

Genes, Affect, and Reason: Why Autonomous Robot Intelligence Will Be Nothing Like Human Intelligence

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Abstract: Many believe that, in addition to cognitive capacities, autonomous robots need something similar to affect. As in humans, affect, including specific emotions, would filter robot experience based on a set of goals, values, and interests. This narrows behavioral options and avoids combinatorial explosion or regress problems that challenge purely cognitive assessments in a continuously changing experiential field. Adding human-like affect to robots is not straightforward, however. Affect in organisms is an aspect of evolved biological systems, from the taxes of single-cell organisms to the instincts, drives, feelings, moods, and emotions that focus human behavior through the mediation of hormones, pheromones, neurotransmitters, the autonomic nervous system, and key brain structures. We argue that *human* intelligence is intimately linked to biological affective systems and to the unique repertoire of potential behaviors, sometimes conflicting, they facilitate. Artificial affect is affect in name only and without genes and biological bodies, autonomous robots will lack the goals, interests, and value systems associated with human intelligence. We will take advantage of their general intelligence and expertise, but robots will not enter *our* intellectual world or apply for legal status in the community.

Key words: autonomous robots, emotions, affect, artificial intelligence

“We are machines, and from that I conclude that there is no reason, in principle, that it is not possible to build a machine from silicon and steel that has both genuine emotions and consciousness.”

—Rodney Brooks, *Flesh and Machines* (2002, 180)