

# Presence and the Meaning of Life: Exploring (Tele)Presence Simulation Scenarios and their Implications

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## Abstract

*This paper uses (tele)presence concepts to explore the practical and philosophical implications of the simulation argument: the notion that individuals may be trapped within manufactured realities. After describing a series of hypothetical simulation scenarios, key distinguishing dimensions of the scenarios are considered and implications for epistemology, religion and morality, mortality, and the design of telepresence environments are explored.*

*Keywords---* **Telepresence; simulation; illusion; physical presence; intercept; avatar; android; infinite regression; monism; philosophy; epistemology; religion; morality; death**

## 1. Introduction

Telepresence (the experience of “being there” in a technologically mediated environment) and presence (the experience of “being there” in a non-technologically mediated environment) both raise fundamental questions about the nature of being or existence. These questions have long been addressed, but of course not resolved, in the branch of philosophy called ontology, which literally means the science, theory, or study of being.

Nearly everyone assumes that they know the true nature of what it is like *to be* or *to exist* in a given place at a given time. But because of the fallibility and deceivability of our empirical experiences, we could be far off course regarding the true conditions under which our sense of existence is experienced. Indeed one definition of presence, “the perceptual illusion of nonmediation” ([1], Concept Explication), implies that experiences of telepresence are defined by their ability to take advantage of the deceivability of our perceptual system.

In this exploratory paper we consider a set of simulation scenarios – descriptions of potential true natures of our being or existence – informed by (tele)presence, and the implications of these scenarios for the way we know the world (epistemology), religion and morality, and our mortality.

Why consider different explanations for the apparent nature of our reality when we can only experience and live that apparent reality? First, it reminds us of the power and

increasingly central role of telepresence phenomena – those that involve technology-mediated simulation and illusion – in many aspects of modern life and culture. Second, the fact that human beings live their lives accepting experience as what it seems to be suggests a parallel with designing effective presence and telepresence experiences: if we can better understand that acceptance, perhaps we can figure out how to help people enter, stay in, or in other cases see through and escape from, the experiences and worlds we design for them. And third, considering the nature of being and reality in new ways suggests important implications for what we choose to believe and how we choose to live in our (apparent) reality and helps us examine the weightiest questions of life: the nature of life, death, God, immortality, the universe, and more.

## 2. Background

The question of the true nature of reality has been examined since ancient times by philosophers including Plato, Descartes, Locke, Berkeley, Hume, Mill, Russell, Husserl, Heidegger, Ayer, and many others. Do our senses provide direct access to an objective, substantial reality? Can we know the essence of things rather than their imperfect or particular form? Do we exist separate from our physical bodies? Schools of thought such as metaphysical subjectivism, idealism, phenomenology, existentialism, logical positivism, pragmatism, deconstructionism, and post-modernism take divergent positions (a review of these perspectives is beyond the scope of this paper; the interested reader is referred to [2] and [3]).

In the past, other technologies, such as the clock, the locomotive, and, more recently, the computer have served as metaphors for human understanding of the natural world and ourselves ([4], [5], [6], [7]). With the increasingly common and vivid illusions provided by technologies from high definition television, 3D IMAX films, videogames, virtual worlds and virtual reality, perhaps it’s not surprising that Bostram [8] and others have recently advanced and begun exploring the “simulation argument,” the much-discussed possibility that we are “living in a computer simulation.”

While the simulation argument and related scholarship ([9], [10], and [11]) does not reference their work, those who study presence and telepresence have much to contribute to the emerging discussion. Telepresence is (arguably) the attempt to use technology to replicate and manipulate our ‘normal,’ ‘default’ or

‘first order’ experience of the world via our perceptual apparatus (this characterization is intuitively logical but assumes there is a separation between mind and body and an objective reality to be experienced). Those who create and study telepresence are increasingly successful at creating these illusions and figuring out how to best design them, so we have expertise on questions of how and whether what we think of as presence (experience not mediated by technology) could in fact be some kind of telepresence.

### 3. Simulation Scenarios

Just as there are many technologies and forms of telepresence, there are many ways in which our seemingly unmediated human experience could be “generated by and/or filtered through” [12] technology. Six of these simulation scenarios are presented below. Informed by telepresence concepts and philosophical perspectives, they are also illustrated wherever possible with references to fictional portrayals of telepresence (see [13]). Note that it is not being argued here that any of these scenarios actually is behind what we experience as human reality but that they demonstrate the power of ideas related to perception, reality, illusion, and telepresence.

#### 3.1. The Physical Presence Scenario

The “Holodeck” portrayed on the science fiction television program *Star Trek* is a good example of a Physical Presence scenario. It posits that our physical bodies are immersed in a virtual environment that is so realistic it cannot be distinguished from the true physical environment. In the television series and films, the holodeck is

a technology that combines transporter, replicator, and holographic systems. The programs, projected via emitters within a specially outfitted but otherwise empty room, can create both ‘solid’ props and characters as well as holographic background to evoke any vista, any scenario, and any personality — all based on whatever real or fictional parameters are programmed. ([14]; see also [15], [16] and [17])

This scenario is also illustrated by the experience of participants in “reality” TV shows such as *Survivor* and *Big Brother*, Live Action Role Playing (LARP) games, historical re-enactments, renaissance fairs, costume dramas, and more. In fact, dramatic stage productions in which “method acting” is employed would seem to be a good example because actors strive to enter the world of the drama through actually becoming a character rather than merely playing one. A final example is illustrated in the film *The Truman Show* [18] where Truman (played by Jim Carrey) lives his life in a television studio manufactured to look like the real world.

#### 3.2. The Intercept Scenario

As in Descartes’ *First Meditation* [19] and the film *The Matrix* [20], this scenario presents the possibility that although we are in control of our own consciousness, our bodies and the material world that surrounds us are an artificial construction. The impetus for this idea is the realization that everything we experience is mediated by our brain, and the understanding that if all afferent channels to the brain were intercepted by a master computer there would be no way to cross-validate experience through separate sense organs, and an entirely convincing programmed universe could be created so long as it accurately rendered the sensations of physical existence. “The supposition of *The Matrix* is that one could live an entire life made up of illusions caused by brain stimuli induced in a passive, immobile being for which sleep-like paralysis is a permanent state” [21, p. 42]. In other words, only the brain itself lives in the ‘real’ world. Gracia and Sanford [22] write that:

Minds are real, and they have the power to produce unreality, either through responses to bodily processes or on their own. A mind can respond to an electrical stimulus to the brain by creating an image, but a mind can also affect the body by independently creating the image. This suggests a way out of the apparent inconsistencies: It looks as if the unreal can directly affect the real, but it is only the real that can directly affect the real. The unreal affects the real only indirectly, when a confused mind takes it for the real. (p. 62)

The defining characteristic of this scenario is a more extreme condition than that of the physical presence scenario, i.e., a complete separation between the human cognitive apparatus and that which it experiences.

