Prompt: Imagine you have just received a MacArthur Fellowship with a no-strings attached award of $625,000. How would this affect your career path and what would you want to impact with the award?

In *The Deepness in the Sky*, Vernor Vinge casually asserts that civilization will suddenly end even if nothing goes wrong. Describing a fictional megalopolis called Namqem, he writes:

> They've accepted optimizing pressures for centuries now. Genius and freedom and knowledge of the past have kept them safe, but finally the optimizations have taken them to the point of fragility.

This is an apocalypse that economists can get behind. Vinge posits that if development corresponds to "optimal resource allocation" (i.e., a reduction in what economists would call *slack*), the result will be a grotesque mix of incalculable complexity, and zero tolerance for error.

In a world with zero slack, each supermarket is completely empty at the end of the day. Tomorrow's toilet paper isn't on the shelves today, since that resource (shelf space) is better spent on today's goods. Instead, tomorrow's toilet paper is being shipped at precisely the right speed from exactly the right place to arrive tomorrow morning.

But if that shipment is delayed, people had better be using bidets.

On the whole, our current society is far off from Vinge's example. But there are places where the future pokes through. One example is our financial markets, where trading shops are so committed to eliminating slack (or, as they'd say, "exploiting arbitrage opportunities") that they lay their own experimental fiber-optic cable to have nanoseconds faster access to exchanges. This leads to outstanding profits. But it also leads to erratic and feverish behavior, such as the 2010 Flash Crash (or the "Crash of 2:45.")

If granted a MacArthur Fellowship, I would use the entirety of the money to write one report. Analogous to what the Department of Energy did when it assembled experts from a panoply of fields (including science fiction), to address the narrow but fateful question of how to warn people 10,000 years in the future about nuclear waste. This question seems remote and esoteric, compared to the burning problems of modern society. But storing nuclear waste properly is perhaps the single largest gift we can bequeath to future generations.

Likewise, I believe in preparing for the economic apocalypse. The report would ideally be written as the teams sequester together for (e.g.) a month, so that they can fully immerse themselves in the distant future. High-performance computing facilities would be made available, and I would prepare for the sessions by creating faithful simulations of complex societies in various states of gridlock.

The starting issue statement might be as follows:

The existence of certain physical bounds (e.g. lightspeed) appears to place an upper limit on the effective complexity of a human society. But social behavior near this limit is not well understood. We lack a consistent mathematical language to discuss social complexity, or even a standard qualitative account. And crucially, we do not know how to prepare today (e.g., which lines of research to begin, what data to start collecting, how to distribute ourselves through space) to mitigate such disaster.