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Cybernetymology and ~ethics

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[Image]  
"Norbert's Crossing"  
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It may very well be a good thing for humanity to have the machine remove from it the need of menial and disagreeable tasks. I do not know.

--Norbert Wiener, 1947 (27)

Steed: I'm playing it as a journalist, getting gen on "automation in modern society," "will the machine supplant man?"--or woman, for that matter.

Peel: And will it?

Steed: Not if I have anything to do with it.

--"The Cybernauts," 1965

And, finally, whether it has essential limits or not, the entire field covered by the cybernetic program will be the field of writing. If the theory of cybernetics is by itself to oust all metaphysical concepts--including the concepts of the soul, of life, of value, of choice, of memory--which until recently served to separate the machine from man, it must conserve the notion of writing, trace, grammè or grapheme, until its own historico-metaphysical character is also exposed.

--Jacques Derrida, 1967 (9)

"You me." The stranger used Cobb's own tight little smile on him. "I'm a mechanical copy of your body."

The face seemed right and there was even the scar from the heart transplant. The only difference between them was how alert and healthy the copy looked. Call him Cobb Anderson2. Cobb2 didn't drink. Cobb envied him. He hadn't had a completely sober day since he had the operation and left his wife.

1. They are all more or less agreed then--all, perhaps, except Wiener, and he should know. The cyber (or more correctly, as we shall see, the kybern) is the figure that, rightly or wrongly, has come to stand for the end of the humanistic ideal of man. The only disagreement is over whether this figure is good (Rucker) or bad (Steed) or, indeed, whether such a judgment need be made at all (Derrida). The meaning of the cyber appears secure, then; its ethics uncertain. Is it possible that these are connected; that the uncertain ethics stems from a false security about the meaning of the term? If so, this can open on to two related questions about the term and its values: kybern~etymology and kybern~ethics.
2. In this essay, then, I will be attempting to follow on from the grounds established in an earlier paper in *Postmodern Culture*, "Cyberbeing and ~space,"[2] and so to mobilise a Heideggerian method (an etymology) in order to begin to open up an altered understanding of the technological domain of the cyber and, in particular, its ethics. As Heidegger shows throughout his work, early and late, it is only our modern (that is, Cartesian and post-Cartesian) assumption that language is a mere representation of beings (for example of "objects," "nature," or "culture") that holds us back from seeing how the very language we speak and write is the dwelling place of our fundamental connection to Being as such. In language, for Heidegger, the fundamental event of appropriation (Ereignis), the letting-belong-together of man and Being, occurs. Language, in this view, is not the world in code, mediating "objects" to man-as-"subject," but the house of Being wherein man also dwells as the only possible guardian of Being.[3] If Heidegger's counter-representationalist argument is correct (and this is something I have examined in more detail elsewhere),[4] then taking an etymological path is no merely arcane or technical (for example, semantic, linguistic or lexicographical) measure. Still less is it a game with words. Instead, it should be a journey of thinking towards what most concerns us, as Heidegger says, "in its essence."
3. But to say that this present investigation tries to open upon the cyber "in its essence" does not entail an essentialism in the crude sense. Rather, and the importance of this will become clearer as we proceed, Heidegger's term for "essence," *das Wesen*, is meant to emphasize "the verbal sense of *wesen* as 'governing' or 'effecting,' while retaining the fundamental reference to 'presencing'".[5] Accordingly, a counter-representational attention to the details of cyber-language (to how, for example, the cyber is fundamentally implicated in the very idea of governing just mentioned by Heidegger and his English editor) ought to take us towards the *Wesen* (or, as I prefer to say, after Deleuze and Spinoza, the *ethos*) of all things cybernetic. And it ought to do so in a way (or via a way or path) that steers us around the currently fraught questions of the mere morality of the cyber. Wherever we look today, that is, whether in popular or in more scholarly accounts of

cybernetics, it is a rare text that does not (as our initial epigrams indicate) raise the issue of whether the field and the objects it contains are Good or Evil for something called "humanity." This, as Heidegger would say, can only reduce an otherwise important field of inquiry to "idle chatter." In its place (or more strictly, in a quite different place altogether) I want at least to begin to open--and this is my only goal in this essay--the possibility of a glimpse into the ethos of the cyber in strictly non-moral terms.

4. In such Heideggerian-Nietzschean terms, as we will see, the power of the cyber is much more fundamental than just a question of the morality of a few quite recent technological changes (such as computers and robots); it has to do with the very question of our ethos, today, as Dasein. As Joan Stambaugh realised as early as 1969, "Technology isn't just something man has acquired as an accessory. Right now it is what he is" (13). It is the ethos of this "is" that this essay tries, albeit sketchily, to realise.

