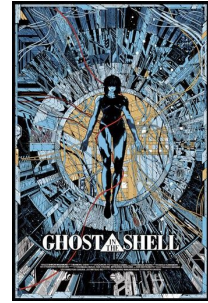


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Cyborg, an ultimate connection between
Experience, Network, and Information:
A Case Study Analysis of Motoko Kusanagi

Motoko Kusanagi is the iconic protagonist of *Ghost in the Shell*, an acclaimed Japanese cyberpunk media franchise. Initially serialized as a manga piece in 1989, *Ghost in the Shell* was originally written and illustrated by Japanese manga artist Masamune Shirow.¹ The series was cinematized into a cyberpunk film and released in 1995 by Japanese director Mamoru Oshii, animator Hiroyuki Okiura, and animation studio Production I.G. This case study analysis draws most of its discussion from the version of Motoko Kusanagi in the feature animated film *Ghost in the Shell, 1995*, among the entire franchise.

Major Motoko Kusanagi is a fictional character in the fictional universe of *Ghost in the Shell*. Professionally, she is a public-security agent and the field commander of Public Security Section 9, an anti-cybercrime law-enforcement division of the Japanese National Public Safety Commission. In short, she's a secret government agent. Biologically, she is a woman who was born as a human and has increasingly replaced her organic body parts with extraordinarily capable mechanical parts. In essence, she's "a synthetic 'full-body prosthesis' augmented-cybernetic human."² Or, she's a cyborg.

¹ Wikipedia. "Ghost in the Shell" https://en.wikipedia.org/wiki/Ghost_in_the_Shell

² Wikipedia. "Motoko Kusanagi" https://en.wikipedia.org/wiki/Motoko_Kusanagi

Cyborg is born as an Experience

A cybernetic organism, or a cyb-org, is a hybrid of machine and organism. Motoko Kusanagi embodies within herself the "historical transformation" between machine and organism.³ By the late twentieth century, "[humans] are all chimeras, theorized and fabricated hybrids of machine and organism; in short, we are cyborgs. The cyborg is our ontology; it gives us our politics" (Haraway, 457). The cyborg has become a concept and a metaphor in identity politics. Kusanagi takes this ontology and fully manifests within herself the intangible possibilities of cyborg existence. She lives as an actual cyborg in the blurred boundary between the dreams and realities of the new chimeras. The cyborg contains within herself both the imaginations and actualities of a revolutionary evolution.

A cyborg is "a creature of social reality as well as a creature of fiction. Social reality is lived social relations, our most important political construction, a world-changing fiction" (Haraway, 456). A cyborg intersects the actual and the virtual realms as much as the mechanical and organic realms, as its experience of social reality resides at the convergence of the real and the unreal. Social relations are profound fiction that render factual through lived experiences. "The cyborg is a kind of disassembled and reassembled, postmodern collective and personal self," just as any other existence that resides within the webs of social realities.

³ Haraway, Donna. A Cyborg Manifesto: Science, Technology, and Socialist-Feminism in the Late Twentieth Century. 1985. Socialist Review. Page 457

Experience has two meanings as a keyword: (i) knowledge gathered from past events, whether by conscious observation or by consideration and reflection; and (ii) a particular kind of consciousness, which can in some contexts be distinguished from 'reason' or 'knowledge.'⁴ Both meanings share the pivotal elements that are the subject who gains or accepts the experience and the object that causes or offers the experience. In both cases, the experience is prompted by something other than the subject, whether by an environment, activity, situation, or entity. Then, the experience is highlighted and accepted by the subject.

The cyborg's experience shares its fundamentally political residency in the reality of constructed social relations with women's experience. "The cyborg is a matter of fiction and lived experience that changes what counts as women's experience in the late twentieth century. This is a struggle over life and death, but the boundary between science fiction and social reality is an optical illusion."⁵ A cyborg is an experience which relates to that of women.

Motoko Kusanagi is a significant case because she is not only both a woman and a cyborg simultaneously but a female cyborg at once in her combined identity. Kusanagi was born a woman and became a cyborg, but she lives within the fused, singular identity of a cyborg-woman. Motoko Kusanagi is at the junction of the already intersectional experiences of a cyborg and a woman.

