

"Ghost in the Shell: S.A.C." **Portrays Our Future**

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Question (1): Discuss which future-oriented movie, television show, or online/interactive game you think most accurately anticipates our future – and why.

"Ghost in the Shell: Stand Alone Complex" is a Japanese anime, or animated program, produced in 2003, based on Masamune Shirow's manga - graphic novel - Ghost in the Shell. Set in a future Japan in the year 2030, technology and politics have progressed, becoming interwoven, and increasingly complex. Advancements have created opportunities, connections, and accessibility, but have also created complicated social and security issues. Although advancements in technology have rapidly changed the landscape of human interaction, notions found today of nation-states, free markets, and illegal gains have remained intact. Theft has evolved through hacking of secure information systems, giving criminals access to deeper levels of sensitive information and virtual goods. Political corruption and corporate greed continue unchanged from today, save for the nature of the secrets kept to keep careers alive and businesspeople in good favor with the public. On the one hand, the world appears on the surface to be drastically different from the world today. Underneath the surface however, lies the same world of today, only "enhanced" and given more complexity. There are many works of speculative fiction in the world, and many come close to seeming likely, but Shirow's anime series "Ghost in the Shell: SAC," for the reasons stated above, most accurately portrays our future.

The main themes of "Ghost in the Shell: SAC" include bio-technological enhancement of human beings in automation and cyberinteraction, and technological advances in warfare and weaponry, and the impact that these advancements make on human consciousness, already burdened with the "enhanced" connections resulting from globalization and imperialism. Some of the characters of "Ghost in the Shell" have undergone a med-technological process called "cyberization." Cyberization enables citizens to access wireless communication, internet access, and research from their minds. The cyberization process replaces parts of the brain – minimally or majorly depending on the individual's wishes to be "more or less artificial" – with nanotechnological robots, robots of an incredibly miniscule scale. This process, and its role in disturbing our concept of what it means to be human, or to be artificial, or its role in making us all truly connected to each other at all times, at will, figures in the stories of the program. The main, so-called "Complex" storyline, features the issue of a talented and socially discontent hacker gaining access through intrusion into

"cyberized" brains– brains surgically altered to include electronic and remote internet access components – in order to take over the senses, the bodily functions, or to access information in the mind ("In the Forest"). The cyberization process also figures in this main storyline as the revelation of a disease resulting from the surgical cyberization alterations is made known. This revelation ultimately serves to compromise the origin corporation, as they put profits over people in trying to keep this information secret from the world ("Equinox").

A second feature of "Ghost in the Shell" involves further technological advancements in voluntary and therapeutic prosthesis. These advancements range from altering parts of the body (apart from the brain), such as the eyes and limbs, to function better, see farther, or exert greater force, to so-called "full-body prosthesis." In full-body prosthesis, the entire body is replaced with a mechanical, technological version, including a cyberized, mechanical brain. The "ghost" – the "soul" – of the human, or in other words, the human consciousness – transferred from the former biological self to the new artificial self, is the key that differentiates a human in full body prosthesis from a robot with advanced artificial intelligence. Even these lines become blurred – robots programmed to respond to situations with advanced artificial intelligence surprise all involved when they appear to use their own free will – something deemed an impossibility in a being without human consciousness – to act on their "wishes" ("Barrage"). Such robots, in "Ghost in the Shell," are used in all functions of society from basic automated tasks to advanced international warfare.

These advancements, while still (mostly) fictional, have been anticipated by social theorists with good track records for being right about the futures of the societies we live in. Influential theorist Marshall McLuhan "predicted ... the ... emerging electronic network," long before the emergence of the internet. He "originated the idea that human beings can extend their nervous system via a global neural net through the use of electronic media and devices" ("Marshall McLuhan"). McLuhan forecast our advancements in technology becoming coincidental with an innate human desire to be closely connected. In his view, we feel the need for constant interaction. It seems natural that his prediction, if accurate, should extend to the farthest reaches of human development as possible. As he foretold, we have discovered our need to be intimately and constantly in touch with each other, following the development of the World Wide Web, GPS, and mobile technology. For the first time we have the ability to actually be connected and aware of all other people at all times. It can be said that this increased connectivity to each other has created a "global neural net" Along which ideas spread and come to fruition at rates previously unmatched in history. If human beings, looking to implement connectivity to the furthest reaches of technological development that they can, continue to make advances in interpersonal technology, we will see

more and more personal enhancements – e.g. implants and bodily modifications to these ends – as predicted in “Ghost in the Shell: S.A.C.”

