

Comment Upon History and the Debate Over Intellectual Property

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INTRODUCTION

The long historical view in Peng, Ahlstrom, Carraher, and Shi (2017), which discusses the issues regarding intellectual property rights (IPR) in China, is a welcome antidote to the overheated rhetoric in the public debate that characterizes China as a ‘pirate’ and slavish imitator. So, I thought that by engaging the paper obliquely, it might be possible to extend Peng et al.’s (2017) observations and conclusions. I will do this by contextualizing their observations about the history of IPR and then turn to the contemporary discussions of IPR and innovation in China.

HISTORY OF INTELLECTUAL PROPERTY RIGHTS

Intellectual property rights, as we know it today, can be traced to the competing, some might say ‘squabbling’ city-states of the Italian Renaissance and, in particular, Venice (Frumkin 1945).^[1] This has a remarkable synchronicity with the development of double-entry book-keeping and various other social technologies that would become ubiquitous in later stages of capitalism (May, 2002, 2007). Patents, in this earlier form, were not necessarily about new-to-the-world technologies, but were about attracting individuals whose activities could contribute to the local economy. Notice, as David (1993: 44) correctly points out, ‘this bit of history calls into question one causal supposition that the basic economic analysis of the patent system has fostered, that is, that the protection of intellectual property has been instituted where governments recognized there was more to be gained by stimulating indigenous inventive activity than by applying knowledge of techniques and products that could be “borrowed” freely from the rest of the world’. Oddly enough, the early patents were given to encourage ‘technology transfer’ for the benefit of the jurisdiction granting the patent. The

social innovation of IPRs that developed in Venice was refined in United Kingdom where in 1623 it was stated that patents should be awarded only to the ‘first and true inventor’ (David, 1993: 48). Remarkably, this was a Parliamentary reaction to the English Crown granting too many patent-based monopolies.

In the intervening centuries, of course, capitalism has become increasingly ubiquitous, with this expansion deepening the drive, indeed necessity, of introducing new products and processes expanded immensely. On the other hand, the ability to imitate and copy new products and processes, i.e., the development of national absorptive capacity, also spread (on absorptive capacity, see Cohen & Levinthal, 1993). As the authors rightly point out, newer national capitalist entrants, such as the US, in particular, adopted a strategy predicated upon absorbing knowledge from more advanced nations – a process at which the US was particularly aggressive in the 19th Century as it was trying to build its textile and garment industries. One of the most egregious of these ‘pirates’ was none other than Samuel Slater whose illegal technology transfer activities led to him earning the sobriquet of ‘Slater the Traitor’ in Britain and in the US is considered one of the ‘grandparents’ of American manufacturing (Everett, Hitchcock, Middleton, & Timms, 2006). With the development of firms that operated across national lines in the late 19th Century, a number of treaties such as the 1883 Paris Convention on Industrial Property Protection were signed allowing foreign firms to file for patents in the other nations within which they operated – effectively, IP was following the cross-national activities of foreign firms (see, for example, Wilkins, 1991 on this history). During this period, the patent systems were not harmonized; what these agreements guaranteed was national treatment, namely whatever the policy was for national firms would also be available for foreign firms. With this set of agreements, IPR had now escaped its national fetters.

By this time, the signatories, all Western nations including the US (or, more properly, their expanding industrial firms), had developed sufficient interest in reciprocal treatment to come to an agreement. This meant the chapter of the US as a wanton violator of foreign patents ended.^[2] In more recent times, similar behavior was seen by the Japanese, Korean, and Taiwanese governments, in each case their early violations were treated with a rather benign attitude on the part of the US government – at least, until the time when the firms in these nations became significant competitors to US firms. Today, each of these nations enforces international industrial IPR rules. Effectively, the progression in each of these nations reinforces the authors’ conclusion that violation of IPR rules and criticism from technological leaders occurs when firms in a particular nation have developed sufficient absorptive capacity to be able to utilize the knowledge developed abroad. While the research on national absorptive capacity development remains underdeveloped, it probably occurs through imitation, a process that would almost necessarily lead to friction with the global technology leaders. What is clear is that the pattern has been that the focal nation’s firms become sufficiently competitive and can benefit from the global IPR regime, the

national government begins to accept the global regime. And, if large enough, it can also affect the evolutionary trajectory.

