MARTINA GILLEN

THE ASEXUAL VIRUS: COMPUTER VIRUSES IN FEMINIST DISCOURSE

ABSTRACT. Feminist work on computing technology has for the most part concentrated on concepts of cyborgs and notions of (dis)embodiment in cyberspace. It is the contention of this paper that, as yet, these conceptions have, outstripped the realities of the technology and that an alternative and technically realistic model is that of the computer virus. The virus has all the positive theoretical advantages of the cyborg, as well as the added benefits of being in existence now as opposed to the product of science fiction, and viruses may be capable of use as a tool for education and activism. Thus, this paper shall examine the limitations of current cyberfeminism, and the range of possibilities viral hacktavistic feminism opens up.

KEY WORDS: cyberfeminist, cyberpunk, cyberspace, cyborg, viruses

INTRODUCTION

The central focus of feminist legal theory is the study of the loci of power in our society and how that power is used to regulate and control the bodies and lives of women. Many tools are employed in pursuit of this goal, notably in recent years the subversive intellectual tools of post-modernism. Post-modern feminism is ultimately a reflexive exercise in the deconstruction of established thought paradigms in order to uncover their inherent failings and biases, specifically those related to ideas of gender and sexuality. Feminist theory, however, is nothing without feminist action. In this paper we shall attempt to both critique existing cyberfeminist work and offer a more grounded alternative. This paper seeks to make a double subversion: the computer virus is to become a creative rather than a destructive power, and the notion of embodiment in cyberspace (the traditional focus of cyberfeminism) will be transformed into a question about the power of those embodiments to affect the "real" world.

The basis of much feminist exploration of cyberspace and cyber realities has been the work of cyberpunk authors.[1] That is to say, the work

---

[1] See, for example, S. Plant, "The Future Looms: Weaving Women And Cybernetics", in M. Featherstone and R. Burrows, eds., *Cyberspace, Cyberbodies, Cyberpunks* (London: Thousand Oaks; New Delhi: Sage, 1995); J. González, "Envisioning Cyborg Bodies:

of writers in the genre of science fiction characterised by a fascination for computer technologies and their fusion and interaction with human beings, corporate economies and the darker elements of ultra modern urban culture. The reasons for this are clear; it is argued that 'cyborg imagery can suggest a way out of the maze of dualisms in which we have explained our bodies and our tools to ourselves'.[2] Haraway has asserted that the dissolution of three crucial boundaries or dualisms is what makes cyborg discourse possible:[3]

- The distinction between humans and other living beings.
- The distinction between animals-humans and machines.
- The boundary between the physical and the non-physical.

However, it should be remembered that cyberspace and cyber realities as conceived by this genre are more like the type of environment visualised by designers of virtual reality systems than the cyberspace known to computer users today. In the cyberpunk model cyberspace is interactive, intensely packed with information and, above all, involves the immersion of the user in an alternative world to a degree not yet matched by current computer technology, including virtual representation (VR) technology that explicitly has this aim.

It might appear that there is a conflation here between cyberspace and cyborgs but this is not the case since the two are so intrinsically linked as to be symbiotic. They are all rooted in the concept of cybernetics.[4] Weiner's

Notes from Current Research", in C. Gray, ed., *The Cyborg Handbook* (London and New York: Routledge, 1995); V. Hollinger, "Cybernetic Deconstructions: Cyberpunk and Postmodernism", in L. McCaffery, ed., *Storming the Reality Studio* (Durham, NC: Dukes University Press, 1991); N. Nixon, "Cyberpunk: Preparing the Ground for Revolution or Keeping the Boys Satisfied?", in *Science Fiction Studies*, Vol. 19 (Greencastle: De Pauw University, 1992).

[2] D. Haraway, *Simians Cyborgs and Women: The Reinvention of Nature* (New York: Routledge, 1995), 181. See also Houston, A. Baker's argument for the need to 'explode' the duality of self and other in critical discussions of race: "Caliban's Triple Play", in H.L. Gates Junior, ed., *Race, Writing, and Difference* (Chicago: University of Chicago Press, 1986), 389.

[3] See D. Haraway, "A Cyborg Manifesto", in *Simians Cyborgs and Women: The Reinvention of Nature*, *supra* n. 2, at 151–155.

[4] Tomas has theorised that cyberspace is, in fact, the nemesis of cyborgs, because it ruptures the fusion of their human/computer physicality and pushes the body to the margins of the scheme. See D. Tomas, "The Technophilic Body: On Technicity in William Gibson's Cyborg Culture", *New Formations* 8 (Summer 1989), 113–129. I think the key point here is that Tomas is using Gibson's model, which does not accurately reflect how something like the matrix, if current trends persist, would be rendered. The very point of virtual representation (VR) type systems, which would seem to be the technology of choice for creating a matrix like cyberspace, is that they immerse and engage the user in an alternative world.

original definition of cybernetics[5] was technologies of mind, body and automatic machinery engaging in communication and control with and of each other. With this definition in mind it is easy to see the links between cyberspace as a zone[6] of discourse characterized by being accessible solely through an Internet connected computer or WAPs device, and cyborgs as self-regulating human machine systems. Perhaps the simplest way of explaining this relationship is this: cyberspace is the environment in which the most complex and hybrid cyborgs thrive and cyberspace itself exists because humans and machines are interacting to create it. However, that is not the end of the relationship between the cyborg and cyberspace. The fascination with cyborgs has arisen because they are viewed as technologies of the self in Foucauldian terms. Technologies of the self are:

1. Technologies of production, which permit us to produce, transform, manipulate things;
2. Technologies of sign systems, which permit us to use signs, meanings, symbols, or signification;
3. Technologies of power, which determine the conduct of individuals and submit them to certain ends or domination, an objectivising of the subject;
4. Technologies of the self, which permit individuals to effect by their own means or with the help of others a certain number of operations on their own bodies and souls, thoughts, conduct, and way of being, so as to transform themselves in order to attain a certain state of happiness, purity, wisdom, perfection, or immortality.[7]

Because cyborg bodies are consciously created and manipulated, they also offer a potentiality for constant, indefinite renewal and repair; in other words, immortality. Cyberspace is also a technology of the self, albeit the self of ideas and concepts, the abstract not the physical self. However, the way it comes into being and its theoretical relationship with cyborgs is as ambiguous and questionable as the technical relationship is simple. On one level cyberspace is the space behind the wires, the zone of discourse

This does not necessarily preclude bringing elements of the physical into cyberspace and, in some instances, may positively require it; for example, current technology uses sensors mapping the actual physical movement of users to generate movement in cyberspace.