#### 3.3. The Avatar Scenario

This scenario is exemplified by the popular “life-simulating game” called *The Sims* [23] in which the players “create characters and control their lives -- everything from choosing a spouse and a career to what to eat for dinner and when to go to the bathroom” [24]. While we are most familiar with the role of the avatar player, in this scenario we take the role of the avatar character that is played. Like the characters in the game, our physical bodies are actually extremely realistic avatars being used by gamers who manipulate our every thought and action through a gaming interface that is completely imperceptible to us. Unlike in the previous scenarios, in which we retain our own consciousness and at least a degree of free will, the avatar is merely a shell for a sentient being far away; we have no consciousness without that of the player. The Japanese animated film *Ghost in the Shell* [25] presents a similar situation in which a computer hacker by the name of Puppet Master is able to access and control the minds of both humans and cyborgs. In this scenario, what we know as multiple personality disorder might be viewed as a number of consciousnesses sharing the same material body within the simulation.

### 3.4. The Android Scenario

This scenario is the opposite of the others because it presents a situation where the individual rather than the environment is simulated. As in the film *Blade Runner* [26], this scenario presents the possibility that our consciousness itself is a technological construction that has been engineered. Despite our ability to think consciously and autonomously, the parameters of our thought, our level of intelligence, the depth of our emotional experiences, and all other aspects of our being are programmed into existence. This scenario strikes at the heart of foundational philosophical issues such as free will, consciousness, and identity.

### 3.5. The Infinite Regression Scenario

This possibility is born out of the idea that human existence could be a confusing compound of some or all of the other scenarios (as well as others). In the film *The Thirteenth Floor* [27], scientists create and temporarily inhabit the bodies and minds of simulated people in a virtual world that replicates Los Angeles in the 1930s. The reality of the people in this simulated world is as convincing as the holodeck or the Matrix. But eventually it is revealed that the scientists themselves are simulations created by an even more advanced society. This “simulations within simulations” scenario has limitless potential since there is no end to the number of worlds that might be situated within other worlds. Considering the possibility of an infinite regression of simulated worlds harkens back to the cosmological arguments of Plato, Aristotle, and St. Thomas Aquinas.

### 3.6. The Monism scenario

The theory of Monism was originally developed by philosopher Bishop Berkeley (1685-1753). Robinson and Maybin [3] describe Berkeley’s position as follows: “All that exists is One Infinite Mind and our millions of finite ones – one continually transmitting ideas and the other continually receiving them. That’s all there is” (p. 73). As a radical idealist, Berkeley suggested that only perception exists, and it is not dependent on a material world. Instead, we get our ideas of the “world” from God. If we dispense with the religious aspect of this argument concerning the distinction between God and humanity, we are left with a scenario that includes only a single consciousness which is responsible for everything. This view of reality holds that although humans have the illusion of autonomy, we are all a part of a single consciousness that is in the process of interacting with itself through personae (ourselves) whom it has imagined into existence. The consciousness has repressed the memory of the act of imagining for the sake of manufacturing the illusion of free will, thus making interactions between personae realistic and *interpersonal* as

opposed to artificial and *intrapersonal* (as would be the case when talking to oneself). Although this scenario seems quite farfetched, in some ways it requires fewer assumptions than many others. For one thing, it allows us to dispense with the messy debate over the troubled relationship between perception and reality because, in Berkeley’s view, only perceptions exist.

## 4. Simulation dimensions

Like current and evolving telepresence technologies, the simulation scenarios represent different constellations of possible characteristics. What are the key dimensions that distinguish these scenarios? Dainton [9], Fleet [10], Jansch, [11] have offered different simulation taxonomies, which are synthesized in Table 1.

Table 1. Simulation taxonomies of Fleet, Jansch and Dainton

<b>Extrinsic Simulation</b> (Fleet, 2007): “the simulated mind has some sort of external existence outside the simulation”.		<b>Intrinsic simulation</b> (Fleet, 2007): “the simulated mind is purely confined within the simulated environment and has no other existence.”
<b>Third Degree Simulation</b> (Jansch, n/d): “a simulation where people undergoing the simulation are physically embedded in the simulation.”	<b>Second Degree Simulation</b> (Jansch, n/d): “a simulation where the subject of the simulation is located outside the simulation, and is only 'virtually' immersed.”	<b>First Degree Simulation</b> (Jansch, n/d): “A first degree simulation is a 'complete' simulation. There is no 'real' person controlling the simulated character. The character exists only in the simulation.”
	<b>Hard Simulation</b> (Dainton, 2002): “[Hard] simulations result from directly tampering with the neural hardware ordinarily responsible for	<b>Soft Simulation</b> (Dainton, 2002): “[Soft] simulations are streams of consciousness generated by running programs (software) on computers (other than the brain if the brain is nothing but a computer).”

	producing experience.”	
<b>Partial Simulation</b> (Dainton, 2002): “In partial simulations, only <i>some</i> parts or aspects of experience are generated by artificial means.”		<b>Complete Simulation</b> (Dainton, 2002): “Every part and aspect of experience is being generated by artificial means.”
<b>Communal Simulation</b> (Dainton, 2002): “A [communal] simulation is a virtual environment shared by a number of different subjects, each possessing their own distinctive individual psychology.”		
<b>Individual Simulation</b> (Dainton, 2002): “An [Individual] simulation is restricted to a single subject. Of course, the subject of an [Individual] simulation may meet what they take to be other people in their virtual worlds, but these ‘others’ do not possess their own individual autonomous psychological systems.”		

from this initial distinction, notice that all of the categories below “intrinsic simulation” are completely confined in the sense that it is impossible to imagine a world beyond the simulation from the perspective of the subject. Beneath the “extrinsic” simulation category, second and third degree simulations are distinguished based upon the physical presence of the subject. Notice that Dainton’s [9] “hard” simulations are consistent with the premises of Jansch’s [11] second degree simulation because the existence of external neural hardware implies the existence of an external mind. Naturally, second degree simulations permit less drastic alternatives also (e.g. videogames). Below this, “partial” and “communal” simulations each fall under the aegis of second and third degree “extrinsic” simulations. They are distinguished from “intrinsic” simulations because both have definitions which rely on a larger reality beyond the simulation. Finally, “individual” simulations are a potential in all cases and thus traverse all categories.

