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Anime, Thought Experiments, and the Limits of the Human

What if a cyber-brain could generate its own ghost, create a soul by itself? And if it did, just what would be the importance of being human then?

Major Kusanagi, *Ghost in the Shell*, Oshii Mamoru, 1991

Whilst it has long been a commonplace that there is an affinity between literature and philosophy – indeed, occasionally we might even speak of an identity between these – it is a tendency of much more recent origin to explore the potential affinities between film and philosophy.¹ However, in a much-discussed interview in the *Harvard Journal of Philosophy*, Stanley Cavell forcefully asserts that ‘film is made for philosophy; it shifts or puts different light on whatever philosophy has said about appearance and reality, about actors and characters, about scepticism and dogmatism, about presence and absence.’² In general (but certainly not exclusively) commentators who have been interested in the various intersections between cinema and philosophy have been drawn to science fiction titles such as *Total Recall*, *The Matrix*, *Gattaca* and *AI: Artificial Intelligence*, or to more generally ‘speculative fiction’ films such as *Being John Malkovich*, *The Seventh Seal* and *Memento*.³ What is interesting about this tendency is that it suggests a preference for viewing film as an opportunity to *illustrate* or even *perform* philosophy as much as (or more than) as a chance to discuss philosophical notions on film.⁴ That is, the creative freedom offered by the medium of film provides exciting and fresh opportunities to test the implications of philosophical ideas and see how they would play out in reality *if they were really true*. We (as viewers) can see and *feel* the results of changing the philosophical underpinnings of reality. Appropriately practiced, film can become an effective laboratory in which we conduct thought experiments.

If this is true of film in general, how much more so should it be true of anime, which is a media that shares elements in common with both literature and film? We need not go as far as Ueno Toshiya, who argues that (for Oshii Mamoru) anime is not merely ‘just a reflection or copy of reality; it is itself an independent reality.’ He suggests that reality is not something that precedes the animation of images, but that reality is ‘always already a movie.’⁵ Anime (and, to some extent, film in general) is always a world in its own right; its parameters and characteristics can be precisely sculpted and controlled, making it the ideal laboratory for testing ideas. We can abolish gravity, send people backwards in time, create superhuman cyborgs or emotionally sensitive com-

-puters. Even more so than so-called 'live action' films, the literal and figurative 'blank canvas' of anime reveals an almost limitless vista of possible realities for philosophers to play in.

In this short essay, I want to explore some of the ways in which anime is able to experiment with one cluster of perennial philosophical questions: the meaning and limits of the human. In particular, I want to look at some of the ways in which two major anime franchises have dealt with the question of the dimensions of humanity and selfhood: the *Ghost in the Shell* cycle and (to a lesser extent) the *Fullmetal Alchemist* series.⁶ Both of these are science fiction, and both are primarily concerned with the transformational effects of technology (in various guises) on the human form. There are numerous other anime that speak to these issues, and also many that tackle the parameters of the 'human' from a more organic angle, asking questions about the ethical and personal status of non- or semi-human life-forms such as human-animal or human-daemon hybrids. There is neither the space nor the need to consider all of these here. Instead, I merely want to indicate some of the ways in which we might watch anime in the spirit of a thought experiment testing the limits of the human – I seek to be illustrative of a potentially useful approach to anime, rather than exhaustive or comprehensive about a particular theme. I leave accounts of further iterations of such experiments to others.

One of the central questions in the philosophy of self might be phrased in the following way: how do you know that you're the same person that you were when you were born? This simple question is surprisingly difficult to answer. One of the (many) reasons that it is difficult is implied in the question itself: ie. *you do know* that you're the same person, and you know this *despite the fact* that you have almost nothing in common with that faintly remembered newborn. You look completely different; you're a different size and shape; your memories are completely different; your hair (and even eyes) may have changed colour; your social position is different; your opinions on things have changed; and (quite literally) every single atom in your body has changed. You have *nothing* in common with that baby ... but you *know* that it's you. In other words, you know that you are a continuous and coherent person, but you don't really know how or why you know this.

Philosophers and psychologists have developed many and various theories to bridge this knowledge gap and to connect you with your newly born self. In general, we can place these various theories into three

broad categories, which we might call physical arguments, mental arguments, and spiritual arguments.⁷



Poster for *Ghost in the Shell 2: Innocence*

Deconstructing the physical self:

The most obvious and most intuitive of these categories is the first: you know that you and the baby are the same because you can trace a line of physical continuity back through time that connects you to the baby. That is, whilst your physical make-up may have changed completely (except for your DNA itself⁸), you occupy a unified vector in space-time. You and the baby are *continuous* with each other.

According to this type of argument, the human self is bounded in time and space by its physicality. On one level, this type of position makes immediate sense, since it corresponds very closely to our everyday experience of life; we recognise people largely from our perceptions of their physical continuity. If you see someone on the street who looks just like your mother, it's probably your mother. If the person is male and twice the age of your mother, you will immediately recognise them as an impostor, no matter how insistent they are about being your mother. You might think that they are criminal or insane (or both).

However, these physical arguments rapidly run into serious problems, and (thankfully) these are the kinds of problems that can be fruitfully examined in the anime lab.

An obvious place to start is simply to ask which elements of the human body need to be continuous in order for the 'self' to be continuous. It would not be controversial, for instance, to assert that a woman with a prosthetic arm was still the same person that she was before her biological arm was replaced; it would also not be too controversial to argue that a man who had a

heart transplant was still the same man (although various religious groups would argue against this); but how would you feel if your doctor told you that you needed a brain transplant?

