An Examination of the Human Soul that Dwells within the Machine as Exemplified by The Ghost in the Shell

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English

Abstract:

Since the 1980s Japanese anime — a.k.a. Japanimation — for TV and movies has rapidly been a movement growing worldwide with widespread, significant, and diverse effects. Among other anime filmmakers, Hayao Miyazaki (b. 1941) and Mamoru Oshii (b. 1951) have internationally been considered the most prominent and ingenious. While Miyazaki chooses to focus on either foreign or domestic mythological themes, Oshii prefers to explore the theme of futuristic cyborgization.

Oshii's 1995 anime *Ghost in the Shell* adapted from Shirow Masamune's manga gained critical acclaim in the global arena and still remains popular with international anime viewers. My research will focus on the significance of humanness in a cybernetworked society of the future. It is worth considering how full cyborgization of the human body and even mind will turn out. What does the ghost in the machine, or the ghost in the shell, suggest?

Key words:

ghost, cyborg, cybernetic body, infinity, mirror images, alterity

Despite the advent of Darwinian materialism, Cartesian body-mind dualism has been embedded in our consciousness for over three hundred years. Among other disagreements, the emerging discipline of biosemiotics has begun to pave the way for a new constructive, insightful approach to the life processes living organisms carry out in order to survive and evolve on Earth. Indeed, biosemiotics provides us a scientific perspective on the complexity of life processes so much so that we can understand how components of the body interact and communicate at the molecular level. The living organism, biosemiotics argues, is much more than a mere machine, the fact of which is perhaps most relevant concerning human beings. The relatively new concept of "body-mind" serves as a guideline for the exploration of life and humanity. In his article, "The *Semiosic* Body-Mind", the Danish biochemist and semitotician Jesper Hoffmeyer notes:

> The semiotisation of nature has as a consequence that body-mind dualism falters and that the obstinately guarded borderline between human and natural sciences become riddled. Just as organisms cannot be understood as if they were just sophisticated computers, the human mind cannot be understood as if it had no body. All bodies are minded and all minds are embodied (*Cruzeiro Semiótico* 22-25).

This emphasis on the interconnectedness of body and mind strongly suggests that the classical body-mind distinction is irrevocably collapsing.

For clarity's sake, the term "semiosic" -not semiotic- in the title of Hoffmeyer's article should be defined. It can simply be interpreted as "sign-producing". The word is derived from another Greek-origined word "semiosis". In "Pragmatism" (1907) Charles Sanders Peirce (1839-1914), an American scientist and philosopher, introduced *semiosis* into the academic language of cognitive science, in which this term plays a crucial role in his theory of cognition. *Merriam-Webster* defines it as:

> Semiosis: a process in which something functions as a sign to an organism (circa 1907): New Latin, from Greek sēmeiōsis observation of signs, from sēmioun to observe signs, from sēmeion.

This term has extensively been introduced into related academic areas such as semiotics and, later, biosemiotics.

In this paper, I will examine the way in which this body-mind interrelatedness is illustrated by emerging popular perceptions and views of both cyborgs and cyborgization of humans. In so doing, I will focus on the groundbreaking and internationally acclaimed Japanese anime film, *Ghost in the Shell* (1995) directed by Mamoru Oshii. The film centers around a character called Motoko Kusanagi, a female cyborg with an implant made of human brain cells who, while being recognized as a highly competent warrior fighting terrorism, begins to feel encouraged or urged, by an entity unknown to her, to dive into her mind or inner world. The most crucial issues in this film are whether cyborgs possess souls, and if so,

how they are aware of their souls. In other words, does the ghost exist in the machine, or rather, as the film's title suggests, does it in "the *shell* (inorganic body)"? And how are they interrelated?

Hoffmeyer's insightful description of bodies as "minded" and of minds as "embodied" opens up a new, exciting avenue for examining how mind and body invariably and inextricably interact with and interpenetrate one another. Although this analysis primarily refers to the nature of human existence, both corporeal and incorporeal, it can also be applied to the possible cyborg nature that will come into being in the not so distant future. Indeed, it is most likely that biocybernetics will make it possible to overcome existing clearly identifiable boundaries between human and machine.

