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State capacity and intellectual property regimes: Lessons from South American soybean agriculture



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ABSTRACT

In the 1980's, the U.S. government started a global upward ratchet of intellectual property (IP) protection, demanding countries reform their IP regimes increasing the scope and strength of IP rights. There has been substantial variation across countries and industries in the degree of reproduction of this trend. Based on a comparative-historical analysis of IP regimes in South American soybean agriculture (Argentina, Brazil, and Paraguay) from the 1970s to the present, this study shows that: (1) when state capacity in IP and state capacity in agricultural R&D are weak, a restrictive IP regime is likely to emerge; (2) when state capacity in IP is strong but capacity in agricultural R&D is weak, a permissive IP regime is likely to emerge; (3) when state capacity in IP and in agricultural R&D are strong, a restrictive IP regime is likely to emerge.

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1. Introduction

Intellectual property (IP) is arguably “the most valuable and contentious form of property” in the modern world [1]. “By affecting patterns of technological development and diffusion and the distribution of the gains from technological change, rules on the ownership and use of knowledge affect national and international trajectories of economic development”, including strategies “to reduce poverty, achieve food security, and protect public health” [2]. Nevertheless, current understanding about how the institution of IP emerges and changes over time and space is still

incipient. Most studies about IP “...focus on national and international IP laws. But while laws are the solidified results of social struggles and political conflicts, understanding the law itself tells us little about the social processes that lay behind laws and even less about the social dynamics that will eventually challenge and often change them” [2]. To help fill this gap in understanding the underlying social processes and dynamics, the present study presents an explanation for cross-national variation in IP regimes¹ based on a comparative-historical analysis of IP regimes for plant varieties in South American soybean agriculture (Argentina, Brazil, and Paraguay) from the 1990s to the present.²

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¹ Following Brousseau and Rossi (2009: 2), I use the term IP regime to refer to institutional arrangements that are broader than state-designed IP laws, including also enforcement practices and private contracts. See Brousseau, Eric, Maria A. Rossi. 2009. “Intellectual property regimes: a comparative institutional framework.” Paper presented at the 2009 Conference of the International Society for the New Institutional Economics, Berkely, CA. Retrieved from http://communiaproject.eu/communiaproject/conf2008p_Intellectual_Property_Regimes_a_Comparative_Institutional_Framework.pdf on October 29th 2010.

² Soybean agriculture is a major world industry. Soybeans are used for a wide range of applications, from feeding livestock and producing biofuels to textile fibers and plastics. In 2010, soybeans were the third main world agricultural commodity in value of production after rice and wheat (data from the Food and Agriculture Organization of the United Nations – FAO, retrieved from faostat.fao.org on August 10th 2012). The term South American soybean agriculture refers here to Argentina, Brazil and Paraguay. Although this activity has been present in other countries of the region, Argentina, Brazil and Paraguay account for virtually all of soybean production in South America (97.48% from 2008 to 2010 based on data from FAO). Brazil, Argentina and Paraguay follow the United States as the second, third and fourth largest exporters of soybeans in the world respectively.

South American soybean agriculture has been the site of intense conflicts between rural producers, seed companies, and states over IP rights on plant varieties. In the core of these disputes lies the right of rural producers to save seeds from plant varieties protected with IP rights from their own fields for future cultivation without consent from or payments to seed companies. As long as rural producers retain this right, they are not totally dependent on seed companies to obtain seeds.³ Therefore, seed companies have demanded from governments and rural producers from Argentina, Brazil and Paraguay restrictions on that right so that they can maximize the appropriation of economic returns from the agricultural biotechnology they develop. One of the main actors in these disputes is transnational corporation Monsanto, which holds patents on Roundup Ready (RR) soybeans, the most largely cultivated genetically modified plant variety in the world.⁴ Although IP rights on plant varieties affect other crops, “there is no doubt that the contestation over the right of rural producers to save seeds, with its consequences on legislative changes and demands for royalty payments, was born and intensified with the generalization of the use of transgenic varieties of soybeans” [3].⁵

The success of seed companies in restricting the right to save seeds has varied from country to country. In Argentina, the country has provided relatively weak protection for private IP rights on seeds since the creation of the “Law of Seeds and Phytogenic Creations” in 1973.⁶ This law allows rural producers to save seeds without paying royalties. In addition, Monsanto was never able to obtain a patent on RR soybeans in Argentina. The company retaliated with a suspension of its research and marketing operations with soybeans in the country and law suits against Argentine soy growers and

exporters in European countries, but none of this was effective in changing Argentina’s IP regime on seeds. In contrast, IP rules and enforcement practices in Brazil and Paraguay have strengthened private IP rights on plant varieties (including restrictions on the right to save seeds). In both countries, Monsanto implemented a private system of royalty collection for RR soybeans that virtually eliminated the right of soy growers to freely save seeds.