⁴ Raymon Williams, "E," *Keywords: A Vocabulary Of Culture and Society*, page 83

⁵ Haraway, Donna. *A Cyborg Manifesto: Science, Technology, and Socialist-Feminism in the Late Twentieth Century*. 1985. *Socialist Review*. Page 457

Cybernetics dreams of Network; Cyborg lives in the dream

A cyborg is a cyb-org, or a cybernetic organism. What does the word "cybernetic" signify? The term *Cybernetics* derived from the Greek word κυβερναν, which means "to govern, as essentially the art of the steersman" who steers a boat or ship.⁶ Wiener developed the concept and field of *Cybernetics* as the fusion of human or animal operation and a machine operation. In summary, *Cybernetics* is "the science of control and communication in the animal and the machine." The word of origination "κυβερναν," or "to govern" emphasizes the core concept of *Cybernetics* that is the interaction between people and machinery, and what goals they strive for through such interactions.

An essence of *Cybernetics* is the role of feedback. "The feedback mechanisms are not only well known to occur in the voluntary actions of the human body, but that they are necessary for its very life" (Weiner, 5). Similarly, *Cybernetics*, which operate through both bodies and machines, evolve and develop its operations through the systems of feedback. Such a distinct characteristic of *Cybernetics* is shared by the network, a prophecy towards which *Cybernetics* increasingly directs itself. *Cybernetics* continues to move from the physically engineered mechanical realms towards the virtually programmed digital realms. At the core of such realms is Network, a growingly complex, plural, and nonhierarchical entity.

⁶ Norbert Wiener, "Men, Machines and the World about" in *The New Media Reader*, edited by Noah Wardrip-Fruin and Nick Montfort, 289-300. Cambridge, MA: MIT Press, 2003. Page 5

Network functions as "an analytical tool embedded in global culture and information technologies, and their multitudes of connections, messages, and topographies."⁷ Network denotes "connections" that are possibly abstract but definitely present, such as "the terrorist network," and "messages" that are shared on various platforms, such as "the social media." More significantly, network denotes the "topographies" that organize everyday life experience in terms of sociality and relationality or, in other words, "connectivity in perpetuity."⁸ Media and information technologies rendered the world in the state of constant and continual mediation via the network.

In all its "multitudes of connections, messages, and topographies," Network consistently signifies the subject around which these nodes assemble. Whether or not a person is actively accessing, interacting, or consuming the said nodes, the nodes always assume their ontological reliance on people. Regardless of the ethical, political, social, and economic nature of the linkages, the nodes emerged, at least originally, for the sake of their creators---the humans evolving to be cyborgs. Here, the cyborg is both the subject of the network and the network itself. The cyborg does not have an external entity other than itself for which it operates; It is its own master. The cyborg is outstanding because of its ontological independence. The cyborg operates for itself.

⁷ Levina, M. (2017). Network. In L. Ouellette, & J. Gray (Eds.), *Keywords for media studies*. New York University Press.

⁸ Levina, Marina; Grant Kien, eds. *Post-global Network and Everyday Life*. Peter Lang New York, 2010.

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"The cyborg is resolutely committed to partiality, irony, intimacy, and perversity. It is oppositional, utopian, and completely without innocence..... Cyborgs are not reverent; they do not remember the cosmos. They are wary of holism, but needy for connection."⁹ The cyborg does not have a creator, a faith, or a religion, like the network. The cyborg is its own god. It only needs the nodes of perpetual connectivity which lets itself to continue in its manifestation. The cyborg shares the same vision with the network, but the cyborg lives the dream of sovereign independence for which network only prays.

The Internet is the death of Information

Another remarkable and metaphysical layer of Kusanagi's identity is that towards the end of the film, she evolves once again by integrating with another hybrid entity. Kusanagi merges with antagonist Puppet Master, an artificial intelligence program who has gained sentience over time. Motoko Kusanagi evolves into a fusion of a cyborg woman and a sentient AI program. While Kusanagi is an organic human turned synthetic cyborg, Puppet Master is an AI program turned alive, in the perspective of physiology, specifically neuroscience psychology.

An interesting comparison to Puppet Master is the computer program AlphaGo, which plays the board game Go. AlphaGo is an AI program that was developed by *DeepMind* with machine learning technologies, specifically with an artificial neural

⁹ Haraway, Donna. A Cyborg Manifesto: Science, Technology, and Socialist-Feminism in the Late Twentieth Century. 1985. Socialist Review. Page 458

network, or a deep learning method.¹⁰ The program was developed through extensive training processes to be an exceptionally powerful player, and has only evolved to be even stronger throughout time. AlphaGo has thoroughly learned from its opponent players and grew its knowledge of the game Go at an exponential pace. Saedol Lee, the former professional Go player of 9 dan rank with extraordinary and unique skills, played against AlphaGo in November 2019. In an interview that took place while the matches were in process, Lee once said how AlphaGo "played in such a way that it understands and strives for the beauty of Go." Lee, internationally known for his dramatic and distinctive style, praised AlphaGo for its grasp of the fundamental beauty of Go, implying that the AI program's profound understanding of the game is not only intelligent but also psychological and possibly emotional. Here, one cannot help but ask if AlphaGo has something equivalent to a personality as a Go player. If an AI program with a linear purpose and functionality of a game can access the realms of psychology and possibly emotions, what infinitely unknown possibilities are there in more extensive and multiplex AI programs? Puppet Master is a manifestation of AI programming's potentiality to tap into the psychological and neurophysiological realms of living organisms. The evolution of AI programs always starts from the initial stage of collecting, compiling, and computing information. The cases of AlphaGo and Puppet Master point us to the mysterious potential of information.