#### Making~beings

5. The main point of this investigation is, then, to find an ethics for the cyber. Essentially, it must be an ethics for something only very slightly other than--perhaps more than, perhaps less than--the human: an ethics for some of the things that we have given ourselves over to--to a slight extent and with particular relevance to our current historical moment. But still, the "giving over," no matter how slight, is crucial. That is, for a long time, we, as a particular kind of being, as Dasein, were equipmental; we were the ones who manipulated equipment.[6] And we made the world precisely through our manipulations of equipment, perhaps so much so that we subsequently mistook our makings for entities beyond our grasp. That has certainly been our predominant attitude towards history: the array of things outside us that appear to determine our being but which, in fact, are our makings.
6. And that, I venture, is a bad mistake. It's a mistake because it rethinks our own artefacts as natural. And it's bad because it overly delimits our future capacity for making as techne. It sometimes even makes the giving-over of our makings seem almost naturally bad. But, in fact, that giving over might be revalued as something we have done all along, from the most ancient of times. Even more to the point, the giving over or deferral may have been our strength in the first place. That is, in being equipmental, we deferred to things outside and beyond us: the fishing hook, the steam turbine, the computer. This giving-controlling, this making-and-being-made-by, may then be critical to the very constitution of Dasein itself.
7. As the central condition of our being, we are the only things that can make the things that also make us. We are, always already, feedback-like in this respect. But then we mistakenly bring the things we have made (art, economies, technologies, and so on) into such a peculiar position that they can take on the character of

"objectness" or "otherness." In Marxist terms, we are those who essentially and utterly "alienate" ourselves from what we make. In deferring to our products we differ from them.

8. In the Marxist tradition, this looks like a mistake in history (the history of capitalism), such that we have to correct the error and either forge or return to some purer state in which our differences from what we make are utterly deleted. But instead of this compelling (if unsatisfiable) thought, we may have to say that this is what beings of our ontological kind have always done, without fail: bring things forth that, on their achievement of "objective" status, appear, compellingly, to control us, to govern us, to steer us, to replace our "souls," or whatever it is we hold most dear as the mythical foundations of our being. But we are in fact the ones who bring about these myths, the very gods and devils we would live without, if only we lived more "authentically." So if we are actually constituted such that our difference from what we make (art, myth, culture, history, and the rest) cannot be deleted or bypassed, such that there is no possibility of "purely human" or "pre-technological" production, then another story altogether has to be told. A recent chapter in this story concerns all things cyber.
9. The crucial question of the cyber is this: why is it that we tug ourselves back to an authenticity that predates (so the many stories go) our giving over (our deferral) to our own creations when, in fact, what makes us "authentic" (if anything does, and if the word "authentic" is to have any meaning) is precisely our utterly unique capacity to give over, to differ and defer?[7] If this is the case, then the cyber-instance of giving-making and making-giving (such that there is no real priority between these) is just one instance of what it is we are and do--once we realise that what we are and what we do (with equipment) are not distinguishable in any compelling way.
10. Cyber-entities are, in this basic sense, no different from primitive or industrial equipments. But the way they operate in relation to us (and this is the only way they can operate) also has its own distinct inflexion. That inflexion, however, is not necessarily new. Its roots are deep and have to do with much earlier forms of the making of technologies of control, and the giving over of those same technologies to what the technologies themselves create.
11. Imagine this: a fishing hook is designed to catch a known fish on a particular stretch of coastline. It's designed to fit under a particular lip formation, to pull a particular weight, and so on. After being used in this way for a while, it also starts to bring in a different species, a species unknown to the hook's designers. Is that new kind of fish an aberration, a monster? Or is it a boon? We can never say in advance. All we know is that the hook-makers built differently than they knew--neither better nor worse, until the fuller story unfolds.

12. Our current technological metaphor for this same, and enduring, process is the cyber. We could have taken many word formations to capture this--but it turns out that some events around 1947 or 1948 led "cyber" to become the predominant term.[8] That was itself an accident, as our four epigrams show: an effect of a technology of words working back into our ways of everyday life, and so producing more than was first bargained for. Still, we are stuck, more or less, with that term, the "cyber." What is this new metaphor?

Cybern~et~ics

13. The current variety of words that begin with "cyber-" derive from the Greek word *kybernetes*, a steersman. In its turn, this noun is formed from the verb *kybernao*, to steer. Latin takes up the Greek *kybernetes* quite straightforwardly as *gubernator*, again a steersman--and hence the rare or archaic use of "gubernator" in English (meaning a governor) and its variants, "gubernation" and "gubernatorial," a term that can still occasionally be heard in American English today.

14. This is related to a metaphorical sense in which the original Greek word itself could refer to a governor (of a city, for example). He is the one who, as it were, steers the city, takes it along its path. This tells us something about both cybernetics and governance. Cybernetics is always imbued with a sense of command, making things happen from a control-point at a distance, in the domain of otherness. It's about the giving over of control to an entity for which (or whom) that control function is its primary purpose. And governance is always, and equally, imbricated in remoteness and the machinic. All governance is, by this definition, at a distance. If it were not, it would simply rejoin the action that it governed, making it indistinguishable from what is governed. The two come together in that unique space where distance and control, the human-complex and the machine-simplex, come into new configurations. The space of the cyber is both the most enabling and exciting region of conditions (in terms of human technological development) and the most restricting and reduplicative region (in terms of the almost eternal ends of the machine). The distinction depends on a very old question perhaps: who pays the ferryman? And, in passing perhaps, we should also note that in addition to this strict etymology and its spawn, there is also a more obscure and distant tangent to explore: for there is the slightly related Latin word *gubernaculum*, used in medical and biological English to mean the cord that holds the testicles together in the scrotum.

