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Book Review “The Creativity Crisis: Reinventing Science to Unleash Possibility”

by Roberta Ness (Oxford University Press)

Paul H. Jensen

pjensen@unimelb.edu.au

University of Melbourne

In comparison to other areas of human endeavour, our understanding of the innovation process is largely still a mystery. We don't really understand where creative ideas come from – we typically treat them as 'manna from heaven' – and we don't have a sophisticated understanding of how to take an idea to market. For economists, this is largely a black box. Sure, it is true that psychologists have a deeper understanding of 'creativity' and its sources, and there are some fields where our understanding of the economics of the innovation process is more advanced than others – the process of taking scientific breakthroughs from the lab to the consumer has been well travelled by big pharma, for example. But, by and large, much of it remains mysterious. So, it is welcome to see a comprehensive and insightful book by a leading scholar on the topic of 'Reinventing Science'. For an economist, it is particularly interesting to see a scientist articulate the role that incentives and institutions play in unleashing the potential of science for economic growth.

But this is both a huge drawback in reading the book and a source of major disappointment. The author certainly highlights some key economic forces that help explain the barriers to unlocking the potential of the scientific endeavour, but it is also true that the economics is fairly lightweight (at best) and quite problematic (at worst). That is probably not surprising given that the author is an internationally-renowned physician and epidemiologist; not an economist. But this seems to be a common refrain in the area of science and research policy – leading scientists who believe that given their pre-eminence in their field have great insights into how things could be done better. And to a certain degree, this is true. However, it is also a common trap that many people fall into – they think

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that anecdotes and observations from their own career are sufficient to understand systematic problems and are therefore capable of designing better public policy. Sadly, it is not. While I learnt a lot from reading the book, it sadly fell short of the mark in terms of providing with me concrete evidence about how we can improve the current scientific system.

One of the first issues that struck me when reading the book is that it already feels rather outdated. In fact, the author acknowledges that the book took a long time to complete and it really shows. Many of the examples included relate to events in 2012 and the literature reviewed is, at times passe. One can't help but think that a careful editor would have ensured that the book was given a fresh outlook before publication. Moreover for someone familiar with the literature, much of the book feels somewhat hackneyed. There are lots of well-known examples of success stories trundled out but no real insights that can help solve the creativity crisis (if indeed one exists: I am not so sure).

My second major problem with the book is that it doesn't contain much economics! Although there are lots of references to great economists who have studied science (e.g. Paula Stephan), there is precious little economics in the book. It reads like another scientist who wants to write a critical assessment of science policy but doesn't really have the necessary tools to do anything about it. And what economics is in there is quite weak. For example: rolling out well-worn examples like the Prisoners' Dilemma to explain game theory and using it to come to the conclusion that "Within science, group cooperation provides the greatest societal as well as individual benefits" seems overly simplistic. The low-point of the discussion, for mine, is around the topic of patents. "The epitome of the winner takes all is patenting", exclaims Ness. "The question is whether possessing and selling inventions promotes the pursuit of innovation or, rather, whether exclusivity restricts information exchange and slows discovery." Positioning the debate in this simplistic way ('either this or that') leads you straight into an academic cul-de-sac. A more nuanced debate, and one which is common in the economics literature on invention and patenting, argues that patents might be justified in specific circumstances despite the fact that they do, by their very nature, restrict information exchange and use. But to posit this more complex world-view is much easier to do if you have at your fingertips concepts such as externalities, deadweight loss, *ex ante* investment incentives, and so on. In the absence of these tools, the author isn't able to convince the reader that they understand the complex set of tradeoffs involved.

Overall, this is a good book for someone wanting an overview of the issue surrounding the scientific enterprise and how it shapes innovation. Issues such as collaboration, globalisation, and invention are explored with real passion and conviction. But for someone who already knows a bit about these issues, the book will probably be a disappointment. Ness clearly knows the important issues, but

lacks the insights to really provide genuine solutions to what are, for the most part, thorny public policy issues. Without that, it remains unclear that the solutions to the problems of the scientific system proposed in the book will ultimately ‘unleash possibility’.

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Author/s:

Jensen, PH

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