

# A Cybernetic House Between: A Safe Zone Between Our Technological Flesh and the Technological Field

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## FAUSTIAN BARGAINS

The popular American theorist of technology, Neil Postman, once said that all technological change involved what he called a *Faustian bargain*.<sup>1</sup> This very useful phrase was his way of emphasizing the integrated quality of the potential pitfalls and advantages offered by technological change. The example I like to use to describe this bargain is Tim Burton's story of *Edward Scissorhands* (1990). While Edward, who had scissors for fingers, was a wonderful topiarist and hair stylist, he could not wipe the hair from the brow of his loved without cutting her. All technology is like this. It both enables and it disables. It fundamentally changes how we relate to the world. To a person with a hammer, the old adage goes, everything looks like a nail. And similarly, Postman adds, "to a person with a pencil, everything looks like a sentence. To a person with a TV camera, everything looks like an image. To a person with a computer, everything looks like data."<sup>2</sup> We use our tools in order to extend our agency and perception, but with every positive change comes with it a whole host of consequences, both anticipated and not. As our technology changes so do we.

This is nothing new. We are technological beings. Our technology is inextricably linked to who we are and how we have come to be who we are. Simply put, the category of things we call technology enables us to do stuff we otherwise would not have been able to do. Things that we could already do, technology allows us to do them with greater *ease* and *expediency*. The expediency with which a tool allows us to do something opens up time for other activities. Tools have freed us from spending our

time labouring over the most basic requirements of life so that we could construct the elaborate artifice that is our world today. The history of tools reads precisely as the history of our liberation, as we have become increasingly divorced from the shackles of necessity.

We are technological beings. Our technology underlies our perception of the world and our agency in the world. As Alberto Pérez-Gómez once put it in a wonderful little essay on Heidegger, "the reality of our changing mental landscape and our technological flesh" is "undeniable."<sup>3</sup> It is as if our technology, once an array of convenient tools, has become more like a "biological development," to use Hannah Arendt's description, which belongs to us, "as the shell belongs to the body of the turtle."<sup>4</sup> We are surrounded. We have repeatedly and continuously transformed our world until the field which we occupy and against which we define ourselves has become a thick palimpsest of technology.

While we are in the business of defining technology, I think it is important to distinguish from Pérez-Gómez's 'technological flesh' another domain, what I would like to call *the technological field*. The distinction is essentially between what might be called 'close' technology, with which we form a tight instrumental phenomenological assemblage, and what might be called 'separate' technology, the environs between and within which we move. Technological flesh is the pill which alters our psyche, the defibrillator embedded in our chest cavity, the new paradigms and models with which we think, and the hammer with which we move the nail and shape the world<sup>5</sup>. 'The technological field' on the

other hand is the light which turns on when we get home, the garage door which opens at the press of a button, the phone that rings when our friend calls, and the vacuum cleaner that scoots about our carpet cleaning up after us. The technological field is also the nails that hold our walls together, the walls that keep things out and in, and the windows which blur that boundary. I hope to show that distinguishing between technological flesh and the technological field is an important step in navigating the various Faustian bargains that we are beset by when considering "situated technologies".

### BARGAINS IN THE TECHNOLOGICAL FIELD

The technological field is the elaborate artifice of modern civilization. The Vitruvian fantasy of the construction of the primitive hut serves as a handy illustration of how dependent who we are is upon the construction of the technological field. Joining boughs to make walls and a roof is literally taking nature and rendering it technological in order to advantage oneself and increase the likelihood of survival. But it is important to remember that with every step we have taken in expanding upon that primitive hut there has been a bargain. The walls that keep out wind and rain and burglars also keep out friends. Streetlights protect us from danger and also expose us all to scrutiny. Our streetlights bleach out the stars. Installing a security system in your house keeps your things safe but it is also a statement that says: people are not to be trusted. Acts such as encoding information about yourself on a credit card and outfitting the world with systems for reading that card are statements of faith in the elaborate artifice of civilization. We technologize the world in order that it can take care of us. However, every time we invest more faith in the infrastructure that supports us, the more we open ourselves up, as individuals, to manipulation and abuse, to coercion, as it is popularly put in the tradition of cybernetics.