When we turn to China, any discussion of IPR or property rights, in general, must begin with the understanding that prior to the Communist Revolution, China had a weakly developed form of capitalism (see, for example, Tse-Tung, 1959) and IP was of no consequence at all – at the time, IP was completely an intra-developed world discussion. With the victory of the Chinese communists in 1949 and the abolishment of private ownership of the means of production in 1956, there was no longer any need for IPR. Not surprisingly, it was not until the opening initiated in 1978 that the topic of IPR would appear on the Chinese government's agenda. In 1984, the modern patent system was established. This was an introduction, of course, that only slightly lagged the reintroduction of a market economic principles. Not surprisingly, the entrepreneurs that took advantage of the new market openings paid little attention to Western rules and sensibilities regarding knowledge ownership. Moreover, it was only later due to the cumulative effect of this opening and the ensuing unprecedented economic growth that anyone in the West became interested and then deeply concerned about protecting their IP in China. It was precisely the development of absorptive capacity at the national level, which in capitalism translates to the firm level, that turned mild amusement at Chinese efforts and little regard for their ability into the alarm expressed by MNCs at the propensity of Chinese competitors to appropriate intellectual property and establish competitive operations (for a discussion of MNC operation in China and learning, see Collinson, 2016).

Thus far, I have largely seconded the conclusions of the authors and provided some context for thinking about the overall development of IPR. In the following paragraphs, I take up two extensions that are of interest to scholars studying in innovation, international competition, and the context for competition.

EXTENSIONS FOR FUTURE CHINA IPR RESEARCH

The first extension is that many observers do not understand the significance of the Chinese investment in innovation and, by extension, IP creation and protection.^[3] To begin with some facts. If mainland Chinese were to patent at the same rate as their Taiwanese counterparts, China would become the world's largest owner of patents by far. Today, Taiwanese patent at the US Patent and Trademark Office (these patents can be considered as new-to-the-world) at a greater per capita rate than do Americans (473 vs 418 patents per million). Given that China has roughly 4 times the population of the United States, the possibility that China will become the world's largest intellectual property owner is not hypothetical. Even more so because the Chinese government is providing enormous incentives to organizations to patent both in China and abroad.^[4] And yet, Chinese firms are still not important international patentors. For example, in 2015 the leading Chinese firm, Huawei is only 45th on the list of all corporate patent grantees in the

US, but that had improved from 76th in 2011. Its competitor, ZTE had improved to 83rd in 2015 from 452nd in 2011! During the period from 2011 to 2015, Tsinghua University was the 178th in terms of US patents. In contrast, the largest university patentor in the world, the University of California system was ranked 74th and Stanford 174th (US Patent and Trademark Office 2015).^[5]

The scale and rapidity by which Chinese increased investment in improving university research particularly through the lavishly funded 985 and 211 Programs is perhaps unparalleled in human history – the only comparable increase in funding of university research is the US in the aftermath of the Russian launch of Sputnik (on 985, see Han et al., 2013; Chen, Patton, & Kenney, 2016). The results of this investment are only now beginning to be seen. The authoritative Shanghai Jiaotong Academic Ranking of World Universities (2016) shows that in 2015 China had 41 universities in the global top 500, whereas in 2004 China had only seven universities in the top 500. Moreover, the two highest ranked universities moved from being in the top 300 in 2004. Tsinghua University had moved to 58th in 2015, while Peking University moved from the top 300 to 78th in 2015. With this improvement, China has dramatically separated itself from the other developing nations and, has already surpassed all the Asian nations, except for Japan. Certainly, if the improvement continues, will outstrip many of the larger European nations including former research powerhouses such as France and Germany. While Chinese universities are clearly showing remarkable improvement, they remain far behind the global leaders, the US, United Kingdom, and Japan. As a note of caution, recently China ended the 985 and 212 Programs. Will this result in a loss of momentum or have these favored universities developed sufficient momentum such that they can continue on their upward arc?^[6]