15. So "cybernet-ic" can refer to anything that is steersman-like. But, at the same time, it carries with it a double and possibly contradictory sense of both governing and being governed. And it may have barely discernible connotations of the reproductive organs. The ethics of the cyber therefore conflates a number of basic questions: Is the steersman governor or governed? Is it positively (re)productive or negatively demonic? Or else, is it in command or commanded? Is the governor self-appointed or elected?

Does it self-reproduce utterly, or is even its self-reproductive capacity ultimately a product of what produces it?

16. Returning to etymology for now, though, the term "cyber" is always a truncation of a broader term. And it's normally used to expand other truncated terms so as to make words like "cybernetics," "cybernation," "cyberspace," "cyborg" ("cyber" + "organism"), "cybernaut," "cyberpunk," "cyberia" and so on. So it's an abbreviation that adds itself to other abbreviations to concoct a variety of hybrids. Or perhaps, borrowing from biology again, we should say "cybrids"; for cybrids, unlike hybrids, borrow different parts of the genome from each of their parent plants and are, in this sense even more radically intra-differentiated than mere hybrids.[9]
17. Most dictionaries and textbooks, however, agree that the fullest and most original form, in English, is "cybernetics," a term coined by Norbert Wiener in 1947 from "cybern-" (kybernao?) and "-etics." In Wiener's sense, which we will return to later, the term referred to a discipline that would study the kinds of control systems that use feedback so as to generate automatic processes. Since then, it has taken on much broader definitions ranging from computing in general to the study of any systems of control, organisation and regulation, and particularly to those systems that use self-control, self-organisation, and self-regulation. It is this capacity that apparently gives such systems at least one feature in common with living biological systems. Hence, by extension, they are sometimes thought to have intelligence, to learn, develop, and grow. In this broader sense, then, cybern-etics might be said to model itself on gen-etics.
18. As a form of study or a method of investigation, cybern-etics is an "etics" (as in both "genetics" and "phonetics"). "Etic" (as opposed to "emic") studies engage their objects from the outside. Hence there is, contrastively, a "phonemics," if not a "genemics." Etic investigations do not ask how what it is they study understand themselves. Rather they ask how they can be analysed from outside. To use another distinction, they are nomothetic rather than ideographic. So most sciences, by definition, are etic--for the simple reason that the things they study are not normally considered able to understand themselves.
19. "Cybernetics," then, is the investigation of steering from a position other than that of the steersman himself (or perhaps the steering gear itself). And yet, it also seems, in popular conceptions of the cyber, that almost everything is given over to the steering technologies themselves. What is it to stand outside this conglomeration?--to do meta-cybernetics as the "the giving over of our governance and steering to another of our own making"? Might this be cybernethics? But we are getting ahead of ourselves.
20. Returning again to etymology, we truncate the Greek term kybernao by taking the kyber double-syllable on its own. The reason why we get cybernetics as a discipline is the practical, technological

attempt to find an other-than-us that steers and guides. The pilot determines our path--but it may be that we nevertheless give the orders regarding the termini--the start and finish points. On this view, the kybernetes merely takes us between those determined points. But what are they? What is particular and unique to the path of cyber-technology?

21. Elsewhere, I have begun to describe cyberbeing (and ~space) as a relatively unique figuration of the equipmental being of everydayness.[10] The argument there runs roughly as follows. In so far as Dasein (our ontological condition as beings of a quite particular kind) is constituted by an as-structure--that is, in so far as it understands as (in the counter-mentalistic sense of grasping-as, or holding-as, having-to-hand-as)--we are also able to imagine a less definite and embodied form of an as-if-structure. This would be the virtual inflexion of the as-structure's actual. In the space of the as-if, we would only virtually grasp or hold or orient to. Such a space would be particular to all imaginary makings: the literary, the meditative, the artistic, and so on. Importantly, the cyber is not strictly limited to the domain of the as-if. It is not purely virtual. Rather, it is constituted by a movement or a motion that navigates (very quickly, almost instantaneously) between the "as" (our everyday capacity for being) and the "as if" (our imaginary capacity). It is actual-virtual: not in synthesis or combination, but in terms of motion and movement. It hovers or flickers between these termini.

