FCJ-054 Digital Bodies and Disembodied Voices: Virtual Idols and the Virtualised Body

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Introduction

2 The virtual idol, a computer-generated media celebrity, is a figure representative of a cultural milieu in which arrangements of data seem interchangeable with physical materiality. We are currently in an historical moment when form, information and data are widely understood to be rendering matter, physicality and flesh increasingly redundant. Popular and academic accounts of the body as discourse, behaviour as genetically programmed and digital information systems as rendering spatial relationships and physical interaction irrelevant, for example, are all dominant discourses of the 'information age'. This mode of understanding is perhaps a prerequisite for the appearance of the virtual idol, a figure animated by digital data, an immaterial substance into which seemingly anything – even the body itself – can be translated.

3 The virtual idol seeks to simulate a particular kind of human body: the celebrity who is already heavily mediated and virtualised through her relationship with and dependence upon technologies of representation and the careful construction of a public persona. The celebrity is a particularly appropriate subject for digital simulation given that the careers of living media celebrities already follow a trajectory which carries them towards virtualisation, and the virtual idol's blurring of the boundaries separating the biological and digital bodies highlights a contemporary propensity to see little difference between the two.

4 The virtual idol might seem like nothing more than curio, or the product of an increasingly cynical – or desperate – celebrity industry. However, in this essay I wish to situate the virtual idol within a larger history of thought on the relationship between the living body and its technological simulation. Simulations of the living body not only reflect contemporaneous understandings of what the body is and how it works; they also inform these understandings, serving as models for further investigation and speculation.

The Virtual Idol

5 As suggested by its name, the virtual idol is a computer-generated equivalent of the Japanese aidoru, or idol, a pop star cum actor who can be taken as an extreme example of corporate attempts to prefabricate celebrity. According to Hiroshi Aoyagi, 'becoming a female idol is to be wrapped up in a package of toylike femininity designed by idol manufacturing agencies to attract consumers and enlarge profits' (2005: 86).

6 The fact that the management of girl idol group Tokyo Performance Doll sought to internationalise the market for the group's songs by selecting a group of young Chinese girls to form Shanghai Performance Doll – singing translations of Tokyo Performance Doll's songs – further illustrates idols' status as mass produced and interchangeable value-added commodities (Iwabuchi, 2002: 102; Aoyagi, 2005: 238).

7 While a number of different accounts of celebrity arose during the late 20th century surge in scholarly discussions of the phenomenon, they were broadly unified by a rejection of explanations which depended upon the celebrity's exceptionality or uniqueness, seeing celebrity rather as a constructed phenomenon produced by a specialised industry or industries(see Rojek, 2001: 29-49; Turner, 2004: 41-45). However, a central problem for the production of celebrities is that, '[u]nlike factory-built products, celebrities have minds of their own and the capacity for independent action' (Turner, 2004: 35). In 1996, HoriPro, one of Japan's largest talent agencies, hit upon a novel method of neutralising the dangers of aging, scandals and tantrums for its stable of idols. It commissioned Visual Science Laboratory, a Japanese computer graphics company, to create a computer rendered and animated celebrity intended to reproduce the living idol's appeal while adding to it the fascination of an entirely artificial, technologically produced body. The result was Kyoko Date, the world's first virtual idol.

The Charm of the Virtual

8 Speaking of the relationship between the human body and new technologies, Fortunati, Katz and Riccini note that, while new technologies are most certainly ascribed an economic value, the human body is often seen as having comparatively little economic worth.

9 > The human body, because it is placed outside the rationale of value, is seen as something whose value is so incommensurable and therefore immeasurable that it ultimately does not cost anything and so is socially devalued. As nonvalue, it therefore always costs less than technology (this is the reason for the slowing down of robotics). (2003: 3)

10 This incommensurability is made abundantly clear by the relative economic worth ascribed to computers and the developing world bodies which assemble them; however, the parenthetical remark concerning robotics requires clarification. For 'robotics' perhaps it would be more accurate to substitute research into androids, that subset of robots which reproduce the human form; this would seem to be the spirit of the quote given the parallel with the human body, and the creation of robots which do not mimic the appearance of human bodies (for example those which are used to assemble cars or microchips) is a highly successful and economically important industry. It is the attempt to create a robot whose actions closely reproduce those of a human body which has for many years failed to deliver something approximating the fantasy which motivates it.

11 However, in this regard I would argue that Fortunati et al. are failing to appreciate an important dimension of attempts to create androids. It is true that there is little economic imperative to create mechanical replacements for human bodies – after all, the world is full of human bodies which do not need to be designed and built at great cost – but this only raises the question of why such research has taken place at all, rather than requiring explanations for its lack of success. The quest to build a machine which could walk began before the invention of the steam train (Asendorf, 1993: 105), and yet Honda's ASIMO, the first bipedal android capable of reliably nimble perambulation, only attained this capacity in the 1990s (Honda, 2006). The slow progress towards ASIMO was not the result of a lack of economic imperative, but rather the fact that reproducing the countless adjustments of balance necessary for human beings to teeter about on two long legs for many years seemed an insurmountable engineering challenge. Again, this invites the question of why this problem was pursued for so long when robots can just as easily be fitted with wheels, or a far less challenging four legs.