As it happens, developing technology for such enhancements/modifications is currently in development in advanced laboratories. In the video-recorded talk, “Implant technology to enhance human abilities,” speaker Kevin Warwick comments on recent innovations, growing neural tissue and linking it to robots. In other words, the technology to take artificial information and stream it over organic matter is in existence. So, he says, “we now have robots that don't have computers for brains, they have biological brains” (“Implant technology”). With huge difference in capabilities to process information between organic matter and artificial matter, such technology may lead to rapidly advancing AI, and, perhaps, to a level where the difference between human consciousness and artificial intelligence is blurred. Furthermore, the ability to “grow our parts” infers that we are indeed moving towards a future where humans will be offered options to “enhance” their bodies through high-functioning prostheses.

The robots with high levels of artificial intelligence, which later “evolve” to develop free will in the show are spider-like drones/one-person tanks called “Tachikoma(s).” Tachikomas are used to aid the military operations of the main characters. They are outfitted with machine guns, have surveillance equipment, and are capable of using cloaking technology and advanced evasive actions. Their artificial intelligence gives them the autonomy to “assist” their human soldiers by being able to respond to human questions – say about surveillance or threats – with the depth and perception that human beings use. As these creations become self-aware, they begin to ask questions among themselves on the nature of life and consciousness, like newly born humans.

Similarly to the concept of implanting access to wireless connection directly into people, the technology for developing weapons that can “think” is also already underway in regards to the airborne remote-controlled “drones” that have become a fixture of modern warfare:

Ronald Arkin of the Georgia Institute of Technology's School of Interactive Computing ... proposes involving the drone itself—or, rather, the software that is used to operate it—in the decision to attack. In effect, he plans to give the machine a conscience. The software conscience that Dr. Arkin and his colleagues have developed is called the Ethical Architecture. Its judgment may be better than a human's because it operates so fast and knows so much. And—like a human but unlike most machines—it can learn (“Droning On”).

In creating consciousness for the weapon itself, there is a potential for increased reliability and accuracy in implemented war strategies. However, while the potential for developing A.I. to create more efficient

war machinery is astronomical, such a consciousness could, presumably, lead to debate on intrinsic value and independence of both humans and artificial creations if they were to appear to advance to “self-awareness.” “Ghost in the Shell” touches on these potentials in its comparisons of cyberized humans and Tachikomas, and in its debate of what constitutes, or does not constitute, the “soul.”

Socially, politically, and economically, “Ghost in the Shell” predicts a likely future as the world it shows changes little about the dynamics and framework of how society currently operates. In the year 2030, governments in industrialized nations are democratically voted into power. Nations vie for other nations' state secrets, in addition to power and control over those nations through information, diplomacy, and military actions (the United States of America has, by this time, become the “American Empire”). Activist and terrorist groups are prominent players in the sometimes-just protest of corrupt state and corporate actions, through peaceful protest or through violent action. A gap between very rich and very poor still exists in most industrial nations.

This sort of future scenario is most likely because people, themselves, have not changed much over the eras. It is sometimes suggested that the onset of technological advancement will – at some point in our future – have an extraordinary effect on people and the ways that we conduct our lives. For instance, the 1970 book *Future Shock* by Alvin Toffler predicted a world in which information overload would become prevalent and “drive us insane” (“A Futurist 40 Years Later”). In a quote from the movie of the same name based off of *Future Shock*, writer and filmmaker Orson Welles provides narration: “This machine makes our lives move faster. Computers combine facts to make new knowledge at such high-speed that we cannot absorb it...” (“A Futurist 40 Years Later”). The fear and prediction expressed here is that machines and technological advance will impede and overcome our “normal, human” lives, eventually making us slaves to our own development. There is, in fact, no substantial reason to fear a technological “takeover” of this magnitude. As much as technology progresses and even merges with human biology and social life, it is, in the end, just developments that depend on human demand, as all other advancements do.