22. Steering, or being cyber, then, is the movement or motion between these points. But another variation on the etymology of "cybernetic" comes into play here. To this point, for the most part, we have thought of it as "cybern-" (from the verb kybernao) and "-etic." However, we have also seen that it's possible to imagine the term as beginning instead with the noun, kybernetes, and to configure it as "cybernet-" and "-ic." Then, in superadding the "ic," to the "cybernet," we appear to re-engage a peculiarly English suffix. This is the Anglo-Saxon "-lic" which approximates to the Modern English word (or suffix) "(-)like." In fact, in Anglo-Saxon, "-lic" is important enough to be declined--hence "-licost" is "-likest" or "most like," as in "fugle gelicost": most like a bird or very bird-like.[11] The "-ic" is already a marker of simulation; of something being like another thing. (In the above case a ship is described as bird-like-est.) And who can say whether it gains or loses power from the comparison? The "-ic" says that what the cyber is steersman-lic.

23. Today we use the suffix "ish" to express almost (but not quite) the same modality or metaphoric relation. But this newer locution seems to diminish what arises from the metaphorical connection. (Cf. "goodish," "Marxish," "feminish," and so forth.) Why is such a connection almost always viewed negatively? Nothing in its own constitution seems to merit this. What is the ultimately authentic that allows the authentic-ish ("like," "as") to become a less valuable way of moving? For if we are right in estimating the termini and trajectories of the cyber's movements, the "as" or

"like" is essential to it, just as it is essential to all inflexions of Dasein, for which everything begins with grasping as rather than with simple and mere grasping. So it is no wonder that cyber-phenomena are among today's candidates for the ultra-inauthentic: not only do they openly wear the "as," "like," or "ish-ness" of everyday coping, they supplement this with a further tendentiousness, the as-if terminus. And, at the same time, as hybrids between other forms of prior equipmentality (engineering, the chemistry of silicon, and binary mathematics), they include such things as artificial limbs, self-programming computers, "virtual" reality devices and remote-controlled vehicles for exploring the surfaces of other planets.

24. "Cybernetics," then, is a truncated form of the Greek, but the truncation always carries with it (a) the name of a discipline, an "etics," that must, therefore, work from the outside, and (b) a "like-ness," a form of analogy. An exterior discipline of necessary like-ness. So cybernetics is a discipline formed on a metaphor--or else the cyber-forms are metaphors that lead to a discipline. Or else both.
25. As such cybern-et-ics is the discipline that asks about how being human gives itself over to a steering that is not "its own": and has never been purely its own. We (as such) were always other-wise: in other ways. It is therefore, essentially, the discipline of the prosthetic, the supplemental, the equipmental. It looks at whatever we use to extend ourselves, to get from here to there--trafficking, for example. It investigates how we use the steersman--with all of the contradictions that such a project(ion) implies. For is it not the case that the steersman takes us? Yes, true, but we also instruct the steersman in the matter of where it is we want to go. In this case, all we leave to the kybernetes is the path. And still, the path is not unimportant.[12]
26. In this way, we give over our path of, say, thinking, to the kybernetes--perhaps in return for a better guarantee of our arrival. Though it's always a risk. Because of the risk, giving over the path makes some people (like Steed) feel uncomfortable. It makes them feel dispossessed of their own destiny, their own (re)productive capacities. They feel as if they are not being steersmen in their own right, having given up this capacity to a demonic force. So it can make them feel what many have felt in (what they think of as) the "grip" of technology--out of control, unable to steer for themselves. It's as if they have become an other's equipment. But there is ultimately no "other" that has equipment.
27. So can we give over our entire equipmental being to the cyber? Isn't it rather that we only give over the means of travelling between the points we pre-specify to it? The kybernetes, on this reading, is a travel agent. And why would this kind of steering be different from, say, looking up an index in a book in order to find a certain passage, as opposed to reading the whole book in order to find it? The index, in this very ordinary case, is a kind of



steersman. It helps us reach our destination; but it does not determine the destination. The same applies with more force to electronic search facilities. Or to raise a more technologically apposite example, think of net surfing: we set out to search for something but are led elsewhere along the way, perhaps never arriving at the point we originally set out to find. Is the net itself in control of this? Is it not, rather, that we make a decision at each turn?

28. If so, then everything we call a technology (from the fishing hook to the supercomputer) only aids the end or project (Entwurf) that we make of ourselves (and by which we make/create ourselves).[13] The mistake is to think that the end/project is (and always has been) ours alone--in some purely "human" state; that it was never "assisted" by (or dependent on) technologies. And are technologies anything more than our own previously-generated ends, our completions, former completions now enlisted towards further completions still?[14]
29. As soon as there is an end (a human end), there is already a technology for making it, realising it. And, of course, any technology can be made from previous ends re-realised as means. To be human is, among other things, to have an end; and that end is a project to be realised by equipment. And then, "other" things have to be brought to bear to realise that end. But they could never be "other" in any essential sense. This has never not been true for human beings. We were never purely free of equipment.
30. In this way of looking at things, the kybernetes is by no means a strange or new figure. It is by no means a sudden technological flash. It has always been there--steering--as soon as any thing ever used any other thing; as soon as it had equipment. And we are probably the only things that ever had steering equipment.
31. To be sure, there are changes in what the equipment is--from memorising to writing things down; from writing-down to printing; from printing to computing; from computing to the more recent cyber-forms. But these do not change the fundamentals of our being. Those remain more or less the same. The basic components--readiness-to-hand (equipmentality), presence-to-hand (equipment condensed into "nature" or "objectivity"), Dasein (ourselves)--remain the same--but in, as it happens, currently altered configurations. So we rarely simply steer, rather we tend to organise the steering. What else, what other kind of being, could be like this?
32. We give over the routine management of movement to pieces of wood (rudders and oars), to pieces of metal (ailerons), to pieces of plastic and rubber (steering wheels and tyres), to pieces of paper (indexes), to pieces of silicon (search engines). There is nothing strange or different about this. Our difference from nature (a classification that we have also invented, as it turns out) is that we, unlike our imaginary idea of "pure" nature, are always and utterly the makers of our steering devices. We were never not