The Artificial Body

12 The first direct ancestor of the modern android was the 18th and 19th century clockwork automaton, whose appearance in Western Europe was soon followed by the Japanese clockwork karakuri doll after the arrival of clockwork technology to that country (de Panafieu, 1984: 127; Screech, 1996). The existence of these automata was in no way justified with recourse to ideas of economic significance or industrial productivity; they were created for no other reason than the pleasure of seeing a machine simulate the appearance and movements of a living being. While the android might have acquired a set of economic justifications since that time, Fortunati et al.'s comment only draws attention to the weakness of these justifications. While robotics have been pursued most vigorously in Japan, a country whose past rapid economic growth and resistance to immigration can be seen to have created an economic imperative for new sources of labour, there is a great gulf separating the robotic arm on a car assembly line from ASIMO. The fact that the most impressive and lifelike robot bodies are creations such as Sony's AIBo (Artificial Intelligence roBOt) animals (Sony, 2005) and Honda's ASIMO, automata which have no real productive use, only serves to accentuate this fact. The AIBo's claimed raison d'étre is its usefulness as a companion, but the argument about the incommensurability between the value of the human body and its robotic simulation is surely doubly true when the human body is substituted with that of a dog or cat. In the case of ASIMO, it has been argued that androids have a superior capacity to function in the home, helping to care for Japan's increasing proportion of elderly citizens. However, the ASIMO project was initiated in 1986, a time when Japanese technological research was driven more by bubble economy hubris than concern about physical frailty, and the economic impact of a rising average age was only just beginning to be recognised.[1] During ASIMO's various public appearances, its capacities are shown off through economically insignificant activities such as dancing and balancing on one leg, rather than opening jars for arthritic old ladies or carrying them upstairs to bed. At the 2005 International Robot Show in Tokyo, 80 year-old Joe Engelberger, the

founder of the world's first industrial robot manufacturer, was reported to have complained about the state of robot research, which he characterised as preoccupied with making 'toys' or 'dolls' which mimic human bodies rather than producing machines capable of practical application (Cameron, 2005: 21). The fact that both the AIBo and ASIMO have been used primarily in corporate advertising for their respective producers, demonstrating their technological resources and know-how, rather than being seriously marketed as consumer goods, further makes the suggestion of an economic imperative in their development seem no more persuasive than claims for the aerodynamic properties of fins on 1950s cars. This is not to argue that such robots can have no productive function, but only to note that their use value seems marginal to their fascination. Just as 1950s industry can be seen to have made reference to technological fantasies of streamlined speed with its fins, the android can be seen as resulting more from wider discourses concerning technology than the pragmatic justifications attached to it after the fact.

13 The virtual idol provides an excellent case study for investigating the less pragmatic considerations underlying the development of such technological artefacts. Also largely a Japanese phenomenon, like the android it can be seen to resonate with wider-ranging fantasies of simulating the human body.[2] In addition, misleading claims about the practical value of simulated bodies are less applicable in the case of the virtual idol than the android as the economic imperative which drives the creation and marketing of virtual idols is a public fascination with the idea of such simulations of the human body in themselves, making the more laboured justifications required of ASIMO unnecessary.

Simulation and Representation

14 The advent of the virtual idol has already been noted by news services such as the BBC and CNN as a technological curiosity (for example, 'Virtual Pop Star's Chart Bid', 2000; Williams, 2001). However, such popular accounts understand the virtual idol as simply and unproblematically a representation or simulation of a biological original. With all Japanese virtual idols to date being female, often the predictable outcome is the repetition of easy assertions concerning the virtual idol as a passive, compliant fantasy woman. Given the geographical epicentre of the virtual idol phenomenon, these assertions are then readily assimilable into stereotyping accounts of Japanese patriarchalism and the emotional infantilism and romantic ineptitude of Japanese men.[3]

15 But is it appropriate to understand the virtual idol simply as representation of a biological original? If the virtual idol is simply a commodified representation of femininity, how can her existence be justified given that the same purpose can be – and has been – served through the use of still or moving photography to supply men with fantasy ideals? In line with Fortunati et al.'s comment, images of living women are vastly more economical in terms of the time and resources required to produce them, and they continue to enjoy more popularity than their computer-generated equivalents. Furthermore, while the virtual idol can simulate a media career, creating an artificial image and performing in a contrived and carefully circumscribed way according to the dictates of her managers and minders, how different is such a mediated persona from that attached to living pop stars and media celebrities? All celebrities bear only a tenuous connection to living, biological bodies, although those bodies ultimately guarantee their status and continuity.