The problem with these taxonomies is that they describe the characteristics of simulation environments and not the environments themselves, which results in numerous logical inconsistencies. For example, in a “complete simulation,” a “passive simulant” is implied and, if every element is generated by artificial means, than who is actually experiencing the simulation? Isn’t an autonomous consciousness (or at least the illusion of one) a necessary prerequisite for experience? Also note that many of the conditions in these taxonomies are incompatible. Consider the fact that “communal simulations” imply external agents. Any entity existing exclusively in the simulation is a product of the technology that generated the simulation and thus cannot be communal in the sense described in Table 1. Fleet [10] created a series of tables which delineate many of the inconsistencies between characteristics.

To remedy some of this confusion, in Table 2 we offer a revised set of simulation dimensions and classify the simulation scenarios presented above based on the dimensions.

Note that in the revised taxonomy in Table 2, the definitions of the dimensions follow those of Dainton [9], Fleet [10] and Jansch [11], but that in some cases an additional perspective, leading to different classifications, is possible. While we know that we are not “gamers” who are “playing” inanimate objects or animate entities in the Avatar or Infinite Regression scenarios, those scenarios would appear quite different from such players’ vantage points.

## 5. Implications of Simulation Scenarios

The six scenarios above, and the key dimensions that distinguish them, present us with a series of intriguing implications regarding epistemology, religion and morality, life and death, and (indirectly) some practical guidance regarding the design of telepresence experiences.

### 5.1. Epistemology

If we were living in one of the simulation scenarios, how could we know? Because simulations attempt to substitute one

Beyond the simulation environments themselves, Barry Dainton offers a description of some potential characteristics of the subjects immersed within them:

**Active Simulations** [9, p. 17]: “The subjects of [active] simulations are confined to virtual environments, but in all other respects they are free agents – or as free as any agent can be. Their actions are not dictated by the virtual-reality program, they flow from their own individual psychologies, even if these are machine-implemented.

**Passive Simulants** [9, p. 17]: “A [passive] simulation, by contrast, is a completely pre-programmed course of experiences. The subjects of [passive] simulations may have the impression that they are autonomous individuals making free choices, but unlike their A-simulation counterparts, they are deluded: all their conscious decisions are determined in advance by the virtual reality program.”

**Original Psychology** [9, p. 17]: Psychology that is inherent to the individual, that developed based on his/her unique experiences.

**Replacement Psychology** [9, p. 17]: “A ‘replacement psychology’ is an artificially-generated system of beliefs, desires, memories, intentions, preferences, personality traits and so forth that supplants a subject’s own (‘original’) psychology.”

In Table 1, a hierarchy is established through the specificity of categories. Starting at the top, “extrinsic” simulations are distinguished from “intrinsic” simulations based on the existence of a mind that is or is not external to the simulation. This is a crucial point because if no mind exists beyond the confines of the simulation, no larger reality can exist for the subject of the simulation. Following

reality for another by means of tricking the senses, the question of how knowledge is validated comes into play. The epistemological questions behind Plato's age-old cave allegory, in which prisoners can see only shadows of objects rather than the actual forms of the objects, find new relevance in modern simulation scenarios (see [28] and [29]).

Epistemology in this context can be explored through the contingencies presented by each of the simulation scenarios. Proceeding according to the assumptions of empiricism, we can presume that individuals in each of the scenarios experience the world through their five senses in much the same way. Therefore it is most productive to

explore the limits of that knowledge by considering exactly where they cause the scenario to break down. In other words, the question becomes "what would the individual present in each of the scenarios have to know in order to reveal the illusion of the scenario and find the exit?"

Using the metaphor given to us by *The Matrix* [20], how does the individual who is present in the hypothetical scenario arrive at a point where they are confronted with the choice between "red" and "blue" pills? Further, what are the particular qualities of the metaphorical "red pill" in each scenario that permit a perspective beyond the confines of the construct of the scenario?

Table 2. Revised simulation taxonomy and classification of simulation scenarios

	<b>Physical Presence</b>	<b>Intercept</b>	<b>Avatar (Player Character)</b>	<b>Android</b>	<b>Infinite Regression</b>	<b>Monism</b>
<b>Extrinsic or Intrinsic?</b>	Extrinsic	Extrinsic	Intrinsic	Intrinsic	Extrinsic	Intrinsic
<b>Nature of Embodiment</b>	Human body with natural interaction	Human body with unnatural interaction	No human body	No human body	No human body	No human body
<b>Partial or Complete?</b>	Partial	Complete	Complete	Complete	Complete	Complete
<b>Individual or communal?</b>	Either	Either	Either (assume communal)	Either	Either	Individual
<b>Active or Passive Simulant?</b>	Active	Active	Passive	Active	Passive	Passive
<b>Original or Replacement Psychology?</b>	Original	Original	Replacement	Original	Replacement	Replacement

**5.1.1. Uncovering the illusion.** In illusions as effective as the ones contemplated in the scenarios, prior knowledge and memory would be the primary means of uncovering the truth. With the limited Physical Presence experiences available today such as CAVEs, LARPs, Renaissance Faires, Star Trek Conventions, etc., it is easy to recognize the illusion and the challenge is more in maintaining the simulation ("suspending disbelief" in it) than uncovering the illusion. Organizers and performers even adopt strategies to enhance the simulation. For example, Renaissance Faires take place in wooded settings to minimize anachronisms such as buildings and cars, and their performers often call attention to out-of-place technologies used by visitors, remarking about the strangeness or magical qualities of the objects. However, even if these strategies were to present a seamless illusion, the visitor would still be unlikely to be fooled because of the "extrinsic" [10] nature of the simulation and the "original psychology" [9] of the visitor. This is to say that the visitor has a keen awareness of the world beyond the simulation and

a coherent sense of how the simulation fits into that larger world.

In the technologically complex Physical Presence scenarios of science fiction such as the *Star Trek* holodeck or the television set of the movie *The Truman Show* [18], the simulation environment is indistinguishable from the real one. Due to this extreme fidelity, revealing the simulation for what it is cannot occur independently of the memory of being in the "real" world. In other words, the only reason one would recognize such environments as a simulation is the memory of having been in the "real" world and the observation that the currently experienced world (the simulation) is not the same in some (even subtle or trivial) way. This point is demonstrated in an episode of *Star Trek: The Next Generation* titled "Ship in a Bottle" when the main characters believe they are in the "real" environment of the Starship Enterprise when in fact they're in the holodeck. The android Data "informs them that all of the events of the day have been a simulation. ...Data discovered this by noticing that a normally right-handed Geordi was working on the

[computer] padd with his left hand” [30]. Interestingly, the crew members are initially deceived because though they recall their entering the holodeck, their perceived exit is merely part of the simulation and they remain in the physical presence environment. In other Star Trek stories (e.g., Homeward [31]), characters are transported into and out of the holodeck while asleep or unconscious.