steered by the devices that we invented for steering (and, to mention a minor example, philosophy is only one such device). The cyber, then, is nothing new. As soon as there is substance or material (hyle), there is a technique for handling it.

33. The cyber, in this sense, is very old. 1947 seems a very recent date for its discovery, its uncovering. But that recency is only one more testament to our inability to reflect on what we have made as what we have made. This is comparable with the incredibly late arrival of the first self-propelling vehicle: the bicycle. We almost want to ask, "How could we have been so uninventive for so long?"
34. The notion of the cyber, we could argue, is a better metaphor for our way of being than many so far. It's better than the idea of the "polis" as our natural environment. It's better than the idea of our having non-material "forms" beyond (and determining) our mortal existence. It's better than the idea of a pool of the unconscious that every conscious entity must follow (or dip into). It's better than the idea that we are the mere effects of the economic formations that obtain during our lives. It's better than what goes by the name of "identity politics." By comparison, these ideas are almost nothing or close to nonsense. For how could we ever have been non-technological? And why are the "humanities" constantly involved in the search for an authenticity outside technologies? We would have died on a remote beach a long time ago without this capacity. Without it, those particular and ultra-recent technologies known collectively as "the humanities" could never have emerged to make such a peculiarly critical demand.
35. To be technological is the same thing as to appoint, find or make a steering device. The cybernetic is by no means the antithesis of the "human." What we (perhaps for some odd reason of anthropologic purity) call "the human" has always been what it is because of its unique capacity to make other things work for it: such things as, for example, steering devices.
36. The only difference today is that we can make things act like this--like a steerer (cybernetic). What we don't see yet is that this relatively new ability (the double motion towards and from the "as if") is not the whole of our present condition. For now, and perhaps for a long time, we will be in the condition of flick(er)ing, hovering, switching, between the old reliable helmsman called "As" and the slightly newer one called "As if." The differences between the two, though, are minimal. Still, we must expect quibbles from the appointed guardians of "culture."

#### Cyber~ethics

37. Our etymology to this point has been general rather than historically specific. It has tried to steer around the field (or waters) of the cyber-in-general rather than confining itself to cybernetics in the narrow sense. But what was the historical impetus for this etymological derivation, as it turned out, in the

particular event of Norbert Wiener's in(ter)vention? Wiener writes:

We have decided to call the entire field of control and communication theory, whether in the machine or in the animal, by the name Cybernetics, which we form from the Greek [Image] [Image] [Image] [Image] [Image] [Image] [Image] [Image] or steersman. In choosing this term, we wish to recognize that the first significant paper on feedback mechanisms is an article on governors, which was published by Clark Maxwell in 1868, and that governor is derived from a Latin corruption of [Image] [Image] [Image] [Image] [Image] [Image] [Image] [Image]. We also wish to refer to the fact that the steering engines of a ship are indeed one of the earliest and best-developed forms of feedback mechanisms.[15]

38. There are a number of interesting features of this almost originary moment--"almost" because Wiener himself gives the first date of use as 1947, the year in which he wrote his "Introduction" to Cybernetics, the year before the publication of the book containing this definition; and also because there is always the ghost or demon of Maxwell haunting and perhaps even governing this new arrival. The first noticeable feature is Wiener's original spelling (probably a mis-spelling) in which the initial [Image] is substituted by [Image]. This may be insignificant; but it may also mark the first sign of the steersman as the chi, the physical symbol of magnetic susceptibility, hence marking the attraction of cyber technologies. Otherwise--though Charon, another chi-character, must not be ruled out in this context either--it may mark the chiasma (crossing over) as the primary act of the steersman; both in the sense of crossing over a stretch of water and of crossing over from "as" to "as if" or from human to machine, and vice versa. It might also indicate the rhetorical figure of the chiasmus in which contrasting phrases cross over one another: "Do not steer in order to arrive, but arrive in order to steer." And finally, Wiener's substitution of the aspirated "k" (chi) for the unaspirated form (kappa), may be among the reasons for us referring today to the "cyber" rather than the more correct, if harsher, "kyber."