Traditionally there is a clear division between mind and body or human and machine as typified by Cartesian dualism. On the other hand, humanist scholars of the Twentieth century such as Gilbert Ryle, an Oxford philosopher who harshly criticized Cartesian dualism because of its simplistic and materialistic separation between the two, emphatically argued for their inseparability. One of his major works, *The Concept of Mind* (1949), is a critique of the notion that the mind is distinct from the body. He also accused the American psychologists B. F. Skinner's and John B. Watson's behaviorism of disregarding consciousness, while paying too much attention to observable behavior. Ryle opposed to this kind of naive materialism. He asserts:

> . . . one person could in principle never recognise the difference between the rational and the irrational utterances issuing from other human bodies, since he could never get access to the postulated immaterial causes of some of their utterances. Save for the doubtful exception of himself, he could never tell the difference between a man and a Robot. . . . According to the theory, external observers could never know how the overt behaviour of others is correlated with their mental powers and processes and so they could never know or even plausibly conjecture whether their applications of mental-conduct concepts to these other people were correct or incorrect (*The Concept of Mind 22*).

He derogatively described Cartesian dualism as "the Ghost in the Machine" (17). For him Cartesians and behaviorists view the human mind as an imaginary entity incarcerated in the physical body and thus disregard the interrelatedness of mind and body, which he argued serves as the foundation of human existence.

Ryle is not said to have denounced his contemporary, mathematician Norbert Wiener, whose theory of cybernetics was coming into fruition at that time. Yet Ryle would show disapproval of artificial intelligence theorized by the cybernetician and state that Wiener put the ghost in the machine. Interestingly, the same wording appeared some fifty years after in Pete Barlas' book review of a biography of Wiener, *Dark Hero of the Information Age: In Search of Norbert Wiener, the Father of Cybernetics,* coauthored by F. Conway and J. Siegelman. Barlas was so impressed with Wiener's extraordinary

intelligence in a slightly negative or critical way that he chose that title for his review.

Interestingly again, Ryle's concept of the ghost in the machine evolved to take a different tone after two decades. Receiving inspiration from his book, the Hungarian-British writer and journalist Arthur Koestler wrote *The Ghost in the Machine* (1967) but, unlike Ryle, he adopted a neither negative nor positive but rather realistic stance. In the 1960s when the Cold War was turning hot again in Vietnam after the Korean War, he envisioned the threat of nuclear war. He believed that despite the continuing development of science and technology, the human world naturally possesses both the potential to advance and regress. By emphasizing the idea of infinity he argued that it is necessary for human beings to be aware of the unlimited multiplicity of the human world. He observes:

> Consciousness has been compared to a mirror in which the body contemplates its own activities. It would perhaps be a closer approximation to compare it to the kind of Hall of Mirrors where one mirror reflects one's reflection in another mirror, and so on. We cannot get away from the infinite. It stares us in the face whether we look at atoms or stars, or at the becauses behind the becauses, stretching back through eternity. Flat-earth science has no more use for it than the flat-earth theologians had in the Dark Ages; but a true science of life must let infinity in, and never lose sight of it. In two earlier books I have tried to show that throughout the ages the great innovators in the history of science had always been aware of the transparency of phenomena towards a different order of reality, of the ubiquitous presence of the ghost in the machine—even such a simple machine as a magnetic compass or a Leyden jar. Once a scientist loses this sense of mystery, he can be an excellent technician, but he ceases to be a *savant* (underline mine, *The Ghost in the Machine* 219-220).

His view of the ghost in the machine is open to the world beyond physical reality, that is, "a different order of reality" in which the mysteries of life and existence abound so productively that both nature and society may develop with a mixture of apparent progress and regression. More important, the notions of infinity and mirror in relation to the ghost in the machine in this excerpt play a key role in my subsequent analysis of the anime The *Ghost in the Shell*.

While writers, critics and scholars have philosophically argued about the relationship between mind and body and where soul and matter meet, scientists have successfully developed cybernetics and bioengineering. In fact, science and technology have yet to develop in order to produce cyborgs that are as physically and intellectually capable as humans, or even superior to them. Nevertheless, emerging sciences such as biological cybernetics and biological nanotechnology promise the possibility of creating super-powered cyborgs and of cyborgizing humans. The British cyberneticist Kevin Warwick's recent surgically invasive human enhancement experiments known as *Project Cyborg* that began in 1998 has demonstrated that by implanting a microchip in the body humans can be cyborgized, at least partially. Although his scientific adventure was extremely risky, it is in line with the posthumanist conception of cyborgs as a radical form of body metaphor. His experiments predict the emergence of a new kind of

human body and ontology and perhaps transformation of the traditional concept of humanity posthumanism seems to seek. It is likely that poshumanism will provide the point of intersection between philosophy and science so that the cyborg as a technologically enhanced human represents a new state of being, which remains debatable and even controversial. But sci-fi novels, manga and anime have already begun to explore this state of being.

