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22nd ANNUAL NICHOLAS MULLINS LECTURE

The Modern Commercialization of Science is a Passel of Ponzi Schemes[1]

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Abstract

A wide array of phenomena lumped together under the rubric of the “commercialization of science,” the “commodification of research,” and the “marketplace of ideas” are both figuratively and literally Ponzi schemes. This thesis grows out of my experience of working on two concurrent projects: the first, an attempt to understand the forces behind the progressive commercialization of science; and the second, when it dawned upon me that the financial crisis then unfolding was resulting in the deepest worldwide economic contraction since the Great Depression of the 1930s. This lecture explores the parallels in three different areas: the biotech sector, technology transfer offices at major universities, and possible decline of numbers of American-authored papers in major science journals.

Keywords:

Biotechnology | Technology Transfer | Commercialization of Science | Commercial Bibliometrics

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Notes

[1] Editor's note: Professor Mirowski gave the 22nd Annual Nicholas Mullins Lecture at Virginia Tech on 25 March 2011. The first person style of his lecture is retained for this article.

[2] See Zuckoff (2005), Chancellor (2007), Ferguson (2012) and the work of Hyman Minsky (2008).

[3] I had originally wanted the title to be ScienceMart™, but repeated rounds of interventions by lawyers at the Press made me remove the trademark, and much else as well.

[4] See, for instance, Shapin (2008, 2011), Woolgar (2004) and Berman (2008, 2011). I pass by the entire "Triple helix" and "Mode 3" literatures as well. For a more jaundiced assessment, see Tyfield (2012).

[5] This estimate comes from the Federal Reserve disclosures released in December 2010. See Chan and McGinty (2010).

[6] See, for instance, Smith (2010), Stiglitz (2010), Engel and McCoy (2011) and Ferguson (2012).

[7] See Taibbi (2010) and Galbraith (2008). See also the film Inside Job (2010).

[8] The conventional talisman for these types of theories is the work of Minsky (2008); for further commentary, see Mirowski (2010a, 415–43).

[9] The project is described online: http://web.mit.edu/dkaiser/www/CWB.html. A similar sort of argument can be found in Rasmussen (1997, 245–93).

[10] Kaiser himself makes the comparison with “boom and bust cycles of financial speculation” in his 2008 lecture, which can be viewed online (Kaiser 2008). See also Kaiser (2002).

[11] It is clear from my correspondence with David Kaiser that he might not wish to endorse this particular gloss upon his work. Nevertheless, one can anticipate that this interpretation could easily be developed from the trends already found in science studies indicated in note 4 above.

[12] An attempt to portray the many-sided nature of the new regime can be found in the special issue of Social Studies of Science devoted to “Neoliberal Science” (October 2010, vol. 40, no. 5).

[13] In one estimate provided by the trade group Biotechnology Industry Organization: of the 370 publicly traded American biotechs, 125 had less than six months cash on hand (Pollack 2008). Since this organization exists to present the model in its most flattering light, the situation was probably more extreme than that.

[14] For evidence of money loss, see Pisano (2006, 115) and Coriat et al. (2003, 238).

[15] Much of the data quoted herein were derived from a study of biotech rates of return by Ian Cockburn and Josh Lerner (2009) paid for by the venture capital industry; there is some reason to suspect their reported 44% failure rate in biotech firms is on the low side.

[16] The main sources on this worrying trend are Nightingale and Martin (2004), Hopkins et al. (2007), Angell (2004) and Aggarwal (2007).

[17] The implications of the failure of the biotech model are so inflammatory, and so opposed to the interests of so many “new knowledge economy” actors, that the neoliberal think tanks and the industry have began to mount a counter-insurgency to argue there is no real problem. See Buckley (2007), Caulfield et al. (2006) and Adelman and DeAngelis (2007).

[18] This is admitted, to a greater or lesser degree of serious documentation, in Powell, Owen-Smith, and Colyvvas (2007), Greenberg (2007), Geiger and Sa (2008), and Newfield (2008, chap. 12). I exclude from this statement some windfalls that accrue from the increasingly acrimonious litigation that universities have incurred in their pursuit of the profits of science.

[19] This is documented in Jaffe and Lerner (2004). Recent “patent reform” has done nothing to address these problems.

[20] Patent grants have exploded after Dudas left office, leaving some to wonder whether the Obama administration has permitted the situation to degenerate even further. See: http://inventivestep.net/2011/01/17/uspto-issues-record-number-of-patents/.

[21] See, for instance, the Thomson Reuters-driven World University Rankings: http://www.timeshighereducation.co.uk/world-university-rankings/2010-2011/physical-sciences.html.

[22] The rival services of Elsevier’s Scopus and Google Scholar are discussed in ScienceMart, mainly to point out the ways in which they have not been put to the uses that we identify as important for Thomson ISI.

[23] See ScienceMart (Mirowski 2011, 18–20, 123–5, 263–4 and 280).

[24] See, for instance, Mervis (2007), National Science Board (2008a, 5–36) and Guess (2007). One example of how the Companion (National Science Board 2008b) broke ranks with this consensus was its willingness to discuss “declines” in article output.

[25] It started out with the hostility of neoliberals like Milton Friedman and George Stigler to the state provision of higher education. Friedman devoted much of his accumulated fortune to the privatization of state-supported education, which he regarded as the largest residual sector of state socialism in the West. Hayek famously disparaged academics as “second-hand purveyors” of ideas.

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