[5] N. Weiner, "Cybernetics", in *Scientific America* 179 (1948), 14–19.

[6] The use of the word 'zone' is deliberate here because it suggests not only a geographical area, but also the group of computers on a network.

[7] M. Foucault, "Technologies of the Self", in L.H. Martin, H. Gutman, P.H. Hutton, eds., *Technologies of the Self* (Massachusetts: University of Massachusetts Press, Amherst, 1988), 18.

accessed by the technologies discussed above. However, it is also infinitely more and infinitely less than that. Benedikt has described it as a new universe; a place accessed by computer; a place where nothing is forgotten and everything changes; a common mental geography; a place to observe/be observed; a deposit of cultural wealth; a place where organisations can be viewed as organisms; and as a realm of pure information. He concludes that, "Cyberspace as just described does not exist."[8] Cyberspace is simultaneously a material thing: the digital impulses computers use to enable other computers and, by extension, their users to share information, and the conceptual space in which those users move when exploring this information. Once one moves into the realm of sharing information, then cyberspace becomes enmeshed with language and all the conceptual difficulties associated with that phenomenon. There is, however, an extra dimension in which cyberspace may collapse the boundaries between signifier and signified: in cyberspace the fluid nature of identity and the (im)possibility of the subject become explicitly clear. Derrida's attack on logocentricity, Foucault's unveiling of historical exclusion and Lacan's own concept of the self as fiction all come to fruition in cyberspace, where identities can be toyed with for oneself and existence is legitimation enough. That is, at least, according to the current feminist thinking on cyberspace and cyborgs, which has been heavily influenced by the cyberpunk model of that state. Furthermore, although examination of the cyberpunk genre is not the sum total of theoretical interest in cyborgs,[9] that genre is recognised as having a uniquely powerful vision. Stone, for example, has stated that the publication of *Neuromancer*:[10]

... crystallised a new community ... [It] reached the hackers ... and ... the technologically literate and socially disaffected who were searching for social forms that could transform the fragmented anomie that characterised life in ... electronic industrial ghettos ... Gibson's powerful vision provided for them the imaginal public sphere and refigured discursive community that established the grounding for the possibility of a new kind of social interaction ... [It] is a massive textual presence not only in other literary productions ... but in technical publications, conference topics, hardware design, and scientific and technological discourses in the large.[11]

Even the most dystopian view recognises that cyborg body imagery and identity can reproduce a fetishistic evasion of otherness and sexual differ-

---

[8] M. Benedikt, "CYBERSPACE First Steps", in D. Bell, and B.M. Kennedy, eds., *The Cybercultures Reader* (London and New York: Routledge, 2000), 29–30.

[9] For example, see S. Jones, ed., *Cybersociety* (London: Sage, 1994).

[10] W. Gibson, *Neuromancer* (London: Haper Collins, 1984).

[11] A.R. Stone, "Will the Really Body Please Stand Up?: Boundary Stories about Virtual Cultures", in M. Benedikt, ed., *Cyberspace: First Steps*(London: MIT Press, 1991), 95.

ence.[12] That is to say that precisely because issues of personal identity are problematic for cyborgs, that very lack is compensated for either by compulsive evasion of the issue or by unduly strenuous assertion of personal identity. An excellent example of this is the replicants in *Bladerunner*: as Doune has noted, they compulsively collect photographs precisely because they are uncertain about their own sense of history and memory.[13] This has parallels in the often fiercely gendered forms adopted in cyberspace. Whilst any lucid and constructive challenge to traditional stereotyped gender roles and boundaries is to be applauded, the current feminist interest in cyborgs and cyberspace as mediated through cyberpunk fiction is troubling for two reasons:

- Firstly, the commodification of bodies that the cyborg image imposes particularly when examined in light of the actual dominance in cyberspace today of corporate entities.
- Secondly, the cyberpunk has perhaps been unduly celebratory of the technologies it discusses. Although, since it is fiction it cannot be said to have got its science "wrong", it has been overly influenced by the concerns of its time and has, thus, led theorists to think of technology in ways that do not reflect the realities of existing technologies. Nor does this mode of thought reflect likely potential future technologies, given the current trends of our technological development.

Commodification is problematic since it tends to reassert existing economic disparities generally and, more specifically, may in this instance bolster existing trends towards the objectification and commercial exploitation of female bodies in particular. This would be doubly problematic if cybernetic modification became seen as somehow dehumanising the recipient with all the attendant loss of personhood and, consequently, human rights that that would entail. This model of the cyborg as monster has been proposed by Shildrick as a potential tool for enabling disruption, because they contain the trace of the self in the other.[14] However, it has been cogently argued that cyberpunk has elided this play of difference and is, in terms of gender politics, innately conservative and, thus, tends to recreate existing prejudices and inequalities.

---

[12] See M.A. Doune, "Technophilia: Technology Representation, and the Feminine", in J. Wolmark, ed., *Cybersexualities: A Reader on Feminist Theory, Cyborgs and Cyberspace* (Edinburgh: Edinburgh University Press, 1999).

