

PICKERING'S CYBERNETICS

andrew pickering

2025 Cybernetics Conversation, 30 June-2 July, Cybernetics Society, Loughborough University

Three concerns have fed into this talk. One is that I've seen this session described as a provocation, so I'll try to be a bit provocative—forgive me if I go too far. Second, I've seen the talk advertised as 'Pickering's Cybernetics'—so I'll pick up the gauntlet and lay out my own take on the field. My third concern needs a bit more explanation.

Once upon a time—the 1940s, 50s, 60s; the Macy conferences, the Ratio Club, the Namur conferences—cybernetics was a bright and sparkly thing. Everyone wanted to be a part of it. Now they don't; it's become a backwater. At the turn of the millennium, Ranulph Glanville wrote that 'cybernetics has fragmented and, apparently, disappeared,' and I can't think of anything since to contradict that. What has gone wrong? Why are so few people interested and engaged with cybernetics these days? There are many stories to be told about this, but the one I want to focus on today is that cyberneticians have (1) stripped away much of what gave the field its sparkle in the first place, while (2) failing to open up new connections, losing much of the field's potential relevance and importance along the way.

My aim is to show how my take on cybernetics speaks to this third concern by drawing attention to what has been lost and to avenues that could have, but haven't, been developed. Of course, this raises the question of what present-day cybernetics is. No doubt, cybernetics is still a many-splendoured thing, but from my knowledge of its institutional homelands—the Cybernetics Society, the American Society for Cybernetics, the Metaphorum group—I would say it centres on two dominant topics. One is systems, organisations, governance and Stafford Beer's Viable System Model, the other is second-order cybernetics with its emphasis on conversation and the situatedness of the observer. Is it too provocative to say that neither of these has a lot of sparkle?

•

I'll start with my own take on cybernetics and how I arrived at it. I came to cybernetics from the outside. My interest in it grew out of my earlier work on the history of physics. In the late 1990s I somehow got the idea that cybernetics is a radically and interestingly different sort of science from physics and I tried to find out more about it. This was a frustrating business. I quickly got fed up reading about thermostats and steam-engine governors. So I tried going back and reading books written by the founders of cybernetics. I got no joy, literally, from Norbert Wiener, Warren McCulloch is pretty baffling, but the numinous writings of Ross Ashby, Grey Walter, Stafford Beer, Gordon Pask and, later, Gregory Bateson drew me in. And then I embarked on what I now realise was a mad project: trying to find the common essence of their writings. Of course, this was a mistake. Cybernetics no more has an essence than does physics; Ashby had his project, so did Walter et al, and they were all doing their own things. So, in retrospect, I made up my own story of what they had in common, which included some of their work but not all of it, and certainly not all of the work of all of the people commonly counted as cyberneticians. And then I wrote a long book about it, *The Cybernetic Brain*.

So, what is the vision I arrived at there? The key point is that it is *ontological*, meaning it's a vision of how the world is, what sort of stuff it's made of. If sciences like physics are about a knowable world (of quarks, black holes, DNA helices) I argued that my cyberneticians instead had a vision of the world as ultimately *unknowable*, emergent, a place that can always surprise us, that we can never fully master.

Besides unknowability, I also understood cybernetics as being a science of the entanglement of people and things. The warrant for this was Wiener's juxtaposition of the human and the nonhuman in his reference to 'control and communication in the animal and the machine,' which became entanglement rather than just juxtaposition in the work of Ashby et al. And I conceptualised this entanglement in terms of human/nonhuman couplings at the level of performance (rather than simply information), worldly action, in feedback loops and spirals running through people and things that I call a *dance of agency* (as modelled by Ashby's homeostats). And that's basically it, that's the fundamental story of cybernetics as I told it in *Cybernetic Brain*—a story of unknowability as explored and accommodated to in dances of human and nonhuman agency.

I know this story isn't anything you can find explicitly in the writings of any cybernetician. My cyberneticians never even used the word 'ontology'—they were writing in the 20th century when epistemology was the thing and talking about ontology was verboten, though Stafford Beer got close in describing cybernetics as the science of 'exceedingly complex systems.' But still, I think it has plenty to recommend it. The way I see it now is that it goes down to a more fundamental level than any of the writings I derived it from. At the same time, it resurfaces as a common thread linking together all the cybernetic projects that fascinate me as part of a single unitary paradigm, and it also opens up possibilities for new developments. Let me talk about that now with regard to the lost sparkle and decreasing reach of cybernetics.