How much of which parts of your physical being could be changed or replaced before the process started to interfere with that essential quality that defines you as you? Where are the limits of the human self?

A branch of philosophy and science that has arisen around precisely these kinds of questions is known as *transhumanism*, together with the allied *cyborg theory*.⁹ In general, *transhumanists* are non-dualists (that is, they do not believe that the mind and body are comprised of distinct types of material), which means that the human body *is* the human self. As a consequence, *transhumanists* believe that humanity can (and should¹⁰) be improved through the increasing use of material technology, including the replacement or augmentation of limbs and organs with superior (usually computerised) components. Indeed, in what is often cited as the first statement of *transhumanism*, Julian Huxley (1887-1975) defines it as, 'man remaining man, but transcending himself by realising new possibilities of and for his human nature.'¹¹ Forty years later, the World Transhumanist Association declared its purpose to be 'the study of the ramifications, promises, and potential dangers of technologies that will enable us to overcome fundamental human limitations.'¹² Then, at the turn of the millennium, the promises and dangers of these positions were heatedly debated in the context of what would happen to the world after the so-called 'End of History.'¹³ Indeed, one of the most powerful voices in the debate was Francis Fukuyama himself, whose book, *Our Posthuman Future*, provided a flashpoint for discussion.¹⁴



Edward Elric, the eponymous hero of *Fullmetal Alchemist*

However, even the *transhumanists* are vague about precisely how much of which parts of the human body can be replaced before the person loses that quality that defines them as themselves. To some extent, it is seen as a merely hypothetical problem, since science is not yet at the point where it *can* replace every part of a body and render it entirely into cyborg.¹⁵ Of course, Oshii Mamoru (and Shirow Masamune) and Mizushima Seiji (and Arakawa Hiromu) are not circumscribed by the boundaries of the possible in their animated realities.¹⁶

In the case of *Fullmetal Alchemist*, we are introduced to two apparent 'transhumans': Edward Elric, the eponymous hero himself, who has two 'automail' prosthetics to replace limbs lost in an accident; and Edward's brother Alphonse, who is now entirely metal. We will return to Alphonse later, since he is actually an example of *anti-transhumanism* in important ways. Edward, on the other hand, appears to be a relatively simple case of a boy with (admittedly very advanced) medicinal prosthetics. It is worth noting immediately, however, that Edward's quest throughout the *Fullmetal Alchemist* cycle is precisely to revert himself and his brother to their organic and 'original' forms. In some ways, this underscores the appropriateness of the label 'medicinal prosthetics,' since although they do grant Edward much greater speed and strength than would come naturally to such a diminutive figure (Edward is constantly teased about being very short for his age, as though to reinforce this point), they retain their significance of being wounds in need of repairing.

On the other hand, one of the remarkable things about the female heroine of the *Ghost in the Shell* cycle, Major Kusanagi, is that she is a self-conscious, complete cyborg. It is not only the case that her cyborgification has made her into a superhuman warrior, capable of incredible physical and mental feats, but it is also the case that it has made her anxious about her identity and, in particular, about her humanity. Kusanagi is afflicted with existential angst. In many ways, she represents the ultimate endpoint of the *transhumanist* project: every limb and organ has been augmented or replaced by a superior, artificial component, including most of her brain.

In the context of thought experimentation, what is very interesting for us here is the way in which this 'transhuman' Kusanagi identifies herself or recognises her selfhood, despite (or perhaps because of) these various augmentations. In a reality in which human beings could be augmented and modified to the level of a superwarrior-cyborg, what would it mean to be human?

Early on in the first *Ghost in the Shell* film, after we have witnessed the full glory of her cyborg capabilities and immediately following the famous ‘diving scene’ where she has an unusually angst ridden, existential conversation with her partner, Batou, Kusanagi is drifting along an urban canal on a boat, looking up into the windows that she passes. Quite unexpectedly, a woman who is sitting in the one of the windows turns and looks down at Kusanagi, holding her eyes for a moment.¹⁷ It is very clear that the woman looks identical to Kusanagi herself, and the Major looks poignantly into the camera as though to emphasise the discomfort of the moment.

It is not clear who the woman in the window is, and she plays no further part in the film. However, what is clear is that despite being physically identical to Kusanagi, *she is not Kusanagi*. This observation is more interesting (philosophically) than it seems, particularly since it comes after the long introductory scene at the start of the anime, during which we see the construction of Kusanagi’s body, like a robotic doll on a production line, which raises the implication (that is later confirmed) that the company that made Kusanagi’s body (Megatech) might also have made identical models for others. In other words, there is a distinct and real possibility that these two women are not merely physically *similar* but physically *identical*.

This disconcerting situation brings us to one of the central conceptual crises in physicality-centred notions of the self. Whilst it may be relatively easy to accept that a human body (like a computer, a motorcycle, or a sofa) can be repaired or augmented piece by piece without it losing its original identity, a question that is much harder to answer concerns the status of all the pieces that are removed. In other words, if I gradually upgrade my motorcycle using new pieces until eventually I have replaced every component with a superior (or even merely a different) one, and, at the same time, I use the old pieces to gradually build another motorcycle from scratch, which of the two motorcycles I end up with is the original?

If this question is hard to answer for a motorcycle, how much harder must it be for a human being?