[13] *Supra* n. 12, at 27.

[14] M. Shildrick, "Monsters, Marvels and Metaphysics", in Ahmed et al., eds., *Transformations: Thinking Through Feminism* (London and New York: Routledge, 2000), 313.

For all its stylish allusions to popular culture – to punk rock, to designer drugs, to cult cinema, to street slang and computer-hacker (counter?) culture – cyberpunk fiction is, in the end not radical at all. Its slickness and apparent subversiveness conceal a complicity with '80s conservatism . . . Sterling argued in *Mirrorshades* that the cyberpunk movement 'is not an invasion but a modern reform' (xv). 'Reforming' what we might well ask? Certainly not Science Fiction's gender politics.[15]

The second difficulty concerns the current mismatch between the technologies portrayed in cyberpunk fiction and the actual current state of technology today. This is problematic because there is an intrinsic danger of turning from critique and analysis of actual technologies and their social implications, to the analysis of text without clearly noting the change. Cyberpunk fiction does, to a certain extent, reveal attitudes toward technology, the dreams (or nightmares) of cyber-culture. However, if such analysis is never reconnected or applied to actual existing technology, then it becomes a hollow exercise if it purports to be anything other than the textual analysis of a literary genre. Furthermore, if feminist theory is to be the intellectual underpinning of feminist activism, it must be relevant to the actual state of the world today and, in this instance, that must mean being concerned with today's technology, not the potential technologies of the future. This is not to suggest that theorisation or critique based upon cyberpunk fiction is invalid or irrelevant; it is simply that we must retain a clear picture of what it actually concerns. Is it concerned with textual analysis or analysis of human/computer interaction? We must not allow our passion for interdisciplinary work to obfuscate the purpose of our analysis.

COMMODIFICATION

The cyborg body is essentially a purchased, manufactured and marketed entity simply by virtue of the incorporation of non-organic parts. In seeking to enhance that which is naturally given by human reproductive processes, physicality is moved into the realm of consumerism. 'Parts' are manufactured, purchased and installed and, within a capitalist framework (and it is notable that cyberpunk fiction is overwhelmingly set within a capitalist framework), this requires money or a money equivalent. This is made explicit by the way many of the cyborgs in this genre of literature speak about their bodies and the lengths they will go to purchase their desired modifications. Molly, the archetypical cyborg of Gibson's *Neuromancer*, prostituted herself in order to purchase her cybernetic

---

[15] Nixon, *supra* n. 1, at concluding paragraph.

implants.[16] This was doubly traumatic and degrading for her since, as her cybernetic self became more developed, the cut-off switch, which was supposed to separate her consciousness from her physicality, ceased to function. Furthermore, her 'employers', discovering her implanted blades, used them to add to her repertoire of professional services. As she describes it:

I wasn't conscious it was like cyberspace, but blank. Silver. Smells like rain ... You can see yourself orgasm, it's like a little nova right out on the rim of space. But I was starting to *remember*. Like dreams, you know. And they didn't tell me. They switched the software and started renting to speciality markets. And I knew, but I kept quiet about it. I needed the money. The dreams got worse and worse ... One night ... They must have disturbed the cut out chip. I came up. I was into this routine with a customer ... We were both covered with blood. We weren't alone. She was all ... [h]e was saying 'What's wrong. What's wrong?' 'Cause we weren't *finished* yet ... [17]

Thus, her cybernetic nature caused the whole of Molly, all of her being to become a commodity. (This is notable in that it eschews the traditional strict separation of mind and body within the cyberpunk genre.) This was the case even when she escaped prostitution or, perhaps more accurately, sexual prostitution, when she became a mercenary. Molly's use of her cyborg body may grant her empowerment and choice on a personal level but, on a larger scale, her freedoms do not extend beyond her ability to manipulate the fact that she is an immensely, commercially valuable commodity. Molly is free in her personal relations, and she is free in her commercial relations to the extent that she can now choose her own clients and the services she provides for them. But this degree of freedom can only be maintained as long as her abilities as a mercenary carry a high price tag. There is a strong connection here with Tomas' comments that cyborgs constantly try to maintain an 'edge'. Indeed, Tomas notes that Molly eventually abandons Case precisely because he takes the 'edge of her game'. This craving for the edge is, of course, as Tomas suggests, a technophilic marker of personal identity and a survival tool in the violent assassination wars in which so many cyberpunk characters seem to be involved.[18] However, in addition to being a tool of survival in this violent context, the edge becomes *per se* a vicious circle of financial

---

[16] Traditionally 'cybernetic' is a broad term used to describe any technology of communication or control which physically mixes human and mechanical or computerised elements. (The fiction genre, however, does contain animal cyborgs, the "Rat Things" of Neal Stephenson's novel *Snow Crash*, therefore organic and mechanical elements may be a better definition.)

[17] W. Gibson, *Neuromancer* (London: Voyager Harper Collins Publishers, 1998), 177–178.

[18] Tomas, *supra* n. 4 at 113–129.

necessity for cyborgs like Molly. To be at the top of her profession and, thus, earning hard cash, Molly must have the most sophisticated implants available and, to have these implants, she must have hard cash, and so it continues. Cyborgs are complicit and accepting of their own commodification precisely because they hope to achieve this 'edge' with almost mystical fervour. They are aware that pursuit of it is a destructive course of self-commodification that may end in their own dissolution and death, but are prepared to risk all in the hope that they will become a part of the successful elite. A similar effect may be seen in the glorification of cyberspace by modern capitalist democracies today. As Frank has noted, cyberspace has confounded market economy with democracy since, in reality, the alleged social mobility it provides will be enjoyed only by a very few and since, in fact, de-industrialisation makes socio-economic divisions increase.