16 Clearly what is missing from such accounts is a consideration of what makes the virtual idol different from both living celebrities and other representations of the female body, which is that it is constructed from digital information and has no direct living or material original. In a 1997 issue of The Face largely devoted to the fame of British proto-virtual idol Lara Croft, a commentator explains Croft's status as 'that of a Seventies car advert: a half-naked woman being used to sell the machinery beneath her' (Sawyer, 1997: 70).[4] However, such accounts are clearly insufficient in that computer generated women are analogous to both half-naked woman and car, bringing together sexy body and technology. Furthermore, the 1970s car is capable of exerting sex appeal even when not draped with a bikini-clad nymph; the 'muscle car' is attributed with its own spectacle of sexual desirability, whose very name figures it as something approaching a body in its own right. In this sense, then, the desirable car is not so different from the android in its fascinating technological evocation of the human body; it may lack the capacity to climb stairs, but it does possess a more persuasive claim to practical value.

The Virtual Body

17 The virtual idol is clearly situated at the intersection of machine and body, but what remains unclear is how this intersection came to be so firmly established in popular conceptions of technology. When seeking to explain the desire to see the human body simulated using technology, of obvious importance is the manner in which such simulations seem to literalise contemporaneous understandings of how the human body is constituted.

18 The European automaton appeared at a time and place in which materialist accounts of the human body sought to explain its functioning in mechanistic terms (de Panafieu, 1984: 130-31). The automaton's ability to simulate the human body seemed to confirm the legitimacy of these accounts of the body, but the desire to create such artefacts in the first place also reflects an existing faith in their accuracy.

19 > [T]he automaton has close links with the living creatures in all its different manifestations, but especially in relation to the medicine and physiology of the period. It dissects the living and imitates them sufficiently well to generate a gratifying illusion about its own nature; it proposes experimental protocols that link up with the old topics of the body, animals and man … as machines. (Beaune, 1989: 436 emphasis in original)

20 The problem, of course, is that such limited referencing of the human body invites a belief that every human capacity might be simulated in the same way and thus that the human body itself is not qualitatively different from the automaton, being superior only in its greater complexity. Christine Woesler de Panafieu makes the argument that automata do not reflect an attempt to replace the human body with technology (a conclusion which is often drawn from attempts to reproduce the body through robotics or remove its input through automatism), but rather result from an attempt to show that technology and the human body are in fact one and the same thing (de Panafieu, 1984: 131). Rather than being an effort to tame or replace biology, such pursuits seek to remove any distinction between biology and machinery by demonstrating that the human body is simply a more complex machine and thus not in any way opposed to other machines or privileged in relation to them. The obvious appeal of such an idea is that it panders to a belief that current scientific knowledge can explain every one of the body's mysteries, rather than often being mystified by the body's functioning and capacities as is more truly the case.

21 Given that any representation of the body makes only a selective reference to the living original, changes in modes and styles of bodily representation can be seen to reflect those corporeal attributes most prioritised or valued at a given historical moment. As already noted, the 18th century automaton can be seen to reflect an understanding of the body based upon materialist and mechanistic accounts, but this principle can be extended more broadly. For example, it has been noted often enough that the older tradition of classical and neo-classical representations of the body reflects a prioritisation of the qualities of wholeness, smoothness and exteriority, and thus served as an aesthetic reflection of the humanist subject as self-contained and differentiated.

22 The relationship between the classical form of bodily representation and the rise of a particular conception of the body lies at the heart of Bakhtin's account of the grotesque:

23 > The new bodily canon presents an entirely finished, completed, strictly limited body, which is shown from the outside as something individual … The basis of the image is the individual, strictly limited mass, the impenetrable façade. (Bakhtin, 1984: 320)

24 This account is taken up by Stallybrass and White in their description of the classical statue:

25 > [T]he classical statue is the radiant centre of a transcendent individualism, 'put on a pedestal', raised above the viewer and the commonality and anticipating passive admiration from below … The classical statue has no openings or orifices … [T]he bourgeois individualist conception of the body … finds itsimage and legitimation in the classical. (Stallybrass and White, 1986: 21-22)

26 Such representations both reflect contemporaneous conceptions of what the body is, and perhaps seek to blur the distinction between original and copy by encouraging the living body to take on desired attributes through the influence of its simulacrum.[5] It can be seen as a kind of sympathetic magic which, through the influence of a lifeless representation of the body, seeks to produce living bodies which more closely approximate that representation.

27 This kind of reversal, in which the copy is seen to affect the appearance of the original, existed long before Barbie dolls or Lara Croft were accused of encouraging dieting or plastic surgery. Western

art, medicine and science have for some time been obsessed with investigating the nature of the living body through its representation, and accounts such as that of art historian Nicholas Mirzoeff see this obsession with representation as resulting from a desire to assuage anxieties concerning the nature of the lived body.

