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Review of *Virtual Migration*, by A. Aneesh

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Possibly unnoticed by many, the fundamental notion of what it means to be an immigrant is changing rapidly. Aihwa Ong (1999), for example, argues the need for a new category, *transnationals*, consisting of people who not only hold citizenship or resident status in two countries, but in fact live in both of them, in commuter fashion. All this is of course facilitated by technology—fast air travel, cheap telephone communication, e-mail, and the like.

In his book, *Virtual Migration: the Programming of Globalization* (Duke University Press, 2006), A. Aneesh takes this a step further. The impact of technology is so profound that many now "migrate" without leaving their home towns. Importation of labor, one of the traditional goals of immigration policy, is now reversed: Modern technological mechanisms now make it easier to move the work rather than move the workers, and offshoring of IT work is booming.

Contemporaneously, we are seeing an evolution of power, with control flowing now to computers and those who program and run them, a phenomenon Aneesh calls *algocracy*—government by the computer algorithm. As the work moves abroad from the country to which power is applied, power shifts as well.

Take something as simple as withdrawing cash from a bank. Aneesh points out that with an automatic teller machine, no step in the transaction is negotiable, in contrast to one's traditional interaction with a human teller. We must respond to the questions put to us by the ATM—and *only* those questions. The same nonnegotiable nature of the process occurs online, when one reviews one's bank account, submits computerized applications for jobs and schools, purchases goods and services, and so on.

Even one's interaction with humans can be controlled to a large extent by machine. One might call the bank to inquire about an account error, but a machine still demands that one first run a gauntlet of questions. "If you wish to open a new

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account, press 1. If you wish to increase your credit card limit, press 2...” And most significantly, it is becoming rarer, it seems, for the machine to provide the consumer flexibility by offering, “For all other questions, press 9.”

And when (if) a consumer succeeds in reaching a human in this process, she is likely to be abroad, typically, in India. Moreover, the software controlling the ATM, the consumer’s bank account, and the phone screening is likely to be developed by programmers in India as well. All these parties would in the past have been in the same country as the consumer. Hence, the new phenomenon of “virtual migration” of people and power.

Aneesh concedes that his thesis does not hold fully. He in fact gives an excellent, detailed account of what can go wrong when programming work is shipped abroad. Aneesh also makes the disclaimer that the computer is not a *golem*, the rogue robot from Yiddish stories. And yes, geography still matters, he assures us. Yet the effects are there, and Aneesh generally succeeds in making his point.

In some ways, his theories have even more relevancy than he himself may realize. He agrees perhaps too quickly with recent social theorists that Weber’s notion of “indestructible bureaucracy” may be outdated. On the contrary, Aneesh’s thesis of algocracy is even more powerful in light of the fact that very few people understand the algorithms on the internal level. Software can be enormously complex and extremely difficult to modify, so there are strong incentives against changing it. In this sense, the software really does acquire a life of its own, and thus Aneesh’s research actually confirms, and is strengthened by, Weber’s work.

Aneesh does not always get the details right. His characterizations of the laws and politics regarding the American H-1B work visa, used heavily by Indian programmers, are seriously inaccurate, as is his statement that most H-1B programmers work for “body shops.” His sources on H-1B are limited to the popular press, rather than the body of academic and government research on this topic, such as Ong and Blumenthal (1996), National Research Council (2001), Government Accountability Office (2003) and Matloff (2003). His treatment would have been enhanced by drawing from contemporary challenges to the 200-year-old theories of comparative advantage in international trade, such as Gomory and Baumol (2000), an odd omission in view of his correct assertion that his theory offers insights not provided by conventional economics.

Perhaps the most important omission in Aneesh’s work concerns time frame. His implication seems to be that virtual migration is a long-term phenomenon, yet these dynamics appear to be transient, as they depend on international differences in wage levels. Aneesh does not address the fact that the H-1B program is popular among U.S. employers for access to cheap labor, as shown through both statistical analysis and employer surveys, and he barely alludes to the wage factor in offshoring. As international IT wage levels equalize, virtual migration will likely be reduced to a niche player in the global economy.

But his other theme, algocracy, will likely have more staying power, and his expositions of both themes make his book a valuable contribution.

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