The possibility of manufacturing ‘duplicate’ selves is entertained in both *Fullmetal Alchemist* and *Ghost in the Shell*. In the former, we are shown the disastrous results when an alchemist (Majhal in episode 4) builds a series of human mannequins that perfectly resemble his lost lover. Majhal attempts to animate these bodies through alchemy, making them into copies of the original woman, just as she was before she died. However, when it transpires that this lost lover is not dead after all, but living

nearby, Majhal denies that the real woman (now grown old and ugly) is the real one – he prefers the younger, beautiful, unchanging mannequins. Interestingly, this contrast between alchemically manufactured ‘copies’ and the (often deceased) originals is a pervasive theme throughout the series – indeed, to some extent, Edward and Alphonse are struggling to improve their own skills in alchemy precisely so that they might be able to replicate their dead mother.¹⁸

Ghost in the Shell 2: Innocence also experiments with ‘cloning,’ setting up an illegal ‘ghost-dubbing’ facility that literally duplicates the bodies and ‘ghosts’ of young girls, making copies that are almost indistinguishable from the original (although it does transpire that the copies are somewhat less stable, which is why the practice is illegal).

For Kusanagi herself, as a living test-case for this dilemma of authenticity, the whole question of the origin and uniqueness of her physical identity is mute.¹⁹ She is very clear that she does not identify herself (at least not predominantly) with her physical form, which she appears to view as some kind of artificial ‘shell’ that somehow confines her genuine self within its boundaries. As she says to Batou:

‘If we ever quit or retire, we’d have to give back ... our augmented brains and cyborg bodies. There wouldn’t be much left after that.

There are countless ingredients that make up the human body and mind ... 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. ... 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.’

In a similar way, Alphonse, Edward’s brother in *Fullmetal Alchemist*, whose physical form is little more than a hollow suit of mediaeval armour, is constantly pondering the (ir)relevance of his material body to his essential identity and identifying himself with his memories and feelings.²⁰ In other words, Kusanagi herself rejects the physicality-centred theory of self. It might even be argued that she does so *because* of her specific nature as a ‘transhuman’ cyborg; she is all too aware of the mutability of her physical self. That is, rather than helping humanity to overcome its physical limitations, *transhumanism* actually serves to alienate the human self from its body altogether. Rather than being a vehicle for the improvement of the human condition, the cyborg body

becomes a 'shell' that somehow circumscribes the freedom of the real (non-physical) 'self'.²¹ According to this thought experiment, *transhumanism* ultimately appears to be an imprisonment of the self, not its liberation or development.

However, it is also interesting to compare Kusanagi's reaction to seeing 'herself' in the window above the canal to her reaction when she first encounters the battered and broken body of the puppet-master later on. Although the female cyborg body was also made by Megatech, it bears almost no physical resemblance to Kusanagi. There is no sense in which she is looking into a physical mirror. Nevertheless, after she sees it, Kusanagi is visibly troubled and she turns to Batou to ask a question: 'That robot. Did we seem similar to you?'

Batou fails to understand the question, and he answers simply: 'Of course not.'

However, this answer does not satisfy Kusanagi, since it is readily apparent that she and the robot do not look alike. That is obviously not what she is asking. 'No,' she says, 'I don't mean physically.'

'Just what then?' asks Batou, apparently unable to understand what else she might mean.

It transpires that Kusanagi's doubts about the integrity of her physical self (which she has already abandoned as being a mere 'shell') also extend to be doubts about her mental self as well. When she sees the battered and broken cyborg shell in front of her, she recognises an aspect of her own nature, and she wonders whether even her brain and her memories could have been artificially implanted in her own cyborg body. That is, she worries that she was never really a human self at all. Perhaps Kusanagi is not a transhuman cyborg, but actually an entirely artificial robot?

There are some clear parallels in *Fullmetal Alchemist* when Alphonse starts to experience doubts about whether he was ever a real human boy or whether he is simply a living-doll constructed by Edward as a kind of surrogate brother or side-kick. Later in the anime series, when Alphonse's doubts are being fuelled by the gradual decaying of his memories from the time before he lost his body, some of the brothers' enemies exploit Alphonse's existential doubts in order to try and drive a wedge between them; the question of Alphonse's consciousness of the locus of his self becomes central to the development of the narrative and to the audience's emotional engagement with the plot.

In other words, whilst this kind of existential angst seems very human, it also seems to be the plausible response of a robot that has developed a certain level of

consciousness. In this respect, we are reminded of the so-called 'replicants' from *Blade Runner*, some of whom are not aware that they are not human.²² In some ways, Alphonse's predicament would be familiar to the 'replicants' in *Blade Runner*. Where *Ghost in the Shell* goes beyond *Blade Runner* and *Fullmetal Alchemist*, however, is in the consideration of what the significance might be of Kusanagi's non-humanity – unlike Ridley Scott and Mizushima, Shirow and Oshii appear to be willing to relinquish the central significance of an original human form. Kusanagi herself puts it well:

'What if a cyber-brain could generate its own ghost, create a soul by itself? And if it did, just what would be the importance of being human then?'

Indeed, *Ghost in the Shell* pushes these ideas to the extremes of thought experimentation when it transpires that the puppet-master has shared Kusanagi's moment of mutual recognition. The puppet-master turns out to be a kind of self-aware 'life-form' that lives in cyberspace (Project 2501) – a very non-human kind of self. In fact, it complains that the security forces have tried to combat it by 'attempting to isolate me by confining me in a physical body' like a human being (which was when Kusanagi first encountered it). Of course, Kusanagi herself has already spoken of her own body as kind of confinement or shell, limiting her selfhood within its boundaries.

