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Chinese Patents as Copyrights

BENJAMIN PIWEI LIU*

INTRODUCTION

Although harmonization efforts such as the Agreement on Trade-Related Aspects of Intellectual Property Rights (TRIPS) and the Patent Cooperation Treaty regime have brought national patent systems closer, differences among them remain a continuing challenge to innovators in an interconnected global marketplace. The recent development of the Chinese patent system is of particular interest because China is the factory of the world, the most populous market, the home of the patent office that handles the most patent application filings, and the number one source of imports that violate intellectual property rights (IPR). Its patent system affects every company whose supply chain, competitor or market footprint touches China. Moreover, developing countries are increasingly looking to China for an alternative IPR model. China's patent system may well be the basis of new norms for other emerging economies.¹

Unfortunately, the Chinese patent system tends to be compared to United States' patent doctrines and practices with the subtext of characterizing it negatively in a seemingly haphazard array of excesses or inadequacies: the quantities of its utility model and design patents are growing too fast;² the scope of its invention patents is too narrow;³ there

* Assistant Professor and Director of the Chinese Intellectual Property Resource Center, The John Marshall Law School. This Article is based on a presentation given during a symposium at Campbell Law School, hosted by the *Campbell Law Review*. It was also presented at Tokyo University organized by Toshiya Watanabe. The author thanks participants of these events for their helpful comments as well as Llewellyn Gibbons for his thoughtful feedback. He would also like to thank the staff of the *Campbell Law Review* for their excellent editorial assistance.

1. Peter Yu, *Intellectual Property and Asian Values*, in HANDBOOK ON INTELLECTUAL PROPERTY LAW IN SOUTHEAST ASIA (Christoph Antons ed., forthcoming 2012) ("China's innovation models may attract the attention of other countries that are working hard to catch up with developed countries.").

2. Eve Y. Zhou & Bob Stembridge, *Patented in China, The Present and Future State of Innovation in China*, THE LEDA GROUP 21-23, http://ledagroup.org/wp-content/uploads/2011/01/China_Report_0810.pdf (last visited Apr. 11, 2012); Jody Lu, *Who is Making Junk Patents?*, CHINA INTELLECTUAL PROPERTY (May 4, 2011),

are too many defenses available to an infringer;⁴ the patent enforcement administration is not specialized enough;⁵ and so forth. Each of these relativistic differences marks an individual tree, but there is still a lack of vision of the forest. Moreover, perceiving the Chinese patent system as a parade of individual IPR horrors creates a self-fulfilling tragedy. As John Orcutt and Hong Shen warned in a study on Chinese innovation strategy, “Starting from such a negative position encourages foreign businesspersons to underestimate the importance of law in China, and thereby fail to properly protect their legal interests when operating in China.”⁶

Beyond these practical concerns, the choice of descriptive modes presupposes a questionable normative stance. The relativistic mode—one that essentializes the Chinese patent system as a lesser doppelgänger of the United States patent system—implicitly condones a neo-colonial vantage that presumes the primacy of the United States patent law and the complaints of non-Chinese companies.⁷ A holistic model, by contrast, would describe the Chinese patent system by what it is, not by what it is not. The central question is whether we can capture the Chinese patent system on its own terms.

<http://www.chinaipmagazine.com/en/journal-show.asp?id=690>; *Patents, Yes; Ideas Maybe*, THE ECONOMIST (Oct. 4, 2010), http://www.economist.com/node/17257940?story_id=17257940 (questioning the quality of the rapidly growing utility model patents).

3. SPECIAL 301 ON INTELLECTUAL PROPERTY FROM THE UNITED STATES TRADE REPRESENTATIVE 25 (2006) (“While China’s patent laws are largely compliant with the TRIPS Agreement, right holders have noted that the narrow scope of patentable subject matter under Chinese law makes patents for transgenic plants and animals virtually unobtainable.”).

4. EU-CHINA PROJECT ON THE PROTECTION OF INTELLECTUAL PROP. RIGHTS, THIRD REVISION OF CHINA’S PATENT LAW: LEGAL TEXTS AND DOCUMENTS ON THE DRAFTING PROCESS 2006–2008, 112 (2009), (criticizing the prior art defense).

5. *Id.* at 1. The project explains:

We are also concerned by what seems to be an extension of the number of Courts having jurisdiction over patent matters. Experience, in Europe, leads to limit as much as possible the number of such “patent courts”, so as to facilitate the recruitment of technically competent judges and ensure consistency in their decisions. It seems that China is moving in the opposite direction, and we are afraid that, regardless of the efforts that SIPO will make to provide training, local Courts will find it difficult to maintain quality and consistency.

Id.

6. JOHN L. ORCUTT & HONG SHEN, SHAPING CHINA’S INNOVATION FUTURE: UNIVERSITY TECHNOLOGY TRANSFER IN TRANSITION 111 (2011).

7. Peter Yu, *Toward a Nonzero-Sum Approach to Resolving Global Intellectual Property Disputes: What We Can Learn From Mediators, Business Strategists, and International Relations Theorists*, 70 U. CIN. L. REV. 569, 650 (2002); see also *id.* at 580 n.70 (listing scholarship discussing the imperialistic aspect of global intellectual property regime).

This Article explores a possible organizing logic that unifies the Chinese patent system's seemingly unrelated deviations from United States' expectations into a coherent architecture—that of copyright. Specifically, this study compares the Chinese patent system to common abstractions that have come to distinguish patents from copyrights, the two pillars of creative Intellectual Property (IP), and argues that Chinese patent law's movement towards a copyright paradigm is illustrated by idiosyncrasies such as: its preference for protecting particularized, physically fixed embodiments, substantial similarity-based infringement tests, the prevalence of use- and source-based defenses, and the absence of patent specific enforcement administration.

Although the primary goal of this article is to provide a descriptive account of the Chinese patent system, the actual existence of a copyright-like patent system contributes to ongoing theoretical debate over the appropriate design of innovation law. Scholars regularly question the doctrinal separation between patent and copyright and advance proposals to borrow features from one to give to the other. Some of the examples include Mark Lemley and Christopher Cotropia's examination of copying in patent law,⁸ Jeanne Fromer's study comparing claim scope between copyrights and patents,⁹ Lorelei Ritchie de Larena's¹⁰ and Maureen A. O'Rourke's suggestions importing the fair use defense into patent law,¹¹ Samson Vermont exploring the possibility of importing the independent creation doctrine into patent law,¹² James Bessen and Michael Meurer's criticism of the indefiniteness in current patent rights and recommended cures that step in the direction of the copyright paradigm, just to a name a few.¹³ That the Chinese patent system actually embodies these suggestions, intentionally or not, provides an ongoing experiment to test the operation of these principles that even their proponents have considered mere theoretical possibilities.

8. Christopher A. Cotropia & Mark A. Lemley, *Frontiers in Empirical Patent Law Scholarship: Copying in Patent Law*, 87 N.C. L. REV. 1421 (2009).

9. Jeanne C. Fromer, *Claiming Intellectual Property*, 76 U. CHI. L. REV. 719 (2009).

10. Lorelei Ritchie de Larena, *What Copyright Teaches Patent Law About "Fair Use" and Why Universities Are Ignoring the Lesson*, 84 OR. L. REV. 779, 780 (2005) (discussing a possible fair use doctrine in patent law).

11. Maureen A. O'Rourke, *Toward a Doctrine of Fair Use in Patent Law*, 100 COLUM. L. REV. 1177, 1188 (2000) (discussing a possible fair use doctrine in patent law).

12. Samson Vermont, *Independent Invention As a Defense to Patent Infringement*, 105 MICH. L. REV. 475, 480–81 (2007) (discussing the possibility of importing the independent creation doctrine into patent law).

13. JAMES BESSEN & MICHAEL J. MEURER, *PATENT FAILURE: HOW JUDGES, BUREAUCRATS, AND LAWYERS PUT INNOVATORS AT RISK* 29–45, 235–53 (2008).