The Ghost in the Shell, an anime canon applauded by international viewers, exemplifies the cyborg as a product of the best possible human intelligence, creativity and imagination. The narrative begins with sudden and unexpected attacks by cyberterrorists against Japan in the year 2029. Consequently, a series of investigations are initiated by the Internal Affairs section of the Public Security Bureau. A squad leader of the Bureau is the physically and intellectually high-powered female cyborg called Kusanagi, who is almost fully cyborgized with only a small chunk of organic brain cells left intact. Her squad pursues the cyberterrorist group with unexpected consequences. Subsequent investigations gradually reveal that the cyberterrorists' ringleader, the Puppet Master, who masterminded the attacks is in fact a virtual entity born in the vast sea of the cybernetwork. It also becomes apparent that both the Japanese government and military are involved in these crimes; their top secret project to develop cyber control systems has gone very wrong, resulting in the emergence of a maladjusted mastermind hacker known as The Puppet Master. Moreover, it turns out that another section of the Bureau dealing with foreign affairs has been obstructing her team's investigations in order to cover up for the government and military. This results in the investigations by Kusanagi's squad becoming more complex and extremely difficult.

Most surprisingly, but crucially, *Ghost in the Shell*, whilst appearing to highlight cyber warfare and cyberterrorism, centers around the theme of the cyborg's unexpected encounter with its hidden soul. The final sequence of the film unexpectedly suggests that the protagonist, while portrayed as the technologically idealized cyborg, feels compelled to begin a new journey in order to touch her own soul lurking inside a chunk of brain tissue of her full cyborg body. Therefore, the title *Ghost in the Shell* suggests that her ontological status is spiritually delicate and mysterous. On the other hand, the Puppet Master claims that their ghosts have something in common and wants to merge. Despite her resistance, the protagonist herself feels that their fusion is inevitable. In the film's conclusion, these two irreconcilable opponents unite their ghosts. The film's foregrounding of her internal journey toward her own spirituality and the amalgamation of both ghosts encourages the viewer to perceive the cybernetwork as a visual externalization of the mysterious cyborg mind with its growing thirst for spiritual identity. Near the end of the film, the fierce battle between the two ghosts with disposable bodies results in the loss of her original cyborg identity. Having merged with the Puppet Master's ghost, she leaves her colleagues behind and disappears into the vast sea of the network. This implies the beginning of her initiation into a spiritual world.

In an era of biotechnological and technoscientific possibilities, when a cybernetwork permeates the entire world, communication seldom occurs on an interpersonal basis. This is because by plugging themselves into nearby input/output terminals every communication participant can be readily connected to the worldwide network. Their selfhood and subjectivity are destabilized and lost into a world of pan-global cyber-connectivity. For the posthumanist cleansed of selfhood and subjectivity, communication can be unlimitedly enhanced and supported by the use of advanced technologies. But this technologized future is likely to come with a great cost; the demise of interpersonal interaction and denial of the soul.

The posthumanist may consider the protagonist of the film, Kusanagi, an ideal posthuman since among other characters, she is able to successfully interact with her rapidly changing network environment through environmental sensing. In truth, she represents the successful embodiment of the biotechnological concept of "data made flesh" which has been explored by such scholars as Eugene Thacker, Robert Mitchell and Phillip Thurtle. Thacker describes this concept as,

> [a] primary moment that characterize[s] this intersection between biotech and infotech [which] has to do with the "translatability" between flesh and data, or between genetic codes and computer codes ("Data Made Flesh: Biotechnology and the Discourse of the Posthuman" 90).

The research of this area effectively essentializes and reduces the body to a mass of digitalized biological data which matches the posthumanist description of the body. As a result, a cyborg's communication in cyberspace can be conducted succinctly and effectively.

But is Kusanagi satisfied with her cyborgized body and mind? If yes, why does she look so sullen and unhappy throughout the film narrative? Her constantly brooding appearance strongly suggests that she is dissatisfied with the sterility of excessive productivity and ultimate convenience of the electronically networked environment of which she is a part. When talking to Togusa, a male squad colleague on a terrorists search mission, she laments her extreme adaptability to this environment.