This concept is supported in “The Socialization of Markets.” Neil Fligstein and Luke Dauter reflect on the nature of the global market to shift and change based on social, political, or self-oppositional values. In other words, demand or lack of demand for technologies and standards of living depend on these economic factors. For example, in writing of theory on how markets grow, change or shift, they comment:

While population ecology viewed the environment of the firm as “hard,” and thus the main mechanism of selection was the availability of the scarcest resource, institutional theory posited that the environment was at least partially a social construction. Scott &

Meyer (1982) called such environments “sectors” and described the socially constructed environment of firms as a function of all the other organizations that might impinge on a particular organization. They included governments, suppliers, workers, and customers as part of such a social construction. We note that sectors that join all interested parties look quite similar to the set of actors that political economy focuses on, i.e., firms, governments, and workers. DiMaggio & Powell (1983) extended these arguments and called such environments “organizational fields” ... The field metaphor implies that firms watch one another, engage in strategic behavior vis-à-vis one another, and look to one another for clues as to what constitutes successful behavior (Dauter and Fligstein 111).

As markets shift based on economic and social factors, world affairs tend to progress predictably, as a consistent shift of power between nations. Olive Schreiner, an early 20th century feminist writer, is analyzed by Liz Stanley, Helen Dampier, and Andrea Salter. They note that her comments and predictions on early 20th century globalization, as seen from the changing social and political climate of Johannesburg, South Africa, consistently match with 21st century globalization theory. Schreiner's predictions on “changing & scalar territorial space; a changed time/distance relation through the material, then the virtual – steam, cable, post, telegram, telephone; change as the social fabric; [and] social movements & networks resisting from below” in regard to – as they say – the ontology of globalization research, follow with modern globalization theory on “post-territorial space; a changed time/distance relation through the virtual; [and] change as the social fabric.” Her predictions on “pre/multi-disciplinarity; [and] mobilities ... flows & especially of finance capital & global imperial expansionism” in regard to the “methodology” of globalization correspond with modern concepts of “post/multi-disciplinarity; [and] mobilities & flows” (Dampier, Salter and Stanley 673). In other words, as much that has changed, certain factors that determine the direction of human progress stay the same, and are more or less predictable over a long range of time.

In his “Wall Street Journal” review of Robert Friedel's *A Culture of Improvement*, columnist Adam Keiper reflects on what he perceives as Friedel's insinuation that technology is shaped by us, not vice versa: “Technology is not, he seems to say, the inevitable expression of advancing human reason or a great, impersonal force directing the course of history. Rather, it proceeds by fits and starts -- held back, pushed forward or diverted by social and biographical contingencies” (Keiper). Technology is a tool. It is not a being unto itself that will grow wildly out of balance if unchecked. “Ghost in the Shell: S.A.C.” reflects this very notion. Humans live everyday with the average problems and afflictions we have now, if some of the names for them have changed, and are balanced in life, relationships, economics, and

the technological progress of their societies.

The creator of the “Ghost in the Shell” franchise, Masamune Shirow, went to pains to create a fictional world and social environment in which humans and technology interact realistically. He did not think that humans would completely destroy the blueprint of society to start from scratch, and to create radical new societal structures, as is seen in some futuristic fiction, nor did he anticipate a great cataclysm reducing human society to its basest state against its will, creating a “post-apocalyptic” world in which people must struggle to survive and fight for the basics. The world of “Ghost in the Shell” is not a utopian paradise, in which no one works, worries, or suffers. It is very much like the present world, with modifications made to how people interact with each other and how they get on in the world: creating income and spending it. This view is consistent with the history and nature of society. The basic nature of society does not change because of technological progress. Rather, small modifications are made day by day. Technology follows based on what people demand, not the other way around. Shirow, in creating the “Ghost in the Shell” world, anticipated a steady growth on what people have with what they will create. Likewise, he correctly foresaw the new benefits and complications that technological advancements and our interaction with them would bring. Human advancement, as it continues, is likely to bring about neither a completely idealistic society, nor a post-apocalyptic one. Shirow foresaw a society in which social structure, politics, economics and innovation all “get on as usual.” This foresight is by far the most realistic sort of portrayal of a future society. Thus, “Ghost in the Shell: S.A.C.” is the nearest fiction can come to an accurate portrayal of our future.

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