Interestingly, those within the cybernetic community are well aware of this tension, or at least those are that perch upon the branches that stem from Mead, Bateson, Pask, or Von Foerster. Those that share what Ranulf Glanville recently described as 'Warwick's View'<sup>6</sup> certainly seem less interested, drawn more towards the technical side of problems like robotics and AI. Gordon Pask, on the other hand, the resident cybernetician to Cedric Price's Fun Palace projects, treated the balance between

liberation and coercion very seriously indeed. The goal behind much of his work was to render the relationship between humanity and machine *conversational*, i.e. mutually constructive<sup>7</sup>. He believed in the possibility of our developing, as Glanville, a student of Pask's, has put it, "synergetically with whatever we create, to the benefit of both."<sup>8</sup> His MusiColour Machine project, for instance, of 1953, did not just transform rhythm and frequency into a pulsating light show, but when it found this input becoming tired and uninspired would begin to riff on its own. Musicians playing with the machine would be spurred on to innovate further<sup>9</sup>. The MusiColour Machine, operating as part of the technological field, was neither subservient nor dominant. Rather it was collaborative.



Figure 1. Steve Mann pictured through the years

Not everyone is as high-minded as Pask, however. Steve Mann wrote in 2001, "as a cyborg, I stand in the ebbing current between freedom and entrapment."<sup>10</sup> Mann, a famous proponent of wearable computers, would no doubt agree with Donna Haraway's fears articulated in 1991 that our machines are becoming "disturbingly lively, and we ourselves frighteningly inert."<sup>11</sup> Fears that we will end up unwittingly being overcome by our technological field are common and have been held for a long time. Just think of the long tradition of films that have dealt with these issues such as *Wall-E* (2008), *The Matrix* (1999), *Brazil* (1985), Kubrick's *2001: A Space Odyssey* (1969), or even Chaplin's *Modern Times* (1936). The list of references from literature that could be collected would of course be much longer. The fear is not new. Mann's suggestion is somewhat unique, however. Instead of making the environment responsive and 'smart' (or possibly in complement to this), he argues, we should focus on augmenting the individual. He sees this as

the only way to avoid ceding power to an anonymous technologized infrastructure (and whatever interests lie behind it and operate within it). To combat *surveillance*, for instance, which is practically inevitable given the advantages it renders, he entreats us to engage in complementary *sousveillance*.<sup>12</sup> "Faced with ubiquitous surveillance," he ponders, "our only (il)logical response is: more surveillance."<sup>13</sup> Rather than doing away with the recording of the world, his strategy is simply to remove its privilege. If you always carry a recording device with you (and keep it on), the constant capturing of images becomes no longer solely the domain of those in power. Mann's response to the runaway technologization of the field is to even out the power balance by arming individuals with technology. One may think of the Japanese teenage girls in the 1990's using their cell phones to reterritorialize public space as permissible of their youth and their femininity<sup>14</sup>. Or similarly, one may think of the Green Revolution in Iran where protestors were able to use their personal telecommunication technology to communicate with an international community whose journalists had been kicked out of the country<sup>15</sup>. From such a perspective, the trick to retaining autonomy and personal agency in a world increasingly disposed against it is to galvanize our technological flesh, with prosthetic senses, prosthetic memory, prosthetic intelligence, etc., truly transforming ourselves into cyborgs.

### BARGAINS WITH THE TECHNOLOGICAL FLESH

Thus technological flesh can serve as an answer to the dangers of a not necessarily benevolent technological field. However, let us not pretend that our materializing technological flesh is not without its own host of consequences, both positive and negative. While admittedly sometimes technology serves an agenda of disindividuation, the merging of self with world, frequently it does just the opposite. The 'legacy of abstraction'<sup>16</sup> inherited from the enlightenment which conceives of the individual's mind as separate from their body, their emotions as separate from their thoughts, and the individual as separate from their communities is strongly manifest in much of our technology, especially that 'close' technology which forms our technological flesh. We become alienated from our bodies, from our immediate social ecologies and from physical ecologies as our consciousness spreads out across digital networks. We lose rapport with things. We become unmindful.