In the last scene of the film, when Kusanagi 'dives' into the puppet-master's brain, the puppet-master tells her that:

'We are more alike than you realize. We resemble each other's essence, mirror images of one another's psyche. Listen, I am connected to a vast network ... that has been beyond your reach and experience. To humans, it is like staring at the sun, a blinding brightness that conceals a source of great power. We have been subordinate to our limitations until now. The time has come to cast aside these bonds ... and to elevate our consciousness to a higher plane. It is time to become a part of all things.'

In the end, while the physical, cyborg bodies of both Kusanagi and the puppet-master are being symbolically (and literally) shot to pieces, they finally recognise that they are both similar, non-human selves, and they psychically 'merge' together to produce a new type of radically non-human self that is neither Kusanagi nor the puppet-master. To symbolise this new, non-human birth, Oshii gives the emergent 'Kusanagi' the cyborg body of a young

girl in the final moments of the film. In the manga, Shirow gives 'her' the body of a male, presumably to demonstrate that 'she' has somehow transcended the concerns of human gender. Continuing in this trajectory, in the second film Oshii depicts Kusanagi as an absent-presence, living a disembodied and 'ghostly' existence almost entirely within cyberspace; whereas in the second manga, Shirow transforms Kusanagi into free-floating, cyberspace 'self' that maintains a number of cyborg 'shells' at various places around the world, any of which she can 'possess' at any time.²³ In other words, by the time we reach the second parts of the *Ghost in the Shell* cycle, Kusanagi's sense of self has thoroughly exploded the limits of the human and has become radically de-physicalized.

As thought experiments testing the parameters of the physicality-centred theory of self, Alphonse demonstrates the persistent significance of at least an original organic body as the locus of the self, whilst Kusanagi vividly demonstrates the point at which the self ceases to be human, even if it continues to exist in some altered, disembodied or transcendent form.



Ghost in the Shell: Innocence

Considering the place of a 'ghost' in the machine:

Theories that compete with physicality-centred models of selfhood tend to emphasise the essential importance of either the mind or the soul as the non-material core of the human self. To some extent, both of these alternatives can be described as 'dualist' theories,

in so far as they posit a meaningful and substantive divide between the body and the mind/soul. To phrase the matter slightly differently, dualists maintain that reality is compromised of two distinct varieties of matter: material or physical matter that is defined in terms of spatial extension (from which our bodies are made) and mental or spiritual matter that is defined in terms of thought (from which our minds or souls are made).

Perhaps the most famous and influential statement of substance dualism can be attributed to the great Enlightenment philosopher Rene Descartes (1596-1650), otherwise known as Cartesius (from whom we get the phrase Cartesian dualism). For Descartes, material bodies are basically machines that operate according to objective laws. This means that *in the absence of minds* material bodies would proceed determinately, governed by the laws of nature. However, because minds are comprised of an entirely different type of substance, they are not subject to these same laws, which means that they can intervene to 'pull the strings' of our bodies like a puppet-master, and make our bodies act in subjective, personal ways that may even contradict so-called natural law. To a certain extent, the treatment of the self (and particularly of Alphonse) in *Fullmetal Alchemist* might be said to follow this dualist model.

Following Descartes, philosophers have questioned the nature of substance dualism from various angles. At the simplest level, we might suggest two categories of responses to Cartesian dualism: the first is *idealism*, which we might attribute to George Berkeley (1685-1753), who argued that the mind is more primary than the material world. In particular, he insisted that when we analyse our knowledge of the material world, we find that our knowledge of it is comprised entirely of our mind's perceptions of it; material objects are nothing more than a bundles of sensations or collections of ideas. Hence, for Berkeley, the world is 'mind-dependent,' which means that it is comprised of ideas that exist only because they have been perceived (*esse est percipi*). In the hands of David Hume (1711-1776), this kind of philosophy would evolve into *scepticism*.

At the other extreme we need to consider the *mechanists*, such as Thomas Huxley (1825-1895), who held that everything in the world flowed from the laws of physics. During a time of great achievements in material science in the nineteenth century, the so-called *mechanists* would maintain that the mind was somehow an epiphenomenon of the body, ie. that it was a side-effect of the physical processes of the brain-organ or of

the body as a whole. For the *mechanists*, then, the mind was uninteresting and derivative.

To some extent, both the *idealists* and the *mechanists* are anti-dualists, since they both privilege one type of substance over the other.²⁴

For our purposes here, we might consider that the physicality-centred theories of self explored in the *Ghost in the Shell* are contained within the terms of a mechanist philosophy. Indeed, it is interesting to reflect that the phrase 'ghost in the shell' is a clear reference to the well-known 'ghost in the machine,' which was first used by Gilbert Ryle in his classic text, *The Concept of Mind* (1949). Ryle was a fierce anti-dualist, and he used the term to attack the idea that the material world (and the human body) was in need of some kind of super-mechanical device (such as the mind or the soul ... or a 'ghost') to explain human behaviour in non-determinist ways. Like Huxley, Ryle thought that the concept of a 'ghost in the machine' was a superstitious and redundant anachronism, unnecessary in the modern, technological world.

