

DON'T ANTHROPOMORPHIZE ME EITHER

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A discussion of embodiment, entrainment and agency.

We believe we can control a robot with code and screwdrivers. We believe it is inert matter. We believe it is a creature like us. We believe it is nothing like the complex beings we are. We believe we created it. We believe it is a clever pet that never shits. We believe it obeys us. We believe it is a lifeless machine. We invest it with personality. We divest it of presence.



Fluid mess in 'On Track' installation, In Serial, 2010

BACKGROUND

I have been working in digital arts since the late 80s, primarily making interactive works of various kinds. Recently, I worked with robots for the first time, as a member of the collaborative group *In Serial*: myself, Petra Gemeinboeck, PRINZGAU/podgorschek and Marion Traenkle. We produced an installation

comprised of a mechanical mop, a muddy fluid mess and a troupe of robots whose task was to attempt to clean the mess, but who in fact increased it continually.

In our work as *In Serial*, I was particularly entranced by the interactions between non-humans; the idea that our machinery, robots and mess did not respond to or engage with humans at all, but were energetically entangled with and focused on each other. The mop communicated with the robots via infrared signals. The physical nature of the installation and its mess impinged upon the robots' movements. The agitations of the robots released more fluid to the floor. Humans were bystanders.

We were working with pre-made off-the-shelf robots, the *iRobot Create*, which is a version of a commercially available domestic robotic vacuum cleaner. These were not purpose built for the artwork. They came with their own abilities, tendencies and habits in place, which made working with them, especially in the brutal, wet, sticky scenario we developed, quite tricky.

EMBODIMENT

I understand embodiment in a quantum physics sense – that the particles that form us are no different from and not divided from the particles that make up the rest of the world. There are no real physical boundaries between people, microbes, robots, furniture, food, garbage, gases, fluids, animals or any of the stuff of our world at all. There are only different formations, different dynamic patterns, being lived out in this one seething mass. Embodiment is densities, patterns, collections, constellations, drives and desires. Just as one cannot step into the same river twice, as its water is constantly flowing away and being renewed, the atoms that make up bodies are moving at lightning speeds around relatively vast empty spaces, appearing, disappearing, colliding and rebounding. We breathe in and breathe out billions of atoms with each breath. We incrementally exchange our atoms, cells, organs with each other and with the rest of the world, replacing about 98% of our atoms each year. [1]

In these densities, patterns and flows of exchange, I am interested in where consciousness, intention and agency reside.

Jane Bennett refers to, “[...] encountering the world as a swarm of vibrant materials entering and leaving agentic assemblages.” [2]

My self spills out beyond the boundaries of my skin, given that it is no boundary at all. Energies from elsewhere spill over into the formation I think of as me. Perhaps volition, will and intent are not restricted to humans, given that a human is not a separate discrete entity. Perhaps objects and ideas have as much personal volition as I do. Perhaps ideas are just a kind of ripple or current that moves various particles around within this vast soup of information, energy and matter. Perhaps it is constellations, fluid assemblages of apparently disparate actants, that effect agency, enact drives, ferment thoughts and conduct relationships. Perhaps fields of intention find material expression through whatever comes to hand.

In *Media Ecologies* Matt Fuller refers to:

[...] a combination of drives and capacities that, stimulating each other to new realms of potential, produce something that is in virulent excess of the sum of its parts. Indeed such parts can no longer be disassembled; they produce an ecology. Not a whole but a live torrent in time of variegated and combinatorial energy and matter. [3]

[...] the capacities of activity, through sensation and affect possible to each composition, whether organic or not are shaped by what it is, what it connects to, and the dimensions of relationality around it. [4]

The embodiment I am interested in is that surrounding, forming and propelling us as a system, a turbulence, an assemblage, of flesh, thoughts, machines, fluids, robots, programs, ideas, tables, rooms and so on – an embodied agency arising from the shifting, intricate, dynamic arrangements of our particular constellations.

ENTRAINMENT

Entrainment is a term used in physics to mean a coming into phase or sync. Early experiments, back in the 1600s, showed that pendulums set off at different rates will gradually come into phase with each other.

In geography, entrainment is the process by which sediment becomes part of a fluid flow. In meteorology, it describes a non-turbulent flow being captured by a turbulent one, as can happen when dry environmental air becomes entrained within a moist cloud. In hydrodynamics, it describes one fluid pushing or pulling another along with it. In engineering, it is the entrapment of one substance within another, such as gas in an aerated fluid or tiny objects caught up in smoke. In biology, it can describe physiological rhythms coming into phase with environmental rhythms, as in circadian sleep cycles, or the synchronization of whole organisms to external rhythms. In new age alternative health gadgetry, it is delivered to our brainwaves via flashing lights and audio pulses. [5]

It is a physical, material, energetic coming into phase, a confluence, a synchronization between inner and outer; between this and that, within beats and flows.

Music articulates our limbs. It directly addresses and shifts the muscles, bones and joints. Our feet begin to tap; our shoulders are swayed by the beat, by the pleasure of repetition, by the force of a tune. We can be swept away and lose ourselves, abandoning thought and self-consciousness, or we can be barely aware of some small dancing of a toe while our mind is importantly solving problems in a concentrated chatter.