Memory of a different, unsimulated reality is more unlikely in the other scenarios, which are classified in Table 2 as complete. In the case of the Avatar and Infinite Regression scenarios, our memories are only of experiences from within the simulation; only access to the more complete memories of an invading consciousness would allow us to perceive the truth (perhaps the common feeling of *deja vu* results from aspects of our simulated environment that are similar to aspects of the environment that was previously experienced by our replacement consciousness before its entry into the simulation).

In the Monism scenario, memory of the fact that there is only a single consciousness interacting with itself through personae that are imagined into existence is repressed. For its individual manifestations to be released from their illusion the single universal consciousness must bring the knowledge of the ultimate and complete oneness of all things out of repression; it must remember its own singularity. Note that this cannot be realized empirically. Because the entire premise of the “sole consciousness” is based on the idea of a universe that doesn’t exist in the physical world, the realization must come from an act of remembering within the sole consciousness itself (i.e. one of its manifestations) and not from a gap or seam in the environment or perceptual “break in presence” [32]. Such a gap or seam would, of course, not be recognized as such anyway because there would be no “gapless” or “seamless” model to compare it to.

In the Android scenario the challenge is not uncovering a repressed or otherwise unavailable memory of a different, real, external world, but the discovery by an artificial human of its true nature. In the most sophisticated versions of this scenario, this discovery is likely to come only through the revelations of others, and logical argument. In the film *Blade Runner* [26], a replicant (Rachael) must be convinced of her status by being told about memories she thought were secret but instead were ‘implanted.’ In a 1969 episode of the original *Star Trek* series called *Requiem for Methuselah* [33] an android discovers her true status when she inadvertently discovers her creator in his laboratory with a series of earlier versions of herself.

In some of the scenarios, notably Physical Presence, Intercept, and Infinite Regression, skepticism and experimentation are potentially useful approaches to uncovering the truth from within the simulation. The skeptic looks for inconsistencies between the real world and Physical Presence simulation (e.g., the holodeck) that will reveal gaps or seams in the environment and cause a perceptual “break in presence” [32], as when characters in the films *The Truman Show* [18] and *The Thirteenth Floor* [27] reach the ‘edge’ of

the simulated world. In the Intercept scenario, discovery of the world outside the simulation from within it begins with skepticism that does not accept for granted the façade of the surrounding world no matter how accurate it appears.

But skepticism alone does not solve the puzzle. Experimentation within the simulation must follow, as when in the film *The Matrix* [20] Neo is able to manipulate physics within the Matrix and confirm his suspicions about the falsity of that world. Because the physical laws of the Matrix are not actually *physical*, but are rather the programmed imagination of a machine (a simulation), they can be combated with the imaginative impulses of the individual connected to that machine. As Gracia and Sanford [22] observe, “A mind can respond to an electrical stimulus to the brain by creating an image, but a mind can also affect the body by independently creating the image” (p. 62). In concrete terms, the very same afferent nerves that are intercepted by hardware of the machine have the capacity to affect the behavior of the machine’s software. To use the internet as a primitive example of a Matrix, one can view web pages but also create and post them. And if one is very clever, one can create viruses or hack into networks and ISPs that destroy or alter the landscape of the web. The same logic applies to the environment created for us by a computer operating system – cautiously exploring and ‘crashing’ it leads computer users to recognize how it works and the ability to manipulate and change it more effectively. To escape the Matrix, one must be able to hack.

**5.1.2. Consequences of escape.** Through whatever means, uncovering and escaping from a simulation one has been living in would seem to be a worthy goal. But there also might be dangerous consequences. In the Intercept scenario, depending upon the way that messages to the cognitive system have been intercepted, one may or may not be able to step outside of the hardware of the simulation. If the brain stem has been severed or other serious damage has been done to the body in order to be connected to the hardware of the simulation, it is not possible (nor even desirable) to exit the simulation since the vessel for existence in the world outside is permanently disabled. In the case of the “brain in the pan” scenario of Descartes’ First Meditation [19], it is impossible to ever escape since a brain devoid of sense organs cannot empirically experience the world to which it has escaped. On the other hand, if the brain stem has merely been tapped but is otherwise uncompromised, it is possible to take a great step backwards outside the boundaries of the simulation. Using one’s true physical body, escape from the technology is theoretically possible and the machine itself can be empirically apprehended with one’s physical senses. Of course one would then be in the “real” world, which may or may not be pleasant (it certainly isn’t in *The Matrix* [20]).

The consequences of ending any of the simulations classified as intrinsic in Table 2 are likely dire, since by definition there is no external world to escape to. For example, just as avatars we use in today’s games and other

virtual environments can't escape from their simulated world and exist in ours, having no consciousness of their own, we may not be able to escape our simulated world and exist in the external reality. On the other hand, the consciousness that is controlling or 'playing' us might have better uses for its time in whatever external world it normally occupies.

The consequences of revealing the simulation in the Android scenario are particularly interesting and help us revisit fundamental epistemological questions. The discovery of the true nature of one's origins, whether being told one has a different specific parent, was adopted, or was the result of artificial insemination or other techniques of modern medicine, can be unsettling; discovering you are a machine would likely be considerably more unsettling. Since the android itself is artificial, the consciousness that results from it is, perhaps, the ultimate example of an intrinsic simulation [10] – one which has no existence beyond the simulation. But gaining knowledge of its own falseness is not a step toward escaping that falseness, just a realization that the falseness is all it will ever be capable of knowing. Analyzing *The Matrix* [20] from a Buddhist perspective, Brannigan [34] points out a subtle distinction that has strong relevance here. He points out that Morpheus refers to the Matrix as a “prison for the mind” and not “a prison of the mind.” In the former case there is hope for escape since an externally constructed prison might be escaped from, but in the latter case, which applies to the Android scenario, there is no hope for escape since it is the mind itself which is the trap and one isn't even capable of thought or action outside of the illusion.

Of course, the situation that the android finds itself in reflects the potentially frightening truth about the relevance of our own authentic humanity. If the only thing distinguishing an android from a human being is a synthetic versus a “natural” origin, what cause does the authentic human have to believe that his/her epistemological capacity is superior? If the performance of the perceptual system is the same, what reason is there to think that our own experience is somehow more genuine?