28 Representations of the body are one means of seeking to complete this inevitably disjunctured entity. The coherence of the represented body is, however, constantly undermined by the very incompleteness these images seek to overcome. The body is the object of whose materiality we are most certain, but the indefinable potential of that inevitably incomplete materiality remains a constant source of unease. (Mirzoeff, 1995: 21)

29 N. Katherine Hayles has characterised a dominant contemporary understanding of the body as one of 'virtuality', 'the cultural perception that material objects are interpenetrated by information patterns' (1998: 69; 1999: 13-14). Hayles argues that this perception is only made possible by the post-war development of a duality between information and materiality, a duality itself only made possible when electronic media allow the 'dematerialisation' of communication, and given additional impact by the importance of such communication to the conduct of modern warfare. Implicit in the post-war appearance of information theory, which reduces communication to the transfer of something abstract and contextless, immaterial but mathematically quantifiable (Hayles, 1998: 72), such a conceptual framework is also implicated in forms of knowledge as disparate as genetics and socio-biology, on one hand, and Foucauldian accounts of the body as produced by discourse, on the other.

30 Every epoch has beliefs, widely accepted by contemporaries, that appear fantastic to later generations ... One contemporary belief likely to stupefy future generations is the postmodern orthodoxy that the body is primarily, if not entirely, a linguistic and discursive construction. Coincident with cybernetic developments that stripped information of its body were discursive analyses within the humanities, especially the archaeology of knowledge pioneered by Michel Foucault, that saw the body as a play of discourse systems. (Hayles, 1999: 192)

31 This complaint intersects with a number of other critiques of Foucault's account of the body. In the late 20th century, Foucault's account was questioned from within sociology on commonsense grounds, but more recently, in 'the Deleuzian century', the most effective challenge is a philosophical one highlighting its perpetuation of a classical distinction between form and matter in the shape of discourse and materiality.[6] Paul Rabinow suggests that even Foucault himself came to acknowledge the limitations of an approach which focused exclusively upon discourse:

32 Deleuze convincingly claims that Foucault lost his wager that it would be the language of the anthropological triad – life, labor, language – that would open the way for a new episteme, washing the figure of Man away like a wave crashing over a drawing in the sand. Foucault himself acknowledged that his prediction had been wrong when, a decade after the publication of The Order of Things, he mocked the 'relentless theorization of writing,' not as the dawn of the new age but the death rattle of an old one. (Rabinow, 1992: 236)[7]

33 Whether originating in the sciences or humanities, virtualising accounts of the body see the self as most importantly a construction of information, leaving the materiality of embodiment as little more than a by-product or regrettably inescapable excess. The kinds of conclusions invited by such an understanding of the body can be seen at their most striking in marginal perspectives such as those of transhumanists who plan to download their identities as pure data into a computer and discard their bodies, but a more general, commonsense understanding of the body based upon this perspective is visible all around us, seemingly confirmed by, for example, the experience of modifying or replacing one's identity while interacting with others in an internet chatroom, or the promise of genetic research to allow modification of behaviour or appearance by altering the syntax of genetic code.

34 Technical artefacts help to make an information theoretic view a part of everyday life. From ATMs to the Internet, from the morphing programs used in Terminator II to the sophisticated visualization programs used to guide microsurgeries, information is increasingly perceived as interpenetrating material forms. Especially for users who may not know the material processes involved, the impression is created that pattern is predominant over presence. From here it is a small step to perceiving information as more mobile, more important, more essential than material forms. When

this impression becomes part of your cultural mindset, you have entered the condition of virtuality. (Hayles, 1999: 19)

35 This development can be contextualised within a longer-term shift in the relationship between body and representation, as noted by Martin Kemp and Marina Wallace:

36 [F]undamentally human (and humanist) themes remained at the centre of Western art from the Renaissance to the mid-nineteenth century. But by 1880 or so, something extraordinary was beginning to happen – [t]he centres of attention in avant-garde art moved decisively into areas other than the human figure rendered within the broad spectrum of naturalism … At more or less the same time, hand-drawn illustrations of what was called 'gross anatomy' – that is to say, the features discernible by the naked human eye – ceased to undergo significant development.

37 That these developments in art and medical imaging occurred over the same time span is not coincidental. The kinds of truth for which artists and medical researchers were mutually searching lay not just within and under the surface appearance of things, as they had for generations, but at different levels of reality, more abstract and often ever-more minute. (Kemp and Wallace, 2000: 16-18)

38 The advent of new technologies of representation such as photography, cinema and X-ray imaging penetrated and fractured the unified classical body, breaking it into multiple spatial layers and temporal moments. Later, in the era of morphing special effects, digital photomontage and functional MRI scans, posthumanist representations of the body can be seen to have exploded the unified classical body into countless fragments of data and shifting perspectives.

