

# The Allegiances of Reason in Design Thinking

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There is good reason for optimism today that smart machines will continue grow in their capacity to become strong techno-partners in the pursuit of innovative solutions to complex social problems. The advantages of this collaboration are already apparent in the vastly increased ability of designers to inquire into, manipulate and model big data sets for social ends. Access to such information treasures continues to lay the groundwork for an advanced class of complex and promising transformational proposals. Dynamic systems models, inspired by the likes of the Jay Forrester World3 model<sup>1</sup> in the 1972 MIT study, *The Limits to Growth*<sup>2,3</sup>, have become increasingly sophisticated and reliable.

But beyond such desirable increases in machine leverage lays the new and unfolding realm of human created dependence on autonomous sociotechnical systems. It is here in the potential for partial to full proxy systems that serious concerns continue to be raised about the human-machine nexus, its problems, potential dangers and limitations.

You'll recall, for example, the classical exchange between the HAL 9000 computer and Dave, the Jupiter space ship commander, in the Stanley Kubrick's, 2001: A Space Odyssey<sup>4</sup>:

Dave: "Open the pod bay door, please, Hal."

HAL 9000: "I'm sorry Dave, I'm afraid I can't do that"

This fictional exchange in 1968 dramatized the issue of "who" was actually in command and whether Hal's pre-programmed priorities ought to take precedent. Dave was informed that his order was denied, whatever the current situation, because it would compromise the mission. The dilemma remains in 2017. While we might harbor a certain amount of techno-optimism about the potential for combining human and machine muscle on complex social problems, matters get especially dicey when we contemplate the thought of something like a LAWS (Lethal Autonomous Weapons Systems)<sup>5</sup> becoming fully deputized to "negotiate the virtue of possible actions" in life and death decisions.

One might want to believe that it will eventually become technically possible to program a perfect proxy for all situations and conditions, but reason suggests otherwise. However hard we try, the technical hill-climb to full-coverage, situational perfection is asymptotically long and steep. The possibility of running into some Mulish, "deus ex mutagen,"<sup>6</sup> (as takes place in Isaac Asimov's *Foundation Trilogy*) some statistically improbable situation that has no pre-planned response, always remains.

In the novel, *Invasive*,<sup>7</sup> by Chuck Wendig, a thriller about genetically weaponized ants, an anonymous defense system mistakenly shoots down a friendly passenger plane. The actual cause of the problem is traced to the system's software, but the tragedy is covered up by the FBI for political reasons as a terrorist hacking. Not surprisingly, the genetic code of the modified ants proves even harder to "program" and control.

In "Value-Pluralism and the Collaboration Imperative in Sociotechnical Systems,"<sup>8</sup> Derek Miller writes that it is a mistake, however, to think of smart machine limits as primarily a technological problem. He says that, "The issue does not lie in the state of technological development, but rather in the way that human beings reason, and how we create and direct machines to act as our proxies."

"Computers," Miller points out, "are always programmed from a cultural perspective that is not universal; within any given cultural system, there are not simply unanticipated challenges, but actually conflicts of values... and eventually over time, systems that we create from particular cultural perspectives will very often operate in inter-cultural contexts, further complicating their relevance, legitimacy and effectiveness, *and their ethical foundation for action.*" (my emphasis)

Our partnership with intelligent machines takes place in a cultural field in which

human reason is divided in service between two masters. The first is the familiar world of the technical, where reason serves the empirical science that enables the design, building and programming of intelligent machines intended to enhance, augment and extend human capacity.

In the second world, however, reason becomes bound in service to its home culture, with its differing, and often competing ideals, beliefs and valuing priorities. Here, while it continues to help clarify valuing priorities and conflicts, reason's primary role shifts to the legitimization and rationalization of the reigning culture's religious and political consensus. The activations, embodiments and realizations of that reasoning are all derived from and answer to the culture's conclusions about what matters most.