The central question that this scenario raises goes to the heart of empirical epistemology and the nature of being human: How do we know whether what we experience is the product of a quality that is native to the external stimulus or if it is a product of our own unique perceptual system? Is it only consciousness that defines the human condition? If this is so, an artificially intelligent android like the replicants in *Blade Runner* [26] should have human status (this was also the topic of the “Measure of a Man” episode of *Star Trek: The Next Generation* [35]), in which the android Data is eventually granted the rights of an individual). However, more dualistic and religious arguments that require the existence of a soul or essence outside of the physical body may call the humanity of an android into question. Are we only the product of our neural hardware and cognitive software? If so, would a perfect reproduction of that hardware/software result in a perfect reproduction of our own consciousness? The notion of a “replacement psychology”

([9] would seem to partially contradict this argument if psychology is capable of being imposed from one type of entity to another. What we have here is the notion of the “ghost in the shell,” in which our consciousness is something separate from our bodies which merely inhabits and animates our physical existence. We're not likely to be able to answer these questions any time soon, but the metaphor of simulation can help us address them more thoughtfully.

## 5.2. Religion and morality

Exploring the hypothetical dilemma of whether or not we are living in a simulation inevitably leads to questions concerning who created the simulation and why. These questions are relevant to longstanding religious and philosophical debates concerning the existence and nature of God. In addition, our beliefs about the real or simulated nature of our world have implications regarding what constitutes moral and immoral behavior, including whether or not morality and conscience even exist in a virtual world.

Beginning with religion, there are two primary ways to conceive of a creator's existence in the simulated world. The first way derives from the dualism of Plato and Descartes and imagines the creator to be the outside force who created the simulation. In this conception, the creator is the ultimate “mind” which has orchestrated the physical and material conditions of the simulated world and only he/she/it is capable of manipulating the laws of the world (see [36] and [37]). The second way derives from philosophers and religious figures such as Kant, Buddha and, more recently, Carlos Castaneda who assert that the creativity of the individual within the world has the potential to aspire to a state near to godliness (see [36], [37] and [38]).

The question of morality is most essentially concerned with the task of making choices that are consistent with a pre-established sense of what is right or good. Choices of how to interact *as* or *with* the creator, choices governing interaction with others within the environment, and choices between truth and falsehood compose the root structure of morality as it pertains to simulations.

**5.2.1. God and God-like creators.** The simulation scenarios suggest an important distinction between God as the ultimate creator and other powerful but not ultimate creators. In *The Matrix* films the central characters and viewers wanted to know who designed and built the Matrix that trapped most of humanity in an Intercept simulation. Near the conclusion of *The Matrix: Reloaded* [39], we encounter “The Architect,” who claims to have created the Matrix but at the same time reveals that Neo is an anomaly resulting from his own inability to balance the equation of the Matrix. To conceive of God as a mathematician locked in an ongoing struggle to balance an equation is reminiscent of some basic questions that challenge the notion of an almighty creator. Most of us are familiar with the old question “Can God create a rock so heavy that even he cannot lift it?” The

same principle applies: “Can God create an equation so complex that he cannot solve it?”

We can say generally that the concept of God as a hardware/software engineer is inherently flawed. If God must struggle against problems of logic and physical laws in order to manufacture his Universe, shouldn't we be looking at those broader forces which constrain him? For isn't something that constrains God a more appropriate candidate for the title? It would seem that the existence of any technological apparatus would be evidence of such a constraint since the manipulation of physical material to build a simulation would indicate adherence to some other set of physical laws that demand certain materials be placed together in particular ways in order to achieve a desired effect.

The same logic applies across most of the other types of simulations, with creators and controllers of simulations being God-like but not the ultimate creator. For example, the player of any of the variety of popular videogames titled “The Sims” (literally short for “simulations”) exercises a God-like control over the lives of his characters. The game's official website even states that “An entire world of Sims awaits your quirky command. It's your neighborhood, they're your Sims, and whether they prosper or perish is completely up to you!” [40]. Despite this, of course, players are obviously not Gods.

If simulations are nested within simulations as in the Infinite Regression scenario, the creators of the bracketed simulations are certainly not God-like in the absolute sense since everything they create exists within the parameters afforded by the larger simulation about which they are unaware. Their creativity is akin to the creativity involved in playing a videogame because every affordance has already been predetermined by the programmer. Only the Monism scenario proposes a separate and absolute God who creates the sole consciousness in which we exist.

On the other hand, the entities that create and control these simulations have varying degrees of God-like power. Even if the engineer or player lacks the omnipotence of God, he/she certainly has near-complete control over the experience of individuals within the simulation. Players using Avatars and the invading consciousnesses in the Infinite Regression simulations have absolute control, while creators of Physical Presence and Intercept simulations and Androids set the parameters of “our” experiences.

Regarding the second way that a creator's existence can be conceived within a simulation, Bassham [41] observes multiple similarities between Neo in the *Matrix* films and Jesus, and, indeed, both are portrayed as saviors who are not fully bound by the physical laws of the worlds in which they dwell. This line of reasoning acknowledges the potential for our own God-like qualities. Similarly, a particularly savvy gamer in one of the Infinite Regression simulations might be able to reprogram the game, although doing this would require an awareness of the simulated nature of existence and forge a connection between the gamer and the world outside

of the game. Approaching this kind of possibility from a Kantian perspective, Lawler [42] writes that “[i]n projecting the world of our own experience, we attribute to it an independent reality and thereby alienate our own freedom” (p. 139). Conversely, if we were to become aware of the power we had over our own experience, we might exercise a God-like power over it.

As suggested by the Android scenario, continued development of genetic engineering and nanotechnology will challenge our understanding of the act of creation, and, perhaps by extension, our understanding of “God.” The power to shape chromosomes and directly manipulate atoms effectively grants humanity the power to reproduce ourselves much in the same way that “replicants” are reproduced in the fictional film *Blade Runner* [26], making us seemingly God-like. Perhaps, though, such an achievement is meaningless since we already have this power. After all, isn't our very existence here and now a testament to the fact that we have always been physically equipped with the organs necessary to reproduce? Is there a distinction to be made between the creativity that occurs during coitus and the creativity that would result during work in a laboratory? It could be argued that our brains, no less than our bodies, were gifted to us by a “creator” and, thus, the products that they produce, including androids, are no more the labor of our own efforts than the formation of an infant during the primal act of insemination, pregnancy, and birth. On the other hand, if we doubt anyone or anything is responsible for our creation, these scientific tools gain new meaning in their capacity to facilitate our will. If matter in the physical world (including the act of childbirth) is understood as random and disorganized chaos, then our orderly and structured “will” can be imposed upon it through the intervention of technology.