Conversely though, the beat might repel, might induce a rebellion of the limbs rather than choreograph them. If I am in the mood for some thrash punk and I walk into a cafe where they are playing swing jazz, it will push me, irritated, back out onto the street while part of me cries uselessly, "But I just want a coffee." If I am craving the quiet joys of the Tord Gustavsen Trio but the cafe is bellowing Henry Rollins, as much as I love Henry, I will be pushed out the door the same way. I am not in the mood.

The participants in an entrainment need to be just that. The rhythm will not take and the sync will turn to resistance, if the parties are not willing, if they have no affinity. Maybe the geographer's sediment

must have an attraction to the flow of water. Maybe the gas bubbles must want to aerate the engineer's fluid. Certainly, my limbs must have a tendency, or at least a tolerance, toward the beat that lifts them.

RABBIT / ROBOT

A rabbit moved in with my girlfriend and I a number of years ago and to start with there was constant struggle of wills. Rabbits are not smart enough that you can train them. They simply do what they feel they have to. The rabbit decided to make her home in the living room. We did not want her to. A lack of communication and understanding along with very different intentions and drives produces a brutal and stupid language. She bit us. We barricaded the door. She launched herself at the barricade and scrambled over. We bribed her with carrot. She chewed through our electrical cables.

Over years of frustrations and defeats, we became familiar with her ways, her world-view, and she with ours. The small, determined rhythm of her being and the distracted human over-thought rhythms of ours settled into phase. The arrangement, ecology or constellation found its form. We had an entrainment.

Like the rabbit, these off-the-shelf robots caused us some troubles in our attempts to control and direct. We frustrated the robots – tethered them, trapped them, told them to clean and prevented them from cleaning, perched them on high tables, even took away some of their senses. They disobeyed our programs, leapt off the tables, threw their tire tread and largely refused to dance to our tune.

Entrainment takes time, attention and proximity. It takes a recognition and appreciation of the force, intention, drives and will of the unique material-intelligent-energetic constellations in play. It takes willingness to participate and respect for the others in the mix.

ANTHROPOMORPHISM

Perhaps our first mistake is to anthropomorphize ourselves; thinking we are separate, cohesive, autonomous beings, in singular command of our thoughts, decisions and actions. In the robot, we see reflections and parallels of our imaginary free-standing, contained, independence in its similar ostensible autonomy, decisions and actions. We then believe we can control the robot with programming and screwdrivers. We believe it is inert matter. We believe it is a little creature like us. We believe it is nothing like the complex creatures we are. We believe, god-like, we created it. We believe it is a manageable, clever pet that never shits. We believe it obeys us. We believe it is a lifeless machine. We invest it with personality. We divest it of presence.

Yet we are not discreet entities and neither are robots. What if the particles we appear to inhabit are propelled by winds and flow forms of other ideas, other material particles and other energies? Perhaps impetus sweeps into us from the robot or beyond. Perhaps the robot's constellation, its arrangement, has its own intelligence, will and intention. Given that we are not materially separate from each other, nor in any way fixed, perhaps its will and intention animate us at the same time as ours drives them.

Perhaps this is also true for the table, the cigarette butt, the floor, the spilled coffee, the song on the radio, the ideas I read about last night – the other material and immaterial stuff of our world. Robots though, have a level of digital and machinic complexity that allows a more humanly understandable

reading, a possibility of communication, collaboration or contest that is not possible with a rock or a sandwich wrapper.

“A touch of anthropomorphism then, can catalyse a sensibility that finds a world filled not with ontologically distinct categories of beings (subjects and objects) but with variously composed materialities that form confederations.” [6]

Perhaps over time and in proximity, with a respectful recognition of vibrant material presence, the particles that seem to form the robot and the particles that seem to form the human, can come into entrainment and leave behind our anthropocentric arrogance first and anthropomorphism second. The exchange of atoms, the currents of ideas, the forces and phenomena of the sea of particles might manifest through some dissonant hum between human and robot fields of formation.

"[...] order is not imposed from above, by mind exerting its will on dumb material forces; it is intrinsic to the self-organising nature of the phenomenal world itself. When we recognise our participation in its co-arising patterns, we can claim our power to act." [7]

References and Notes:

1. *Deepak Chopra, Quantum Healing: Exploring the Frontiers of Mind Body Medicine (New York: Bantam Books, 1989), 48.*
2. *Jane Bennett, Vibrant Matter: A Political Ecology of Things (Durham, NC: Duke University Press, 2010), 107.*
3. *Matt Fuller, Media Ecologies: Materialist Energies in Art and Technoculture (Cambridge, MA: The MIT Press, 2005), 173*
4. *Ibid., 174.*
5. *Wikipedia, "Entertainment," <http://en.wikipedia.org/wiki/Entrainment> (accessed September 2011).*
6. *Jane Bennett, Vibrant Matter: A Political Ecology of Things, 99.*
7. *Joanna Macy, Mutual Causality in Buddhism and General Systems Theory: The Dharma of Natural Systems (Albany, NY: State University of New York Press, 1991), xii.*