Section I examines four broad aspects of the Chinese patent system for copyright-like features. Many so-called patents in China are narrowly drawn industrial protections against a copyist. Patent defenses resemble that of classic copyright defenses, and Chinese patent administrators and judges occasionally slip into the mode of copyright enforcement. Section II advances several causes to explain the tendency of the Chinese patent system to exhibit copyright-like features. The tendency to focus on copying is a natural response to foreign pressure seeking redress for IPR theft, even though historically these calls arose in the context of copyright piracy and trademark counterfeiting. It also coincides with China's own aspiration for technological development where concrete rights protect improved embodiments while giving wide berth to subsequent improvers. IPR enforcement under the copyrights paradigm is simpler and easier to implement when the state lacks sufficient capacity to address complex infringement issues. Apart from these pragmatic reasons, a copyright paradigm offers a coherent morality of IPR that is probably more palatable than the winner-take-all regime that the traditional patent paradigm presupposes. Section III draws out the implications of a copyrights-tinted patent system. For China, we can anticipate its industrial asset protection to place greater emphasis on the curtailing of unauthorized copying but less concerned with setting out a zone of technological exclusivity. For developing countries, the Chinese approach provides an alternative patent model designed to rebalance innovation and development. Developed countries may also look to China's experiment with copyright-like features for improvements to its own patent system.

I. COPYRIGHT-LIKE FEATURES OF THE CHINESE PATENT SYSTEM

The United States Trade Representative (USTR), in its latest report to Congress on China's Compliance with its World Trade Organization (WTO) commitments, acknowledged that "China has put in place a framework of laws and regulations aimed at protecting the intellectual property rights of domestic and foreign right holders, as required by [the TRIPS Agreement]."¹⁴ Its consistency with TRIPS notwithstanding, several features of the Chinese patent system appears to depart from conventional notions of the patent system viewed from the vantage of the United States patent practice. Curiously, these differences appear to eschew notions of a strong patent system in a direction that is curiously

14. OFFICE OF THE U.S. TRADE REPRESENTATIVE, 2011 REPORT TO CONGRESS ON CHINA'S WTO COMPLIANCE 4 (2011).

reminiscent of copyrights. First, the Chinese patent office now receives approximately one million utility model and design patents a year, both of which are essentially copyrights for industrial products. Second, even apart from these lesser patents, the Chinese invention patents tend to have a penchant for greater physical concreteness and closer concordance to real exemplars. Third, several defenses under Chinese patent law map well onto familiar copyright defenses such as fair use. Fourth, Chinese Courts and agencies entrusted with patent enforcements are also in charge of copyrights and occasionally slip into a copyright mode of infringement analysis.

A. *Designs and Utility Model Patents*

Much of the explosive growth of Chinese patents is attributable to the protection of design and utility models. It has become fashionable for critics of the Chinese patent system to question the usefulness, or even the danger, of granting so many patents to what appears to be trivial or low quality improvements.¹⁵ And yet it is the ubiquity of utility model and design patents that provide the first clue of analogizing the Chinese patent system to a system of copyrights.

Jerome Reichman noted nearly two decades ago that these industrial protections are “legal hybrids” between the copyright and patent paradigms based on his study of the German patent system.¹⁶ This system-

15. Eve Y. Zhou & Bob Stembridge, *Patented in China, The Present and Future State of Innovation in China*, THE LEDA GROUP 21–23, http://ledagroup.org/wp-content/uploads/2011/01/China_Report_0810.pdf (last visited Apr. 11, 2012); Jody Lu, *Who is Making Junk Patents?*, CHINA INTELLECTUAL PROPERTY (May 4, 2011), <http://www.chinaipmagazine.com/en/journal-show.asp?id=690>; *Patents, Yes; Ideas Maybe*, THE ECONOMIST (Oct. 4, 2010), http://www.economist.com/node/17257940?story_id=17257940 (questioning the quality of utility model patents); *China to Curb “Junk Patents”*, CHINA.ORG (Dec. 29, 2005), <http://www.china.org.cn/english/BAT/153629.htm> (reporting the view of Tian Lipu, the Chinese patent office commissioner, that “most junk patents are within the category of utility model and design”).

16. J.H. Reichman, *Legal Hybrids Between the Patent and Copyright Paradigms*, 94 COLUM. L. REV. 2432, 2453–64 (1994).

was replicated in Japan.¹⁷ Later China studied both countries closely when drafting its own modern patent law.¹⁸

A Chinese utility model patent offers ten years of protection for new technical solutions relating to a product's shape, structure, or a combination thereof, which is fit for practical use.¹⁹ A utility model patent is registered at the State Intellectual Property Office of the People's Republic of China (SIPO) without substantive examination, although its validity depends on novelty, inventiveness, and utility similar to that of an invention patent, but the level of inventiveness need not be as high as an invention patent.²⁰ It is subjected to examination and invalidity challenge at the time of enforcement.²¹ An industrial design patent covers any new design of a product's shape, pattern or a combination thereof, as well as the combination of the color and the shape or pattern of a product, which creates an aesthetic feeling and is fit for industrial application.²² Design patents also require novelty and inventiveness. But as in the case of utility models, the level of inventiveness also need not be as high as that of an invention patent and in any event SIPO does not examine these applications on these substantive issues. Instead, they are examined for compliance with formal requirements. To restate this in copyright terms, both utility model patents and design patents are directed to specific, physically fixed embodiments that require originality and a modicum of inventiveness, with registration being the only formal-

17. Toshiko Takenaka, *Harmonizing the Japanese Patent System With Its U.S. Counterpart Through Judge-Made Law: Interaction Between Japanese and U.S. Case Law Developments*, 7 PAC. RIM. L. & POL'Y J. 249, 250 (1998) ("Most of the Japanese judicial system is based on the German system, particularly the German court system and the procedural aspects of German Law. This is particularly true with respect to the Japanese patent system, because many current patent statutes are translations of their German counterparts.").

18. WILLIAM P. ALFORD, *TO STEAL A BOOK IS AN ELEGANT OFFENSE: INTELLECTUAL PROPERTY LAW IN CHINESE CIVILIZATION* 69 (1995).

19. Patent Law of the People's Republic of China (promulgated by the Standing Comm. Nat'l People's Cong., Mar. 12, 1984, effective Mar. 12, 1984), ch. 1 CHINA PAT. art. 2, 42 (1984).

20. Raymond M. Gabriel, *The Patent Revolution: Proposed Reforms in Chinese Intellectual Property Law, Policy, and Practice Are the Latest Step to Bolster Patent Protection in China*, 9 ASIAN-PAC. L. & POL'Y J. 323, 334 (2008).

21. *Id.* at ch. 2 CHINA PAT. art. 22.

22. *Id.* at ch. 1 CHINA PAT. art. 2.

ity required—the same list of criteria associated with the perfection of copyright.²³

To be certain, these lesser patents are available in a number of countries including Japan, Korea, and Germany.²⁴ The United States Patent and Trademark Office acknowledges an overlap between design patents and copyright where the same subject (such as an ornamental design) may obtain both forms of protection.²⁵ And even though U.S. patent law does not provide utility model protection, United States judges noted the similarity between the German utility model and copyright.²⁶ However, it would be a stretch to call the patent system of these countries a copyright system simply because utility model patents and design patents exist.

What sets China apart is the sheer number of utility and design patents. In 2010, SIPO accepted 1.22 million patent applications. Of these, 390,000 were invention patents, 410,000 were utility model patents and 420,000 were industrial design patents.²⁷ In contrast, the total number of patents filed in the United States was only about half a million in 2010.²⁸ In 2011, 1.63 million patents were filed in China, representing a growth of 33 percent.²⁹ About a third of these patents are design patents (522,000), and another third of these patents are utility model patents (585,000).³⁰ The amount and distribution of these patent types are visualized in the chart below.

23. Preston M. Torbert & Zhao Jia, *People's Republic of China*, in *INTELLECTUAL PROPERTY LAWS OF EAST ASIA* 233, 238 (Alan S. Gutterman & Robert Brown eds., 1997) (discussing utility models and designs in China).

24. WIPO, *WORLD INTELLECTUAL PROPERTY INDICATORS—2011 EDITION*, 206–07 (2011) [hereinafter *WORLD INTELLECTUAL PROP. INDICATORS 2011*] (listing Japanese, Korean and German industrial design applications in 2011).

25. See U.S. PATENT & TRADEMARK OFFICE, DEP'T OF COMMERCE, *MANUAL OF PATENT EXAMINING PROCEDURE* § 1512 (8th ed., 8th rev. ed. 2010).

26. Timothy R. Holbrook, *Should Foreign Patent Law Matter?*, 34 *CAMPBELL L. REV.* 581, 584 (2012) (citing *In re Carlson*, 983 F.2d 1032, 1036–38 (Fed. Cir. 1992)).