39 Quite clearly, the virtual idol is a body which exists in a state of virtuality. Just as neo-classical representations of the body reflect understandings of what the body is or should be from their time, the virtual idol is an artefact which reflects current conceptions of the body and their relationship to previous ones.[8] The virtual idol is a new kind of automaton which marks the movement from the industrial to the post-industrial age; whereas, in the machine age, the body was imagined to be a machine, in the information age it is imagined to be information. This is part of a wider shift: where once mechanistic accounts sought to reduce the workings of nature to a collection of mechanisms, today the discourse of genetics seeks to reduce the workings of nature to arrangements of data.

40 This vision of the body as computer data is summoned by Lev Manovich's exhortation to see the computer generated body, not as an imperfect representation of the body as it now is, but rather as a representation of the body as it will be in a virtualised future (an exhortation which reflects the power of the discourse of virtualisation in its hyperbole):

41 [The s]ynthetic computer-generated image is not an inferior representation of our reality, but a realistic representation of a different reality … [W]e should not consider clean, skinless, too flexible, and in the same time too jerky, human figures in 3-D computer animation as unrealistic, as imperfect approximation[s] of the real thing – our bodies. They are perfectly realistic representation[s] of a cyborg body yet to come, of a world reduced to geometry, where efficient representation via a geometric model becomes the basis of reality. The synthetic image simply represents the future. (Manovich, 1996: 64)

42 This new kind of body – one consisting entirely of digital code – brings with it a new set of perspectives on how the body does, and might, function in a state of virtuality, just as the clockwork body reflected and informed materialist perspectives in its day. The advent of new digital technologies has had an important impact on popular conceptions of the status of information as a dematerialised substance, and the virtual idol as digital body generates a set of questions concerning the attributes of a truly virtual body in the digital age.

43 Digitalisation has led to an unprecedented sense of the dematerialisation of cultural texts, and of their near-infinite translatability and appropriability. Still images, music, text, video can all be translated into a common format, one which allows them to be infinitely duplicated, near-instantaneously disseminated, and re-authored by anyone who comes into their possession. This has been seen as empowering consumers by providing them with the capacity to produce and distribute their own material or retrofit existing material to their tastes, but has also caused consternation amongst intellectual property holders as their ability to dictate consumers' mode of interaction with their properties has weakened. While 'real life' media stars are already highly virtualised, and digital formats give consumers tremendous power to, for example, illegally

duplicate or remix Beyoncé's latest song or re-edit still or moving images of her body for their own ends, the fact that the virtual idol exists only in digital format, and can be marketed, not simply as a manipulable end product, but as the encoded potential for action which allows her copyright owners to animate her in the first instance, introduces a further level of complexity in the relationship between digital information and body. Rather than simply buying audio-visual representations of the virtual idol, consumers can actually buy instances of the virtual idol's manipulable body itself, which are no less real or original than those used to produce her movies or songs.

Yuki Terai and Interactive Celebrity[9]

44 The virtual idol Yuki Terai was launched in 1997 by Japanese company extage.[10] One year earlier, HoriPro had launched Kyoko Date, achieving short-term success with the release of pop songs and 'appearances' on radio. (Obviously, when appearing on radio, the only component of the Kyoko Date persona being presented to the audience was Kyoko's voice, which was produced by a living human being, not a computer.) Unlike HoriPro, however, extage was a company largely concerned with technical education and the publication of magazines and reference books aimed at computer animators, rather than being experienced in the management of media personalities. Yuki Terai had already been created by manga artist Kenichi Kutsugi and introduced in the form of a two dimensional, monochrome comic book, and extage, recognising her value as an appealing and already fleshed-out character, set about establishing her as a pop star, pinup, and advertising spokesmodel. She has since enjoyed considerable success, releasing DVDs, photo books, and music CDs, and has secured a mainstream profile by appearing on TV shows and advertisements and even as a centrefold in a Japanese men's magazine. extage's strategy has thus been to market Yuki to a mainstream audience using familiar media formats such as books, calendars, TV broadcasting, CDs and DVDs.

45 However, Yuki is also marketed by Japanese software publisher eFrontier, publishers of Shade, a 3D modelling programme. The target audience for eFrontier's marketing of Yuki Terai is far more specialised, and the format in which she is presented much less familiar to most consumers.