A final issue regarding the nature of God in the context of the various simulation scenarios concerns what form he/she/it might take in entering the simulation. If we explore this using the Christian account of creation as an analogy, we could say “God” is the “active/original” being and we are simulants he created in a simulation environment of his design. God (the Father) entered the simulation using an avatar when he/she/it spoke to Moses as a burning bush and Satan used the snake as an avatar in the Garden of Eden. Extending the analogy, did Jesus enter the simulated world as himself somehow or did he just create a flesh-costume avatar to inhabit, or invade the consciousness of an existing simulant, for his trip through the mortal world? The 2003-2005 CBS television series *Joan of Arcadia* [43] had God appear to and converse with the main character in the form of a recurring cast of ordinary looking people; the premise was established in the lyrics of the theme song, “One of Us” by Joan Osborne [44]: What if God was one of us? / Just a slob like one of us / Just a stranger on the bus / Trying to make his way home.

The point is that a God or Ultimate Creator (i.e. the first creator) is unable to interact on the same ontological level as that which it has created. An Ultimate Creator will always

exist on a broader plane that its creations can never experience because they are trapped in the first order simulation designed by the Creator. Furthermore, an “Ultimate” Creator must be self-generating (willing itself into existence), so we cannot interact with anything but a pure *will* since the Ultimate Creator could have no essential physical manifestation to be bound by.

As above, the questions regarding the existence and nature of God are timeless, but the concepts of simulation and telepresence can help us think them through in new ways.

**5.2.2. Power, free will and moral responsibility.** The degree of power and control of a simulation creator is inversely proportional to that of those who live in the simulation. In the Avatar and Infinite Regression scenarios, a “sim” or occupied entity has no power to execute decisions or be anything more than a simple pawn living out a destiny crafted by the interaction between programmer and player. Although Sims characters are certainly less complex than authentic humans, they present an apt metaphor for demonstrating that the belief in an omnipotent divinity precludes the possibility of free will in the absolute sense. Imagine that you have created a simulated human being in the game. You have determined their “personalities, skills, and appearance” [40] as well as the activities they pursue and the situations they encounter. Are you and you alone not responsible for the fate that befalls the simulations you have created? Even without having programmed the game, your awareness of its parameters and knowledge of possibilities and potential outcomes grants absolute power over your creations. Of course, to be both player and programmer (true omnipotent Godliness) earns you even more responsibility for the fate of your simulations. Note that we might mistakenly believe we’re in control just as the characters in the videogame are apparently unaware of any influence that the gamer exerts over their lives but that doesn’t change the reality. The implication of these scenarios for morality is drastic: If we are not our own masters, then we are logically not responsible for the apparent moral choices that we make. With powerlessness comes absolution from responsibility and with omnipotence comes complete responsibility.

In the Physical Presence and even the Intercept scenarios, the creator sets the parameters of experience but takes a more “hands-off” approach; they have determined our minds, bodies, and environments and stepped back to watch what happens. We have at least a degree of free will and thus responsibility for our actions but the Creator retains significant responsibility for what occurs. If I stand a string of dominoes on their sides and then nudge the first one, what should I expect to happen?

Following this line of reasoning, if the designer of a simulation was to create that simulation within another simulation without knowing it (the Infinite Regression scenario), his/her moral responsibility would logically be diminished since the actions that were performed were

permitted by the designer who created the encompassing simulation. Therefore, the primary designer bears a moral responsibility not only for his/her own simulations, but the simulations that are created within them.

In the case of the Android simulation scenario, it could certainly be argued that creating an android is akin to creating a child, and the power and responsibilities commensurate (that’s the premise of a *Star Trek: The Next Generation* episode titled “The Offspring” in which Data “constructs” a daughter [45].

**5.2.3. The morality of revealing the simulation.** If we are living within some type of simulation, even a most pleasant one, is it moral to reveal the truth? In general the answer would seem to be yes. Griswold [46] poses the issue this way: “Does true happiness depend on some knowledge of reality, or if we feel ourselves to be happy may we rightly declare ourselves to be happy in fact?” (p. 130). Presuming that it is moral to cause happiness rather than suffering it is important to make the correct choice. Ultimately, he concludes that happiness is contingent upon a “right understanding of reality – the reality about oneself and about what is truly the case in the world” [46, p. 135] because false understanding is temporary and will ultimately be revealed to result in an unhappy state of cognitive dissonance. Maintaining this approach becomes more difficult when the simulation is idyllic [47] notes the many warnings in *Star Trek* regarding the addictive and corruptive power of illusions) and the reality is horrific (as in *The Matrix* films).

A particularly sharp challenge is presented in the Monism simulation scenario because the entities within the simulation have the false belief that they are a distinct and separate entity in possession of an independent mind interacting in an exterior environment when in fact they are all figments of the imagination of a single consciousness. If even one of the entities came to the knowledge of the true nature of their ontological status they would all cease to exist, since knowledge cannot be simultaneously repressed and consciously acknowledged. Thus, an “individual” entity within the simulation has the potential to dissolve the simulation (and with it the universe since nothing is presumed to exist outside of the sole consciousness) by recalling the truth that he/she is connected with all others as part of the same singular mechanism of awareness. Is the destruction of the simulation an immoral act because it obliterates the illusion of separateness that lent the feeling of consciousness to the multitudes, or is it a moral act because it uncovers the truth about how things really are? Extreme cases such as these, while obviously hypothetical and fanciful, help us untangle conflicting moral principles.

### 5.3. Death and mortality

Is telepresence technology an avenue of escape from mortality? Should it be developed in this direction? If, as in some of the scenarios described above, physical bodies have

reduced or completely negated importance, could we hypothetically extend our lifespan indefinitely within the context of a simulation or through the development of cyborg technology?

Some of the simulation scenarios portray death as something that has the potential to be only a limited threat. In the Avatar, Android and Intercept scenarios, the physical body plays either a fleeting or very limited role in existence.

For the “invading consciousness” of an Avatar, the body is a temporary corporeal vessel that can be replaced (a concept dramatized in the 2009 episode of the *Dollhouse* series titled “Haunted,” in which the main character is “imprinted with the memories of a deceased person, who wants to solve her own murder” [48]. The Avatar simulation scenario is quite consistent with the common belief in reincarnation.

In the Android scenario, the body takes on the quality of a machine that is completely serviceable, with nano and/or other technology that restores atoms and molecules to their prior arrangements curing everything from blunt-force trauma to cancer and postponing death indefinitely.

If our experience is intercepted and replaced via technology, our body plays only a limited role and exists only to support the functioning of the brain. In that scenario, life could be extended and fatal accidents or incidents resulting from bodily trauma could be prevented. In the *Matrix* films, however, actual death persists within the simulation. Morpheus notes that death in the Matrix is true death because “[t]he mind makes [the experience of death] real.” This does not need to be the case, though, since Neo dies in the Matrix and comes back to life, based on his understanding that the experiences of the simulation are not authentic (the same logic is used in the 1968 “Spectre of the Gun” episode of *Star Trek* [49], in which Spock uses a “Vulcan mind meld” to relay his conviction that the crew’s current experiences are only in their minds and that the bullets they will soon encounter are mere shadows or spectres).