According to *Business Week* magazine, CEO compensation during the decade (the 1990s) went from 85 times more than what the average blue collar employees received in 1990 to some four hundred and seventy five times what blue collar workers received in 1999.[19]

Not all cyborgs face commodification in such a graphic way but it *is* an essential part of their being. In David Skal's novel, *Antibodies*, a man named Robbie tells the story of volunteering for an experiment with an artificial eye:

We got to a point where, through my left eye, the world looked like a computer bill board, which is exactly how it worked. Eventually, the resolution would be improved to that of a colour TV monitor – in other words, almost perfect natural vision.

But in the mean time, I had this fabulous experience of seeing normally through one eye but at the same time seeing this whole digital *reality* superimposed on the other one. I mean, I could have sold it to MTV! It was incredible, really incredible.[20]

As Foster has commented:

It is worth pointing out how this passage consistently conflates the experience of cybernetic embodiment and the experience of cultural commodification. The implanting of a mechanical eye replaces a body part with a commodity that carries a price tag, but also results in a consumerist 'vision' of the world as a 'billboard', a vision which itself is imagined as a commodity that could be sold on MTV.[21]

To that insightful comment, I would also add that there is a more sinister undertone of commodification in this scene, since Robbie's 'eye'

---

[19] T. Frank, *One Market Under God: Extreme Capitalism, Market Populism and the End of Economic Democracy* (London: Seker and Warburg, 2000), 7.

[20] D. Skal, *Antibodies* (New York: World Wide Library, 1989), 128.

[21] See T. Foster, "Meat Puppets or Robopaths? Cyberpunk and the Question of Embodiment", in Wolmark, *supra* n. 12 at 217–218.

was disabled due to a funding cut. The whole enterprise seems riddled throughout with commercialism, to the extent that Robbie's ability to function physically was dependent upon continued funding and, in this instance, that funding was dependent upon the continued interest of the current powers in the project. Robbie, as a person, and Robbie's needs are somewhat lost in this context. This is indicative of the potential that cyborg culture has for placing power in the hands of the already privileged and wealthy: not only are they in a position to afford the most sophisticated modifications for themselves but they may also be in a position to prevent others from doing so.

The same can be said of the Internet and cyberspace in reality today. Even purportedly private or personal pages are splattered with business advertisements, often in the form of unwanted and unsolicited pop-ups, which are used to fund so called free sites by effectively selling the web-space for advertising. The sale of Internet browsers, web space, computer hardware, and service provision are booming industries. The computing and media industries in general are also very powerful and able to control others' use of cyberspace through legal sanction. This is evident in the recent Microsoft crackdown on Internet software piracy and the record industries' actions to close down Napster, the free music exchange. This ultimately ended in a compromise deal, which will mean Napster is no longer able to distribute copyrighted works and will not long remain a free service. Furthermore, statistics show that, despite an overall increase in computer ownership and Internet use, the media is still very much the preserve of the white male.[22] The New Economies of post-industrial technology have not democratised the market place but, instead, have created a hegemony of super-achievers at the expense of everyone else.

Market populism is an idea riven by contradictions. It is the centre-piece of the new American consensus, but that consensus describes itself in terms of conflict, insurrection, even class war. It is screechingly democratic, and yet the formal institutions of democracy have never seemed more distant and irrelevant than under its aegis. It speaks passionately of economic fairness, and yet in the nineties the American economy elevated the rich and forgot about the poor with a decisiveness we haven't seen since the 1920s. Market populism decries "elitism" while transforming CEOs as a class into one of the wealthiest elites of all time.[23]

Furthermore, the concept of the cyborg is commercial in another practical sense, one that may go some way in explaining its popularity as an intellectual model. The cyborg is a well-honed and exploited media icon. The

---

[22] J. Buten, *Personal Homepage Survey*. Available online at: <http://www.asc.upenn.edu/USR/sbuten/phpi.htm>

[23] *Supra* n. 19 at XV.

1980's and early 1990's saw the rise of the cyborg as popular media figure, not only in the alternative genre of cyberpunk and science fiction, but in mainstream films as well. *Bladerunner*, *Terminator*, *Robocop*, *Johnny Mnemonic*, all of these films fall within the cyborg genre. The cyborg is, thus, a well-known and commercially exploited figure. This existing mainstream interest may have made the cyborg accessible and attractive to feminist theorists and, perhaps, encouraged them to reap the benefits of the cachet of this model, but it nevertheless means that once again the cyborg body has been tainted by commercialism.

One of the major tenets of feminist interest in cyberspace is the idea that there are no 'givens' in that zone: there is no race, no gender, no class and no perception of being differently-abled or marginalised. Wakeford has even linked the saturation of culture by technology with the shift in attitudes concerning sexuality as part of the overall influence of media and information technologies.[24] However, there are two caveats, which one would add to this type of claim. The first is that this fluidity of identity is dependent upon technological proficiency and, to a certain degree, the sophistication of the hardware and software used, and this may disadvantage groups who have limited access to sophisticated hardware and or IT training.[25] Even if fluidity of identity is an uncontested premise, this is not the same as saying that the Internet has become a haven for minority groupings or the disenfranchised. In fact, research shows that the vast majority of users are still middle-class Caucasian males.[26] These statistics may, of course, be flawed or inaccurate due to deliberate self-misreporting. If this is the case, then that in itself is significant because, if presenting oneself as a Caucasian male is not perceived as offering some tangible advantage over other identities, then why bother to do it when there are a whole range of other identities potentially available? Or, if the inaccuracy stems from the fact that these statistics are based on homepage ownership, the question could equally be asked why other groups are failing to make their web presence felt? There is a strong danger that, instead of challenging the boundaries of class, gender, race and ability, cybernetics and cyberspace will merely serve as a tool to deepen the groove of existing social and cultural patterns, by privileging those who can afford computer access and have the spare time or cash to manufacture a web presence for themselves.