27. *China's Intellectual Property Protection in 2010*, STATE INTELLECTUAL PROP. OFFICE OF CHINA (April 29, 2011), http://english.sipo.gov.cn/laws/whitepapers/201104/t20110429_602312.html.

28. *Id.*

29. *1.633 Million Patent Applications Received in 2011*, STATE INTELLECTUAL PROP. OFFICE OF CHINA (Jan. 17, 2012), http://english.sipo.gov.cn/laws/whitepapers/201104/t20110429_602312.html.

30. *Id.*

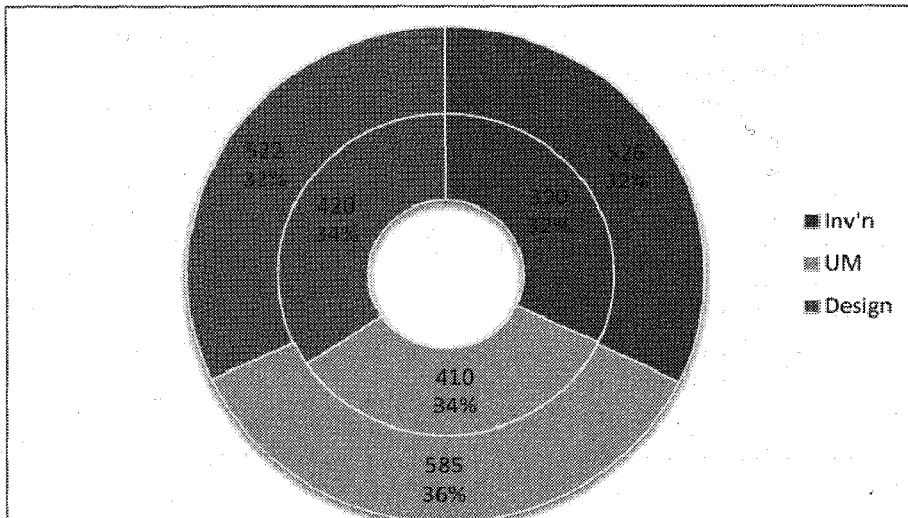


Figure 1

Figure 1 represents these numbers in a pie chart to show the overwhelming presence of utility model patents and design patents in China in units of 1000 applications. The inner and outer circles represent the amount of filings in 2010 and 2011, respectively. About two-thirds of all patent applications filed during these two years fall under these lesser patents. In comparison, the Japanese and German patent offices only received 31,756 and 6,285 design patent applications in 2010, respectively.³¹

The data on granted patents show an even more explicit proclivity towards registered physical embodiments. In 2010, SIPO issued 814,825 patents; 135,110 invention patents were granted (16.6%); 344,472 utility model patents were granted (42.3% of total); and 335,243 industrial design patents were granted (41.1% of total).³² Over 80% of all recent grants are utility model and design patents.

Many criticize some of these patents as low quality patents or “junk patents” because they are not examined and provide a very narrow scope of protection.³³ This view ignores the fact that owners of these IP assets

31. WORLD INTELLECTUAL PROPERTY INDICATORS 2011, *supra* note 24, at 206–07.

32. *China's Intellectual Property Protection in 2010*, *supra* note 27.

33. See, e.g., Lu, *supra* note 15; *Patents, Yes; Ideas, Maybe*, *supra* note 15 (questioning the quality of utility model patents); Xinhua News Agency, *China to Curb “Junk Patents”*, *supra* note 15 (reporting the view of Tian Lipu, commissioner of the State Intellectual Property Office, that “most junk patents are within the category of utility model and design”); Meng Fanxin, *Application of Equivalent Doctrine in Utility Model Patent Infringe-*

have been very successful at protecting against the copying of specific embodiments just as copyright protects against the slavish copying of specific expressions. Some of the most pro-plaintiff patent cases in China involve design and utility model patents.³⁴ Even in countries like Germany where the level of innovation and economic development are closer to the United States than China, utility model and design patents have allowed innovative companies like Apple to block smartphone competitors to great strategic effect.³⁵ That these protections operate like copyrights also explains their numerosity: protection is based on the pinpointed protection of a specific product in the marketplace, and not based on staking out a broad claim scope. Therefore separate applications are necessary to protect different product lines as opposed to a broad patent. In the final analysis, about 780,000 patents, or 80% of the patents issued in China in 2010, were essentially copyrights of industrial assets.

B. *Invention Patents*

Working in the U.S. context, Jeanne Fromer plots the different IP claiming styles in two dimensions: the patent paradigm employs peripheral claiming by characteristics to protect a broad text-delineated scope, while the copyright paradigm employs central claiming by exemplar to protect pinpointed embodiments.³⁶ In theory, the invention patents that take up the remaining 20% of granted Chinese patents should conform to the characteristics of utility patents in the United States. In practice, even invention patents subtly lean towards the copyrights paradigm, with its emphasis on the concrete and the specific. For example, patent eligibility rules disfavor claim types that are prone to be broad and ambiguous. Thus, certain process inventions are not patent eligible

ment Lawsuit, CHINA PATENTS & TRADEMARKS (2006) (noting that a large number of utility model patents are not inventive enough).

34. See *German Company Wins Key Design Patent Case in China*, STATE INTELLECTUAL PROP. OFFICE OF CHINA (Feb. 2, 2009), http://english.sipo.gov.cn/news/internationalip/200904/t20090417_454486.html (discussing successful design patent litigations and the importance of design patent in protection automobile parts); Legal News Alert, *The Chint v. Schneider Settlement: 157 Million Reasons to Believe Chinese Patent Holder's Rights Have Muscle* (Apr. 15, 2009), <http://www.foley.com/intelligence/detail.aspx?int=9074> (summarizing the largest IP damage award in China, which involved a utility model patent).

35. *UPDATE 1-German Court Upholds Ban of Samsung's Older Tablet*, REUTERS, Jan. 31, 2012, available at <http://www.reuters.com/article/2012/01/31/samsung-apple-idUSL5E8CV1I620120131>.

36. Fromer, *supra* note 9.

in China. Written description rules tends to tether the scope of allowed claims closer to the exemplars actually disclosed in the patent specification than their United States counterpart. As a result of the stricter patent eligibility and written description rules, the scope of Chinese patents claims appear to hew close to the disclosed exemplars in a way that is reminiscent of copyrights, not unlike the design and utility model patents already discussed in the previous section.

1. *Patent Eligibility Rules Disfavor Claim Types Prone to be Broad and Ambiguous*

Article 2 of the Chinese patent law defines invention as “any new technical solution relating to a product, a process or improvement thereof.”³⁷ Under this technical solution requirement, an invention must “employ technical means to solve a technical problem to obtain a technical effect.”³⁸ In addition, Article 25 enumerates specific exclusions from patent eligibility including scientific discoveries, rules and methods for mental activities, and methods for the diagnosis or for the treatment of diseases.³⁹

When evaluating the patent application, examiners will first look to whether the claimed invention solves a technical problem and avoid the ineligible categories based on the description of the technology before searching for prior art. Pure business method patents not tied to any computer software or machine will probably fall under the category of unpatentable pure mental activities.⁴⁰ For example, a computer-implemented method for organizing tourist waiting times at busy sightseeing locations will be rejected at this stage notwithstanding the use of a computer system to implement this process. The problem presented here—one directed to the efficient organization of tourists and avoiding congestion—is not a technical problem within the meaning of Article 2(1) and is possibly excluded as rules and methods for mental ac-

37. Patent Law of the People's Republic of China, *supra* note 19, at ch. 1 CHINA PAT. art. 2.

38. See Meng Xianghai, *A Study on Article 2.2 of the PRC Patent Law*, KING & WOOD (June 2010), <http://www.kingandwood.com/article.aspx?id=A-Study-on-Article-22-of-the-PRC-Patent-Law&language=en> (citing *Guidelines for Patent Examination* pt. 2, ch. 1, STATE INTELLECTUAL PROP. OFFICE OF CHINA (2010)).

39. Patent Law of the People's Republic of China, *supra* note 19, at ch. 2 CHINA PAT. art. 25 (1)–(3).

40. Jasper Kwok, *Patentability of Business Method Claims in China and Taiwan*, 85 J. PAT. & TRADEMARK OFF. SOC'Y 434, 438 (2003) (discussing the criteria for patenting business method in China); SIPO, *Patent Protection of New Technologies* (2009) (requiring the business method claims to include hardware and satisfy technical character).

tivities under Article 25(2).⁴¹ Next, if it appears that there is a technical problem and solution in the description, the examiner will proceed to search for prior art. If it appears that the technical problem had been solved in the prior art, the examiner will re-determine the actual problem and solution and re-evaluate whether it is a technical problem and solution under Article 2.

