances narrative experience by forcing the players to consider what they would do were they actually a the protagonist of a given story. "When you play a video game you enter into the world of the programmers who made it. You have to do more than identify with the character on screen. You must act for it."[28]

Figure 2:

On the left a screenshot from *Zelda: A Link to the Past* (Nintendo 1992) and on the right, a screenshot from *Elder Scrolls Oblivion* (Bethesda Softworks 2006)

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[27] See Maxis 2004.
[28] See Turkle 1984.

Video games as art

Video games operate in the same manner as traditional forms of art in performing two functions: firstly art enhances communicated narratives (specifically myths), through activating alternative modalities of communication. Video games often utilize multiple modalities (e.g., visual, auditory, tactile) to this end. More importantly, however, video games directly communicate inner experiences, without resorting to metaphor, which can be shaped with a higher level of precision than other forms of art (e.g., painting, poetry, music). For example, playing a simple game like *Tetris* can directly evoke the inner experiences of 'being overwhelmed' and claustrophobia (especially at later stages of the game).

Figure 3:

On the left a screenshot from *DOOM* (Id Software 1993) and on the right a screenshot from *DOOM III* (Id Software 2004)

The use of sound and visuals in games such as the Doom and Doom III[29] create experiences of apprehension and terror. Such experiences are created directly rather than through metaphor, thus reducing potential ambiguity. The case of Doom also illustrates the increased dramatic impact that comes with higher performance computer technology. Realistic lighting and shadows, better artificial intelligence, and more dynamic surround sound further enhance the potency of the video game experience. A growing number of video games include forms of 'direct connection,' employing biometric feedback techniques such as galvanic skin response. These games add to the experience by responding to subtle changes in the player's psycho-physical state.

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[29] See Id Software 1993 and 2003.

Figure 4:

A screen shot from *Half Life 2: Lost Coast* (Valve 2005)

Higher performance graphics has also increased the ability to effectively display human characters that actually emote through facial expressions and gestures. This ability further supports emotional attachment on the part of the player. From a spiritual/religious perspective, computer generated imagery enables the portrayal of both realistic and 'supernatural' phenomenon such as halos, chakras, and energy fields.

Video games as ritualistic practice

Experiences created in ritual facilitate the internalization of intellectual knowledge. As Human beings have a predisposition to 'act out' myths in the form of rituals as explained by d'Aquili and Newberg in their book *The Mystical Mind; Probing the biology of religious experience*:

> "It is because of the reciprocal representation of the the content of the major neural systems that human beings are naturally disposed to act out their myths. Myths are noted out be the ordinary motor behavior but by rhythmic motor activity. Humans reach far into their evolutionary past and graft ancient motor behavior onto the product of their neocortex, that is, onto myth." [30]

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[30] See d'Aquili and Newberg 1999.

D'Aquili and Newberg further define ritual behavior as follows:

> 1. is structured or patterned;
> 2. is rhythmic and repetitive (to some degree at least), that is, tends to recur in the same or nearly the same form with some regularity;
> 3. acts to synchronize affective, perceptual-cognitive, and motor processes within the central nervous system of individual participants; and
> 4. most particularly, synchronizes these processes among the various individuals involved.[31]

These definitions for ritual also describe the mechanics of video game play. Video games are computer programs defined by algorithms that are formally structured. The physical act of playing a video game (through a computer interface or game controller) is in itself rhythmic and repetitive. Muscle memory plays a big part in game operation, mental and physical action must "come together."[32] With experience this physical process becomes fluid and effortless - for the skilled player the physical interface of the controller "fades away."[33] In this way, the act of operating the game is similar to a ritualistic dance. Choreographed sequences of input are especially prevalent in fighting games such as *Tekken 4,*[34] in which certain predefined sequences of input must be utilized to create powerful 'combination' moves. Video games allow for high levels of 'synchronization' for the individual participant as repeated combinations of input correlate with predictable sensory feedback. Multiplayer video games also act as a ritualistic device that enables multiple individuals, sometimes separated by great real world distance, to participate simultaneously in a predefined choreography of events.

Repetitive behavior combined with strong emotional engagement is the essence of conditioning and the internalization of intellectual knowledge (e.g., learning). Rich environments that allow open exploration and experimentation make video game environments the ideal 'sand box' for play and role-playing. There is already growing movement towards applying video games in education and training. The Serious Games Initiative states that their goal is "to help usher in a new series of policy education, exploration, and management tools utilizing state of the art computer game designs, technologies, and development skills."[35] It is clear from this evidence that "involvement with simulated worlds affects relationships with the real ones."[36] However, the effectiveness of the

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[31] Ibid.
[32] See Turkle 1984.
[33] See Highland 2005.
[34] See Namco 2002.
[35] Website of Serious Games Initiative retrieved from: http://www.seriousgames.org.
[36] See Turkle 1984.

experience is dependent upon design and implementation (as with all forms of art and media).