These indicators of interest in invention and innovation should be considered in light of the fact that, given current growth trends, China could become the world's largest economy in absolute terms within the next decade, but, of course, in per capita terms it will dramatically lag the advanced developed nations. This means it will be a middle-income nation and thus subject to what some have termed 'the middle-income trap' (see Lewin, Kenney, & Murmann, 2016 for an extended evaluation of this topic). As this crossover becomes increasingly close and as Chinese influence grows globally, the Chinese are likely to become increasingly assertive in discussions of the global IP rules of the game. One early example of Chinese grappling with its relative IP weakness and therefore massive outflows of IP licensing fees was the government's promulgation of the Chinese TD-SCDMA standard for 3G mobile telephone. In this case, the TD-SCDMA standard was largely unsuccessful and was soon surpassed by the 4G standard where China simply adopted the global standard (Gao, 2014). However, it was a subtle threat that China did not have to simply acquiesce to Western licensing fee demands.^[7] Today, Chinese engineers are active in all global standard-setting in an effort to ensure that China's needs are represented (Breznitz & Murphree, 2011; Suttmeier, Yao, & Tan, 2009). With an enormous market and increasingly capable firms, it is

not surprising that both the Chinese government and firms are actively involved in global standards-setting processes.

The second extension is the increasing critique of the US IP regime, which a number of commentators have argued is frustrating innovation (Burke & Lemley, 2009; Jaffe & Lerner, 2004; Mazzoleni & Nelson, 1998). The critique is not limited to the patent system. Many have argued that the copyright system is also in crisis. In particular, the desire to protect legacy products. The most famous of which is the periodic US extension of the period of copyright protection that coincides with each looming deadline for Mickey Mouse to enter the public domain and thereby vitiate one of the Disney Corporation's longest running sources of income (Doctorow, 2016). With each change of the IP laws, the legacy rent-extracting firms can again raise the cry of 'piracy'. If the goal of IP protection is to encourage innovation through the public exposure of knowledge so that new inventors can build upon the shoulders of giants and introduce yet other innovations that will contribute to the greater social good of society, then the question of whether the current regime is the most effective must be posed. This is particularly necessary when the US is pressuring other nations to adopt its particular version of IPR. Will China, as it increasingly conforms to global IPR rules, force changes upon the developed world also begin to shape the rules in ways that are conducive to the late developing nations?

CHINA AND THE 'MOBILE INTERNET'

Before closing, let me turn to Chinese performance at one of the cutting edges of contemporary capitalism, what has become known as the 'mobile internet'. What is so fascinating is that during the PC-based internet era, Chinese firms generally copied US business models with Baidu copying Google, Sina copying Yahoo!, Youku copying YouTube, Alibaba copying Amazon, 51Jobs copying Monster.com, etc. Given the fact that the Chinese government blocked most US applications, this model operated well in that it created a Chinese ecosystem separated from the global one, but the impetus and business models of these startups was largely unoriginal.^[8] With the massive diffusion of smartphones (essentially hand-held computers connected to the Cloud), China, which already had massive mobile feature phone adoption, experienced the introduction of unique technologies and business models; some of which particularly instant messaging and payment systems were unique to the world. In the mobile internet, Chinese firms such as Tencent, Alibaba, and Baidu have developed some world-class technologies and social innovations (Jia & Kenney, 2016). The most widely admired are the extremely sophisticated payment systems and the global-class chat services (Chan, 2015; Kessel & Mozur, 2016). While these Chinese leaders still depend upon open-source operating systems and it is uncertain whether they are capable of global-class technological contributions, these digital platforms are remarkable in their sophistication and usability.

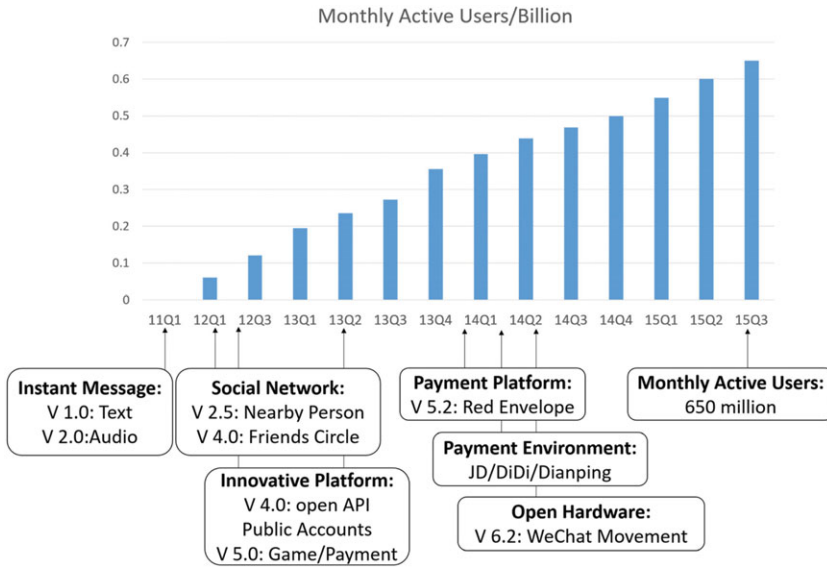


Figure 1. WeChat monthly active users by quarter, 2011–2015
 Source: Jia and Kenney (2016) and Tencent Quarterly Reports.