The stricter utility requirement and enumerated exceptions disfavor several claim types such as business method claims or inference-based medical diagnostic claims that are particularly notoriously problematic in the United States.⁴²

Many of these inventions may be rewritten into product patents to avoid a patent eligibility challenge.⁴³ Novel software methods often involve the use of new devices or the novel combination of existing products that are themselves patentable.⁴⁴ Pharmaceutical use claims may be rewritten as Swiss-type product claims.⁴⁵ Because both claim styles describe the same invention, one might criticize the Chinese rule as elevating claim form over claim substance. However, claim form matters in the marketplace: a businessman can point to a physically embodied electronic device or diagnostic kit and ask if it is an infringement to copy the product. It is more challenging to make that determination if the product is protected through a patented manufacturing process and drives up the information cost of determining permissible and impermissible copying.

The net result is that Chinese patent law enhances its notice function by forcing innovators to describe their contribution as a physical embodiment for many valuable innovations that are litigated today.

41. Li Deshan, *The Patentability of Business Methods*, CHINA INTELLECTUAL PROPERTY MAGAZINE (Dec. 2008), <http://www.chinaipmagazine.com/en/journal-show.asp?id=456>; Steve Song & Guowei Liu, *Patent Eligibility of Business Method in China from US Perspective*, 1 CHINA PATS. & TRADEMARKS 54, 56 (2011).

42. BESSEN & MEURER, *supra* note 13, at 131–32, 244–46 (discussing the legal cost of patent litigation and the boundary problem in biotech and software area).

43. See ROBERT MERGES & JOHN DUFFY, PATENT LAW AND POLICY: CASES AND MATERIALS 154 (5th ed.) (“However, process claims can usually be redrafted into machine claims that provide equivalent protection of the intellectual property.”).

44. See *In re Alappat*, 33 F.3d 1526, 1544 (Fed. Cir. 1994) (en banc) (permitting the patentability of electric circuitry elements that embody mathematical operations).

45. Liantao Li & Tina Tai, *Features of Swiss-type Claims*, MANAGING INTELLECTUAL PROPERTY, Apr. 1, 2009 (discussing the use of Swiss-type claim for pharmaceuticals in China that claims a product containing chemicals used to treat a condition instead of the treatment method itself).

2. *Written Description Rule Tethers Claim Scope to Exemplars*

If subject matter eligibility predominantly impacts business method patents, the strict written description rule reins in patent scope in the unpredictable arts. SIPO examiners construe the disclosure narrowly, with the result that the scope of patent claims hews much closer to the literal text of the disclosure than their U.S. counterparts.⁴⁶

In China, a subject matter is considered disclosed only if it is literally recited in the original specification or if it can be directly determined from the original specification and drawings.⁴⁷ In practice, not much can be directly determined from the original specification beyond what was literally recited in the unpredictable arts, and experimental data obtained from one embodiment can only support a claim directed to that embodiment plus a band of equivalents surrounding it.⁴⁸

A comparison of United States and Chinese pharmaceutical patent claims illustrates the tendency of Chinese claim scope to trace actual embodiments and United States patent claims to cut a larger swath of products or processes. A comparison of the Chinese Viagra patent with its United States counterpart illustrates the possible claim scope difference.⁴⁹ The Chinese patent for Viagra® contained a single claim:

Use of -[2-ethoxy-5-(4-methyl-1-piperazinosulfonyl)phenyl]-1-methyl-3-n-propyl-1,6-dihydro-7H-pyrazolo[4,3-d]pyrimidin-7-one or a pharmaceutically acceptable salt thereof, or a pharmaceutical composition containing either entity, for the manufacture of a medicament for the

46. See Masakazu Ichikawa, et al., *Comparative Studies on Patent Examination Practice Among China, United States and Japan*, FIRST JIPA-IPO ASIAN PACIFIC INT'L CONGRESS (Sept. 14–15, 2005), www.ipo.org/AM/CM/ContentDisplay.cfm?ContentFileID=6481 (detailing the difference in claim scope due to different written description and support requirements).

47. Peng Li, Kenneth X. Xie & David T. Yang, *Patent Procurement and Enforcement in China: A Field Guide*, MORRISON & FOERSTER QUARTERLY NEWS 7 (2011); *Guidelines for Patent Examination*, STATE INTELLECTUAL PROP. OFFICE OF CHINA (2010), <http://www.sipo.gov.cn/zlsqzn/sczn2010eng.pdf>.

48. Li, Xie, & Yang, *supra* note 47, at 7.

49. J. Benjamin Bai, Peter J. Wang & Helen Cheng, *What Multinational Companies Need to Know About Patent Invalidation and Patent Litigation in China*, 5 NW. J. TECH. & INTELL. PROP. 449, 451 (2007); Peter K. Yu, *From Pirates to Partners (Episode II): Protecting Intellectual Property in Post-WTO China*, 55 AM. U. L. REV. 901, 985 (2006); Jeffrey A. Andrews, *Pfizer's Viagra Patent and the Promise of Patent Protection in China*, 28 LOY. L.A. INT'L & COMP. L. REV. 1 (2006) (detailing the Viagra dispute); ORCUTT & SHEN, *supra* note 6, at 133–37 (discussing the Viagra case as an example of successful patent protection in China).

curative or prophylactic treatment of erectile dysfunction in a male animal, including man.⁵⁰

Claim 1 is directed to the treatment of male erectile dysfunction using sildenafil, the active ingredient in Viagra. The scope of the claim is narrowly drawn to the use of a single compound, and therefore it would not block a competitor from developing an analogous cGMP PDE-V inhibitor—the family of inhibitors to which sildenafil belongs. Nonetheless, this narrow patent remains a powerful prohibition for preventing others from copying Viagra directly, leadingly to the famous Viagra patent invalidation challenge where twelve generics companies attacked the patent. These challengers attacked this Chinese patent for failing to enable even a narrow claim because the efficacy data supporting the method-of-use patent is based on a single unspecified compound from a group of especially preferred embodiments. Ultimately the Beijing High People's Court upheld the validity, finding that a reasonable person reading the disclosed data for the single compound can infer that the data corresponds to the claimed embodiment.⁵¹

In contrast, the corresponding United States Patent number 6,469,012 initially contained three independent claims and twenty-three dependent claims, of which independent Claim 24 was invalidated during re-examination.⁵² The invalidated Claim 24 independently covered the use of selective cGMP PDE-V inhibitor, which could have covered Cialis® and Levitra®.⁵³ Claim 1 of the '012 patent covers the combinatorial set of 14 variable R groups. Sildenafil, the actual active ingredient in Viagra®, is specifically identified as the third structure in dependent

50. China Patent Application No. 94,192,386, Publication No. 1,124,926 (filed May 13, 1994).

51. Tony Chen, *Beijing High Court Upholds Viagra Patent in China*, JONES DAY 30, 32 (2008), available at http://www.jonesday.com/files/Publication/288b184e-c6ee-44b5-800f-30838f34da54/Presentation/PublicationAttachment/aa464b25-7839-4af9-be34-30d62faf4d56/Beijing_High_Court.pdf.

52. U.S. Patent No. 6,469,012 (filed Mar. 4, 1996) [hereinafter '012 Patent]. The United States Patent and Trademark Office invalidated Claim 24, which was directed to PDE-5 inhibitors, during re-examination, which allowed Cialis and Levitra to enter the marketplace. *Ex parte Pfizer, Inc.*, No. 2009-004106, 2010 WL 532133 (B.P.A.I. Feb. 12, 2010); *Viagra, Cialis, & Levitra: Board of Patent Appeals Affirms Rejection of Pfizer's Broad Patent over ED Treatment*, PATENTLY-O BLOG (Feb. 15, 2010), <http://www.patentlyo.com/patent/2010/02/viagra-cialis-bayer-board-of-patent-appeals-affirms-rejection-of-pfizers-broad-patent-over-ed-treatment.html>.

53. *Viagra, Cialis, & Levitra: Board of Patent Appeals Affirms Rejection of Pfizer's Broad Patent over ED Treatment*, PATENTLY-O, Feb. 15, 2010, available at <http://www.patentlyo.com/patent/2010/02/viagra-cialis-bayer-board-of-patent-appeals-affirms-rejection-of-pfizers-broad-patent-over-ed-treatment.html>.