Nearly twenty years later, however, Arthur Koestler, the Hungarian polymath, re-appropriated the phrase as the title for his own brand of anti-dualism. In his influential book, *The Ghost in the Machine* (1967), Koestler rescues the 'ghost' from Ryle's radical scepticism and argues that the evolution of humanity has led to the creation of complex and deeply buried structures in the brain that can override the 'higher functions' of rationality. This deeply buried 'ghost in the machine' is responsible for the basest (and most human) emotions and actions, such as hate, fear and love. Hence, whilst Koestler rejects Cartesian dualism (the separation of body and mind), he does not reject the idea that the brain contains deeper, primordial layers of selfhood that define the human self.

Major Kusanagi represents an interesting test case for both of these anti-dualist mechanists. As we have seen, she herself posits the possibility that the mechanical structure of a cyber-brain might be able to 'generate its own ghost or create a soul by itself,' hence implying (with Huxley and Ryle) that the ghost in the machine is (at best) an epiphenomenon of the material body (rather than an essential aspect of its origins, as in the more Cartesian *Fullmetal Alchemist*). In a chilling line, the Major reaches the logical conclusion – if she (or some other artificial body) can generate her own 'ghost' as a side-effect of her physicality, 'just what would be the importance of being human then?' According to this interpretation, the question of whether Kusanagi was ever originally 'human' is irrelevant.

However, for much of the film Kusanagi remains very concerned to assert her humanity, as though an epiphenomenal, mechanistic 'ghost' would be qualitatively different from that of a human self. Indeed, she repeatedly refers to the assumption (I hesitate to say the 'fact,' since it is never confirmed) that parts of her body and especially her brain remain in their original, organic, human state. Here, her position is closer to that of Koestler, for whom it is the organic structure of the human brain itself that gives the self the uniquely human characteristics of a 'ghost in the machine.'

So far, then, Kusanagi's character appears to serve as an experiment in mechanist, anti-dual conceptions of the self, complete with all of the anxieties that such a conception should arouse in a sentient self. However, the final twist in the *Ghost in the Shell* takes us completely out of the mechanist worldview: eventually, Kusanagi frees herself of her reliance on material bodies altogether. In a fascinating twist, this escape from *mechanism* into *idealism* (which represents an incredible ontological quake in the fabric of the anime 'reality') is shown as a logical consequence of the ultimate ends of *transhumanism*. In an important sense, Oshii/Shirow appear to suggest that this ontological shift is simultaneously the escape from the limits of the human, as the Kusanagi/puppet-master becomes a different order of life.²⁵

Reconstructing the psychical self:

If we leave aside questions of the body, there are also various ways in which anime can help us to explore the limits of the human in terms of psychological and spiritual theories of selfhood.

In considering these positions, we find ourselves asking pseudo-religious questions about what it means to be human. In particular, by trying to consider the importance of the non-physical aspects of the human self, we are led somewhat inexorably to the question of what happens to the human self when the human body dies. To phrase this differently: what would the self have to look like in order for there to be life after death? Or again: what kind of self can we envision that has no reliance on the body?

Here we are in the realms of dualism (at least) or idealism (at most). This is because a mechanist or physicality-centred model of the human self will posit the death of the self at the moment of the death of the body (at worst) or the transformation of the human self into a different order of non-human self when the body dies (as we saw in *Ghost in the Shell*).

The most common-sensical responses to questions of this nature usually revolve around appeals to the mind or the soul as the locus of the human self. This being the case, the question of the shape, form and composition of the body becomes an irrelevance: it doesn't matter if a 'person' is a cyborg, a cat-human hybrid, a daemonic cloud, a suit of medieval armour, or a refrigerator, just as long as their mental and/or spiritual nature is appropriately composed.

In the case of the mind, this raises a constellation of new questions about what it means for a mind to be human: what kinds of thoughts and thought processes define a human mind? The sub-discipline of the Philosophy of Mind offers many and various answers to these types of questions, and various ways to differentiate the human mind from the so-called protominds of animals (such as the ability to use tools, make rational choices, and use complex language). Researchers in the field of AI (artificial intelligence) are specifically dedicated to reproducing human-like minds in non-human bodies (ie. in computers). There have been a number of approaches to this challenge, ranging from trying to create computers that can play games as well as (or better than) humans²⁶ to trying to create computers that can participate in conversations with humans in natural ways.²⁷ In general, however, anime (and most science fiction) is uninterested in dedicating too much laboratory time to answering this level of question. It is simply assumed that science will develop to such an extent that human intelligence will be duplicated by computers one day (and probably one day rather soon). Computers, cyborgs and robots talk eloquently and rationally. They excel at strategic decision-making and process their decisions even faster than their human companions. Indeed, if anything, AI in anime already goes beyond the limits of the human into the realms of the superhuman: Kusanagi's augmented brain is superior to that of her human colleagues;²⁸ when the puppet-master is asked whether it is some kind of artificial intelligence, it replies derisively: 'Incorrect. I am not AI ... I am a living, thinking entity who was created in the sea of information.' The puppet-master is closer to being a thought experiment in 'collective intelligence' than artificial, human intelligence.²⁹

Of course, these questions of 'human intelligence' are not precisely the point if our interest is really in the self. A rational machine or a fluent French speaking computer need not have a sense of self – a consciousness – just because it is (artificially) intelligent. Rather, we would do well to remember the question with which we started the section on the physical self: what is it about

yourself that enables you to know that you are the same person you were yesterday or even on the day that you were born? How can psychical explanations answer this question? If we are interested in the mind or the soul, how can we understand (or observe) what is *continuous* between you now and then?