This reality is puzzling in different ways. First, the case of Argentina defies the global increase in IP protection that emerged around 1980 [4]. Since then, states and corporations from core countries led by the U.S. government have demanded other states to ratify international treaties and reforms to national legislation increasing the scope and strength of IP rights. Their goal is to preserve the international competitiveness of the knowledge-intensive industries of the Global North. Second, the case of South American soybean agriculture challenges two theories from the literature on IP regimes. The first is that wealthier countries offer stronger protection to IP in comparison to poorer countries. However, Argentina has had levels of income per capita higher than those observed in Brazil and Paraguay, but its IP regime on seeds is relatively weak. The second theory concerns what I will refer to here as “state capacity in IP”, defined as the technical, organizational, and financial capacity of a state to design and enforce IP rules according to national development goals. This theory states that countries with stronger state IP capacity enforce IP rules according to their own goals. Brazil has been recognized as a leader among developing countries in its capacity to shape national and international IP rules according to its national development goals. However, its IP regime on seeds has changed in accordance with demands from foreign seed companies and in spite of protests from Brazilian rural producers.

In the next section, I discuss these arguments and reformulate them to account for the puzzles of South American soybean agriculture, resulting in an alternative theory on state capacity in agricultural R&D and state capacity in IP. Section 3 contains a historical analysis to empirically ground my theory. It is divided into three subsections: (3.1) state capacity in agricultural R&D, (3.2) state capacity in IP, and (3.3) IP regimes on seeds. Each subsection is further divided into segments focusing on each country. This research is based on data from interviews,⁷

³ Soy is an autogamous plant, meaning it can reproduce through self-fertilization. Autogamous plants generate seeds that keep their agronomic qualities from one generation to another, which allows rural producers to save seeds. Hybrid seeds (such as hybrid maize) do not keep their qualities from one generation to another, forcing rural producers to purchase new seeds every year.

⁴ The advantage of this variety is its resistance to glyphosate, a herbicide that is less expensive and easier to apply than those used on conventional soybeans. In addition, the easier management of RR soybeans favors the use of non-tillage sowing systems, which are more efficient and less harmful for the soil. For several years, Monsanto also held a patent on glyphosate.

⁵ This statement was made about Argentina but is also valid for Brazil and Paraguay. In Argentina, the other major transgenic crops are maize and cotton. Maize seeds are hybrids, which provide a natural protection for IP rights since second-generation seeds do not carry the agronomic qualities of original seeds. Transgenic cotton (Bt cotton) is distinguished by a gene patented by Monsanto but its cultivation is marked by the same issues with IP present in soybean agriculture (see Van Zwanenberg P, Arza V, Fazio, ME, “Domestication of agricultural biotechnology within Argentina’s science and technology regime: the case of GM cotton.” 9th GLOBELICS International Conference, November 15–17, 2011. Buenos Aires [forthcoming]). In Brazil, the other transgenic crops are cotton (which was approved by the government only in August 2008) and maize (also hybrids). Finally, in Paraguay, the only transgenic crop besides RR soybeans is Bt cotton, which was approved only in October 2011. Therefore, IP controversies have been highly concentrated on soybean agriculture.

⁶ Here, an IP regime is considered strong or restrictive when it provides strong protection for the rights of holders of IP (seed companies), making access to knowledge on the part of knowledge-users (rural producers) more restricted. On the other hand, an IP regime is weak or permissive when it provides stronger rights for knowledge-users, making access to knowledge easier.

⁷ I conducted interviews with experts in IP and in soybean agriculture, state officials, representatives of rural producers, of the seed and crushing industries, of NGOs and social movements from Argentina, Brazil, and Paraguay. Interviews were semi-structured and lasted for 1 h on average. Interviewees were selected through a non-probabilistic sampling method in which the criterion was to select interviewees that could provide “insider” information about IP policy-making in soybean agriculture. Questions concerned the experience of organizations (not of individuals) in IP conflicts or policy-making. Therefore, references to interviews mention only the name of organizations. Names are mentioned exceptionally, when the information provided had been previously made public by the interviewee. Most interviews were conducted in person during fieldwork in Brazil (June 2009), Argentina (August 2010), and Paraguay (March, 2011). Some interviews with Brazilian organizations were made through e-mail or telephone from May to July 2011. In Argentina, Brazil and Paraguay I conducted 13, 27 and 13 interviews, respectively.

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