Claim 10.⁵⁴ Thus, even after reexamination, the '012 patent remains extremely broad. The data for that single compound was sufficient to support a broad claim likely to cover trillions of chemical entities.⁵⁵

For a more recent example in the unpredictable arts, one of the patents for prostate cancer treatment provides a simple demonstration. Javtana® is a combination therapy approved in 2010. The most recent Chinese patent for Javtana® contains one claim directed to a specific preparation of the drug:

An acetone solvate of 4-acetoxy-2 α -benzoyloxy-5 β ,20-epoxy-1-hydroxy-7 β ,10 β -dimethoxy-9-oxotax-11-en-13 α -yl (2R,3S)-3-tert-butoxycarbonylamino-2-hydroxy-3-phenylpropionate comprising 6.5% acetone by weight.⁵⁶

The corresponding United States Patent number 7,241,907 was issued to Aventis on July 10, 2007.⁵⁷ Claim 1 of the '907 patent is identical to the Chinese claim except it does not contain the 6.5% acetone weight limitation.⁵⁸ Based on this omission, the United States claim covers the entire range of acetone content in the solvate while the Chinese claim is limited to an acetone solvate containing 6.5% acetone by weight in accordance with the amount of acetone used in Example 1 of the disclosure.⁵⁹ This single change opens up vast design around opportunities, as imitators may now explore solvates containing acetone in the ranges below 6% or greater than 7% without fear of infringement in China—a possibility foreclosed in the United States.

The actual proof of China's narrower claim scope requires an empirical examination of a statistically significant number of patent claims beyond the scope of this article. Still, these two examples illustrate what vast differences can exist for U.S. and Chinese claims of the same technology for the most valuable class of IP assets a company can possess. Yet at the end of the prosecution process, the Chinese claims remain closely tethered to limitations in the disclosure: the Viagra patent disclosed the experimental data for a single compound and the claim covered a single compound, while the Javtana patent disclosed the experimental data for specific acetone content and the claim reflected that.

54. '012 Patent.

55. '012 Patent, col.5 l.33–43.

56. China Patent No. 100429207.

57. U.S. Patent No. 7,241,907 (filed Sept. 17, 2004).

58. *Id.* (“An acetone solvate of 4-acetoxy-2 α -benzoyloxy-5 β ,20-epoxy-1-hydroxy-7 β ,10 β -dimethoxy-9-oxotax-11-en-13 α -yl (2R,3S)-3-tert-butoxycarbonylamino-2-hydroxy-3-phenylpropionate.”).

59. U.S. Patent No. 7,241,907, Col.3 ln. 1-3.

The same disclosure in the United States patent application did not limit the patentee to the exemplars in the two examples here.

It is not for a lack of trying: The published applications of the *Via-gra* and *Javtana* patents began with broader claims similar to those ultimately granted in the United States. And at least in these two instances, the quality of attorneys or market conditions for these claim differences can probably be ruled out. Pfizer and Aventis are experienced patentees, and their patents cover valuable pharmaceuticals in the marketplace—it stands to reason that they have hired the best patent prosecutors money can buy and their patents reflect the broadest possible scope given the experimental data in the disclosure.

One can quibble whether the problem is the excess of the United States claims beyond the bound of enablement and written description, or the narrowness of the Chinese claims. But the basic point remains that the Chinese claims examined here closely track disclosed embodiments and actual experimental data, and this tendency coincides with the practice of central claiming by exemplar that Fromer and Long associated with modern copyright claims.⁶⁰

C. *Infringement Defenses*

Another area of difference is the number of patent infringement defenses available in China, but not available or much more limited in the United States.⁶¹ Specifically, Chinese patent law recognizes a “non-commercial use” defense, a prior art defense, a broader experimental use defense and a broader prior commercial use defense, in stark contrast to the strict liability regime of the United States.⁶² Although these defenses may surprise a U.S. patent practitioner, they appear much less controversial when viewed through the categories of copyright defenses: (1) the defenses for experimental use and non-commercial use create a zone of fair use; (2) the prior commercial use defense and prior art defense reflect the defense of independent creation, and; (3) the “innocent resel-

60. Fromer, *supra* note 9, at 752; Clarisa Long, *Information Costs in Patent and Copyright*, 90 VA. L. REV. 465, 499–501 (2004) (describing the differences between patent and copyright law with respect to each claiming style).

61. Llewellyn Joseph Gibbons & Xiao Li Wang, *Striking the “Rights” Balance Among Private Incentives and Public Fair Uses in the United States and China*, 7 J. MARSHALL REV. INTELL. PROP. L. 488, 517 (2008) (“Unlike copyright law, U.S. patent law has almost no excused infringement provisions that would limit liability for violating the patent owner’s exclusive rights.”).

62. Mark A. Lemley, *Should Patent Infringement Require Proof of Copying?*, 105 MICH. L. REV. 1525, 1525 (2007).

ler” defense provides damage immunity to good faith retailers akin to the immunity offered to Internet and web service providers under the copyright regime.

1. *Experimental Use and Non-commercial Use as Fair Use*

In the United States, the narrow and almost irrelevant common law experimental use defense is the sole exception in a patent system that otherwise does not recognize statutorily excused infringement.⁶³ The near absence of excused infringement contrasts sharply with the well-established fair use defense in copyright law where non-commercial use or exploratory use enjoys some protection.⁶⁴ Commentators have considered the theoretical pros and cons of inserting a fair use-like exception.⁶⁵ Nonetheless, it is unlikely that the experimental use exception will be the anchor for a robust fair use doctrine in the United States patent law at this time.⁶⁶

Chinese patent law recognizes a broader set of excuses for unauthorized use of patented technology. Comparing the U.S. and Chinese experimental use exceptions under the rubric of fair use, Llewellyn Gibbons and Xiao Li Wang showed that the experimental use defense Chinese patent law provides is more flexible than its United States counterpart.⁶⁷ It is legal to make or use a patented product for research use purposes, regardless of whether “the patented product out of idle scientific curiosity or researching the product for the purposes of developing a new commercial product.”⁶⁸ In other words, the Chinese experimental use exception gives weight to transformative use of a protected product

63. *Madey v. Duke*, 307 F.3d 1351, 1362 (Fed. Cir. 2002) (noting that the experimental exception is narrow, limited, and available only for amusement, to satisfy idle curiosity, or for strictly philosophical inquiry).

64. Rochelle C. Dreyfuss, *Trade Secrets: How Well Should We Be Allowed To Hide Them? The Economic Espionage Act of 1996*, 9 FORDHAM INTELL. PROP. MEDIA & ENT. L.J. 1, 35 (1998) (“To encourage spillover uses and reduce deadweight loss, copyright law relies once again on fair use and patent law recognizes a limited experimental use defense.”).

65. de Larena, *supra* note 10, at 780 (discussing a possible fair use doctrine in patent law); O’Rourke, *supra* note 7 at 1188 (discussing a possible fair use doctrine in patent law); Katherine Strandburg, *Patent Fair Use 2.0*, 1 U.C. IRVINE L. REV. 265 (2011) (discussing a possible fair use doctrine in patent law for emerging technology).

66. Gibbons & Wang, *supra* note 61, at 518 (“Consequently, as it is currently defined, experimental use is unlikely to serve as a basis on which to build “fair use” type defense in patent intensive industries.”).

67. *Id.* at 520–21 (discussing experimental use exception in China); Patent Law of the People’s Republic of China, *supra* note 19, at ch. 8 CHINA PAT. art. 69(4).

68. *Id.*

(borrowing a copyright term) akin to how copyright permits transformative use within the fair use defense.⁶⁹

The *Sankyo v. Beijing Wansheng* case in 2006 and the *Eli Lilly v. Ganli* case in 2007 illustrate the sharp contrast between Chinese and United States practices.⁷⁰ Both cases relate to the making and use of patented drugs during the research and clinical trial by generics drug companies. In both cases, the generic defendants made and used patentee's drugs within the scope of the patent but the patentees were denied relief.⁷¹ The courts relied in part on the experimental use exception to exempt the generics drug companies. Since then, both the United States and China have codified a clinical trial exemption, bringing the United States practice closer to the permissive Chinese practice.⁷² Nonetheless the distinction remains material outside of the clinical trial context.