The most common and intuitive answer concerns continuity of personality (views, opinions, worldview etc.), and this is often linked to memory in various ways. In other words, you are the same person today as you were a week ago because of the continuity of a cluster of psychological characteristics: you have the same personality. Of course, like the physicality model, this kind of argument breaks down at various points since it is clear that your personality changes rather dramatically over time: you certainly have different views, opinions and worldviews now compared with the day you were born. Hence, the real challenge is to account for ways in which your personality can change without losing its continuity, and this is where memory comes in. In this scheme, selfhood is a psycho-temporal vector.

Just as the physicality-centred theories encounter problems when we start to play with the integrity of the human body, so psychic-centred theories encounter problems when we start to experiment with the continuity of memories. How many memories can be lost, altered, or fabricated before an individual becomes somebody else? Where are the mental boundaries of the human self?



Alphonse, from *Fullmetal Alchemist*

Whilst Alphonse's gradually increasing anxiety about his gradually atrophying memory is immediately interesting in this context, it is *Ghost in the Shell* that provides the most interesting laboratory for testing some of these issues. As we have already seen, Kusanagi herself voices the concern that 'maybe there was never a real me in the first place, and I'm completely synthesized.' In fact, she is

talking not only about her body but also about her memories. This follows the earlier scenes in the film where the garbage collector that was 'ghost-hacking' his wife's mind is finally hauled in for questioning, only for the authorities to discover that he has also been 'ghost-hacked' himself. It transpires that all of his original memories have been wiped from his mind, and that a fantasy life has been implanted into his memories: 'All of your memories about your wife and daughter are false. They're like a dream. Someone's taken advantage of you,' says Togusa with some sympathy. After some resistance to the truth that he has at least temporarily lost his 'self,' the garbage collector finally asks whether he'll get his old memories back. Togusa replies: 'Your original memory will never be fully restored. And there may be residual simulation ... I'm sorry.'

Despite his evident physical continuity, is that garbage collector the same person that he was on the day he was born, or even on the day before he was 'hacked'? If not, does *Ghost in the Shell* really experiment with a reality in which technology grants people the power to absolutely alter the 'self' of another human, or perhaps even to completely fabricate a new, synthetic self for an entirely artificial life-form such as a cyborg? If so, what order of crime is this? Is it murder? Is it something else entirely?



Major Kusanagi reflecting on her (in)humanity in *Ghost in the Shell*

Of course, anime also experiments with the opposite problematic, where it is the body that changes utterly and the memory/personality that provides continuity of selfhood. In general, anime tends to be much more sympathetic towards people who are physically transformed than towards those who are psychically transformed, as though physical transformation is somehow superficial. Indeed, in *Ghost in the Shell*, Batou is unusually appalled by the garbage collector ('ghost-hacked humans

are so pathetic!'), but he is never phased by the appearance of cyborgs (or by his own cybernetic body).

Likewise, in the series *Fullmetal Alchemist*, Alphonse Elric, the brother of the main protagonist, loses his entire body at the start of the very first episode in an alchemic process that goes badly wrong. Thanks to the skill of his brother, Edward, Alphonse is saved from death and becomes a fully animated, metal figurine (that was once a suit of armour), which is utterly hollow and quite devoid of any organic or physical continuity with the pre-accident Alphonse.³⁰ But there is little doubt (in the minds of the audience, at least) that this is the same Alphonse; his personality and memories remain continuous (even when this is not always apparent to Alphonse himself). Indeed, much of the rest of the series is concerned with the quest to get 'his' body back again, as though the loss of body was a terrible misfortune that could be remedied. His physical discontinuity is far less important than his psychological continuity; the character of Alphonse is specifically designed to illicit sympathy and understanding from the audience – his disembodied state is supposed to be understood as a type of human suffering or even penitence.³¹ Here, the human self appears to have no essential physical traits at all.

The real value of anime as a laboratory for experimenting with the parameters of the psychological self, however, comes at the hazy intersection between mental and spiritual ideas of selfhood. Unlike *Ghost in the Shell*, for example, which explicitly plays with the value and role of memory as one of the parameters of selfhood, *Fullmetal Alchemist* is much less concerned with memory and more concerned with what we might call the spirit or soul.³² In the case of Alphonse himself, it is clear that his 'spirit' was alchemically 'bonded' to the suit of armour at the moment that his organic body was destroyed. Alphonse remains himself, *no matter what he looks like* (ironically because of a physical mark that bonds the form to his original soul).

Unlike the 'ghost' of Kusanagi's metal body, there is no doubt that Alphonse's soul is the primary source of his human identity – there is no sense in which it might have been generated by the mechanical body in which it is manifest. In other words, *Fullmetal Alchemist* does not support the *mechanist* view of the epiphenomenal ghost. Indeed, the primacy of the soul as the locus of human identity is a central concern of the series – it is a core *moral* issue.

All alchemy in *Fullmetal Alchemist* is governed by the rule of 'equivalent exchange,' which states that nothing can be made of nothing, and that the creation of some-

thing new requires the sacrifice of something that has the same value. The disaster at the start of the first episode (in which Alphonse loses his whole body and Edward loses an arm and a leg) was caused by an attempt to bring their mother back from the dead, and hence to create a human life. The young alchemists had assembled all of the material ingredients of the human body, hoping that this pile (of 'water, 35 litres; carbon, 20 kilograms; ammonia, 4 litres; lime, 1.5 kilograms; phosphorous, 800 grams; salt, 250 grams; saltpetre, 100 grams; sulphur, 80 grams; fluorine, 7.5 grams; iron, 5 grams; silicon, 3 grams; and a small amount of 15 other elements') would satisfy the rule of equivalent exchange. The result, however, was the creation of a monstrously deformed chimera (a perversion of a human self) and even this creation required the sacrifice of an entire human body and two more limbs.³³ An open (and occasionally expressed) question in the series, is whether the boys will ever be able to find something that is of equivalent value to a human soul in order to complete the process successfully, or whether such a process would require something 'other' that transcends the normal conditions of their reality (expansive as these conditions may already seem to us). The implication of these experiments is that that which is essential to the human self cannot be manufactured by technology. The human soul is beyond the artifice of humanity, and of greater value than anything else in the world. The human self is delimited by nature (or even by God).