46 Yuki Terai is both the product of, and of most direct interest to, the Japanese otaku subculture. Otaku (most commonly translated as 'nerds' or 'geeks') are a subculture heavily invested in manga, anime, and computer games. Otaku produce a great deal of amateur fan art and, while this mostly takes the form of comic books, many otaku are also amateur computer modellers, and many professional Japanese graphic artists and computer animators and modellers have trained themselves in their craft through fan activity rather than educational institutions.[11] Aidoru otaku constitute a subset of otaku whose fandom is directed at living idols (Aoyagi, 2005: 205 ff.), and the virtual idol combines their and other, more general, otaku obsessions. Texts produced both by and for otaku are often concerned with bishōjo, or pretty girls, and one forerunner of the otaku interest in the virtual idol can be seen in the kisekae computer programme, a kind of digital paper doll set originally aimed at young girls, but which was soon appropriated by otaku (often reimagined as a kind of interactive pornography) (Hamilton, 1997: 4).

47 Amateur otaku computer graphics artists therefore represent an important market both for the magazines and reference books of extage, and the software published by eFrontier. While extage's marketing of Yuki Terai focuses on mainstreaming the appeal of a computer generated pin-up of initial interest primarily to the otaku subculture, the rendering and animation software published by eFrontier is only really marketable to industry professionals and otaku enthusiasts; software packages such as Shade are costly and complex, and it is unlikely that a more mainstream demographic would devote itself to the production of computer animation rather than simply its consumption.

48 However, the existence of a non-professional market for this software, one representing widely differing degrees of ability and proficiency, invites the provision of packages catering to those users without the skill or time to create elaborate projects from scratch. As a result, eFrontier sells the actual data from which Yuki Terai is produced for use with the Shade programme, providing amateur computer graphics artists with resources similar to those used to professionally model and animate Yuki for a mainstream audience and thus the capacity to pose and animate her body in the same way.

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eFrontier and extage therefore market Yuki Terai in quite different ways and to different demographics; consumers of extage's more mainstream Yuki products are likely to include otaku enthusiasts, but the Shade data packages which allow her posing and animation are unlikely to reach a non-otaku audience.

50 The differences amongst consumers is also tied to a difference in the format in which Yuki is presented in each instance, and the kinds of consumption practices they invite. While extage can and does present Yuki Terai in consumer digital formats such as CD and DVD, these digital products are intended to be as fixed and predetermined in their use as her presentation in other formats such as books and television broadcasts. extage is addressing Yuki to a mainstream consumer audience content to receive pre-produced Yuki Terai texts (the most interactive these texts get is a computer programme in which Yuki teaches the user to touch type). However, the more specialised consumers of the data files sold by eFrontier seek to be involved in the authoring of new Yuki Terai texts, and are therefore interacting with this media celebrity in a novel way, one not possible with living celebrities; the mainstream consumers of extage's Yuki products are purchasing Yuki Terai texts more-or-less identical to texts relating to living celebrities, but eFrontier's customers are actually purchasing Yuki herself, in a form no less original or flexible than the form owned and utilised by extage to produce its mainstream Yuki texts. This capacity introduces novel methods of consuming celebrity, ones which draw the figure of the media celebrity more directly into debates concerning the new modes of reception and production made possible by digital formats.

51 Central to recent debates surrounding digital formats has been the degree to which they allow manipulation of intellectual property by consumers. Of particular concern to producers of films, music, and software has been the degree to which control over the distribution of material in digital formats has been lost. The capacity to translate digital files into new and more readily transportable formats such as MP3 and DivX and then circulate them through file sharing networks such as Napster, Kazaa and BitTorrent has been a cause of anxiety.

52 This anxiety results from digital formats' capacity to remove intellectual property rights holders from any direct economic relationship with the dissemination of copyrighted material. However, selling the code for Yuki Terai's computer model is the equivalent of, not simply making one's own copy of Beyoncé's latest song or video clip, but making one's own copy of Beyoncé's body. The virtual idol makes the body itself a work of art in the age of mechanical – or rather digital – reproduction.

53 Given the struggles for control over digital formats which have taken place (and are still taking place) between intellectual property rights holders and consumers in the digital era, it might seem surprising that eFrontier is making the data for Yuki Terai's body available at all. Certainly it might be expected that extage would want to maintain a monopoly over the body of its own media starlet, and thus control over which kinds of media texts she appears in. The potential conflict between these two models for disseminating Yuki Terai was apparent at the beginning of her career.

54 An early coup in the marketing of Yuki Terai was her appearance in a mouthwash commercial for Japanese pharmaceutical giant Lion in 2000, in which Yuki's computer generated body was composited into live video footage.[12] However, three days before the Lion advertisement was first aired, Japanese men's magazine Friday, having experimented with eFrontier's Yuki Terai data for Shade, put together a story on the potential to produce pornographic images using this software, complete with example illustrations. The potential damage to Yuki's advertising career would have been analogous to that caused by sexually explicit photographs of a living pop star being published shortly before the launch of a lucrative celebrity endorsement. Disaster was averted by the last-minute efforts of extage CEO Mr Tonomori, who managed to have the Friday story toned down before publication by the magazine's editor (who had fortunately attended the same university as Mr Tonomori), and use Friday's concessions to placate Lion. However, the incident illustrates the tension between Yuki Terai as a piece of intellectual property and media celebrity whose persona and representation is under extage's control, and Yuki Terai as a set of data which can be utilised by the general public for whatever ends it desires. Given that any celebrity is highly mediated and is likely to be recorded and consumed in digital formats, the capacity to appropriate and alter bodies which have been digitised is much more widely available