In addition to the codified experimental use defense exception that Gibbons and Wang examined, Chinese patent law contains a more subtle fair use feature based on non-commercial use. In fact, it is technically not a defense at all but carved out of the definition of infringement. Under the Chinese patent statute, infringement of a patent is defined as its unauthorized exploitation for production or commercial purposes.⁷³ Thus the patentee may on occasion fail to overcome the burden of proving this purposive element such as when a non-profit organization uses a patented technology to clean a polluted river or when a consumer purchases an infringing computer for his own personal use.

What constitutes production or commercial purpose can be vague.⁷⁴ For example, it is unclear whether the use of an infringing security fence to protect a business premise is infringing—the fence is not directly involved with the production or commercial activity but its benefit does inure to the business bottom-line.⁷⁵ The Beijing High People's Court

69. Pierre N. Leval, *Commentary: Toward a Fair Use Standard*, 103 HARV. L. REV. 1105, 1111 (1990) ("I believe the answer to the question of justification turns primarily on whether, and to what extent, the challenged use is transformative.").

70. See YAHONG LI, *IMITATION TO INNOVATION IN CHINA: THE ROLE OF PATENTS IN BIOTECHNOLOGY AND PHARMACEUTICAL INDUSTRIES* 147–48 (2010) (discussing the *Sankyo v. Wansheng* and *Eli Lilly v. Ganli* cases in the context of Chinese Bolar exception).

71. *Id.*

72. See 35 U.S.C. § 271(e)(1); Patent Law of the People's Republic of China, *supra* note 19, at ch. 8 CHINA PAT. art. 69(5).

73. Patent Law of the People's Republic of China, *supra* note 19, at ch. 1 CHINA PAT. art. 11.

74. PEOPLE'S COURT DAILY, http://rmfyb.chinacourt.org/paper/html/2012-02/01/content_39494.htm (in Chinese).

75. *Id.*

previously issued an interpretation limiting this exception to personal consumption, although that interpretation is not binding on courts outside Beijing.⁷⁶ While this gloss has no place in U.S. patent jurisprudence, the purposive element speaks directly to one of the copyright fair use factors that look to the nature of the use and the effect upon the market.

The production or commercial requirement, together with the broader experimental use exception, accords the public more leeway to transformative use, non-commercial use, and *de minimis* use akin to the fair use doctrine.

2. *Prior Art Defense and Prior Use Defense as Proxies for Independent Source*

It has been said that “[p]erhaps the most basic difference between patents and other intellectual property such as trade secrets and copyrights is that independent invention is not a defense to infringement.”⁷⁷ Some commentators have suggested that the patent law should adopt the independent invention defense from copyright law but the United States and Chinese patent law have not embraced this view generally.⁷⁸ The availability of prior art defenses and a broader prior user defense under the Chinese patent law means that certain types of copying are easier to exculpate.

Both the prior art defense and the prior user defense implicate a notion of chronology—that some occurrences prior to the creation of the patent negate the culpability of the accused. The occurrence may be a prior independent invention where the invention is done by the accused in the case of the prior use defense or by a third party in the case of prior art defense.⁷⁹ Under the prior art defense, a defendant can avoid infringement by showing that his accused product or process is identical to

76. BEIJING HIGH PEOPLE'S COURT, SEVERAL QUESTIONS CONCERNING PATENT INFRINGEMENT JUDGMENTS OPINION (TRIAL IMPLEMENTATION), art. 94 (limiting non-production or commercial purpose to personal consumption).

77. Stephen M. Maurer & Suzanne Scotchmer, *The Independent Invention Defence in Intellectual Property*, 69 *ECONOMICA* 535, 535 (2002); see also Cotropia & Lemley, *supra* note 8, at 1421 n.3.

78. See generally Vermont, *supra* note 12 (discussing the possibility of importing the independent creation doctrine into patent law); Maurer & Scotchmer, *supra* note 77.

79. Patent Law of the People's Republic of China, *supra* note 19, at ch. 8 CHINA PAT. arts. 62–69(2) (codifying the prior art and use defense).

a technology available before the application date of the patent.⁸⁰ In the United States, practicing or copying a known pre-existing technology is not a separate defense to infringement.⁸¹ Instead, the defendant must show that either the prior art invalidates the patent or, alternatively, that the patent is possibly valid but not covering the accused technology (because otherwise the patent becomes invalid for having covered a pre-existing technology).⁸² However, this two-prong defense strategy based on the use of prior existing technology is not available in China because trial courts are only authorized to adjudicate infringement and not invalidity issues.⁸³ Instead, a prior art defense is used during an infringement trial to avoid liability in lieu of an attack on validity.

How does the prior art defense relate to copyright and the concept of copying? Doctrinally the prior art defense requires the defendant to show that the accused product or process is “identical or without substantive difference” to the prior technology—the defense does not require a showing of intentional copying of the prior art.⁸⁴ As a practical matter, the defendants most likely to succeed under the prior art defense are those who in fact copied or licensed a pre-existing technology. These prior art copyists need not search high and low for an invalidating prior art *ex post*, and their technology is necessarily “identical or without substantive difference” following the act of imitating the prior art.

If on the other hand, the accused technology did not descent directly from the previously available technology, the challenge of proving

80. *Id.* art. 62 (“During a patent infringement dispute, if the alleged infringer has evidence proving its or his technology or design belongs to the prior art or is a prior design, it will not constitute patent infringement.”).

81. *Tate Access Floors Inc. v. Interface Architectural Res., Inc.*, 279 F.3d 1357 (Fed. Cir. 2002); *Cordance Corp. v. Amazon.com, Inc.*, 658 F.3d 1330 (2011) (rejecting the “practicing the prior art defense”).

82. *Cordance Corp. v. Amazon.com, Inc.*, 658 F.3d at 1337 (“A ‘practicing the prior art’ defense typically refers to the situation where an accused infringer compares the accused infringing behavior to the prior art in an attempt to prove that its conduct is either noninfringing or the patent is invalid as anticipated because the accused conduct is simply ‘practicing the prior art.’”).

83. *Bai & Wang*, *supra* note 49, at 11 (“For example, like Germany, China has a split system, with infringement determined by the courts and invalidity challenges heard by SIPO’s Patent Reexamination Board.”).

84. SUPREME PEOPLE’S COURT OF THE PEOPLE’S REPUBLIC OF CHINA, INTERPRETATION ON SEVERAL ISSUES REGARDING LEGAL APPLICATIONS IN THE ADJUDICATION OF PATENT INFRINGEMENT CASES art. 14 (2010 Judicial Interpretation), (providing that “the prior art defense is met if ‘all the technical characteristics alleged to fall within the scope of protection of a patent right are identical or without substantial differences to corresponding technical characteristics of a prior art technical scheme’”).

identity increases and a validity challenge in SIPO based on the prior art becomes the better defensive strategy. The Chinese prior art defense really stands for an “I copied from a legitimate source” defense and is a procedural tool that brings patent doctrines closer to the commercial reality where the real business judgment and practice is between appropriate and inappropriate copying, as in copyright, and not whether a technology falls under one or another side of an ambiguous claim construction or patent validity rule.⁸⁵

There is another sense that the prior art defense invokes the copyright’s mindset, this time to the benefits of the patent owner. Unlike the invalidity defense that exculpates the accused infringer by destroying the patent, a successful prior art defense exculpates the accused infringer while preserving patent validity. The patent then lives another day to protect the patentee’s unique inventive contribution. The prior art defense can be understood as a carve-out, a way of sacrificing patent scope to dodge possibly invalidating prior art at the periphery of the claim scope after the patent has been granted. In exchange, the protection of essential embodiments at the center of the claim scope survives. This pro-patentee aspect of the prior art defense echoes the tendency to favor concrete protection of the central embodiment—a distinctly copyright-based vision—already discussed in sections I.A and I.B above.

The closely related prior use defense has also been compared to the concept of independent creation in copyright law.⁸⁶ During an earlier iteration of the patent reform bills, Senator Orrin Hatch related prior user rights to independent invention:

These prior user rights are, in reality, a defense to infringement liability for those making or preparing to make commercial use of an invention prior to a patent being issued In some cases, the user has *independently invented* the subject matter in question, in which case it would be inequitable to subject him or her to infringement liability.⁸⁷

Under the 2011 America Invents Act, the prior use defense is available to all technology but its use remains limited by several conditions: the prior use must begin at least one year before the filing date of the patent, the

85. BESSEN & MEURER, *supra* note 13, 56–62 (discussing the claim construction process as indeterminate and unpredictable); David L. Schwartz, *Practice Makes Perfect? An Empirical Study of Claim Construction Reversal Rates in Patent Cases*, 107 MICH. L. REV. 223, 248–49, 259–60 (2008) (noting that 38% of appealed patent cases had at least one wrongly construed term and concluding that “claim construction may be inherently indeterminate”).