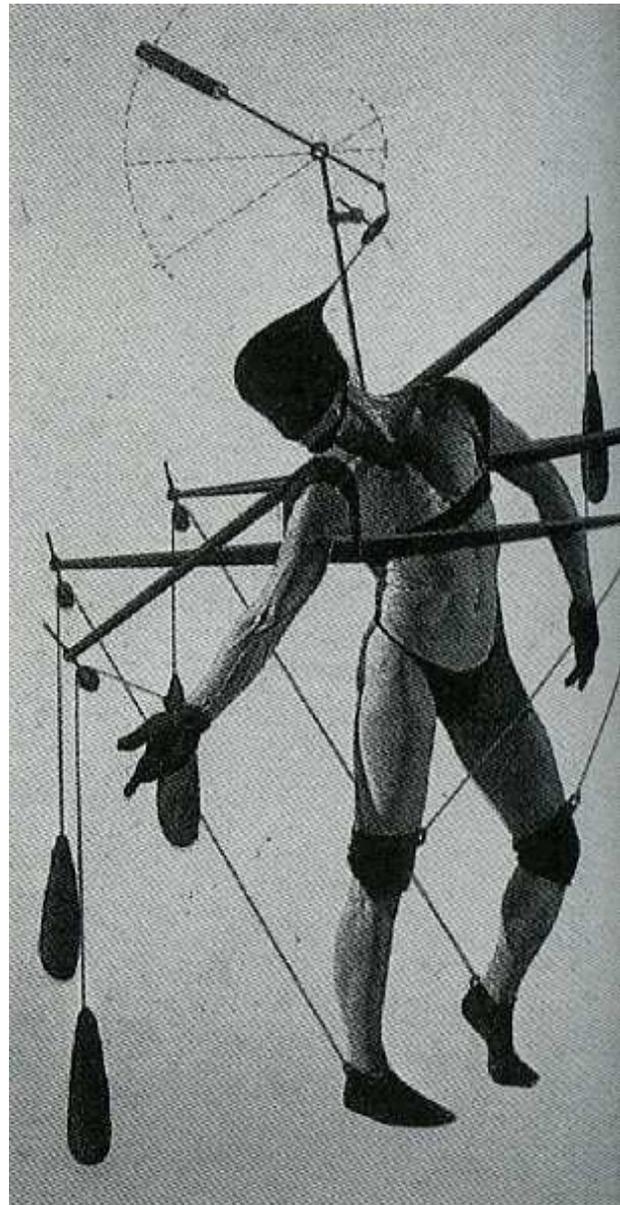


Figure 2. From Diller & Scofidio's Rotary Notary project - an illustration of cyborg alienation

While the danger lurking in the technological field is domination and coercion, the danger posed by our technological flesh is alienation. It is in this context that I would like to talk about the cybernetic house as a possible means of relief from these Faustian bargains.

## THE CYBERNETIC HOUSE

Historically, the house has generally been a nourishing ground for social microecologies such as the family, a bounded space providing safety, privacy, and a point of access, for those admitted, to water, general knowledge, food, shared narratives, heat, electricity, emotional support, telecommunications, etc. Despite the apparent fragmentation and restructuring of family units in the West in the recent past, it seems like social incubators like the house will remain good ideas and in popular use well into the future. Additionally it would be a shame to lose those psychically rich aspects of the house such as those famously explored by Gaston Bachelard in his poetics of space, aspects that one can't help but feel are deeply in danger of destruction. The continuing evolution of our technological flesh threatens to dramatically detract from the effectiveness of the house as a nexus of socialization or as an incubator for our dreams. Likewise, the evolution of the house as a technological artefact, and especially a *networked* technological artefact, may easily become a tool of coercion, or, at the very least, sedation, if we are not diligent in guarding it against such a fate.