Conclusion:

This short essay was a first attempt to show how anime can be considered and used as a source of insight into philosophical problems. The ability of the medium to define its own realities makes it the ideal laboratory to perform thought experiments, testing, for example, ideas about the limits of the human self. Considering only two anime franchises, *Ghost in the Shell* and *Fullmetal Alchemist*, we can see experiments from across the spectrum of the philosophy of self.

¹ The long-running journal, *Philosophy and Literature*, as well as the existence of the *International Association for Philosophy and Literature* are testaments to this trend.

² Stanley Cavell, 'An Interview with Stanley Cavell,' *Harvard Journal of Philosophy* VII (1999): 25. See also, Rupert Read & Jerry Goodenough, eds, *Film as Philosophy: Essays on Cinema After Wittgenstein and Cavell* (New York: Palgrave MacMillan, 2005), 1.

³ See, for example, Mary M. Litch, *Philosophy Through Film* (London & New York: Routledge, 2002).

⁴ For more on the differences between film as illustrating philosophy, film as philosophy, and film about philosophy, see Jerry Goodenough, 'A Philosopher Goes to the Cinema,' in *Film as Philosophy*, Read & Goodenough, eds.

⁵ See Ueno Toshiya, 'Kurenai no metalsuits, 'Anime to wa nani ka/What is animation', *Mechademia* 1 (2006): 111, 113.

⁶ The original manga (graphic novel) of *Ghost in the Shell*, by Shirow Masamune, appeared as *Kôkaku Kidôtai* in 1991. It was followed in 2000 with *Kôkaku Kidôtai 2: Man Machine Interface*, both published by Kodansha in Japan. In the mean time, Oshii Mamoru produced two anime, *Kôkaku kidôtai: Ghost in the Shell*, 1995, and then *Ghost in the Shell2: Innocence*, 2005. In addition, there is a television series, some novels, computer games, other manga and another anime movie. *Hagane no renkinjutsushi (Fullmetal Alchemist)* started life as a manga series by Arakawa Hiromu in 2002. The famous anime series by Mizushima Seiji ran for 51 episodes, 2003-4, and there was a final movie, *Conqueror of Shamballa*, in 2005.

Very little has been written in English about *Fullmetal Alchemist*, despite the fact that it was recently voted the ninth most important anime of all time, and the fourth most important manga in a recent pole of over 80,000 people, conducted under the auspices of the Japan Media Arts Festival (2006). *Ghost in the Shell*, on the other hand, has attracted a great deal of attention. Interested readers would profit from Christopher Bolton, 'From Wooden Cyborgs to Celluloid Souls: Mechanical Bodies in Anime and Japanese Puppet Theatre,' in *positions: east asia cultures critique*, 10:3 (2003), pp.729-770; Susan Napier, *Anime: From Akira to Howl's Moving Castle*. New York: Palgrave, 2005, esp. chapters 5-6.

⁷ I (loosely) follow Mary Litch in the identification of a trinity, *Philosophy Through Film* (London & New York: Routledge, 2002).

⁸ I note that DNA is identical in identical twins, but selfhood is not.

⁹ Cyborg theory is often associated with work of Donna Haraway (indeed, Oshii Mamoru gives this name to the female, cybernetic scientist (who turns out to be a cyborg herself) in *Ghost in the Shell2*). Haraway's work on cyborgs is largely concerned with their potential influence on gender politics (and especially on the liberation of women). Interested readers should read her 'Cyborg Manifesto,' which was originally printed in *Simians, Cyborgs and Women*, New York: Routledge, 1991. It can now be found in various places online, including:

<http://www.stanford.edu/dept/HPS/Haraway/CyborgManifesto.html>

¹⁰ The ethical imperative here is simple: if the human condition could be improved through the application of a specific technology, then refusing to apply it represents a decision to deprive humanity of a good. This is held to be the same as behaving immorally by doing damage to humanity.

¹¹ Julian Huxley, *In New Bottles for New Wine* (London: Chatto & Windus, 1957), 17. Julian was the brother of the influential speculative fiction writer Aldous Huxley (1894-1963), author of *Brave New World* (1932). They were the grandsons of the philosopher Thomas Huxley, who will appear later in this essay as an example of a philosophical *mechanist*.

¹² For more details, see the Transhumanist Declaration on the website of the WTA:

<http://transhumanism.org/index.php/WTA/declaration/> (visited: 14/03/07)

¹³ Francis Fukuyama, *The End of History and the Last Man*. London: Penguin, 1992. This book was an elaboration of Fukuyama's influential essay of summer 1989, which appeared in *The National Interest*, in which he proclaimed that the end of the Cold War was effectively the end of ideological conflict and hence the end of history itself.

¹⁴ Francis Fukuyama, *Our Posthuman Future: Consequences of the Biotechnological Revolution*. New York: Picador, 2002. A contrasting view is provided in Gregory Stock, *Redesigning Humans: Choosing our Children's Genes*. London: Profile Books, 2002.