> If we all reacted the same way, we'd be predictable. And there's always more than one way to view a situation. . . . It's simple. Overspecialize and you breed in weakness. It's slow death (Ch. 3 of the DVD version of *The Ghost in the Shell*).

And she even appears to envy his lack of cyborgazation, saying:

> . . . except for the slight brain augmentation, your body's almost completely human (Ch. 3).

As early as this stage of the film's narrative, she begins to question -whether inadvertently or not- her own identiy.

Cyborgs could be considered "posthumans" who are usually defined as a symbiosis of human and artificial intelligence. Posthumanists such as Danna Haraway argue that the cyborg is liberated from the institutionalized concept of subjectivity and that they are able to demonstrate autonomy without being

subjugated in any way and interact freely with others, including animals, in dynamic environments.

But it is doubtful that Kusanagi enjoys being a posthuman in her present environment, for while being an acclaimed squad leader, she persistently isolates herself from the outside world in her private life; even in her public life she remains much less sociable than her colleagues. Her communication environment does not allow semiosis-the processes of sign-based meaning production-to evolve on its own. She always feels isolated and alone and thus gets more and more depressed. She moans about her cyborg identity.

> There are countless ingriedients that make up human body and mind. Like all the components that make up me as an individual with my own personality. Sure, I have a face and voice to distinguish myself from others. But my thoughts and memories are unique only to me. And I carry a sense of my own destiny. Each of those things are just a small part of it. I collect information to use in my own way. All of that blends to create a mixture that forms me . . . and gives rise to my conscience (Ch. 7).

After a moment's pause, however, she continues:

> I feel confined, only free to expand myself within boundaries.

To her disappointment, an inescapable sense of confinement permeates her inner world.

The nature of her claustrophobic situation stands in stark contrast to what Marshall McLuhan sees as a dominant characteristic of communication environments. In his analysis of communication dynamics he writes:

> [Communication] environments are not passive wrappings, but are, rather, active processes which are invisible. (*The Medium is the Message* 68)

The ways in which communication dynamics operates in McLuhan's communication theory correspond to those in which semiosis operates. What illustrates their similarities is the significant characteristics of semiosis which include great flexibility, spontaneity and creativity in responding to the situation of the moment. The Estonian semiotician Kalevi Kull notes:

> Since all components of semiosis are repeatedly rewritten, both the creation of new and the forgetting of old becomes possible (*Semiotica* 120.3-4: 303).

The communication environment in which Kusanagi is engaged is not as flexible and creative as both McLuhan and Kull argue. Apart from other cyborg characters, the protagonist alone appears to continue to be in a pensive mood because she feels compelled to struggle with the question of her own ghost, i.e. her soul or, plainly speaking, her identity-a new mode of her identity-that can support her so as to live and survive in the posthuman environment. But her present environment provided by the futuristic networked society in the film has deprived her of the opportunity to establish her own identity because in this

environment, semiosis does not operate in a way that helps her communicate actively with her own ghost. In other words, she struggles with her identity crisis and feels driven to search for a new, deeper identity in the posthuman environment that is unfavorable and even hostile to her. But once she has become aware of an insuppressible spiritual drive toward communion with her ghost, she seeks to undergo a radical identity metamorphosis.

Susan Napier sees Kusnagi's identity metamorphosis as a key theme of the film. She writes:

> . . . *Ghost in the shell* . . . turns inward in its exploration of the possibilities of transcending corporeal and individual identity (*Anime: from Akira to Princess Mononoke* 104)

Here Napier intuitively senses an undertone of spirituality in the film and perceives what is happening inside Kusanagi's cybernetic body and mind.

> Although outwardly unconcerned with origins, Kusanagi is profoundly concerned about whether she possesses something that she and the film call her "ghost," the spirit or soul that animates her being (107).

This spiritual quest serves as the leitmotif for the film. It should be noted that throughout the film, even in such scenes that display violence as entertainment, Kusanagi's almost obsessive determination to search for her ghost, her deeper soul, remains intact. While trying to seek out and destroy the enemy of society, i.e. the cyberterrorist group, Kusanagi, a leading member of the counter terrorism task force, inadvertently pursues an encounter with her ghost in the guise of the Puppet Master.

There is a deep connection between the Kusanagi and the Puppet Master. While the cyborg Kusanagi has a tiny amount of human brain cells implanted in her body, the Puppet Master is a purely digital entity created in the sea of digitalized information. In fact, this entity was initially a product of the latest computer technology manipulated by a government-led secret organization, but something went wrong and the entity became autonomous so as to develop, even evolve, by itself. And as the story unfolds, it turns out that these two characters are closely related to each other so much so that they end up merging.