86. See, e.g., BESSEN & MEURER, *supra* note 13, at 249.

87. 152 Cong. Rec. 106, 8830–31 (2006) (statement of Sen. Orrin G. Hatch before the United States Senate on introduction of the “Patent Reform Act of 2006”).

prior use must take place in a manufacturing or other commercial process, and the failure to establish this defense may trigger enhanced damages.⁸⁸ In contrast, Article 69(2) of the Chinese patent law delivers a broader prior user right.⁸⁹ The Chinese prior use defense only needs to predate the date of the patent application and not one year before as required under the United States defense; it is not limited to inventions relating to a manufacturing or commercial process, and there is no negative repercussion to a failed assertion of the prior use defense.⁹⁰

Although the prior art and prior use defenses do not amount to a true independent creation defense, together they immunize defendants who can convincingly trace the lineage of the accused technology to technology that was used or published some time before the patent was sought. This is an evidentiary and procedural shortcut for those who in fact did not copy the product (instead of having to prove invalidity) and embody policy concerns akin to an independent creation defense based on the copying of public domain work.

3. *Willful Infringement, Innocent Carrier, and the Culpability of Knowledge*

The third comparison of exculpatory doctrines relates to rules modifying damages based on the mental state of the infringer as related to copying. Lemley identifies the doctrines of willful infringement and indirect infringement as one of the few areas where patent law explicitly considers copying, and in both cases proof of intentional copying (willful infringement) ratchets up liability in the form of punitive damages and attorneys' fees.⁹¹ This liability scheme is consistent with the patent

88. *Leahy-Smith America Invents Act: Section 5. Defense to Infringement Based on Prior Commercial Use*, BITLAW, <http://www.bitlaw.com/source/America-Invents-Act/5.html> (last visited Apr. 11, 2012).

89. Patent Law of the People's Republic of China, *supra* note 19, at ch. 8 CHINA PAT. art. 69(2) ("None of the following shall be deemed an infringement of the patent right: . . . (2) Where before the date of filing the application for patent, any person who has already made the identical product, used the identical process, or made necessary preparation for its making or using, continues to make or use it within the original scope only.").

90. *Id.* (permitting, before the date of application, any person who has already manufactured identical products, used identical methods or has made necessary preparations for the manufacturing use is allowed to continue to produce or use it within the original scope).

91. 35 U.S.C. § 284 (2000); *United States Court of Appeals for the Federal Circuit 20th Anniversary Judicial Conference*, 217 ER.D. 548, 727 (2002) ("Willful infringement findings, have severe consequences, including enhanced damages and attorney fees.") (comments of Professor Donald S. Chisum).

model where the default liability is premised on simple trespass without regard to the level of intent.⁹²

In contrast, the damage scheme in Chinese patent law reverses the order of default culpability. Liability for patent infringement presumes infringement by copying as in the case of copyright infringement. Under Chinese patent law, all damage options are compensatory (lost profits, reasonable royalty, and unjust enrichment).⁹³ Courts cannot impose punitive treble damages based on willful infringement. In this scheme, proof of copying may help judges find infringement but does not increase liability. Thus the Chinese patent law inherently presumes every act of infringement to be in its most culpable form—that of intentional copying.

A Chinese patent infringer may reduce his liability in certain situations by showing unintentional transmission under an innocent carrier defense. Under this defense, an infringer is not liable for past damages if it obtained the infringing product in the normal course of business and without knowledge of the infringement although this accidental infringer must still comply with an injunction to cease its use or sale. This defense is particularly useful for retailers that buy and resell infringing products or for downstream manufacturers that incorporate infringing components without knowledge of the patent. In this way, the mental state based defense accentuates the presumed intention underlying the Chinese patent law, and the absence of that intention corresponds to reduced liability.

At first glance, this innocent carrier defense creates a unique exculpatory rule under the Chinese patent law. In the United States, retailers or downstream manufacturers will be jointly and severally liable even though they did not directly perform the duplication.⁹⁴ On the other hand, this innocent carrier defense has been an accepted feature of the Copyright Act or the DMCA exemption to digital copyrights infringement offered to Internet Service Providers (ISP). ISPs are not liable for hosting pirated contents as long as they did so without knowledge of the

92. *United States v. Palmer*, 128 U.S. 262, 269 (1888) (comparing patent infringement to trespass on land).

93. Patent Law of the People's Republic of China, *supra* note 14, at ch. 7 CHINA PAT. art. 65.

94. *See Shockley v. Arcan, Inc.*, 248 F.3d 1349, 1364 (Fed. Cir. 2001); Bernard Chao, 80 UNIV. CINCINNATI L. REV. 113, 150 ("In 2001, the Federal Circuit classified the importers and resellers of an infringing device as joint tortfeasors and found that they were jointly and severally liable.").

infringement and ceased distributing infringing files upon notification of the violation.⁹⁵

4. *Summary*

The Chinese patent law provides defenses that are broader and in addition to those in United States patent law and instead resemble the structure of various source- or use-based defenses in copyright law. The overall gestalt of the experimental use, non-production use, and non-commercial use exceptions forms a standards-based zone of excused infringement that conjures the fair use defense under the copyright law even if their exact contours do not completely match. The prior art and prior use defenses extend the patent policy against granting exclusivity to previously known technology. The prior art defenses require a showing that the prior technology matches the accused technology: a match that implies a legitimate source of the technology and resonates with the defense of copying from the public domain in copyright. The prior use defense resonates with the independent creation defense in copyright. Both defenses ease the evidentiary and procedural burdens for legitimate copyists. The damage provisions in China presume recompense based on illegal copying and the related innocent carrier defense of the Chinese patent law embody a theory of culpability akin to ISP exemption in the digital copyright infringement context.

D. *Enforcement Structure*

In the area of enforcement, the Chinese tendency to shrink the dialectic distance between patent and copyright manifests in two areas: (1) patents and copyrights share the same enforcement institutions in China; and (2) the limitations on civil discovery and evidence rules disfavor broad assertions of broad patent scope or patent claims that are tied to a system or process, thereby reinforcing the proclivity for concrete, exemplar based protection that is reminiscent of copyright.

1. *Institution Design*

The United States developed several institutions responsible for the enforcement of patents. Civil patent disputes are handled by federal district courts pursuant to their federal jurisdiction.⁹⁶ These cases are later appealed to the Court of Appeals for the Federal Circuit.⁹⁷ Administra-

95. 17 U.S.C. §§ 111(a)(3), 512(c).

96. 28 U.S.C. § 1338.

97. *Id.* § 1295.

tively, border enforcers may seize imports that are counterfeits and piracies, but Customs does not seize imports that infringe patents absent a judicial injunction or an exclusion order from the International Trade Commission. Thus patent disputes at the border must first move through the courts or the International Trade Commission, ostensibly because Customs is not equipped to solve complex infringement disputes on its own.⁹⁸ In the pharmaceutical context, the Food and Drug Administration is required to consider patent status in the process of granting marketing approval to generics drugs under the Hatch-Waxman Act.⁹⁹ However, the FDA does not actually determine validity or infringement. The Hatch-Waxman Act consigns the job of resolving the actual patent disputes to the traditional forum of district courts.¹⁰⁰ These special institutional arrangements gesture to the complexity of a patent dispute involving difficult validity, claim construction and infringement analysis.

In practice, the presence or absence of a specialized patent court feeds back to the relative strength and breadth of the patent jurisprudence. Landes and Posner suggested that a specialized patent court such as the Federal Circuit “is more likely to have a ‘mission’ orientation than a generalist court” and therefore tends to favor patents more than the generalist federal appellate courts and the enlargement of patent rights.¹⁰¹ This institutionalized rarefication of patent law in turn influences the contour of patent doctrines in the United States.¹⁰²

In China, specialized IP courts enhance the protection of IPRs generally without singling out patents as an asset class worthy of special jurisprudence, at least with respect to other IP forms. There are four levels of courts: a single Supreme People’s Court, a High People’s Court for each province, Intermediate People’s Courts at the prefecture level, and thousands of Basic People’s Courts at the local level.¹⁰³ Of these, seventy-six Intermediate People’s Courts are designated to handle patent in-

98. 19 U.S.C. § 1337.