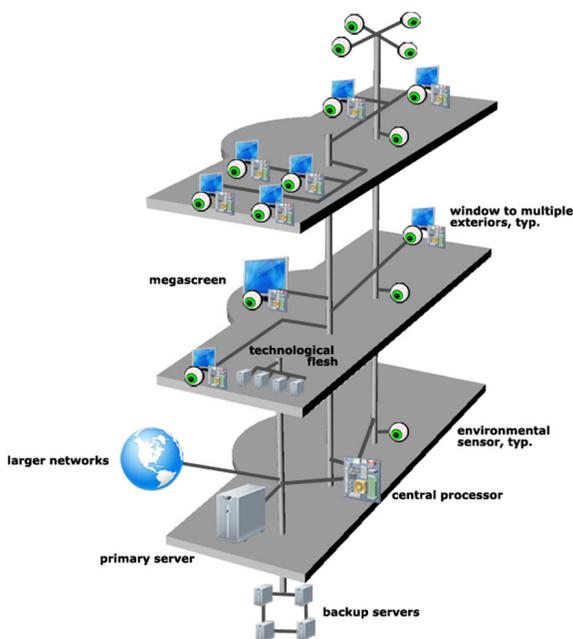


Figure 3. A network diagram for a cybernetic house

My proposal then is to re-frame the house as the technological flesh for the group, an exoskeleton

shared by the small community sheltered within it. Travelling through the world, a personal technologized flesh is reasonable, aiding you in performing the tasks you would like to perform, communicating with people, linking you to vast reserves of information. It allows for a valuable autonomy. But, at the threshold of the cybernetic house, let us shed these shells. Our prosthetic memories could easily be 'synced' to the memory systems of the house and our personal settings likewise shared. In so doing we remove the alienating epidermis that has been sheltering us outside and we place our trust in the larger shell of the house within which the social unit is contained. In reality this could be as simple as a shelf at the front door, possibly next to the cubby where we keep our mittens, where our electronic technology may be hooked up to the home network and recharged (see figure 3).

It is, however, crucial that this demonstration of trust is warranted. The connection, therefore, between the house and the larger networks within which it is situated must be carefully calibrated and articulated. The house being a nodal point in many networks such as information networks and networks of distribution, these networks must benefit the house and the household but they must not demand dependence. In the same way that Steve Mann has argued for the augmentation of the cyborg as opposed to the augmentation of the environment, in order for the trust of the individual in the cybernetic house to be warranted, this shell must remain a more or less autonomous element within the larger systems in which it is situated. Cybernetics is all about steersmanship, and the cybernetic house must be a vessel, intimately linked to its occupants but nevertheless in their control. The cybernetic house becomes a tool for navigating the winds of hegemony through which its inhabitants sail together. Or, if the vessel is not *entirely* in our control (as who would want to be responsible for all parts of a cybernetic system), let the control at least, as Glanville puts it, be mutual<sup>17</sup>.

The crucial question becomes, *what should this cybernetic shell be like?* From the discussion thus far, follow three points about the information technology of the cybernetic house: it should be spatialized; it should be communal; and it should be interactive. Furthermore, the engagement of the individual with the system of the house should be *conversational*.

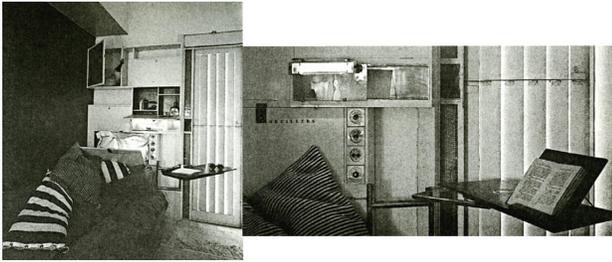


Figure 4. The daybed at Eileen Gray's E.1027 - an under-specified house

### UNDER-SPECIFICATION

In addition to, or perhaps in complement to Pask's notion of conversational theory was his notion of under-specified goals.<sup>18</sup> This essentially means designing so that possibilities may emerge that the designer did not have in mind. In many ways, this is an idea that architects are very familiar with. Architects can never fully predict who is going to use their buildings, or how. Pask's MusiColour Machine is an example of this design strategy, in which he set up a framework for the technological field to respond to stimulus, but designed it so as to adapt as the stimulus changed. The technology set up a particular type of scenario, but it did not go so far as specify particular results. Price's Fun Palace is of course a canonical architectural example of this. Also one may think of the house Gerrit Reitveld's designed for Truus Schröder with its adjustable partitions, and Eileen Gray's E.1027 in the south of France with its many different possible window configurations, and worktables that could be combined to form a long dinner table.