39. The second, and for us most important, feature is that, as Wiener plans it, cybernetics is not simply a matter of dealing with communication and control as such. Rather, the discipline of cybernetics (as cybern-etics) will only deal with what, in the field of communication and control is cybernet-ic, steersman-like. Here the two possible derivations that we considered above cross over. And the feature of the steersman that is in question, that comes, as it were, to narrow the field, to say what kind of sub-discipline of communication studies cybernetics will be, is the steersman's practice. That is, cybernetics will study what the actions of the steerer, the governor, and so on have in common. And the common feature of their practices is that they all involve feedback mechanisms.

40. We could put this another way. Wiener identifies the steering engines in a ship as an instance of feedback mechanisms. But this is equally true of more primitive equipment such as the tiller. As the steersman stands in the stern, overlooking the crew, his decisions as to how to move the tiller depend on the conditions he sees and feels around him. And those conditions have come about not simply from a brute environment (the sea, the topology, the weather, and so on), but also from the previous steering activities of the helmsman himself. He has governed the ship into any present state of governability. In this sense, even the tiller arrangement is a feedback mechanism. The steering is dependent on a feeling of the sea as it presents itself at a given moment in the very process of steering.

41. Accordingly, what is crucial to the field of cybernetics--what marks out its distinct objects--is the feedback that produces recursion. State  $s'$  becomes state  $s''$  by virtue of an operation which (in either an identical or a modified form) is reapplied to  $s''$  to generate  $s'''$ , and so on. In this case, the act of steering oneself is a case of governing and being governed, reflexively, in the same instant. There is no strict active-passive distinction in a situation of feedback, recursion, or re-iteration. This is part of the usual definition of a reflexive verb. The cybernetic is, then, in its brutest form, the field of self-governance.

42. This is what cybernetic machines have in common with cybernetic organisms (and all organisms, on this, Wiener's, definition, must be cybernetic in so far as they are self-governing in their self-propulsion): they govern themselves (and are governed) reflexively. And here the term "reflexive" (as in "reflexive verb") is intended to capture all the properties of self-re-iteration, feedback, recursivity, and self-governing self-propulsion. This, we might say, is the ethos of organisms. And, with the advent of cybernetic machines, we now have to say that there are some machines that share this ethos.

43. If we look at matters in this way, we begin to see that the various public moralities about the cyber are utterly misplaced. I mean, for example, cyberphobic reactions (such as Steed's) to the idea that machines might replace people or their functions--a deep and abiding fear of a necessary equipmentality, supplementality, or prosthesis. While we can hear this lament everywhere today, one lasting monument to it is E.M. Forster's short story, "The Machine Stops." [16] Here, the machine comes to remove that most apparently human need, to see the sky. In cyberphobic texts, it is either this, the relation of the organism to nature, or else its relation to an inner psyche or soul, or both, that is apparently removed by the machine. The same reception has greeted handwriting, the printing press, street lighting, television, and now, among other things, computers.

44. On the other hand, the public morality of cyberphilia (such as Rucker's) simply reverses these values. We can find this in such places as the stories of H.G. Wells, Wired magazine or in thousands

of sites on the Internet. In this idealistic inversion of cyberphobia, all things cyber are thought to enhance natural or psychological human capacities: the sky becomes clearer as it is digitised, the workings of the mind become more open and available as they become "artificial," and so on and so forth. The picture is well known today.

45. Both these positions mistake precisely what we have called the very ethos of organisms: reflexivity. This, as we have seen, is neither a natural nor a mental capacity. That is, it is not constituted out of a relation between the organism and nature, or a relation between it and its putative department of internal affairs (the ghost in the machine, perhaps). Rather the ethos is the self-organising and self-governing self-propulsion that is reflexivity in our sense of this term.
46. Now, if this is the ethos of organisms and also of cyber-phenomena, then it is here that we will find their ethics. As Deleuze, after Spinoza, has pointed out, ethics (as opposed to mere morality or moral judgmentalism) is a matter of ethology (27, 125). It is a matter of what a body can do; its affects. That is, it is not as if a body acted and then, upon a later consultation of its internal states, its "intentions," it decided whether or not the action was good or bad. And, a fortiori, the ethical cannot be a matter of absolute values of Good and Evil. These pertain only to moralisms such as cyberphobia and cyberphilia themselves. Cybern-ethics, then, does not come super-added to cyber-bodies. What a self-organising/self-governing/self-propelling (that is reflexive) body does is its ethos, its ethics. What is good for a body is whatever it does to enhance its powers of self-organising and self-governing self-propulsion. The good is an increase in reflexivity. And the bad, again following Deleuze-Spinoza, is whatever it is that a body does that decreases its reflexive capacity. All of this has to do with the field of bodily movement or motion--hence ethology.
47. Moreover, as Deleuze points out on several occasions, Spinoza's ethology is extremely close to that of Nietzsche, who also separated the "bad" Good and Evil of morality from the "good" good and bad of ethics. To this extent, cybernethics may also point to the centrality of power(s) as the capacity or capacities of Dasein to self-regulate. All of this is redolent not only of Nietzsche's will to power, especially as it is mediated by Heidegger's reading of that concept--as the principle of Nietzsche's new ethical re-valuation--but also of Foucault's uptake of Nietzsche and his view of ethics as arts or techniques of the self.[17] And while this connection opens up another field of inquiry in its own right, what might concern us here is the interesting possibility of deriving a non-moral ethics of power that is co-extensive with the cyber as Dasein's fundamental equipmentality, regardless of the specific technologies that it so happens, at any given historical point, to use as concrete manifestations of that fundamental equipmentality. I have taken this question up elsewhere in another series of articles on Heidegger, culture, and technology.[18]