¹⁰ <https://deepmind.com/research/case-studies/alphago-the-story-so-far>

The modern denotation of the keyword *information* has two primary parts, which are "the process of informing" and "a product that results from such a process" (Williams). This definition emphasizes the direct interpersonal communication in which the conveying of information occurs, in contrast to the connotations in the contemporary expansions. In communications sciences, "the key operation is determining the rates, directions, and probabilities of flow of a quantity called information, the world is subdivided by boundaries differentially permeable to information" (Haraway, 465). Information is a quantifiable, unit-based element that enables effective communication. When information ceases to be elements and translates into the relations of signs, it becomes communications. Information has to die in order to be reborn as communication.

A critical issue with information is that there is an excess of it. "Information exceeds communication. Deleuze: 'We do not lack communication. On the contrary, we have too much of it. We lack creation. We lack resistance to the present.' Information is at once this resistance, and what it resists—its own dead form, communication."¹¹

The Internet is the most essential network in which information dies and lives again as communication. The Internet is "the global system of interconnected computer networks that uses [Transmission Control Protocol and the Internet Protocol

¹¹ Wark, McKenzie. "Information" *A Hacker Manifesto*. Published in October 2004, Harvard University Press. Paragraph 130

(TCP/IP)] to communicate between networks and devices."¹² It is a "*network of networks*" that consists of all types and sizes of networks, connected through an extensive array of "electronic, wireless, and optical networking technologies. The Internet carries a vast range of information resources and services" (Wikipedia). Countless units of information comprise the innumerable instances of communication between networks and devices on the Internet. The Internet is the prime birthplace of information as well as its main cemetery.

The Internet is also real life. There are mechanical infrastructures constructed and running in order for the Internet to stay in continuous connectivity. There are 222 international undersea cables consisting of immaculate strands of glass fibers that operate as signal paths for telecommunication functionalities for the Internet to work. This enormous, material network of underwater, transoceanic cables is semi-centralized and wired, and what fundamentally enables decentralized and wireless communications of the Internet. Due to its centralized, wired, and material characteristics, the Internet's infrastructure is not democratic and lacks many qualities of the virtual Internet. The infrastructure of the Internet is territorially entrenched rather than deterritorialized; precarious rather than resilient; and rural and aquatic rather than urban. "Information wants to be free but is everywhere in chains" (Wark, 126). All

¹² Wikipedia. "Internet" <https://en.wikipedia.org/wiki/Internet>

information on the Internet is physically and materially shackled at the bottom of the ocean.

Motoko Kusanagi contemplates her existence, identity, and ego in relation to information and communication:

"There are countless ingredients that make up the 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. I feel confined, only free to expand myself within boundaries."¹³

Facing the imminent unification with Puppet Master, Kusanagi requests that she continue to be herself after the integration: "You talk about redefining my identity. I want a guarantee that I can still be myself." Puppet Master responds cynically and mysteriously, implicating that what she asks for is the opposite of freedom: "Why would you wish to?Your effort to remain what you are is what limits you." Instead of promising Kusanagi of her enduring ego, Puppet Master suggests boundless access to the expansively networked domains.

Puppet Master's journey from completely programmed synthesis to partially synthetic and partially organic experience contrasts Kusanagi transformation from purely organic to fully synthetic experience. Their experiences lie in an opposition but on the same spectrum. Therefore, the oppositional yet interconnected experiences of

¹³ Oshii, Mamoru. Ghost in the Shell. 18 November 1995. Japan. Production I.G

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the two signify unimaginable potentiality. Who is Kusanagi, now? She is a cyborg-woman and a sentient AI program at the same time; Kusanagi is a mechanical life form and a living computational form at once. Or, she might have become the Internet herself. Kusanagi is the death of information and also the unlimited possibilities of information. Kusanagi, after merging with Puppet Master, speaks at the very ending of the film: "The net is vast and infinite." Motoko Kusanagi is the net that is vast and infinite. However, at the same time, she is still in chains, submerged at the bottom of the ocean, with the rest of *the net*.