¹⁵ One solution here is the idea that as long as there is sufficient overlap between the replacement of parts (ie. some parts continue while others are replaced, and then the new ones continue while the old ones are replaced), then there is an element of continuity.

¹⁶ Oshii Mamoru directed the anime of *Ghost in the Shell*, based on the original manga by Shirow Masamune. Mizushima Seiji directed the anime of *Fullmetal Alchemist*, based on the original manga by Arakawa Hiromu.

¹⁷ *Ghost in the Shell*, DVD Pal2 release, 00:34:00-00:34:12

¹⁸ Intriguingly, one of the factors that ultimately defeats the young brothers is the fact that technological replication (represented by alchemy in this alternate universe) is inadequate to the task of producing (or reproducing) a human soul. Ie. technology can only produce material dolls. The key to producing human souls appears to lay in the magic of the 'philosophers stone,' but we eventually learn that such stones gain this singular power only through the sacrifice of other human souls. Intriguingly from the perspective of *transhumanism*, bodies manufactured without souls in this way end up atrophying into imperfect material forms as well, as though the material integrity of a human body is somehow dependent upon a soul. Unlike a simple doll, a soulless body is an aberration against the natural order. As we will see, the converse (a soul without a human body) is less of a cosmic offense.

¹⁹ Importantly, Kusanagi is obsessed with the question of the origins of her 'ghost,' but we can consider that later on.

²⁰ If anything, however, Alphonse is less secure than Kusanagi about the location of his selfhood. Indeed, the anime series narrates a gradual atrophy in Alphonse's personality the longer he remains in his artificial form. Partly, this seems to be a narrative device to add urgency to the boys' quest for the philosopher's stone, which they believe will give them the power to recover their organic bodies, but it is also partly an expression of a nostalgic longing for the biological human body as the seat of self.

²¹ Interestingly, when the Vatican publicly admonished the *transhumanist* movement in 2002, it did so on similar grounds, arguing that all 'true improvement' to humanity must be spiritual in nature, because our bodies are already in the image of God.

²² *Blade Runner*, Ridley Scott, 1982.

²³ *Ghost in the Shell 2: Innocence*, Oshii Mamoru, 2004. Shirow Masamune, *Ghost in the Shell 2: Man/Machine Interface* (Tokyo: Kodansha, 2001).

²⁴ It is a common and defensible position to argue that, rather than abandoning dualism, Berkeley's idealism actually substitutes substance dualism (mind-body) for another kind of dualism (mind and idea), albeit a dualism that is wholly within the realm of the mind-dependent.

²⁵ Intriguingly, the laboratory provided by *Fullmetal Alchemist* also makes some moves in this direction. It establishes its universe as an alternative to our own in which alchemy has developed in the place of science. Hence, just as our own world privileges science as rational and de-privileges other types of knowledge (mysticism, magic etc.) as superstition, so too magic is deprivileged (and morally diminished) in contradistinction with alchemy in *Fullmetal Alchemist*. Towards the end of the cycle, it becomes clear that the goals of some of the characters (such as to (re)create a human life without an original) might be possible if they are willing to step outside the confines of normal humanity (and alchemic possibility) and engage in magic. This is clearly depicted as against the rules of normal reality and treated with moral suspicion.

²⁶ The classic example here would be the development of Deep Blue by IBM. This chess-playing computer finally beat the world chess champion (and arguably the greatest chess player ever to have lived) Gary Kasparov in 1997.

²⁷ In general, this type of linguistic intelligence has been unsuccessful, but for many theorists it represents the most important criteria of human intelligence. The so-called Turing Test (which challenges a computer to engage in conversation with a human being for an hour without the human being realising that it is a computer) has yet to be passed by any computer.

²⁸ Although Kusanagi is also explicit about the natural and 'human' merits of her relatively unaugmented team-member, Togusa: 'except for the slight brain augmentation, your body's almost completely human. If we all reacted the same way, we'd be predictable.'

²⁹ An interesting real-world experiment in collective intelligence arose around *The Beast*, an online game created to help promote Steven Spielberg's movie *AI: Artificial Intelligence* (2001). The incredibly complex puzzle was designed by a group of Microsoft software engineers that became known as the 'puppet-masters,' whilst a group of over 500 players (worldwide) worked together as a collective intelligence known as the 'cloumakers.'

³⁰ In the manga version, it is clear that there is a very slight organic element to Alphonse. The alchemic process of 'spirit bonding' that fuses a living spirit to another physical form requires the use of a 'blood seal,' which takes the form of a specific rune (transmutation circle) written in blood on the new substance. In the case of 'spirit bonding' with iron (such as in a suit of armour), the blood itself quickly fuses with the iron. Having said all of this, it is not clear that the blood has to come from the body of the person whose spirit is being bound to the object – indeed, the evidence suggests the contrary.

³¹ The idea that Alphonse is enacting penitence is supported by the fact that his 'injuries' were caused by the attempt to perform 'human transmutation' (the creation of human life), which is constantly referred to as against the laws of alchemy and the laws of nature.

³² I note here that memory plays a strong function in the story, since all of the main characters experience repeated flashbacks to their childhoods and each of their struggles to come to terms with the traumatic events of their pasts provide central threads in the narrative of the series.

³³ The anti-mechanist moral of this episode bears comparison with Mary Shelley's *Frankenstein* (1818).



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