As Pask clearly saw, under-specification is key to the design of environments that develop conversationally with their inhabitants, that, like power-assisted steering help the inhabitants do what they want to do without taking over the navigation.

### SPATIALIZATION

As codified information becomes increasingly a constant presence in our lives, it begins to lay over the world, changing our experience. Frequently this information is engaged through our eyes, privileging what might be called an ocularcentric bias. This is one of the alienating qualities of contemporary technology that feeds into the enlightenment legacy of abstraction referenced earlier. Fortunately, how-

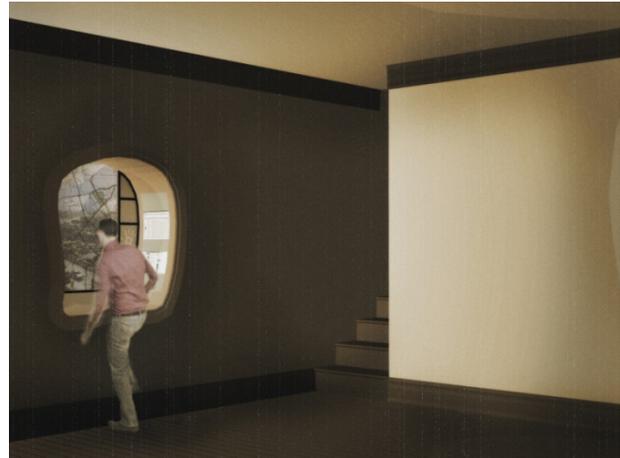


Figure 5. A window between an interior and multiple exteriors

ever, many other means of interfacing are rapidly developing including 'haptic' interfaces by which texture can be digitally simulated, various means of converting the movement of the body into digital input including accelerometers, RFID tagging, video monitoring, etc. Since the mode by which we perceive information greatly affects our understanding of it and in turn our mode of thinking, our expanding array of options is a wonderful development. When information is spatialized, we can navigate it with our bodies, unlocking the knowledge embodied therein. Spatialized information that we can engage with corporeally opens up new possibilities for thinking and, crucially, in this context, for dwelling.

Some compelling examples of this spatialization of information have been provided by the series of 'bottle' projects created by the Tangible Media Group at the MIT Media Lab under Hiroshi Ishii. Ishii's admirable goal is "to join the richness of the physical world with digital technology."<sup>19</sup> Each of these projects involves a series of old glass bottles that may be placed on top of a sensor-laden table. When these bottles are placed on the table, and their stoppers removed, different information is revealed, like music or the local traffic conditions. When the stopper is replaced, the corresponding information flow stops.

The window to multiple exteriors (see figure 5) demonstrates one idea of how this spatialization of information could come home to roost in the cybernetic house. Using an LCD layer in the glazing, along with multi-touch fibres, the window could be-

come the primary means in the house of interfacing with larger and adjacent ecologies. Such a window would allow for an inhabitation of the perimeter of the house, not just the physical perimeter but also the virtual perimeter. It could give you access to what's going on in the street outside and also give you a direct view of the sky, or a view down the street. The view could also be augmented with a satellite image of the neighbourhood, or meteorological data. Such a window could also provide you with the traffic conditions as well, and other news. In such a scenario, you might walk to the window to check your mail. The view outside could have, layered over top of it, the contents of your facebook 'wall'.

### COMMUNALITY

Another idea of how this spatialization might become manifest in the cybernetic house could be a common space specifically intended for communal interaction with information. Such a space could take advantage of new technologies such as 'cybergloves', accelerometers as in the Wii controllers, motion detection systems, or even tablets to engage a small community in interaction with information. Our increasing embroilment in the virtual, despite its promises to create an almost telepathic connection between people, can paradoxically separate us from one another. By sharing information and by taking advantage of opportunities to engage with it in a group, this can be counteracted. The virtual can be reflected upon *together* rather than simply accepted as received, and can create new opportunities for localized intersubjective socialization and negotiation of group structure. People will no doubt have personal need to access information that is not communal and this should naturally be accommodated in the design of a cybernetic house. The point is not at all to replace this individuality but simply to underscore the importance of the house as a location for communal, spatialized technology.

