Chapter X

Attack of the Rainbow Bots:
Generating Diversity through Multi-Agent Systems

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Abstract

Many in IT education—following on more than twenty years of multicultural critique and theory—have integrated "diversity" into their curricula. But while this is certainly laudable, there is an irony to the course "multiculturalism" has taken in the sciences in general. By submitting to a canon originating in the humanities and social sciences—no matter how progressive or well-intentioned—much of the transgressive and revolutionary character of multicultural pedagogies is lost in translation, and the insights of radical theorists become, simply, one more module to graft onto existing curricula or, at the very least, another source of authority joining or supplanting existing canons. In this essay, we feel that

introducing diversity into IT means generating this body of creative critique from within IT itself, in the same way multiculturalism originated in the critical, transgressive spaces between literature, cultural studies, anthropology and pedagogy. The following traces our efforts to develop isomorphic critiques from recent insights into multi-agent systems using a JAVA-based, software agent we've developed called "Izbushka."

Multiculturalism in Science

In this second century of U.S. multiculturalism, it is an impossible—and perhaps pointless—task to delineate the rapidly brachiating strains of multiculturalism extant today, a list that would have to include multiculturalisms practiced in educational settings, government and corporations. Nevertheless, Powell (2003) suggests a useful typology:

More specifically, "multiculturalism" will be defined here in at least three distinct, yet interrelated, ways: as a historical phenomena that originates with the social activism of the 1960s and 1970s, as a critique where a wide array of scholars and activists continue to demand their own cultural identity in their own terms, and as a theoretical movement that self-consciously sets out to theorize a multiplicity of cultural perspectives in what is often called a "relational" or "dialogic" context. (p. 152)

Although Powell introduces this typology by way of historicizing multiculturalism, it is also useful as a description of extant multiculturalisms.

First, we might note the demographic fact that the sciences have become more diverse over the past three decades as the percent of native-born, white-male PhDs in the sciences and engineering has declined. By 2000, a National Science Board study showed, the number of foreign-born PhDs in the sciences increased to 38%, almost doubling the percent in 1990 (NSB, 2003). Moreover, the modest increase in the number of native-born PhDs is "attributable to the rise in the number of women and minorities earning PhDs" (NSF, 2003, p. 21).

Secondly, as part of the sweeping critique of the civil rights movement, there have been various efforts to reform the science "canon" to include women, scientists of color and non-Western scientists. As Donna Riley (2003) writes,

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