How and why do they attract each other? The film's title implies that a creature made of inorganic materials can possess a soul in which his or her spiritual identity and dignity are embedded. Yet the search for the soul's abode necessitates a certain kind of awakening to the truth of humanity in the cyborgized body. Thus, it is necessary for her to face the extremely severe challenge to her status as a cyborg exlusively incarcerated in the networked society. This challenge is posed by the hacker Puppet Master since this criminal in the eyes of non-cyborg society has the intent of merging with her ghost, which the film refers to as "ghost hacking." Needless to say, this tyrannical act can be seen as spiritual usurpation. If the Puppet Master's ghost fuses with hers, it seems, his will dominate hers. In fact, as noted earlier, she needs the Puppet Master's ghost in order to seek out her own ghost. In other words, the Puppet Master

represents not a total stranger and enemy but one closely related to her own ghost, or even an integral part of her ghost itself.

There is something more important than this apparent interconnection between these two cybernetic and digital entities. It is the theme of infinity that unites them not externally but internally as they have chosen to live in a cybernetically structured society that is destined to expand itself without limit. Taking into account this unlimitedness, it appears that they both endlessly float in a sea of information. As Kusanagi, who has found a home temporarily in a child cybernetic body which her closest colleague, Bateau, bought her at a black market, says at the very end of the film, "The net is vast and infinite" (Ch. 14). In the previous chapter of the film in which subsequent to a fierce battle between them their merger takes place, the Puppet Master affirms their affinity and kinship to Kusanagi by asserting:

> We are more alike than you realize. We resemble each other's essence, mirror images of one another's psyche (Ch. 13).

Crucial to the theme of infinity are these mirror images that face each other, since this series of mirror images repeat themselves infinitely and endlessly in all parts and all scales. Just as consciousness in the earlier quote from Koestler is infinite and endlessly self-generating, so too are mirror images. Koestler likens consciousness to a "Hall of Mirrors where one mirror reflects one's reflection in another mirror" (219). In the film Kusanagi and the Puppet Master are depicted as being identical in appearance but also feeling an immediate, mysterious affinity with each other. Their internal connection the film revels can be seen as a metaphorical mirror image. Thus, the themes of infinity and mirror images are closely connected to each other.

In addition, realistic mirror images intensify the theme of infinity. Chapter 7 of the film depicts Kusanagi as enjoying scuba diving not just for fun but rather for spiritual healing as she is stressed out and desperately wants to find an answer. After exploring the ocean depths she returns to the surface and encounters the mirror image of herself. This mirror image shown on the screen does not represent a realistic mirror reflection but rather her yearning for her own ghost. By using another mirror image, Chapter 8 also graphically reveals this unquenchable yearning. She is going on a canal boat cruise and after a while finds her look-alike sitting at a cafe table inside the restaurant located along the shore. Kusanagi looks at her look-alike, or the other way around. In fact, the looker turns out to be the looked at, and both cannot be distinguished. The theme of a mirror image underlies the film so that it helps emphasize Kusanagi's compelling search for her ghost.

For clarity's sake, it needs to be noted that the apparent merger between Kusanagi and the Puppet Master merely predicts that both "ghosts" will find a home in the vast and infinite digital network. Yet it at least suggests hope exists for cybernetic bodies, or future humans in the posthuman era.

Initially, the endless self-generation of mirror reflections brings out the theme of infinity that sheds

light on the infinity of cyberspace in which finally Kusanagi has launched herself on a journey of discovery, into her own being. Furthermore, what the mirrors continuously reflect are the ghost images of the cybernetic and digital entities. These ghost images illustrate what Jean Baudrillard and Marc Guillaume describe as the figures of "radical alterity" whom the early 19th century West-led modernization marginalized through alienation. Consequently a new type of figure of alterity emerged with modernization. It is a product of modern exoticism that deprived them of their traditional fierceness and destructiveness. Guillaume notes that:

> the 19th century saw the first widespread expansion of exotic inspiration in literature and art. I see it as a terminal sign of the decline of the presence of the Other (*Radial Alterity* 47).

