CO-AUTHOR FOR SALE: In a society devoted to "reality shows" and rampant commodification, it had to happen some time. Late last month an independent scientist auctioned off his services as a co-author on eBay, with the promise of helping the highest bidder write a scientific paper for publication. The offer even had the added allure of a linkage with the legendary mathematician Paul Erdös.

But a few researchers saw the online auction as a net negative. Jose Burillo, an associate professor of mathematics at the Polytechnic University of Catalonia, in Spain, entered a fake, inflated bid of more than $1,000 in hopes of stopping the auction. "Nobody should pay anybody for writing or collaborating on a scientific project," he says. "This could open the door to many unethical problems."

The auction began as a bit of fun, admits William A. Tozier, a consultant in Ann Arbor, Mich., who specializes in machine learning and artificial-intelligence research. "I undertook it as a combination of a joke and conceptual art and a bit of an experiment in social networks," he says. The idea builds on the reputation of Erdös, a Hungarian mathematician who died in 1996. A prolific researcher, with more than 1,400 published papers, he spent the last several decades of his life moving from one colleague's house to another's, staying for extended periods at each place and collaborating on solving problems.

In honor of the eccentric researcher, many mathematicians started calculating the intellectual connections that separated them from Erdös -- the scholarly equivalent of the "Six Degrees of Kevin Bacon" game. A person who has written a paper directly with Erdös has an Erdös number of 1. A researcher who published with an Erdös co-author would have an Erdös number of 2, and so on.

Mr. Tozier, who says he has published only one paper in the peer-reviewed literature, has an Erdös number of 4. So he decided to auction off his services, the use of which would earn the winner an Erdös number of 5 if a journal were to publish a paper resulting from the collaboration. He promised to provide up to 40 hours of his time for the project.

Although born in jest, the auction quickly took on a serious purpose, says Mr. Tozier. About 50 prospective bidders contacted him by phone or e-mail, many expressing a frustrated desire to conduct research. "It was clear there was this huge suite of complaints that all arose from people wanting to participate and not having an outlet to participate," he says. Some were graduate students or young faculty members who didn't have the time or the gumption to work outside their own specialties. Others were intellectually motivated people employed outside academe who wanted to solve certain research problems.

People saw real value in the service, says Mr. Tozier: "There's this whole constellation of things they could get from it. They could get credentials. They would get the ability to have their questions actually answered."
The idea offended Mr. Burillo, however. The Spanish mathematician was originally angered because he thought that Mr. Tozier was auctioning a fully formed paper that would require little or no work by the winner. Many scholars in Hungary and other parts of Eastern Europe take Erdös numbers seriously, says Mr. Burillo, and publications are the measure by which researchers are judged. "I have won the auction," he wrote on a Weblog. "Not because I intend to pay or to collaborate with the seller -- my Erdös number is already 3 -- but to stop the mockery this person is doing of the paper/journal system, and also to stop some poor soul who may be in need of a joint paper for his tenure case."

Mr. Burillo now understands that the auction was for a true collaboration, not simply a chance to add a name to a paper. But he still objects to adding money to the research equation. "If you're collaborating, then nobody should pay," he says. "If one of them is paying, then that's not collaborating."

If someone outside academe contacted him and asked him for help doing research, he says, he might help, depending on the circumstances. "If the ideas are important enough to merit a paper, then I wouldn't charge for it," he says. "And if they're not, then I shouldn't do it."

But Mr. Tozier, who abandoned his own graduate studies, sees too many faults with the current academic system, which he regards as elitist and exclusionary. So he declared that the winner of the auction was Ian Grove-Stephensen, founder of the Chalkface Project, a company in Britain that markets online courses and class materials. Mr. Grove-Stephensen, who had bid more than $1,000, told The Chronicle that a collaboration would help him in his business. "A low Erdös number clearly is a status symbol with value that stretches well beyond the academic community," he said.

Despite the potential benefits, though, Mr. Grove-Stephensen backed out of the project, for lack of time. As of last week, Mr. Tozier had not announced a new winner. If he ever does get paid, he plans to use part of the money to start an online community for scientific collaboration.

Ironically, Mr. Tozier intends to return to the academic world that he finds so distasteful. This fall he will enroll in a graduate program in operations research at the University of Michigan at Ann Arbor. "There is a case," he says, "for trying to fix the meat grinder from the inside."

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