---

[24] N. Wakeford, *Performing Virtualities*, available online at http://virtualsociety.sbs. ox.ac.uk/events/pvwakeford.htm

[25] For a series of excellent essays on the question of the egalitarian nature of cyberspace, see Bosah Ebo, ed., *Cyberghetto or Cybertopia? Race, Class, and Gender on the Internet* (Westport, Connecticut, London: Prager, 1998).

[26] *Supra* n. 22.

The second and related point is that the spaces in cyberspace which do exist for marginalized groupings are in danger of excluding those within their own number, by adopting the position of power through representing their community and setting up their narrative as the legitimate one.

CYBORGS AND CYBERSPACE IN THEORY AND REALITY: A TECHNOLOGICAL MISMATCH

Having outlined some of the theoretical concerns that the cyberpunk genre raises, it is now appropriate to examine how the technologies portrayed in that genre compare with our existing technologies. It is easiest to deal with cyborgs first, for while it is true that historically there has always been an interest in replacing lost or injured organic body parts with mechanical devices, this has never been on the scale envisioned by the writers of cyberpunk literature. Indeed, recent developments in the field of genetic engineering might lead the observer to predict that the future, in fact, lies with organically engineered human beings and 'spare parts', and not the sophisticated types of implants visualised by cyberpunk writers. Most of the work being carried out in cybernetics now relates to the creation of entirely artificial neural networks: that is, the creation of artificial systems designed to mimic the form and function of the human brain, independent of any relationship with a human body. This is not to say that the cyborgs of literature are not of interest or should not be discussed; rather, that it is important to remember that they are an entirely literary creation and, therefore, discussion of them should be treated as textual analysis and not as work, dealing with the social implications of existing technologies. Neither the benefits nor the detriments, which these cyberpunk technologies offer to theory, nor the abilities they purport to give their users in practice may ever come to pass. Perhaps it is time to develop a map to escape from the 'maze of dualism',[27] more firmly rooted in the actualities of modern technology and, therefore, by extension, the lives of real people?

Cyberspace is a more complicated matter. Our current technologies do offer a certain anonymity and fluidity of identity, which is one of the key characteristics of cyberspace in the cyberpunk genre from a feminist perspective. However, they have three significant limitations, which make the cyberpunk model of 'jacking in' to cyberspace an inappropriate analogy for the actual experience of computer usage today. The cyberpunk genre was a prophetic vision of the future. However, no matter how dystopian it was, it was, nevertheless, suffused with a certain optimism

---

[27] Haraway, *supra* n. 2 at 181.

concerning the development of computer technology. This optimism proved unfounded, as these developments have not yet come to pass, particularly not in the fields of VR and artificial intelligence. If we are to maintain a clear picture of the impact that cyberspace is currently having on society and, indeed, its actual current potential for the dissolution of gender boundaries, then we must be fully appraised of these limitations.

VR

Virtual Representation (VR) is part of the cybernetic family of technologies. It is essentially a feedback technology where a location is created inside a computer and the users' real world actions are fed into that environment and mirrored by their virtual representation there. As yet, Barlow's prediction that VR will be able to eliminate the interface, the 'mind-machine information barrier', has proven unfounded on any significant scale.[28] Indeed, this may be something of a moot point since, as already mentioned, the entire point of a VR system is immersion; the goal to be achieved is 'telepresence' i.e. being there in the far away. It is only a very pro-mind/anti-materialist stance that would promote this as somehow becoming a type of discorporate entity, although that is the stance adopted by cyberpunk fiction, with its aversion to the 'meat' or physical body.[29] In fact, VR involves modeling real life and real time movements. Indeed, Heim notes that there are, in fact, two distinct types of 'telepresence':

- Artificial telepresence, which is the version, envisaged by the cyberpunk model, which sidesteps the real world by creating and controlling everything inside the virtual.
- Operational telepresence, which permits us to control a real object in a real place from a distance using a virtual model of the real place.[30]

It seems, however, that as far as the actual body of the user is concerned, this is a somewhat misleading distinction, as proper functioning in the VR world still requires the helmet *and* the glove. Furthermore, there is a theoretical point here, which is, I think, clearly illustrated by that quintessential cyberspace film, *The Matrix. The Matrix* adopts a classic cyberpunk

---

[28] J.P. Barlow, "Being in Nothingness", *Mondo 2000*, No. 2 (Berkeley California, Fun City Megamedia, 1990), 38.

[29] For an interesting discussion on the ambiguous mix of physical and incorporeal representations of cyborgs used in cyberpunk fiction, see C. Springer, "The Pleasure of the Interface", from *Screen* 32, No. 3 (Oxford: Oxford University Press, 1991).

[30] See M. Heim, *Virtual Realism* (New York and Oxford: Oxford University press, 1998), 12–17.

view of cyberspace; it is entirely an illusion for the mind. However, it eschews the traditional feminist model for the subversive nature of cyber-space (that playful fluidity and blending of the Self and the Other), by reasserting the complete Otherness of human to machine and machine to human. The anti-physical nature of cyberspace is only believable within *The Matrix* because it is entirely divorced from anything a human could have created. This is apparent from the discussion of the sensation of taste, where it is recognised that a computer created Matrix, where the body was not truly engaged, would be fundamentally flawed and somehow not capable of the hyper-reality of a truly immersing and perfectly illusory cyberspace. For humanity, cyberspace must engage both body and mind in harmony. Mouse hints at this relationship in his comments that there is more to the human body than its physical needs:

Tank: Here you go, buddy. Breakfast of champions.
Mouse: If you close your eyes it almost feels like you're eating runny eggs.
Apoc: Yeah, or a bowl of snot.
Mouse: Do you know what it really reminds me of? Tasty Wheat. Did you ever eat Tasty Wheat?
Switch: No, but technically, neither did you.
Mouse: That's exactly my point. Exactly. Because you have to wonder now. How did the machines know what Tasty Wheat tasted like. Huh? Maybe they got it wrong. Maybe what I think Tasty Wheat tasted like actually tasted like oatmeal or tuna fish. That makes you wonder about a lot of things. You take chicken for example, maybe they couldn't figure out what to make chicken taste like, which is why chicken tastes like everything. Maybe couldn't figure out . . .
Apoc: Shut up, Mouse.
Dozer: It's a single cell protein combined with synthetic aminos, vitamins, and minerals. Everything the body needs.
Mouse: It doesn't have everything the body needs. So I understand that you've run through the agent training program. You know, I wrote that program.
Apoc: Here it comes.
Mouse: So what did you think of her?
Neo: Of who?
Mouse: The woman in the red dress? I designed her. She, um . . . well she doesn't talk very much, but . . . but if you'd like to meet her, I can arrange a much more personalized meeting.
Switch: Digital pimp, hard at work.
Mouse: Pay no attention to these hypocrites, Neo. To deny our own impulses is to deny the very thing that makes us human.[31]

On the other hand, to the machine culture in *The Matrix* the human body was repellant:

---

[31] All the scripts referred to here have been taken from the Unofficial Fan Page at http://travel.to/The_Matrix/index.html or the transcript of the film to be found at http://www.ix625.com/matrixscript.html

AGENT SMITH: I hate this place. This zoo. This prison. This reality, whatever you want to call it, I can't stand it any longer. It's the smell, if there is such a thing. I feel saturated by it. I can taste your stink and every time I do, I fear that I've somehow been infected by it.
(He wipes sweat from Morpheus' forehead, coating the tips of his fingers, holding them to Morpheus' nose.)
AGENT SMITH: Repulsive, isn't it?

The Matrix, by re-enforcing the Self/Other dichotomy and viewing the Matrix as a product of the Other, is perhaps self-consciously reflecting current social distress about the nature of reality and identity. In early versions of the script one of the characters actually refers to the Matrix as living inside of Baudrillard's vision of being inside the map, not the territory. It is too disingenuous to dismiss this as a mere reassertion of human logocentrism, since this film deals with the fluidity of all characteristics about learning how to shape the Matrix without reference to rules or the constraints of reality. This, of course, opens up the way for exploration into theory on cyberspace as the product and dwelling ground of monsters. Perhaps *The Matrix* is consciously referring to the mother/monster stream of theorization? The point is that seeing cyberspace as a place for disembodied play and the related notion of the monster, is only one way of seeing cyberspace, and we (as creatures rooted in the body) are unlikely to construct that space in that manner, as existing technological development in cyberspace and VR show.

Furthermore, we should note that most of the practical applications developed so far have been related to building design, and simulation or training exercises for both medical and military purposes. This is not of concern in and of itself but should lead us to constantly question the agenda behind the distribution of such technologies. Since, as Sofia puts it:

More importantly we ask: *Cui bono?* In whose interest is this distribution of reparative technologies maintained? Who benefits when desires for control of tools and technological processes are satisfied within irreal microworlds offering the illusion of participation in the corporate and military matrix, yet limiting effects to microevents amongst electronic circuits?[32]

Ultimately, existing technologies are far from the large scale commercial and entertainment usages envisioned in the early cyberpunk literature.

---

[32] Z. Sofia, "Virtual Corporeality: A Feminist View", in Wolmark, *supra* n. 12 at 65.

AI

Artificial intelligence (AI) is essentially the notion of inorganic intelligence; it is the learning, sentient machine capable of abstract thought. In the current state of technology, AI is classically represented by the expert system; something which is programmed to do a specific task, or a number of specific tasks within a particular domain. This is obviously far short of the goal of a truly intelligent machine, but does represent major programming achievements. What makes AI systems different from ordinary computer systems is that they are intended to have a capacity to "learn" new information by themselves, and to reach conclusions about situations for which they have no direct programming through analogy. However, this has met with only limited success, as Leith puts it:

I have spoken elsewhere of the Loch Ness Monster syndrome in expert systems research, where although expert systems are consistently hyped and the educated amateur is led to believe that these systems are in widespread use these working systems are as hard to find as the Loch Ness Monster.[33]

Indeed, unless one is prepared to accept the *strong* AI view, which accords mental qualities of a sort to the logical functioning of any computational device, even simple mechanical ones,[34] then in practice the term 'AI' is an oxymoron, since the computers currently in existence would not be classed as intelligent when compared to a human being. Even if one does adhere to this strong AI view, the fact remains that computers of the power, magnitude, and more importantly subtlety, portrayed in most cyberpunk fiction, do not exist. The basis of modern AI technology is the algorithm and the neural net. This computational model is not without its critics and, certainly, has not provided us with computers of the apparently conscious type displayed in science fiction literature. One critic, Roger Penrose, goes so far as to write:

Some readers may, from the start, have regarded the 'strong-AI supporter' as perhaps largely a straw man! Is it not 'obvious' that mere computation cannot evoke pleasure or pain; that it cannot perceive poetry or the beauty of an evening sky or the magic of sounds; that it cannot hope or love or despair; that it cannot have a genuine autonomous purpose? . . . Perhaps when computations become extraordinarily complicated they can begin to take

---

[33] P. Leith, *Formalism in AI and Computer Science* (Ellis Horwood Series in Artificial Intelligence and Concepts, New York, London etc., 1990), 29.