•

(1) My vision of cybernetics is ontological. I've tried talking about that at cybernetics meetings before, and the old-guard just made fun of me, claiming not to know what 'ontology' means. I can't think of a worse response. In one direction, there are large numbers of philosophers, historians, social scientists, and literary and political theorists very interested these days in ontological questions of emergence and posthumanist decentrings of the human and the nonhuman. Just to quantify that, the book in which I introduced the idea of a dance of agency, *The Mangle of Practice*, has nearly 7,000 citations today. The leading names in my field, STS, science and technology studies, are Bruno Latour and Donna Haraway, both of whose work has distinctly cybernetic roots. Haraway's most famous essay is even called 'A Manifesto for Cyborgs' (1984). All of these people are potential allies of cybernetics on my definition. But all of them are conspicuously ignored by the cybernetic mainstream. This is an instance of the sort of insularity of present-day cybernetics I just mentioned.

From another angle, it doesn't take long thinking about the ontology of unknowability and decentred becoming to get to all sorts of nonmodern and often eastern branches of philosophy and spirituality. Late on in writing *Cybernetic Brain* I realised that this is a strain that linked all the cyberneticians I studied. I would remind the followers of Beer's management cybernetics, for example, that the great man spent the last years of his life very loudly going on about and practising his own vision of eastern spirituality. Francisco Varela was scientific adviser to the Dalai Lama. A couple of weeks ago I spoke at the London Buddhist Centre, which turned out to be the most interested and sympathetic audience I have ever encountered.

When I mention all this to most cyberneticians they just change the subject. Another stripping away of potential topics and alliances, another narrowing, that cybernetics can ill afford. I don't need to say that there are far more Buddhists and Daoists, animists and mystics, in the world than card-carrying cyberneticians. Why not try to include them?

(2) What really grabbed my attention in the work of the founders of cybernetics wasn't abstract ideas about feedback, governance and conversation. It was the spectacular range of *real-world projects* they engaged in—in robotics, brain science, psychiatry and antipsychiatry, biological computing, management, the arts and architecture. All of these fascinated me in their originality and their difference from their conventional counterparts. In effect, they all brought my ontological ideas about couplings of the human and the nonhuman down to earth in ways I could never have imagined for myself, and they were what really gave cybernetics its reach and sparkle, back in the glory days. People wondered at Grey Walter's tortoises on TV and bought his books; they turned out on Saturday nights whenever Gordon Pask was speaking. These things speak to all sorts of people, from roboticists to the general public, and where are they now? Again marginalised at best by mainstream cybernetics. So much of the practical and material base has been just lost in today's cybernetics. The journal *Cybernetics and Human Knowing*, as one small example, makes a point of including what might be considered cybernetic artworks, but these are old-fashioned static paintings, never Paskian works like the Musicolour machine and the Colloquy of Mobiles that show us a dynamic ontology of decentred becoming.

If I had to find an explanation for this sort of ontological editing, I would say that mainstream cybernetics has succumbed to the gravitational pull of modernity. Bruno Latour described modernity as characterised by the dualist ontological separation of people and things, and since the 1970s cybernetics has tilted very strongly towards the human side. Things have disappeared in favour of humanist topics like management, governance, conversation, ethics. Not very sparkly . . .

(3) New directions again. Time for an advertising break. In *Cybernetic Brain* I tried to show how all sorts of cybernetic projects could be seen as implementations of my ontological vision. But I claimed not just to be doing history of science. The argument—and hope—was that if people got the hang of it, they could come up with their own new cybernetic projects. And I can perhaps claim to have practised what I preached. My latest book is called *Acting*

with the World: Agency in the Anthropocene, and tries to develop in a new way Gregory Bateson's concern with the environment. My strategy is to trace out examples of how people have sought to find out what the world wants to do and to act in synch with that by deliberately staging the sorts of dances of agency with nature that I've been ascribing to cybernetics. This concern with our *practical* engagements with the world—including, in my case, floods and wildfire control, farming and even shamanism—is again conspicuously absent from present-day cybernetics, another shoot that has been allowed to wither away.