Finally, in the Monism scenario death is only an illusion because it presents a set of circumstances in which non-existence is impossible. If we are all part of the same single consciousness, we cannot truly die unless that consciousness dies, and since it has no physical manifestation it has no reason and, perhaps, no avenue to expire. Although within the simulation, death seems real enough because bodies become inanimate and decay, the consciousness which inhabits them merely passes into the common reservoir to be manifested elsewhere. In this sense, apparent death by old age or disease might actually be the passing of old thoughts and memories just as apparent death by violence or warfare might actually be internal conflict within the common consciousness.

In each of the simulation scenarios then, we find potentially comforting interpretations of death.

## 5.4. Implications for designing telepresence experiences

Although much of the value of considering simulation scenarios in the context of telepresence concerns new ways of approaching the issues just discussed, there are also some important implications concerning the design of effective telepresence experiences.

The dramatic portrayals of people unknowingly existing within one of the simulation scenarios and the ways they are shown to uncover the illusion, provide clues for us to design effective illusions. For example, while in most cases it’s not possible (or ethical) to keep those in a simulation from being aware that they’ve entered one, we can make their entrance less obvious: instead of transporting them into a simulated world while they’re asleep or unconscious, we can minimize their awareness by slowly introducing elements of the simulated world before they enter (see [50]) and by using darkness and distraction. While we can’t remove awareness by fooling them into thinking they’ve left a simulation when they haven’t (as in the “Ship in a Bottle” episode of *Star Trek: The Next Generation* [30]), we can avoid reminding them they’re in a simulation by eliminating obvious, even trivial, inconsistencies and anachronisms, by not letting them encounter seams and edges of the simulated world (e.g., by making the environment a continuous loop), and by establishing rules of interaction that people are used to and then sticking with them, not allowing users to ‘hack’ the simulation by discovering unplanned affordances (e.g., being able to fly without explanation).

Even using today’s technologies, those who create simulations are increasingly “God-like,” and that carries with it significant responsibility to act morally toward 1) the people who will enter our simulations (e.g., to inform them about the nature of their experience, to treat them with respect, to not harm them) and, 2) especially as AI becomes more sophisticated, the artificial entities we create. As “God-like” creators we should attempt to be moral by always considering the perspective of the users and inhabitants of our simulations.

However, it may be that the most important practical implication of this paper relates to the Monism scenario. As networking technology has progressed from giant Interface Message Processors, to computer terminals, to laptop computers, to handheld devices, to items that attach to the body (e.g. Bluetooth), it becomes increasingly clear that the next step in the evolution of the internet is an internalization of the technology. As microchips shrink to the size of blood cells, the idea of sending email or text messages by the simple act of thinking becomes closer to a reality. If this happens, it will be no stretch to say that human brains are networked into the single, massive consciousness referenced in the Monism scenario (and much science fiction). In that reality, the effective design of (tele)presence experiences would be limited only by the imagination as the incidental

aspects of generating the illusion melt away into pure cognitive interaction unencumbered by external hardware.

## Conclusions

Like the clock, locomotive and computer in the past, today's quickly advancing telepresence technologies provide a powerful metaphor for the nature of our world and ourselves. The metaphor and its variations are seen in scholarly considerations of the "simulation argument," which holds that we exist within a computer generated simulation, along with many intriguing portrayals in popular culture (especially science fiction).

It is easy for presence scholars and practitioners to get involved in the details of creating and understanding telepresence experiences, but it is important and valuable to take a step back to acknowledge the power of the metaphor of current and future telepresence simulation technologies and apply it to our beliefs about the mysteries of our world and ourselves. The benefits include new ways to think about timeless questions regarding the nature of being, religion and morality, and death and mortality, as well as practical guidelines for the design of effective simulations. On a personal level, the implications of the various versions of the simulation metaphor are likely to have the positive effect of making us think about the "big picture," to not just accept our experience for what it seems to be but to be skeptical and open-minded about the possibilities in our lives, to not just "attribute to [our experience] an independent reality and thereby alienate our own freedom" as Lawler [42] put it, but to work harder to exercise our own "God-like" power to improve our world and lives.

## References

- [1] M. Lombard, & T. B. Ditton. (1997). At the heart of it all: The concept of presence. *Journal of Computer-Mediated Communication*, 3(2). Available: <http://www.ascusc.org/jcmc/vol3/issue2/lombard.html>
- [2] W. Durant. (1991). *Story of Philosophy: The Lives and Opinions of the World's Greatest Philosophers*. New York: Pocket.
- [3] D. Robinson, B. Mayblin, (2004). *Introducing Empiricism*. London: Totem Books.
- [4] D. Edge. (1974). *Technological Metaphor and Social Control*. *New Literary History*, 6(1), 135-147.
- [5] J. T. Fraser. (1975). *Of Time, Passion, and Knowledge. Reflections on the Strategy of Existence*. New York: George Braziller, Inc.
- [6] J. H. Lienhard. (2001). *Where science and information management meet*. For the Special Libraries Association Business and Finance Division Annual Conference, San Antonio, Texas, June 12, 2001. Retrieved July 24, 2009 from <http://www.uh.edu/engines/science&information.htm>
- [7] J. C. Marshall. (1977). Minds, Machines and Metaphors. *Social Studies of Science*, 7(4), 475-488.
- [8] N. Bostrom. (2003). Are You Living in a Computer Simulation? *Philosophical Quarterly*, 2003, 53(211), 243-255. Retrieved July 24, 2009 from <http://www.simulation-argument.com/simulation.html>
- [9] B. Dainton. (2002). *Innocence Lost: Simulation Scenarios: Prospects and Consequences*. Retrieved on July 1, 2009 from <http://www.simulation-argument.com/>
- [10] T. Fleet. (2007). *Consciousness and the different types of simulation*. Retrieved July 1, 2009 from [http://www.simulism.org/Consciousness\\_and\\_the\\_Different\\_Types\\_of\\_Simulation](http://www.simulism.org/Consciousness_and_the_Different_Types_of_Simulation)
- [11] I. Jansch. (n/d). *Welcome to the machine, part 5: Simulation taxonomy*. Retrieved July 1, 2009 from <http://ieet.org/index.php/IEET/print/3136/>
- [12] International Society for Presence Research. (2000). *The Concept of Presence: Explication Statement*. Retrieved July 26, 2009 from <http://ispr.info/>
- [13] M. Lombard, M. Selverian, K. Horvath, S. B. Park, & H. S. Hwang. (n/d). *Telepresence in popular culture: A study of portrayals of presence*. Retrieved July 29, 2009 from <http://lombardresearch.temple.edu/p4/>
- [14] StarTrek.com: *Holodeck*. (n/d). Retrieved on June 19, 2006, from <http://www.startrek.com/startrek/view/library/technology/article/105222.html>
- [15] *Science Brief: Holodeck Prototypes – Useful AND Fun!* StarTrek.com. Retrieved on June 19, 2006, from <http://www.startrek.com/startrek/view/news/article/123466.html>
- [16] J. Bell. (2005). *Holodeck and Computers FAQ*. Retrieved on June 19, 2006, from [http://www.calormen.com/Star\\_Trek/FAQs/holodeck-faq.htm](http://www.calormen.com/Star_Trek/FAQs/holodeck-faq.htm)
- [17] K. Cowing. (2002, March 8). *Science Brief: Holodeck Prototypes – Useful AND Fun!* Retrieved on July 1, 2009 from <http://www.startrek.com/startrek/view/news/article/123466.html>
- [18] *The Truman Show*. (1998). Paramount Pictures.
- [19] R. Descartes. (2004/1641). *Meditations Of First Philosophy*. Whitefish, Montana: Kessinger Publishing.
- [20] *The Matrix*. (1999). Warner Brothers. <http://whatisthematrix.com/>
- [21] C. Korsmeyer. (2002). Seeing, believing, touching, truth. In W. T. Irwin (Ed.), *The Matrix and Philosophy, Welcome to the Desert of the Real* (pp. 41-52). Chicago: Open Court.
- [22] J. J. E. Gracia, J. J. Sanford. (2002). The metaphysics of The Matrix. In W. T. Irwin (Ed.), *The Matrix and Philosophy, Welcome to the Desert of the Real* (pp. 55-65). Chicago: Open Court.
- [23] The Sims. (n/d). Retrieved on June 19, 2006 from <http://thesims.ea.com>
- [24] M. Yi. (2004). Revising original Sims: Electronic Arts creates new version of popular game. *San Francisco Chronicle*, September 7. Retrieved June 19, 2006, from <http://www.sfgate.com/cgi-bin/article.cgi?file=/chronicle/archive/2004/09/07/BUGLF81UN21.DTL>
- [25] *Ghost in the Shell*. (1995). Bandai Visual Company.
- [26] *Blade Runner* (1982). Warner Brothers. <http://bladerunnerthemovie.warnerbros.com/>
- [27] *The Thirteenth Floor*. (1999). Columbia Pictures.