With 600 million smartphone users demanding immediate service Chinese computer scientists and communications engineers are facing big data and other problems that rival those faced by the US global leaders such as Amazon, Google and Facebook – solving such problems is a process of incremental innovation on Internet time. The speed of the introduction of new features on the Tencent platform can be seen in Figure One. Here, on the cutting edge of innovation and technology, these Chinese firms are not constrained by the past or entrenched multinational competitors and are driven forward by the world’s most sophisticated smartphone users. Is this just a unique hotspot in a sea of mediocrity or is it a breakthrough that will diffuse throughout the society?

CONCLUSION

My comment has encompassed a set of historical and contemporary observations. Returning to the contribution, in my opinion, the authors argue correctly that attributing the current phase during which, for the most part, China continues to be an imitator, to innate cultural characteristics based on Confucianism or some other characteristic seems dubious – there are too many indicators that something else is emerging. It is quite possible that this current period is purely a function of capitalism having taken root so late in China; something that Marx (Asiatic mode of production) and Max Weber (in his studies of religion) in their observations on China now more than a century ago might have predicted, given their understanding of capitalism as a powerful revolutionary force with its remarkable impetus to encourage or even force firms to innovate. Of course, the future is always uncertain, but there are indicators such as the development of

Huawei, ZTE, and the current rapid innovation in the mobile internet industry that suggest China's ancient past is not determining its future. Most likely, as our authors suggest, China will find it in its interest to strengthen IP rights; but they also will become more important in the debates about what type of and how IP should be protected. They will no longer merely be rule obeyers, but also want a voice in the rule making!

NOTES

I thank Kai Jia and Arie Lewin for their helpful suggestions and assistance. Of course, I remain solely responsible for the all the opinions and conclusions in this comment.

- [1] It is very intellectually important to separate the concept of 'intellectual property' and related 'rights' from plagiarism, which is the use of creations without proper attribution, which, as such, are a violation of a set of social norms.
- [2] This conclusion, as the authors rightly emphasize, was not total. While they point out the fact that the US confiscated German chemical patents during World War One as alien property and supplied them to the technologically backward US chemical manufacturers, this was not the only case. For example, in the case of the United Kingdom-based Marconi Corporation's wireless patents, the US government forced licensing by enjoining American Marconi to join the newly formed Radio Corporation of America (Douglas, 1987). As the authors show, the US government showed little hesitation in forcing foreign firms to 'share' their intellectual property even after signing various treaties and protocols. Of course, the US government was little different than other signatories.
- [3] For multiple perspectives on Chinese innovation from a wide variety of scholars, see Lewin et al. (2016).
- [4] In the case of Chinese universities, for a summary, see Chen et al. (2016).
- [5] It is important to not over-interpret these patenting results. Chinese government policy places enormous pressure on universities to patent and it is used as a metric for evaluating the performance of universities and their administrators. Further, there are direct government subsidies for the filing costs and monetary awards to the inventors. As Cheng and Huang (2016: 153–155) note these incentives are also leading to a proliferation of low-quality (valueless) filings and patents. Thus, there has been remarkable progress, but some, probably unknown and unknowable, part of this progress is illusion.
- [6] There are also questions regarding the division of R&D resources between the parallel structure of research-performing institutes and the universities. As university research improves is this parallel structure leading to an inefficient allocation of resources? What is certain is that earlier model within which universities did the training and institutes did the research has disappeared. It might have been possible to divide the research function into applied and basic research, but such linear models of innovation have been completely debunked as being effective.
- [7] An excellent example of this increasing confidence was China's assessment of a \$975 million fine against Qualcomm for antitrust violations. With China responsible for approximately 50% of all Qualcomm's revenue in 2014, it had little choice but acquiesce (Clark, 2015).
- [8] Fuller (2016) argues that the success of these firms is that they were funded by Western venture capitalists and this allowed them to escape from what he believes is, the stultifying hand of the government and state-owned enterprises.

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