•

(4) Politics. This deserves its own section. There is a long-standing, continuing and biting critique of cybernetics, going all the way back to its origins, that sees it as a science of control in the most deadening sense, a science of policing. If cybernetics wanted to make a splash in the world, it would try to address this critique and take on its critics in public. A lot of people would be interested. Instead, as far as I can make out, the cybernetic response is to ignore it. The exception here might be me. I went out of my way in *Cybernetic Brain* to rebut this critique, painting a picture instead of cybernetics as an exploratory trip into the unknown. But maybe I shouldn't have. What is the Cybernetics Society's latest attempt to popularise cybernetics called? Badlands. The first instalment of that was all about the contribution cybernetics can make to policing the internet. I suppose this is great if you're looking for an audience of policemen—although the cybernetic thread that ran through the talks was Ashby's law of requisite variety, and the message I took from it was that the 'bad actors' have much more variety than the police will ever have.

There is another side to all this, again undeveloped in mainstream cybernetics, another path not taken. Cybernetics can be police-science, but it can also be articulated in a critical and a constructive fashion, too. Again it is worth remembering that the father of the VSM was himself an outspoken critic of the political status quo. A long section of Beer's last public speech was devoted to the then recent events of 9/11:

Last month, the tragic events in New York, as cybernetically interpreted, look quite different from the interpretation supplied by world leaders—and therefore the strategies now pursued are quite mistaken in cybernetic eyes. . . The cybernetician knows that resources can be amplified through the process he calls intrinsic control. A large

assailant [meaning the US] charging a judo adept [Al Qaeda] finds himself thrown over the adept's shoulder, and crashing into a corner—destroyed by his own strength.

More generally, Donna Haraway's famous manifesto emphasises the ambiguity of the figure of the cyborg, as both a child of the military-industrial complex (policing, again, starting with Wiener's anti-aircraft predictor) but also the harbinger of an optimistic future free from the insidious dualisms of modernity (cybernetics as the science of emergent entanglements). Try watching the news and wondering if modernity isn't itself the Badlands. 'The purpose of a system is what it does.' There's a whole new political vector here that cybernetics could explore.

My own approach to politics follows Haraway's lead and is encapsulated in the subtitle of *Cybernetic Brain—Sketches of Another Future*. I quoted Glanville earlier on the fragmentation of cybernetics, and one object of my book was to put the pieces back together again, with the ontology of unknowability as the unifying principle. My feeling is that unity is strength, and I tried to show that all the different threads can recombine as something greater—more powerful and impressive—than the sum of its parts, a new paradigm, a new blueprint of thought and action very different from our usual ways of going on—a bottom-up practical politics, a politics of practices, another future.

•

What is to be done? My last heading. I can visualise the elements of another future. I can see what they are and how they fit together. The question I can't answer is how to make this assemblage a social reality. That has always been the great stumbling block—the great unsolved problem—for cybernetics—regularising the social basis. Echoing Paul Pangaro's #NewMacy project over at the American Society for Cybernetics, the obvious historical model is, of course, the famous series of interdisciplinary Macy Conferences that sparked cybernetics into existence in the 1940s and 1950s. We need meetings, workshops, conferences, movies, artshows, new academic units, even new universities with new curriculums, to bring together on a continuing basis all the sorts of topics and people I've been mentioning—cyberneticians, obviously, management types, conversation theorists, roboticists, artists, Buddhists, philosophers and social scientists, STSers, political theorists . . . you name it, all agreeing they're talking about the same sort of thing. I've tried this out in a

small way, and it's worked very well, but as a continuing project it's just fizzled out. So—any suggestions much needed and appreciated. The final question that has crept up on me lately is what to call this cluster of initiatives. I'm no longer sure that actually existing cybernetics could constitute a centre of gravity for such an expanded grouping. Maybe call it 'Beyond Cybernetics.' I've tried 'New Ontologies,' but today I'd settle for 'Another Future.' That sounds promising . . . another future is possible . . .