[34] See J.R. Searle, "Minds and Brains Without Programs", in C. Blackmore and S. Greenfield, eds., *Mindwaves* (Oxford: Basil Blackwell, 1987), 211, for an example of such a claim. It should be noted that the term 'functionalism' is sometimes used for what is essentially the same viewpoint. Some proponents of this kind of view are Minsky, Fodor, Hofstader and Moravec.

on the more poetic or subjective qualities that we call 'mind'. Yet it is hard to avoid an uncomfortable feeling that there must always be something missing from such a picture.[35]

Once again, the cyberpunk model does not reflect the current state of our technologies and, as such, cannot be a firm foundation for theorisation.

The virus as alternative model

To summarise, the core elements of the usefulness of cyborgs and cyberpunk to the feminist enterprise are:

- Cyberspace potentially enables fluidity of identity, having no given gender, race, class or physical-ability.
- Cyborgs are themselves a physical embodiment of the characteristics of cyberspace freely blending and cross matching identities and characteristics.
- The cyborg is the disruptive monster Other with the trace of the self. It is the contention of this paper that, in a different way, the computer virus offers all these characteristics and more as a model for discussion.

The concept of the computer virus was born in the early days of computing as a relatively benign entity, used within computer labs to guarantee the status of a computer's disk drive. The parasitic, self-replicating nature of the virus was seen as a way of ensuring that the system's entire 'memory' was filled with one uniform value. This was a great advantage in these early days when programming was still a very cumbersome and complicated exercise, which very much depended on accurate knowledge of the initial state of the hard drive. It is still the case that the vast majority of viruses exist solely inside the lab: it is those that have 'escaped' or been deliberately introduced into the outside world that are potentially dangerous to ordinary pc users and are referred to as being found 'in the wild'.

In *A Cyborg Manifesto*, Haraway asserts that:

The cyborg is a creature in a post-gender world; it has no truck with bisexuality, pre-oedipal symbiosis, unalienated labour, or other seductions to wholeness through a final appropriation of all the parts to a higher unity.[36]

This is equally applicable to viruses they are self-reproducing (in that sense, asexual) and, therefore, know no boundaries or restrictions within a computer system. Viruses treat everything else as living space, a potential

---

[35] R. Penrose, *The Emperors New Mind* (Oxford: Oxford University Press, 1999), 579.

[36] See *supra* n. 2 at 150.

host, and only the virus itself is recognised as existing within its world.[37] There can be no appropriation of parts to some higher unity since the goal of the virus and its host is mutually destructive.

There is an immediate parallel between this model of infectivity and the work of VNS Matrix, who views the journey into cyberspace as a place where you should: "Be prepared to question your gendered biological construction."[38] VNS Matrix paints a visceral, biological image of cyberspace, in which the actuality and metaphor of the virus as subversive bodily invader is most appropriate. The model of feminist activism is described thus:

> You may not encounter ALL NEW GEN as she has many guises. But do not fear, she is always in the matrix, an omnipresent intelligence, anarcho-cyber terrorist acting as a virus of the new world disorder.[39]

There is a distinct relationship between viral infection, in the computing sense, and sexually transmitted disease (STD): this is, of course, dual destruction for both elements of the fictional cyborg body.

> . . . she corrupts me. She scorns my debility. Pronounces me weak. she laughs at my desire to collapse into familiar flesh . . . she presents me simultaneously with no alternatives and many alternatives. She tells me my only hope lies beyond the coded skeleton. She offers me no clues and no comfort. She is uncompromising in her demands. I must form a body of difference. I have no maps. I am undone. I do not know myself the future is bleak. I am afraid but I AM INFECTED BY HER.[40]

Furthermore, Tomas has noted of the console cowboy heroes (anti-heroes?) of cyberpunk fiction that:

> They are in the business of opening windows in 'the bright walls of corporate systems' with the aid of 'exotic software' (ice-breaking virus programmes or killer-virus programs usually of Russian or Chinese origin). Once they have accessed corporate data formations, they set about stealing or manipulating information. These oppositional and economically disruptive activities are the focus of much of the ebb and flow of social action in Gibson's depictions of cyberspace.[41]

The virus places the same potentiality in the hands of modern activists and this is exactly how a computer or a computer-based economy would capitulate before a real virus.

---

[37] This may not remain the case for long since Zalewski's work on the concept of the 'wormnet' has introduced the idea that viruses should be able to communicate their upgrades to other members of their species. http://lcamtuf.na.export.pl/worm.txt

[38] V.N.S. Matrix, "All New Gen", from J. Broadhurst Dixon and E. Cassidy, eds., *Virtual Futures: Cyberotics, Technology and Posthuman Pragmatism* (London and New York: Routledge, 1998), 37.

[39] *Ibid.*

[40] *Supra* n. 38, at 38.

[41] Tomas, *supra* n. 4 at 125.

Viruses as a potential model for feminist discourse

Viruses, like cyborgs, have complete fluidity and freedom of identity in cyberspace: they mutate and replicate, they possess powers of creation and destruction interwoven into their very nature. They replicate themselves through a process reminiscent of amoebic reproduction (like their biological counterparts) and, thus, like Haraway's cyborgs of the postgender world, can be said to be beyond the categories of gender or sex. Viruses rely on clinical mathematical manipulation of code and, in addition, also use a more 'emotional intelligence' in targeting their victims, particularly in the case of email worms which rely on the user opening the mail (the most notable example of this being the 'I love you virus'). They are the ultimate challenger of boundaries, spreading voraciously through systems, and they quite literally break every code of computing behaviour, whilst still being recognisable as products of the same coding languages as their more benign relations, our operating systems and programmes. They are the ultimate subversion of the computing body politic; they are quite literally the virus infecting the system. Viruses use the same language and functions as ordinary computer applications; they have the same genetic code, as it were. However, their infection and subversion of the digital medium makes them monstrous to mainstream computing. The key advantage of the virus model is that it permits a discourse of Otherness of monstrosity that is within our true potential to create; and it does not run the risk of appropriating for itself the position of power because, by its very nature, it must always challenge that which is dominant. Viruses, by their very nature, are constantly outside, constantly other, constantly oppositional and against the established order. Yet, they are made of the same material as that system which they try to subvert and are conscious of being part of that which they seek to disrupt. This echoes Haraway's description of the cyborg.