than this (for example, digital images of a living celebrity could be re-authored to create pornography, or digital recordings manipulated to create utterances or song lyrics which have never passed the living original's lips). However, the lack of an original body for Yuki Terai, and the commodification of her body itself as saleable digital data, raise a further set of questions about the degree to which a body might be 'pirated'.

Vocaloid and the Separation of Voice from Body

55 Related questions are raised by another piece of software intended to simulate the human body, although in this case audibly rather than visually. While Yuki Terai is visually computer generated, one area in which she has remained the product of a biological body is her voice, which is provided by a singer selected through open audition. However, eFrontier is currently exploring the possibility of providing amateur users with the ability to digitally manipulate both Yuki Terai's body and voice using new software technology.

56 Yamaha has already developed a software technology called Vocaloid, which uses a combination of sound synthesis and a library of sampled voice recordings to allow users to type lyrics into an editor, set the notes being sung, and manipulate a variety of other variables in order to generate a vocal performance in the absence of a living singer. eFrontier is investigating the possibility of combining this technology with its Poser character animation software to produce a package which would allow users to both pose and animate Yuki's body, and control her voice.

57 Because the Vocaloid software makes use of a library of sampled singing, the technology is sold to end-users as particular, individualised voices, each one gaining its own character from the particular session singers sampled to create it. The first of these 'vocal fonts' were 'Lola' and 'Leon', generic female and male African-American backing singers. However, the following two Vocaloid instruments were different from Lola and Leon in their association with particular, real-life singers.

58 British music production software company Zero-G followed Lola and Leon with 'Miriam', a Vocaloid vocal font created using samples of British singer Miriam Stockley (Zero-G, 2005). Japanese music software company Crypton Future Media has also created a Japanese vocal font, 'Meiko', which makes similar use of the voice of singer Meiko Haigō (Crypton Future Media, 2004). While the Vocaloid technology is not yet at the point of convincingly simulating singing, the ability to uncouple a particular person's voice from their body raises further questions about the relationship between new media formats and the mediation of personality. Miriam Stockley and Meiko Haigō have nothing approximating intellectual property rights over what their vocal fonts might say ('corporeal property rights', for example), and would be unable to challenge the use of these voices to express ideas to which they objected.

59 In 'The Grain of the Voice', Roland Barthes differentiates between the raw material of the voice, which is produced deep within the body, and the shaping of sounds which takes place in the throat and face, arguing that 'it is in the facial mask that signifying breaks out, producing not the soul but enjoyment' (1986: 272). The Vocaloid technology effectively separates these two components of song: the 'grain of the voice' is harvested from the living body to produce the raw material of the sample library, which the software then shapes into signifying enunciation independently of that body. This can be seen to take further a trend in electronic music identified by Barbara Bradby, in which new technologies have changed some women from 'lead singers' to 'female vocalists': freelance session performers hired on by (usually male) producers so that their voices can be recorded and utilised for individual projects (Bradby, 1993: 168-69; see also Dickinson, 2001: 339). This shift from women as members of a band to women as a raw material to be sampled and manipulated using new technologies has reached its logical conclusion with Vocaloid, which promises to render the bodies and personalities of women such as Miriam Stockley and Meiko Haigō redundant to the production of music.

60 For its part, extage seems unconcerned by this tension between Yuki Terai as a media personality which it markets, and Yuki Terai as a set of data available for use outside the sphere of extage's control. While extage seeks to secure mainstream success for Yuki, it is nevertheless building on a base of otaku fan interest, and this subculture is also important to the success of extage's other products. The Friday incident notwithstanding, other risqué appropriations of Yuki Terai's digital body are likely to occur only within the confines of the otaku community, in forums outside the view of mainstream consumers, and so have little impact on her mainstream profile. At the same

time, however, her popularity in these forums sustains a core fan base which underwrites her financial viability.