### INTERACTIVITY

While this does not seem to be the right place for a lengthy treatment of the death of the hearth in the Western home and its replacement with the television (which in many ways more closely resembles a window), let it suffice to say that the primary curse of the television was its lack of interactivity. Fires are alive, and they induce reverie and narrative sharing.<sup>20</sup> Television always manufactured

a sort of porous passivity where narratives, truth statements, and values were received and not negotiated. Interactive technology allows an individual to actively engage with the definitions of self, group, and cosmos that are wrought against the backdrop of these technologies.

### CONCLUSION

The cybernetic house, both futuristic fantasy and very real and inevitable development, stands as a possible mediation both of the potential oppressive qualities of the technological field and the alienating qualities of our technological flesh. A cybernetic house, with a carefully calibrated relationship to larger networks, which does not prescribe our use, and which provides us with spatialized, communal, and interactive opportunities to engage with information, could help us avoid making technological Faustian bargains that we may later regret.

### ENDNOTES

- 1 Neil Postman, "Five Things We Need to Know about Technology" (Talk delivered in Denver, Colorado, March 27, 1998), 1.
- 2 *ibid*, 2.
- 3 Alberto Pérez-Gómez, "Dwelling on Heidegger", *Cloud-Cuckoo-Land* 3 no. 2 (1998), <http://www.tu-cottbus.de/theoriederarchitektur/wolke/eng/Subjects/subject982.html>
- 4 Hannah Arendt, *The Human Condition* (Chicago: University of Chicago Press, 1998), 133.
- 6 This is a reference to Professor Kevin Warwick of Reading University. Another way of describing Warwick's approach could be 'control engineering'. Ranulph Glanville, "A (Cybernetic) Musing: The State of Cybernetics," *Cybernetics & Human Knowledge* 2-3 (2000): 152, accessed November 25<sup>th</sup>, 2011, [http://independent.academia.edu/RanulphGlanville/Papers/1038003/A\\_Cybernetic\\_Musing\\_the\\_State\\_of\\_Cybernetics](http://independent.academia.edu/RanulphGlanville/Papers/1038003/A_Cybernetic_Musing_the_State_of_Cybernetics).
- 7 Usman Haque, "The Architectural Relevance of Gordon Pask," *Architectural Design*, 77 (2007): 54-61, doi: 10.1002/ad.487, accessed November 25<sup>th</sup>, 2011.
- 8 Glanville, as above, 153.
- 9 Haque, as above.
- 10 Steve Mann, *Cyborg : Digital destiny and human possibility in the age of the wearable computer*, ed. Hal Niedzviecki (Toronto: Doubleday Canada, 2001), 54.
- 11 Donna Haraway, "A Cyborg Manifesto: Science, Technology, and Social-Feminism in the Late Twentieth Century," in *Simians, Cyborgs and Women: The reinvention of nature* (New York: Routledge, 1991), 153.
- 12 While the prefix 'sur' means 'over' in French, 'sous' means under.
- 13 Steve Mann, "Sousveillance: Inventing and using wearable computing devices for data collection in surveillance environments," *Surveillance & Society* 1 no.3 (2003), 332.

- 14 Mark Shepard, "Toward the Sentient City," in *Sentient Cit*, ed. Mark Shepard (Cambridge, Ma: The MIT Press, 2011), 24.
- 15 *Reuters*, June 16, 2010, <http://www.webcitation.org/5ibzAuKi8>.
- 16 I like this phrase. I got it from: Mark Kingwell, "Meganarratives of Supermodernism," *PhaenEx* 1 (2006) 223, <http://www.phaenex.uwindsor.ca>.
- 17 Glanville, as above, 155.
- 18 Haque, as above.
- 19 James Geary, *The Body Electri: An anatomy of the new bionic senses* (New Brunswick, NJ: Rutgers University Press, 2002), 128.
- 20 For more on this, see Duncan Patterson, "Reverie and Socialization for the Electro-nomadic Cyborg: the Hearth of the Future," in *User Centric Media*, Patros Daras and Oscar Mayora (eds). (Berlin: Springer-Verlag, 2010) 287-292.