

observations



Playing for real

SOCIAL SCIENTISTS have typically lacked a laboratory environment for testing their theories. But an emerging genre of computer games known as massively multiplayer online games, or MMOGs, may provide just that. Many of these games have fantasy themes where players assume the roles of ogres and dwarves and where slaying dragons and casting spells are highly valued acts. But as in the real world, the characters must work—perhaps starting with something menial like chopping trees to sell as firewood—to survive and to advance levels. And a character can interact with those of other players, to buy and sell goods, forge

alliances, wage war, or just hang out.

What is unique about MMOGs compared to other kinds of simulations is the sheer number of individuals involved and how seriously they play. About 500,000 people subscribe to Sony's EverQuest, for example, with about 60,000 players online at any given time, a population comparable to that of Portland, Maine. On average, EverQuest survey respondents play 5 hours a day and have spent about 800 hours developing online characters, finds economist Edward Castronova of California State University at Fullerton.

Game designers struggling to get the simulation right have found that their models are realistic enough to engender many of the same phenomena that exist in the real world, including market pricing, civic organization, friendship, environmental shortages, hyperinflation, theft, murder, and inheritance (or "twinking," in which a player transfers items from one of his own higher-level characters to one of his lower-level ones in order to give it an advantage). There is even foreign exchange, in which a player

pays real money to another player for game items described on a web site, and then the two players arrange to have their characters meet in the game to exchange the goods. Castronova's first time in the world of EverQuest immediately impressed him; the markets "had all the feel of professional commodities markets." They performed so realistically that he thought they should have a board of trade.

Yet games may be better than the real world for research because the pace of a lifetime is accelerated, the goods have less value, and no human bodies can be injured. While these aspects may detract from their realism, MMOGs still offer social scientists an opportunity to do repeat experiments and explore topics such as auction outcomes, gender relations, governance, income inequality, and the behavior of different categories of players. And which games are popular can reveal the characteristics of society that people most enjoy, points out Castronova. Industry leader EverQuest is primarily meritocratic, yet 33 percent of the characters have less than 50 percent of the median character's wealth, suggesting perhaps that equality of opportunity matters more than equality of outcomes. Opportunities for analysis will only expand as MMOGs both differentiate and spread into mainstream markets; SimCity, for example, which departs from the fantasy theme and has proven more popular with women than its predecessors, will launch an online version this year.

—Kristin Lovejoy

Black (magic) markets

The heart of the dragon Zlandicar sells online for \$145, a fungus-covered scale tunic sells for \$430, and game characters can go for thousands. Despite game-makers' attempt to ban these extra-game sales, "platinum pieces," the game currency in EverQuest, are auctioned often enough for economist Edward Castronova to calculate an exchange rate for what would be the 77th richest country in the world.

IN THE WORLD OF EVERQUEST

Population at any given time	60,381
GNP (US\$)	\$135 million
GNP per capita (US\$)	\$2,266
Exchange rate	\$0.01072/platinum piece
Average character wage	319 pp (or \$3.42) per hour
Average age of character	12.5 months

EVERQUEST PLAYER PROFILE

Average player wage	\$20.74 per hour
Average player age	24.3 years
Percent male	92.2
Percent single	60.0

SOURCE: Edward Castronova, "Virtual Worlds: A First-Hand Account of Market and Society on the Cyberian Frontier," CESifo Working Paper No. 618. See also: <http://business.fullerton.edu/ecastronova/vwguide.html>.

Weathering the bills

Ah, New England winters. The sparkling snow. The frosty windows. The nip in the air. The heating bills.

With an average daily temperature below 30 degrees from December through March, winters in New England are long and cold. But more than that, they are expensive. Prices for most types of fuel are higher here than in the rest of the country. Factoring in our long winters means that the typical New England household pays \$350 more in energy bills than the U.S. average.

While you can always turn down the thermostat and put on a sweater to save money, there are limits to how much you can cut heating costs. It can be dangerous to live in an unheated house, especially for children and the elderly, and letting the oil tank get too low can damage the furnace. "The sensible thing to do is to get oil first," says Mae Chapin, who

runs the Hardwick Area Food Pantry in northeastern Vermont. "But then many families have no money in their pocket for food."

Indeed, a 10-degree drop in temperature leads poor families to spend \$67 more per month on fuel and \$16 less on food prepared inside the home in today's dollars, according to a recent study by Jayanta Bhattacharya of the Stanford University School of Medicine and his colleagues. Meanwhile, richer families increase their expenditures on both fuel and food when the weather turns cold, paying \$96 more for fuel and \$20 more for food prepared inside the home.

Those extra costs pinch the poor more, since fuel costs are a larger percentage of poor families' budgets and since they have lower incomes to begin with. To cover the difference, many must reach out for additional help from the community. Chapin's food pantry often serves 10 to 15 percent more families in winter than summer. This year, she may serve even more; the price of residential fuel oil in first quarter 2003 is expected to rise 18 percent over the same period last year.

—Carrie Conaway



SINCE MOST people judge their well-being by comparison with others, widening inequality of lifetime incomes may threaten our standing as a "land of opportunity."

