David Youngberg

Research Agenda

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The economics of technology.

My research focuses on the process of innovation: how inventors create technology, how firms protect technology, and how to improve the incentives to invent.

The motivation for this research rests not just in the recognition that long run economic growth largely comes from technological growth, but in the difficulty of balancing property rights with the spillover benefits of invention due to the tragedy of anti-commons. When many firms hold patents, derivative inventions become unfeasible. The costs of negotiations and hold-outs transform an efficient investment into an inefficient one.

My job paper—"Tacit Knowledge, Inventor Mobility, and the Propensity to Patent"—empirically shows that firms patent to protect their trade secrets against employees who go to work for a different employer in the same industrial sector. Employees who change sectors, however, encourage productivity of R&D dollars, affirming other work (e.g. Weitzman 1996; Trajtenberg, et al. 2006; Hoisl 2007) that cross fertilization of knowledge adds efficiency to the invention process. But defensive patenting adds to the patent thicket without encouraging new technology.

My dissertation argues to curtail patenting and directed R&D in favor of a one-time payment for innovation which would not be subject to patenting: a technology prize. Such prizes solve the tragedy of the anti-commons problem by maintaining the incentive to invent (and thus the inventive to collaborate) without relying on intellectual property.

I also possess an interest in economic education, especially as it relates to evolutionary psychology, the branch of psychology which proposes that various human thought processes (e.g. prejudice, language, xenophobia) are products of natural selection. In 2010, Prof. Robin Hanson and I analyzed seven societies which most closely resembled the hunter-gatherer structure of our ancestry using 40 years of anthropological studies. By understanding the societies of our ancestors, we achieve a better understanding of how people think. This is not a panacea to explain human behavior (equal treatment between men and women was common in these studies, which is in conflict with the rest of human history) but it still sheds light on current behavior patterns. For instance, that forager bands are ruled by a relative with informal power helps explain why the public's more interested in friendly politicians than thoughtful ones.

My dissertation and future research relates to one of the big questions in the economics of science: why is patent activity (per R&D dollar) increasing, a trend that started in the 1980s? I'm interested in investigating this puzzle by considering:

- the role of increasing international trade on the propensity to patent;
- the productivity improvements from capital derived from computing technology;
- the 1982 reforms of the patent court;
- the absence of development cost considerations when approving a patent; and

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- the possibility that a firm's reported R&D spending is significantly smaller than their *de facto* R&D spending.

I've recently begun working with a fellow doctoral student at George Mason University, Paul Bennett, on answering this last question.

Works cited.

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