It was inevitable that in the modern world commercial tourism would begin to seek figures of artificial alterity that had replaced radical alterity. Since figures of radical alterity are gone, Baudrillard argues, the modern world has continued to produce counterfeits of a quality fit for use. He states:

> Starting with modernity, we have entered an era of production of the Other. It is no longer a question of killing, of devouring or seducing the Other, of facing him, of competing with him, of loving or hating the Other. It is first of all a matter of producing the Other. The Other is no longer an object of passion but an object of production. Maybe it is because the Other, in his radical otherness [*alterite*], or in his irreducible singularity, has become dangerous or unbearable. And so, we have to conjure up his seduction. Or perhaps, more simply, otherness and dual relationships gradually disappear with the rise of individual values and with the destruction of the symbolic ones ("Plastic Surgery for the Other", *Radical Alterity*).

Thus, the film seeks to depict the future resurrection of radical alterity figures in the belief that the posthumanist quest for identity and dignity necessitates such a figure who confronts and challenges the posthuman. For the posthuman Kusanagi, the Puppet Master epitomizes this figure of alterity. Traditional anthropology theorizes that to secure one's position in the community, one has to undergo an initiation rite such as a series of demanding, even life-threatening, tasks in preparation to achieve a higher state of mental and spiritual development. This ordeal is still applicable in the electronically wired world of Kusanagi.

Those who seek to live, thrive and survive in this futuristic world have yet to face the challenge of encountering a figure of radical alterity. The protagonist of the film who represents both a posthuman and a posthumanist constantly broods about her ghost because she acutely feels the need to ascertain her identity in the ubiquitously networked world which is too vast and expansive to adapt herself to. While other cyborgs are unaware of the mythic complexity of the network, the protagonist is repulsed by the idea of behaving like an artificial brain-equipped robot. She refuses to adopt the materialist view of the world and tries to look into the abode of her ghost and chooses to become aware of her connectedness with it.

Having undergone the ordeal of encountering the Other, Kusanagi deserves to be reborn into a new life. Near the end of the film (Ch. 13) in which she awakes as a child cyborg, she recites biblical sayings, which are a paraphrase of 1 *Corinthians* 13:11:

> When I was a child, my speech, feelings, and thinking were all those of a child. Now that I am a man I have no more use for childish ways.

Charles Solomon, a critic and historian of animation argues:

> Kusanagi's final quote from I *Corinthians* suggests that electronic evolution may compliment and eventually supplant organic evolution <http://www.amazon.com/Ghost-Shell-Atsuko-Tanaka/dp/6304493681>.

Obviously Kusanagi does not want to grow up to become a mature being in an ordinary sense. Rather, she is completely reborn into a new child-like cybernetic body, which symbolically demonstrates her commitment to the quest for higher spirituality.

In conclusion, *Ghost in the Shell* subtly portrays the complexity of mythology centered around the theme of human identity and existence. Beneath the surface glitter of digital imaging, there lies a deep mythic plane where the mythological and mysterious figure of radical alterity is anxious to confront and dominate the protagonist who embodies the conflict of the awakening of the soul. Confrontation with this figure of otherness awakens the inner pull towards a higher form of life that lies submerged in the protagonist's cyborgized body, which one might describe as a "ghost in the machine."

Technology does not simply imitate nature, but it is capable of helping posthumans and cyborgs perceive subliminally the mysteries of life and nature without the confines of the material world and beyond the confines of their disciplinary thinking. Although these posthumans are reinforced and enhanced by technologies, they may not be completely satisfied with their situation. This dissatisfaction is epitomized by the film protagonist's obsession with her "ghost," i.e. her thirst for spirituality. For her the vast cybernetwork, which the film depicts as a fathomless ocean, is no longer a static, lifeless system of organized electronic structures. It is as creative, dynamic and evolving as the life processes in nature that have been critically described and illustrated by biosemioticians. At the end of the film the protagonist adopts the new body and mind and thus ascends into a new state of being. Ready to go in quest of her own ghost, she courageously dives into the unknown, already aware of the fresh and hopeful perspective on the meaning of life the cyber environment will provide her. In other words, the representation of the cybernetwork ocean serves as a perceptual framework in which the cybernetic or cyborgized body with a thirst for spirituality will seek spiritual revelation or spiritual revival as the cyborg still possesses some remnant of humanity.

The cybernetwork the film depicts was pervaded by policing and disciplining by social control agencies, but at the end of the film it begins to symbolically represent the semiotic space where the image of a ghost in the machine inspires a subtle spirituality that will create a space for a lively, stimulating and productive semiosis and thus enable the achievement of a meaningful life in the cyborgized world of the future.

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