48. And finally, a particular property of human reflexive organisms is that they are, in the strictest sense, accountably reflexive. An increase in reflexivity, in our case, is an increase in accountability. As a human reflexive organism (dare I say, "as Dasein"?), I display in and as my own motion how it is that that motion is to be taken by others. This is how the "social order" so crucial to human self-organisation is possible. Or rather, this is what social order, fundamentally, is. A good instance is mentioned by Wes Sharrock:

Social order is easy to find because it's put there to be found. When you go about your actions [...] you do them so that (or in ways that) other people can see what you're doing. You do your actions to have them recognized as the actions that they are. When you stand at the bus stop, you stand in such a way that you can be seen to be waiting for a bus. People across the street can see what you're doing, according to where and how you're standing.... [Y]ou're standing at a bus stop and somebody comes and stands next to you and they stand in such a way that eventually you can see that these people are standing in a line and that one person's the first and another is the second, and some person's at the end. People stand around at bus stops in ways they can be seen to be waiting for a bus. (4)

49. That is, human social order is not just self-organising; it is not just cybernetic. It is also, and utterly, in the business of displaying its self-organisation. That is, it is accountable. The way I stand by a particular pole, perhaps under a particular shelter, so that what I'm doing is visible to everyone as "waiting for a bus" (rather than, say, loitering) is an instance of accountability. With or without words, I am, in the very doing of waiting for a bus, accounting for what I'm doing as waiting for a bus (as opposed to, for example, using the bus shelter to keep out of the rain for a while). The verbal form of this accounting is only one such kind of accountability--though it is, by and large, how we do it.

50. Sharrock's point cannot be over-emphasised: it is not as if there is the movement, motion, or action and then the accounting (organised, for example, intentionally). Rather the two--the specific properties of human self-organising organisms--and the self-organisation that is called, in general, "society"--are indistinguishable. This is what is particular to us, to our ethos. It is unique to our ethical positioning that we are accountable in this sense. And, as a matter of sheer principle, there is no reason why cybernetic machines should not have (though they presently do not have, as a matter of fact) exactly this ethics. The question would be: when will a prosthetic device put itself in motion in such a way that anyone (including any other cybernetic machine) will be able recognise what it is doing because it has designed its motion to be (not only self-governing but also) accountably that (self-governed) action? A cybernetic machine can build, say, a car.

When will it do so accountably--such that what it is doing is indeed building a car but, above all, such that it is doing so in such a way that it displays its motions as designed to be specifically that action for anyone to see?

51. It will be at that point that a sheer coincidence of cybernetic properties held in common by some machines and all organisms (including human organisms) will have become an ethical identity between cybernetic machines and ourselves. That, if ever, is how the Turing test will be passed.

Way~markers

52. Where we have arrived along our path of thinking is not at a final destination. Not by a long chalk yet. In fact only a few steps have been taken. All we have seen is that beginning with the "usual story" of man and technology--the idea that technology is "what man makes" and his plans for so-making--we started with only part of the picture. As we ventured just a little further into the details of that story, we began to notice it to be fraught with troubles; troubles with no easy solutions. But something of a new understanding of cyber-technologies did occasionally present itself along these culs-de-sac, albeit as a fleeting glimpse. We can only guess what this may be once further pursued. At least, however, we now have a blurry outline of our alternative: that the ethics of today's technological world is different from, and more than, simply a series of "critical intellectual" worries about machine morality. Rather, that ethics is an ethos: as much an ethos of man and Being as of technology.

53. Is it possible, then, that we have been, despite our sense of a journey, back home in language, the house of Being, all along? Perhaps. But if so, we may have recognised some of those who dwell there: man, Being, and the appropriative event (Ereignis) that lets them belong there together. So at least we know this much: it is to the relations between these inhabitants that we must look to find the essence of technology. No amount of chatter about machines and their relations will get us there. As Heidegger puts it: "Today, the computer calculates thousands of relationships in one second. Despite their technical uses, they are inessential." Now we know that this "inessential" is far from being a form of technophobia. For, aptly summarising any journey this essay may have taken into thoughts of a more essential ethos of technology, he also says the following:

Technology, conceived in the broadest sense and in its manifold manifestations, is taken for the plan which man projects, the plan which finally compels man to decide whether he will become the servant of his plan or will remain its master. (Identity and Difference 41)

By this conception of the totality of the technological world, we reduce everything... to man, and at best come to the point of calling for an ethics of the technological world. Caught up

in this conception, we confirm our own opinion that technology is of man's making alone. We fail to hear the claim of Being which speaks the essence of technology. (Identity and Difference 34)

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#### Notes

Thanks to Karen M. Strom for the Greek symbols. Her symbol fonts can be downloaded from the Symbols Bonanza Web site

1. The critical text, here, might be "The Cybernauts," an Avengers episode that is possibly the first popularisation of the "cyber" as an inhuman and anti-human force. It precedes Dr Who's cybermen by a year.