Conclusion

61 In a cultural milieu in which the living body is understood to itself be undergoing a process of virtualisation, the kinds of economic relationships and relationships of power and control which surround the virtual idol can be taken as a more general indication of issues relating to an understanding of the body as data. Visions of the body as information generally lend themselves to fantasies of either self-determination (as in the case of genetic engineering, in which the manipulation of information allows us to modify appearance and behaviour) or liberation (as in technophiliac dreams of enacting new personae in cyberspace). However, the creation of virtual bodies as commodities suggests the possibility of entirely new structures arising to circumscribe the virtual body and leave it at the mercy of larger forces. If we take the dream of the Extropians to one day convert human consciousness into data and download that data into superhuman artificial bodies as an example (see, for example, Terranova, 2000: 273; The Extropy Institute Website, 2004), we might want to ask questions about the kinds of industrial structures and economic relationships which would underlie such a transmigration of the soul, even if it were possible. Who would build these new bodies, and how much would they cost? Would they be designed with a view to planned obsolescence, requiring that their transhumanist recipients periodically pay for an upgrade? Looked at from the perspective of such economic relationships, this quasi-religious vision of freedom becomes a future in which we are so comprehensively gathered into market relationships that our very bodies are the copyrighted intellectual property of private companies, who we must pay for the right to be embodied on a continuing basis. The very life functions of our bodies would be the proprietary technology of large corporations. The new kinds of relationships which arise when bodies are translatable into data which is subject to intellectual property laws are already appearing in instances where biotech companies are copyrighting the genetic code of individuals with rare inherited disorders, taking possession of the information which essentialising accounts see as the underlying determinant of personal individuality and uniqueness. (Meanwhile, American Idol contestants are required to sign a contract which hands over 'the rights to [their] names, voices, likenesses and biographies..., everywhere and forever' [Mole, 2004: para. 10]).

62 The very existence of Yuki Terai is an indication of the hold the idea of the virtual body has over the popular imagination, and is one more illustration of the experience of virtualisation, in which the materiality of our bodies seems to become saturated with data, even to the point where it appears to be dissolving into a pool of information. Furthermore, her position as a media celebrity amongst other, living, media celebrities highlights the fact that – in some areas at least – the differentiation of the living body from those fragments of it which have been converted into digital formats is becoming increasingly difficult. The commercial structures which maintain her, and the ways in which her audience interacts with her computer-generated body, give an indication of the extent to which a new kind of body might be assimilated into the logic of digital data. Information might want to be free, but the varied industries which produce intellectual property aggressively seek to maintain their control; the more the human body is understood to be constituted by data, the more subject to these commercial structures it becomes.

63 However, it must be remembered that the virtual idol is a purely virtual body, one created wholly as a construction of digital data. As with the clockwork automaton of the 18th century, there is a danger that the ability to fabricate such a body will generate a misconception that the living body has no qualities or attributes which are not reducible to the principles underlying its construction, resulting in the further entrenchment of limiting understandings of the body. The human body is no more pure information than pure mechanism, and the fascination of the virtual body ultimately says more about contemporary frameworks used to discuss the body than it does about the reality of our embodied experience.

Author's Biography

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Notes

[1] For example, a Japanese report on population aging's economic impact produced for the United Nations in 2004 cited no research in this area earlier than 1987 (Shimasawa and Hosoyama, 2004: 4). In addition, the name ASIMO, bestowed in honour of Isaac Asimov, author of I, Robot, highlights the project's origins in science fiction fantasies.

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[2] Some attempts to establish careers for virtual idols have been made outside Japan (Black, forthcoming).

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[3] Which is not to say that virtual idols are not reflective of the conceptions of femininity which inform them. Clearly their status as idealised representations of the feminine makes them highly informative in this regard, and I have discussed this aspect of the virtual idol elsewhere (Black, forthcoming).

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[4] The machinery in this case being the Sony Playstation.

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[5] Bakhtin relates the bodily canon he discusses to those '[s]imilar classical concepts of the body [which] form the basis of the new canon of behavior' (Bakhtin, 1984: 322-3, n 8), which seek to modify the appearance and behaviour of living bodies in line with the values underlying neo-classical representation.

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[6] See, for example, (Shilling, 1993).

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[7] For a Deleuzo-Guattarian critique of this privileging of linguistic frameworks, see (Deleuze and Guattari, 1987: 111-12). The passage to which Rabinow refers is (Foucault, 1984: 127).

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[8] For more detail on the design of the virtual idol, and its relationship with neo-classical, industrial and digital aesthetics, see Black (forthcoming).

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[9] The details of Yuki Terai's career used in this article are largely based on information kindly provided by Mr. Takeshi Tonomori and Ms. Masami Ukon of extage/Works and Mr. Taiyo Fujii of eFrontier in an interview on March 28th, 2005.

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[10] extage is a larger holding company which owns Works Corporation, the direct owner of the Yuki Terai character. For convenience, in this article I have simply used the name extage, rather than describing extage's corporate structure in detail or differentiating between it, Works Corporation, or Orario, another extage company concerned with educational products relating to computer graphics.

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[11] For a detailed account of otaku artistic production focused upon manga, (see Kinsella, 2000: 102ff.)

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[12] While a particular Japanese television advertising campaign can usually be expected to run for up to six months, Yuki Terai's Lion toothpaste commercial ran for nine months due to its popularity.

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