- [28] Plato, R. Kamtekar, D. Lee. (2003). *The Republic*. Penguin Classics.
- [29] W. T. Irwin. (Ed.) (2002). *The Matrix and Philosophy, Welcome to the Desert of the Real*. Chicago: Open Court.
- [30] StarTrek.com: Ship in a Bottle. (n/d). Retrieved on June 19, 2006, from <http://www.startrek.com/startrek/view/series/TNG/episode/68582.html>
- [31] StarTrek.com: Homeward. (n/d). Retrieved on July 28, 2009, from <http://www.startrek.com/startrek/view/series/TNG/episode/68636.html>
- [32] M. Slater, A. Steed, (2000). A virtual presence counter. *Presence: Teleoperators and Virtual Environments*, 9(5), 413–434.
- [33] Memory-alpha.org: Requiem for Methuselah. (n/d). [http://memory-alpha.org/en/wiki/Requiem for Methuselah \(episode\)](http://memory-alpha.org/en/wiki/Requiem_for_Methuselah_(episode))
- [34] M. Brannigan. (2002). There is no spoon: A Buddhist mirror. In W. T. Irwin (Ed.), *The Matrix and Philosophy, Welcome to the Desert of the Real* (pp. 101-110). Chicago: Open Court.
- [35] Memory-alpha.org: The Measure of a Man. (n/d). [http://memory-alpha.org/en/wiki/The Measure Of A Man \(episode\)](http://memory-alpha.org/en/wiki/The_Measure_Of_A_Man_(episode))
- [36] M. J. Murray, M. Rea. (2008). *An Introduction to the Philosophy of Religion* (Cambridge Introductions to Philosophy). Cambridge University Press.
- [37] W. L. Rowe. (2006). *Philosophy of Religion: An Introduction (Edition 4, revised)*. Wadsworth/Thomson.
- [38] Castaneda, C. (1998). *The Active Side of Infinity*. New York, NY: HarperCollins Publishers.
- [39] *The Matrix: Reloaded*. (2003). Warner Brothers.
- [40] The Sims: About the Sims. (n/d). Retrieved on July 29, 2009 from <http://thesims.ea.com/us/index.html?menu=about&content=about/index.html>
- [41] G. Bassham. (2002). The religion of *The Matrix* and the problem of pluralism. In W. T. Irwin (Ed.), *The Matrix and Philosophy, Welcome to the Desert of the Real* (pp. 111-1265). Chicago: Open Court.
- [42] J. Lawler. (2002). We are (the) one! Kant explains how to manipulate the matrix. In W. T. Irwin (Ed.), *The Matrix and Philosophy, Welcome to the Desert of the Real* (pp. 138-152). Chicago: Open Court.
- [43] *Joan of Arcadia* (n/d). Internet Movie Database. Retrieved July 30, 2009 from <http://www.imdb.com/title/tt0367345/>
- [44] J. Osborne. (1995). *One of Us* [song]. Written by Eric Bazilian of The Hooters. Album: Relish produced by Rick Chertoff.
- [45] StarTrek.com: The Offspring. (n/d). Retrieved on July 28, 2009, from <http://www.startrek.com/startrek/view/series/TNG/episode/68434.html>
- [46] C. L. Griswold. (2002). Happiness and Cypher's choice: Is ignorance bliss?" In, W. T. Irwin (Ed.), *The Matrix and Philosophy, Welcome to the Desert of the Real* (126-137). Chicago: Open Court.
- [47] K. Sanes, (n/d). *Star Trek and the New Myth of the Machine*. Retrieved on July 31, 2009 from <http://www.transparencynow.com/startrek/startrek1.htm>
- [48] Imdb: Dollhouse: Haunted. (n/d). Retrieved on August 25, 2009 from <http://www.imdb.com/title/tt1356319/>
- [49] Memory-alpha.org: Spectre of the Gun. (n/d). [http://memory-alpha.org/en/wiki/Spectre of the Gun](http://memory-alpha.org/en/wiki/Spectre_of_the_Gun)
- [50] D. Nunez, E. Blake. (2003). Conceptual Priming as a Determinant of Presence in Virtual Environments. *Proceedings of the 2nd International Conference on Computer Graphics, Virtual Reality, Visualisation and Interaction in Africa (AFRIGRAPH)*, 101-108.