Figure 5:

NON-PHYSICAL 'SPIRIT'

INNER EXPERIENCE   PHYSICAL BODY
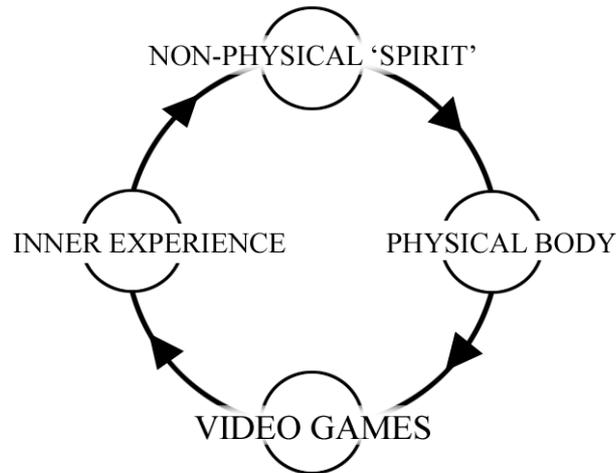
VIDEO GAMES

Philosophically, video games offer many parallels to real life. Video game players control a virtual avatar in a causal game world. Spiritual traditions emphasize the importance of the inner life as opposed to material existence. From this perspective, each of us is, in a sense, a 'spirit in a material (causal) world.' The transplantation of an individual's intentions into virtual form reinforces the idea that one's self representation is linked not in his/her physical form as much as it is to the non-material mind. Many games' play mechanics center on life, death, and rebirth. Reinforcing these concepts in play helps transcend their fears ultimately associated with their notion of death. Games such as *Star Wars: Knights of the Old Republic*[37] and *Black and White*[38] also add the notion of 'karma.' A player's actions, whether 'good' or 'evil' affect their in-game 'powers' and visual appearance.

Video game play is, in a sense, an out of body experience. The player's physical form is left behind as their intentions are manifested by their avatar (which acts as a temporary shell for the player's non-material self). Players can become so absorbed in play that the needs of the avatar displace the physical needs of the player's body. Strong physical drives like hunger and fatigue can be ignored almost indefinitely. In 2005 a 28 year old man died from fatigue related heart failure ending a 50 hour marathon of video game play.[39] This is sort of extremely intense play is by no means the norm. The ESA reports that on average adult American male plays a little less than 8 hours of video games a week.[40] However, this case does illustrate video games' extreme ability to suspend disbelief. Such occurrences have also been known to

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[37] See Bioware 2003.
[38] See Lionhead 2001.
[39] BBC News Website retrieved from: http://news.bbc.co.uk/2/hi/technology/4137782.stm.
[40] Website of Entertainment Software Association retrieved from: http://www.theesa.com/facts/gamer_data.php.

happen during ritualistic religious practice.

Video games as a medium apply all of the techniques employed by myth, art, and ritual to communicate inner experience. Video games furthermore have the potential to integrate myth, art, and ritual to form revelatory experiences. Avatars acting in video game worlds are also a metaphor for physical existence. Through playing games, individuals can experiment and explore their inner landscape and limitations of their egocentric views to cultivate a more sociocentric and integrated perspective. Multiplayer online virtual worlds serve to reinforce sociocentric behavior. While video games offer a tremendous potential to affect personal transformation, there are also limitations of the medium today:

- **Limited emotional scope** – As a medium, video games are still in their infancy. Currently the majority of gaming experiences involve a limited set of emotions in the player. Aggression and fear based emotions are most common in narrative games. A few games, such as *Metal Gear Solid 3*,[41] are designed to engender feelings of betrayal, loss, and regret. Online games which involve primarily interaction between human players have promoted greater feelings of empathy and camaraderie as players work together towards common goals.

- **Limitations of the interface** – Today's video games communicate their reality largely through video monitors, audio speakers, and game controllers which ultimately limit their expressiveness and range of action. Physical experiences have a sense of presence that is difficult to fully capture through a video display. Experiences created by games are also dependent upon the physical surroundings (context) of the interface (e.g., a gaming experience accessed through a television at home is vastly different than that of a hand held game on a subway). The immersion of a game is also hindered by the fact that at any time during game play, the player can also simply chose to turn off the machine. This is not to say that video games should be without an 'off switch,' but rather that games which require a greater time investment on the part of the user are often provide more potent experiences (eg., games in which the player can only save their progress at infrequent narrative checkpoints).