. . . it is oppositional, utopian and completely without innocence.[42]

Ultimately, viruses offer the potentiality of a coherent body of difference with which to challenge the appropriation of cyberspace.

As Ross put it:

If there is a challenge here for cultural critics, it might be the commitment to making our knowledge about techno-culture into something, a hacker's knowledge, capable of penetrating existing systems of rationality that might otherwise be seen as infallible,

---

[42] D. Haraway, "A Manifesto for Cyborgs", in E. Weed, ed., *Coming to Terms* (London: Routledge, 1989), 175.

a hacker's knowledge, capable of re-schilling, and therefore re-writing, the cultural programmes and reprogramming the social values . . .[43]

This can only make viruses of assistance to those wishing to challenge dominant world orders.

It is true that these qualities are not so dramatically transferable to the human creators of viruses, as in the case of cyborgs who effectively become their own creations, but the reputations and identities, which virus writers build up for them, are tranferable. Furthermore, although most people have been victims of malevolent and, one must stress, illegal and immoral virus writing and, therefore, view viruses as being limited to such malevolent programming, there is potential for viruses to be used a tools of education. In fact, this subversion of the perceived nature of the virus itself may make this proposition doubly attractive to feminist activists. The virus is such a powerful cultural motif in both its digital and biological forms, that the notion of using them in a positive way in and of itself lends the enterprise a certain power and mystique. Since it is possible for almost anyone to write a virus, which gives a one-off display and then wipes itself from the system without causing any damage, a non-damaging virus would provide cheap publicity and it is not likely to upset the computer-using community any more than it informs them.

Viruses are attractive to feminist theorisation because they offer the same potential boundary-transgressing benefits of cyborgs, with a potential to promote social praxis as tools of education inside a media, dominated by the establishment.

Beyond the theoretical advantages already discussed, viruses also have the potential to meet the criterion for feminist software design, albeit in an unorthodox way. That is to say, instead of fulfilling the criterion for those using the software, they fulfil it for those writing software. However, the relative simplicity of software coding today and the availability of what are best called D.I.Y. virus kits, mean that the creator position is no longer a privileged elite position. The criterion are:

- Transfer design authority to the user
- Value subjective and experiential knowledge in the context of computer use
- Allow use by many different kinds of users in different contexts
- Give the user a tool to express her voice and the truth of her existence
- Encourage collaboration among users.[44]

---

[43] A. Ross, "Hacking Away at the Counter Culture", in Bell and Kennedy, *supra* n. 8 at 266.

[44] J. Cassell, "Storytelling as a Nexus of Change in the Relationship between Gender and Technology: A Feminist Approach to Software Design", in J. Cassell and H. Jenkins, eds.,

As the thriving bulletin boards and IRC, chat-rooms etc. (dedicated to hacking and virus manufacture) demonstrate, virus writing does excite a sense of community. In *Manifesto* Caraway made the comment that:

I like to imagine the LAG, the Livermore Action Group, as a kind of cyborg society, dedicated to realistically converting the laboratories that most fiercely embody and spew out the tools of technological apocalypse, and committed to building a political form that actually manages to hold together witches, engineers, elders, perverts, Christians, mothers and Leninists long enough to disarm the state.[45]

This kind of alliance is possible if it is formed using viruses, which will permeate the world wide web with their message. Such a group would not be limited by geography, race or gender.

The recycled nature of many viruses (the cut and paste school of coding) suggests that they are also open to user manipulation by all kinds of persons in many situations, and many of those who write viruses do perceive this as being a way of expressing themselves. For example the virus writer *extraordinaire*, Dark Avenger, made this comment when interviewed, in response to why he began writing viruses:

There was a magazine called Computer For You, the only magazine in Bulgaria at that time. In its May 1988 issue, there was a stupid article about viruses, and a funny picture on its cover. This particular article was what made me write that virus. Of course, this was not the first time I heard about viruses. I was interested in them, and thinking of writing one a long time before that. I think the idea of making a program that would travel on its own, and go to places its creator could never go, was the most interesting for me. The American government can stop me from going to the US, but they can't stop my virus.[46]

Previously, this expression has taken the form of destructive acts but this does not mean we should exclude the possibility of positively channelled activism. The virus is an almost perfect forum for the marriage of feminist thought with feminist action since the complex concepts of boundary trans-gression and fluidity of identity can be merged into the kind of direct actions designed to get across campaign messages, which are at the core of activism.

From Barbie to Mortal Combat Gender and Computer Games (Cambridge Massachusetts, London: The MIT Press, 2000), 304–305.

[45] *Supra* n. 3 at 155.

[46] From S. Gordon, *Inside the Mind of the Dark Avenger* at <http://www.av.ibm.com/ScientificPapers/Gordon/Avenger.html>

Conclusions

The cyborg has served and will continue to serve as a useful metaphor and springboard for feminist discussions of cyberspace issues. However, it must be remembered that it is simply that: a metaphor, and a textual construct, which does not reflect the actual impact of computer technologies on our society. Computer viruses offer many of the same opportunities for discourse about identity and boundary transgression. Furthermore, viruses exist in the here and now, instead of in some cyberpunk future. Viruses are, by their very nature, Other. They exist purely to be a challenge to the dominant social order, and the notion of the virus, in and of itself, has power. This makes them the natural tool for feminist empowerment.

Department of Law
University of Reading
Old Whiteknights House, Whiteknights
Reading RG6 6AH
UK
E-mail: m.c.gillen@reading.ac.uk