Cultures do differ and contentiously disagree about who and what matters and who and what matters most. And it is these differences in cultural valuing patterns and priorities, their cultural genetic sequencing, so to speak, that gives them their signature flavors and unique expressions. As anthropologist, Ruth Benedict, points out in her book, *Patterns of Culture*,<sup>9</sup> "Patterns of culture are patterns of value." In a general model of such values, it is the sacred and survival values that are primary, followed by those that conserve and maintain existing institutions and traditions. And finally, those that are related to cultural transformation and life enhancement.

Consider, for example, the names of our leading governmental departments, e.g. Homeland Security and the Department of Defense. Health, safety, welfare and amenity is the usual valuing order of priority. Consider, too, where our public money goes: public safety takes up the majority of municipal budgets. Defense consumes over half of all federal expenditures and will be the most likely source of funding for the development of autonomous intelligent machines.

Religious wars over sacred values have raged throughout history and are still behind much of the turmoil today. Belief systems in and between civilizations continue to conflict fundamentally, dogmatically, and violently, and that conflict is a recognizable presence that is passed down into everyday life. Consider the following storied encounter with a person who is intending to commit suicide by jumping from a bridge:

"Wait, stop, don't jump! You must be religious? What faith, what denomination?"

"Yes, yes I am." (And names a faith.)

"Amazing, wonderful, me too. Orthodox, conservative or reformed?"

"Reformed."

"Go ahead and Jump."<sup>10</sup>

We don't like to think that human reason serves such all too human ends or that

we haven't transcended our baser animal instincts and tribal origins. It is a high consciousness ethics today that presses for the development of intelligent machines to augment our capacity to solve such formidable problems as climate change, inequality, poverty, displacement and war. We'd like to think that this high level of ethical evolution was the universal cultural platform for the development and application of all automated intelligent machines and tools. But the thorny fact that the theory and practice of human conduct remains unevenly developed and distributed across cultures ought to give us pause.

Sixty years ago Aldo Leopold wrote that an environmental ethic was "an evolutionary possibility and an ecological necessity."<sup>11</sup> But evolution is a slow process.

In the film, Conan the Barbarian,<sup>12</sup> Arnold Schwarzenegger as Conan is asked, "What is of value, Conan?" And he replies, "To pursue, capture and kill your enemies, and enjoy the laminations of their women."

And perhaps the most revealing answer to the question: "What would you do if this were the last day of your life?" posed recently to representatives from three of the world's most prominent competing cultures, was:

"Burn neighbor's barn!"<sup>13</sup>



## Footnotes:

1. Forrester, Jay Wright (1973). *World Dynamics*.
2. Meadows, Donella H. et al (1972). *The Limits to Growth*. New York: Universe Books.
3. Meadows, Dennis and Tapley, Eric (2004). *Limits to Growth, The 30-Year Update*. White River Junction, VT: Chelsea Green Publishing Co.
4. Kubrick, Stanley (1968). *2001: A Space Odyssey* (film). Metro-Goldwyn-Mayer.
5. Miller, Derek (2016-17). "Value-Pluralism and the Collaboration Imperative in Sociotechnical Systems," *She Ji, The Journal of Design Economics and Innovation*. Vol.2, No.2, p. 114-115.
6. Krugman, Paul (2012). "Foundation Novels Grounded My Economics": Introduction to Isaac Asimov's *The Foundation Trilogy*. London: The Folio Society
7. Wendig, Chuck (2016) *Invasive*. New York: Harper Collins.
8. Ibid. Miller, Derek.
9. Benedict, Ruth (1934). *Patterns of Culture*. New York: Houghton Mifflin.
10. Anonymous
11. Leopold, Aldo (1949). "The Land Ethic," *A Sand County Almanac*. Oxford: Oxford University Press
12. Millus, John and Laurentiis, Dino (1982). *Conan the Barbarian* (film). Twentieth-Century Fox.
13. Anonymous