

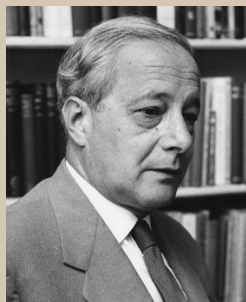
Is it a Pumpkin or a Tiger? Solving the Puzzle of Emerging Science and Technology

Imagine you're putting together a jigsaw puzzle. This puzzle, however, works a bit like the board game in the movie *Jumanji*: when you finish, whatever the puzzle portrays becomes real.

In the September 2012 issue of *Minerva*, CNS-ASU Director David Guston provides this scenario as a thought experiment for the governance of science and technology. When putting together pieces of the emerging scientific puzzle, those orange and black pieces may turn out to be a pumpkin – but they could also be a tiger.

As scientists and scholars, do we forge ahead until the picture completes itself? Or should we do our best to change course based on present knowledge?

The latter approach is attractive, but demanding, and it is this impulse to manage emerging technologies *while such management is still possible*, that is at the heart of CNS-ASU's theoretical underpinning of anticipatory governance.



Polanyi, Soddy and Szilard. Photos used with permission.

Tracing the intertwining stories of Michael Polanyi, Frederick Soddy and Leo Szilard, Dr. Guston lays out the pros and cons of different approaches to putting together the puzzle of emerging science and technology.

Though the research and development of science is unpredictable, he poses the question: "If you are assembling bits of reality, at what point do you want to start asking, 'what happens if this is a tiger?'"

Dr. David Guston is the director of the Center for Nanotechnology in Society at ASU. Dr. Guston is widely published and cited on research and development policy, technology assessment, public participation in science and technology, and the politics of science policy.



Guston, D. **The Pumpkin or the Tiger? Michael Polanyi, Frederick Soddy, and Anticipating Emerging Technologies.** *Minerva* 50(3): 363-379. doi: 10.1007/s11024-012-9204-8



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