



The Policy Studies Organization

Dupont Summit 2014

..... Science, Technology, and Environmental Policy Issues

December 5, 2014 ♦ Historic Whittemore House, Washington, DC

Budding Scholars Conference

Shahram Haydari – *Northeastern University*

"Does Longer Copyright Protection Help or Hurt Knowledge Creation?"

The number of scientific publications has been growing. Larsen and Ins (2010) estimated 4.7% of overall growth in scientific publications between 1997 and 2006. Policy makers are interested in observing a higher growth of knowledge in the society as it contributes to the advancement and development of the country. As an important policy tool, the Constitution empowered the Congress to enact copyright laws to “promote the progress of science and useful arts” i.e. the progress of knowledge and discoveries (Walterscheid, 2002). Lawmakers have extended the copyright term many times since its inception in 1790. There are many interesting economic studies on copyright law (Landes & Posner, 2009), (Hui & Png, 2002), (Tor & Ollar, 2002). However, little research has been conducted on how the extension of the copyright term contributes to the production of knowledge, the very goal for which this policy tool was designed. Here I take the first step towards this goal by implementing and analyzing the efficacy of copyright law and more specifically the length of copyright term with regard to knowledge creation.

I explore the impact of copyright term length by applying Agent Based Modeling (ABM) to simulate the key activities of scholars in a research field to create new knowledge. ABM often uses computer simulations as a tool to study complex problems by analyzing the behavior of individuals as “agents” and their interactions with each other and their environment. ABM provides a method of abstracting away from many real-world complexities and isolating the particular interdependent dynamics I am interested in studying. Such an approach will allow comparisons that would not otherwise be possible given the legal and historical constraints.

The model consists of a set of agents (scholars with various access levels to published knowledge) that explore a network of connected research topics, “epistemic plane”, attempting to publish new research based on what is already known. I examine the effects of varying copyright terms on the efficiency by which scholars publish new research as well as how copyright terms might impact citation tendencies. The model suggests that, for the most part, the extension of the copyright term hinders scholars in producing new knowledge. Furthermore, extending the copyright term tends to harm everyone, including scholars who have access to all published articles in the research field. However, we also identify situations where extending copyright term promotes rather than hinders knowledge creation. I explore if copyright creates any division of labor effect in the epistemic plane and if publishing habit of the scholar (publishing under copyright vs. publishing open access) plays any role in expediting/slowing down the production of new knowledge and citation rates.

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References:

- Hui, K. L., & Png, I. P. (2002). On the supply of creative work: evidence from the movies. *American Economic Review*, 217-220.
- Landes, W. M., Posner, R. A., & Landes, W. M. (2009). *The economic structure of intellectual property law*. Harvard University Press.
- Larsen, P. O., & von Ins, M. (2010). The rate of growth in scientific publication and the decline in coverage provided by Science Citation Index. *Scientometrics*, 84(3), 575-603.
- Tor, A., & Oliar, D. (2002). Incentives to Create Under a Lifetime-Plus-Years Copyright Duration: Lessons from a Behavioral Economic Analysis for *Eldered v. Ashcroft*. *Loy. LAL Rev.*, 36, 437.
- Walterscheid, E. C. (2002). *The nature of the intellectual property clause: A study in historical perspective*. William S. Hein & Co., Inc.

Biography

Shahram Haydari is currently a PhD Candidate in Law and Public Policy Program at Northeastern University. His research interest includes computational social science and studying complex systems through data science and data modeling. He holds Master of Science in Socio Economic Systems from Tarbiat Modares University in Tehran – Iran where he defended his thesis on “Forecasting Stock Market Index using Data Mining and Rough Set Theory.” He also holds an MBA from Clark University in Worcester MA where he was elected to the membership of Beta Gamma Sigma, the national honor society for students of management.