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[41] See Konami 2004.

- **Poor design** – The design and quality of the visuals, sound, music, levels, artificial intelligence, and gameplay mechanics of a video game have a profound impact on the resulting experience. Design consistency is also essential for maintaining a compelling experience. Simply wrapping an existing game in a new skin in order to communicate information does not take advantage of the full potential power of the medium. Serious and many 'edutainment' games are notorious for this by trivializing serious messages in shallow arcade game experiences. Examples include serious games like *Food Force*[42], and *Darfur is Dying*[43]. There are two reasons behind this trend: firstly, the focus of these games is not on the gameplay, but on the information communicated, for this reason many games borrow conceptually from existing popular games. Players might be attracted to the game because it is fun and familiar, and then inadvertently learn something at the same time. Secondly, the production budget of these games is a fraction of that for a commercial game. Producing a cutting edge game is still prohibitively expensive if one plans to give the game away for free in order to best spread the message of the game. As the tools needed to produce high quality immersive video games become more readily available it will be up to game designers to collaborate with leading minds from other fields to fully unlock the true potential of the medium.

A Game Development Platform for Creating Inner Experience

Whereas initial video games could be developed by a team of a few people in a couple months, today's video games with their rich three dimensional graphics and visual effects, engaging music and sound, and limitless possibilities require a large interdisciplinary team of artists, designers, and programmers[44]. In a video game, everything that is seen and all the sounds that are heard must be created and integrated into the environment. Actions and their consequences must also be explicitly defined and programmed. The size and complexity of game development is offset by the use of video game development platforms that provide a

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[42] See Deepend.
[43] See mtvU.
[44] See Rabin 2005.

framework to synthesize and manage in-game experiences.

Lucid 2.0 is a game development platform that enables experience designers to develop create virtual environments and stories that can be interactively experienced on both computer and gaming consoles. Unlike other platforms, we are tailoring primitives that extend Lucid 2.0 to facilitate the communication of spiritual and religious experience. Developers apply these unique library primitives without the need to re-develop them for each new application. These include:

- **Visuals** – Borrowing from works such those by early eastern and western religious painters and more recently by artists such as Alex Grey[45] we are developing a visual library for rendering multiple views of an object, and special effects. With this library, in-game objects can be defined and rendered in physical and/or energetic realms. Visual effects such as halos and chakras can also be parameterized and rendered.

- **Organic Environments** – The platform provides primitives for representing natural phenomenon such as sky, time-of-day effects, weather, and wind. We will also explore other organic effects such as changing seasons and flora. These background effects help to engage the user by providing a familiar context while also reinforcing causality.

- **Interactive Music** – A new soundtrack synthesis engine assesses the player's situation and dynamically synthesizes the background soundtrack to better communicate the emotion of the experience at the time based upon the activity, and user profile. This serves to heighten the dramatic impact and emotion tension of key situations.

- **Community Services** – The platform includes an online component that enables shared experiences among multiple participants. Community services facilitate different modalities of engagement (e.g., one-to-one, one-to-many, many-to-many, etc.) and simplify relationship management by enabling annotations and recording conversations and dialogues for future reference.

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[45] See Grey 1990.

- **Biometric Interfaces** – We are exploring the integration of biometric interfaces such as EEG and ECG systems such as those developed by Heartmath.[46] Access to biometric statistics provides designers with additional physiologically based data to better tune the situations and experiences presented.

These represent an initial set of extensions towards the creation of meaningful and transformational experiences using video game technology. As the development community experiments, these can be further expanded with additional functions and services. It is our hope that the platform will inspire greater interest and involvement among the religious and spiritual communities.

Conclusion

This paper has presented a case for the use of video technology to communicate inner experience. With origins rooted in mythology, video games represent the newest form of continually evolving mass media. Like mythology and art, video games employ the graphics, sound, and storytelling of traditional media forms to communicate stories and create emotional experiences. However, the interactive nature of video games enables game designers to integrate causality to create direct experiences more akin to ritual. New biometric technologies help to validate inner experiences. The expressiveness of computer graphics and sound can also be applied to computer mediated communication between to facilitate introspection and 'deeper,' 'consciousness to consciousness' interactions.

Although video games today are largely driven by commercial interests and tend engage more primitive and instinctual emotions such as fear, need, and desire, their expressiveness is still at infancy. Serious games represent a first step away from the escapism of today's video games towards communicating knowledge (albeit intellectual knowledge). Each new generation of technology increase video games' expressive capacity. As more tools, such as Lucid 2.0, become available, a wider audience of game creators will explore new ways of directly communicating experiences that facilitate inner harmony.

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[46] See Childre 2005.

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