2. A text-only version of "Cyberbeing and ~space" is available at <http://pmc.village.virginia.edu/text-only/issue.997/mchoul.997>. The full hypertext version of the article is available at [http://muse.jhu.edu/journals/postmodern\\_culture/v008/8.1mchoul.html](http://muse.jhu.edu/journals/postmodern_culture/v008/8.1mchoul.html) (Please note that only paid subscribers to PMC at Johns Hopkins' Project MUSE have access to this site. Information on subscribing to Project MUSE is available at <http://muse.jhu.edu/ordering>.)

3. On language as the house of Being, see Martin Heidegger, "The Way to Language," 111-136. The phrase is repeated in Identity and Difference and brought into conjunction with the "event of appropriation" (Ereignis).

4. This is in a book called Culture and Representation, currently under consideration by Cassell, London, with a view to publication in 1999. Electronic copies are available on request from [mchoul@murdoch.edu.au](mailto:mchoul@murdoch.edu.au).



5. See David Farrell Krell's footnote on *das Wesen* in Martin Heidegger, *Nietzsche Vol. IV: Nihilism* (140).

6. Here and throughout this essay, I work with a number of basic concepts derived from Heideggerian philosophy. Most of these stem from Division I of *Being and Time*. In particular, my reading of Heidegger is most influenced by the "pragmatic" Heideggerians. See, for example, Mark Okrent, *Heidegger's Pragmatism: Understanding, Being, and the Critique of Metaphysics*.

7. "Authenticity" might be read, here, as "own-ness," the collective capacity for self-organisation of/as equipment.

8. A few sources suggest that the term "cybernetics" may first have been used by Ampère in the early 19th century to refer to the scientific control of society.

9. Chambers dictionary has the following entry for "cybrid": "(biol) n a cell, plant, etc. possessing the nuclear genome of one plant with at least some part of the chloroplastal or mitochondrial genome of the other, as opposed to a hybrid in which some parts of both parental nuclear genomes are present." A more technical definition is: "Cybrid (Bunn et al. 1974)--the fusion product of an enucleated cytoplasm with an intact (nucleated) cell (--> protoplast). In cybridization, the nuclear genome of one parent is combined with the organelles of a second parent. Sendai virus or polyethylene glycol may be used as fusing agents" (Reiger et al.). The bracketed reference is to "Bunn CL, Wallace DC, Einstadt JM (1974) *Proc Natl Acad Sci USA* 71: 1681."

10. See "Cyberbeing and ~space," paragraphs 1-23.

11. The words "fugle gelicost" are used in line 218 of the Anglo-Saxon epic poem *Beowulf* to describe the hero's ship as it sails.

12. What this may show--although the matter obviously requires closer investigation--is that the logic of the supplement (in Derrida) and the logic of governmentality (in Foucault) are conceptually related. It is also possible that their conceptual relation stems from their common relation to Heidegger and his thinking of equipmentality.

13. *Entwurf* is the term Heidegger uses in many of his works for "projection." The full ramifications of this for our understanding of cyber-technologies, the digital and the virtual are explored in Phil Roe's forthcoming Ph.D. thesis, "Of Hologrammatology: The Politics of Virtual Writing."

14. One possible symptom of the error in question is that we have now come to use words like "perfect" and "perfection" to refer to an utterly ideal state of being. But strictly, what is perfect is simply completed, over and done with (cf. the perfect tense).

15. See Wiener 11-12. Wiener's reference to the Maxwell paper is as follows: "Maxwell, J.C., Proc. Roy. Soc. (London), 16, 270-283, (1868)."

16. Although the story itself is earlier, this popular collection was first published in 1947, the same year, as it happens, that Wiener coined the term "cybernetics."

17. See Heidegger, Nietzsche Volume III: The Will to Power as Knowledge and Metaphysics; Foucault, Power/Knowledge: Selected Interviews and Other Writings 1972-1977; and Foucault, The Use of Pleasure: The History of Sexuality Volume Two.

18. See my "The Being of Culture," to appear in Continuum: A Journal of Media and Culture; "'The Twisted Handiwork of Egypt': Heidegger's Question Concerning Culture," submitted to Epoché; "Five Theses on Culture," submitted to Research in Phenomenology; "Revolution • Resolution • Pathmaking • Technology," submitted to Tekhema: Journal of Philosophy and Technology. Drafts of these essays are available on request from mchoul@murdoch.edu.au.

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