99. 35 U.S.C. § 271(e)(2).

100. 21 U.S.C. §§ 355(c)(3)(C), 355(j)(5)(B)(iii).

101. WILLIAM M. LANDES & RICHARD A. POSNER, *POLITICAL ECONOMY OF INTELLECTUAL PROPERTY LAW*, 26–27 (2004).

102. Damon C. Andrews, *Promoting the Progress: Three Decades of Patent Jurisprudence in the Court of Appeals for the Federal Circuit*, 76 MO. L. REV. 841 (2011) (discussing the impact of the Federal Circuit in various areas of patent law); Ali Mojibi, *An Empirical Study of the Effect of KSR v. Teleflex on the Federal Circuit’s Patent Validity Jurisprudence*, 20 ALB. L.J. SCI. & TECH. 559, 581–582 & fig.1, 586 & fig.4 (2010) (demonstrating the effect of the Federal Circuit on substantive obviousness determination).

103. DOUGLAS CLARK, *PATENT LITIGATION IN CHINA* 16–17 (2011).

fringement trials, indicating some recognition of special challenges associated with administering patent law.¹⁰⁴ The Beijing First Intermediate Court also handles appeals from decisions by SIPO. Notwithstanding these designations, these courts remain primarily generalist courts required to handle other ordinary civil and criminal disputes. Within these designated courts, certain judges form the IP bench that are entrusted with patent, trademark and copyright disputes, and their decisions are appealed through the normal channels without regard to the specific types of IPR at issue.¹⁰⁵ Therefore, while only certain courts are designated to handle patent cases, patent cases receive the same process as copyright and trademark cases within these designated courts. Specialized “patent courts” like the Court of Appeals for the Federal Circuit do not exist despite ongoing effort to promote them.¹⁰⁶

This tendency to place patents on the same footing with copyright and trademark carries over to administrative agencies. For example, Chinese Customs has the power to block the importation of products that infringes counterfeits and pirated goods, as well as imports and exports that infringe patents.¹⁰⁷ However, this is not to say that Chinese Customs is capable of carrying out the full scope of patent infringement analysis in actuality. The *Roadmap for Intellectual Property Protection in China*, a brochure created by the China IPR SME Helpdesk with the consultation of European Patent Office and the Chinese Ministry of Commerce, describes the reality of Chinese Customs’ difficulties with patent enforcement, and to a certain extent copyright law:

In practice, Customs officers can rarely make an initial determination from an inspection as to whether a particular product is infringing, since such a determination is likely to be *beyond their technical expertise*. Regardless of whether the patent or copyright holder has recorded its rights with customs, no notice would ever be given to the right holder as offi-

104. *Id.* at 17, 281–82.

105. NIE JIANQIANG, THE ENFORCEMENT OF INTELLECTUAL PROPERTY RIGHTS IN CHINA 243 (2006) (“China’s courts have established specialized intellectual property divisions to try all intellectual property cases starting from 1993.”); MARTIN K. DIMITROV, PIRACY AND THE STATE 101–03 (2009) (praising the quality of judges sitting on the intellectual property bench).

106. Q & A with Tian Lipu, MANAGING INTELLECTUAL PROPERTY (July 25, 2011), <http://www.managingip.com/TopicListArticle/2872009/Patents-Topics/Q-A-with-Tian-Lipu.html?TopicListId=353> (reporting the view of Tian Lipu, the Commissioner of State Intellectual Property Office, that China may adopt a single patent appeals court).

107. IP Customs Protection Regulations, Art. 7; CLARK, *supra* note 103, at 27.

cials would not be able to become suspicious of a product in order to form their initial determination.¹⁰⁸

Patent infringement cases occupied only three percent of Customs' enforcement load in 2005, indicating an unwillingness to handle such cases due to "the complexity of ascertaining patent infringement."¹⁰⁹

The same engagement and eventual capitulation with patents is true for China's food and drug administration. Since 2002, China has promulgated patent linkage rules akin to the United States' Hatch-Waxman Act.¹¹⁰ But the State Food and Drug Administration (SFDA) actually took it upon itself to assess whether it should approve a generic drug.¹¹¹ So what happens when enforcement agencies try to assess patent issues on their own? As the SFDA indicated during a session of the United States-China Joint Commission on Commerce and Trade (JCCT) discussion:

If the patent is on the compound/composition, it would be relatively easy to determine if there is an infringement. However, if the patent is for a "process," then SFDA feels it cannot and should not be put in the position of needing to make a determination, and will often approve the registration application.¹¹²

It appears that, as a result of placing patent, copyright, and trademark issues in the same forum, courts and agencies do not necessarily maintain as sharp a boundary between the methods of analyzing infringement across these different IPRs. The overarching mindset is one of comparing the physical similarities and differences used for copyright or trademarks instead of engaging in the meticulous claim construction or process-based infringement analysis that is often associated with patent infringement cases in the United States.

108. EU-CHINA PROJECT ON THE PROTECTION OF INTELLECTUAL PROPERTY RIGHTS, ROADMAP FOR INTELLECTUAL PROPERTY PROTECTION IN CHINA (2008) (emphasis added).

109. DIMITROV, *supra* note 105, at 262.

110. See generally, Benjamin P. Liu, *Fighting Poison with Poison? The Chinese Experience with Pharmaceutical Patent Linkage*, 11 J. MARSHALL REV. INTELL. PROP. L. 623, 629 (2012) (discussing the operation of the Chinese patent linkage system).

111. *Id.* at 639.

112. U.S.-CHINA JOINT COMMISSION ON COMMERCE AND TRADE MEDICAL DEVICE AND PHARMACEUTICAL SUBGROUP, PHARMACEUTICAL TASK FORCE MEETING 3-4 (AUG. 30, 2005) [hereinafter TASK FORCE MEETING], available at http://ita.doc.gov/td/health/jcctpharma05_1.pdf.

2. *Limited Discovery Rule*

In China, the party asserting a proposition bears the burden of proving that proposition in trial.¹¹³ Chinese civil litigation rules permit very limited discovery—parties cannot take depositions of factory workers, inspect the accused factory, or compel document production.¹¹⁴ Moreover, judges tend to rely on written evidence over oral testimony.¹¹⁵ These procedural constraints limit whether litigants can prove the proposition they assert during trial. These evidentiary hurdles prove less troubling for product-based patent claims: the patentee can meet the burden of production by obtaining a sample of the infringing product and comparing it to the patent claims to show that the accused product contains every feature described in the patent claim. However, if the patent claim is directed to a process, the patentee is unlikely to obtain the evidence necessary to prove infringement from a willing source outside the infringer's control. Instead, the success of the patentee to prove infringement lies at the mercy of evidence in the defendant's possession. This is already a problem for companies in the United States, and only gets worse in China.¹¹⁶

The 2001 revision of the Chinese Patent Law addressed this asymmetry by codifying the “reverse burden of proof”: when a patentee alleges the infringement of a process patent for manufacturing a new product, the burden of production lies on the defendant to demonstrate the use of a non-infringing process.¹¹⁷ Yet this technical adjustment has proven unwieldy for two reasons.

First, in order to avail itself of this procedural device, the patentee must still prove that the product produced by the accused process is

113. CIVIL PROCEDURE LAW, art. 64 (China).

114. See Samir B. Dahman, *Protecting Your IP Rights in China: An Overview of the Process*, 1 ENTREPRENEURIAL BUS. L.J. 63, 80 (2006); Jeffrey M. Duncan et al., *A Comparison Between the Judicial and Administrative Routes to Enforce Intellectual Property Rights in China*, 7 J. MARSHALL REV. INTELL. PROP. L. 529, 535 (“There is no evidentiary discovery system in China.”).

115. CLARK, *supra*, note 103, at 106 (“Evidence of witnesses is given little weight.”).

116. See BESSEN & MEURER, *supra* note 13, at 125 (“And in general, firms report that they can detect infringement in most products, but not in most processes.”); IAIN M. COCKBURN & REBECCA HENDERSON, SURVEY RESULTS FROM THE 2003 INTELLECUAL PROPERTY OWNERS ASSOCIATION SURVEY ON STRATEGIC MANAGEMENT OF INTELLECTUAL PROPERTY (2003) (noting that 71% of the surveyed IPO members reported that it is straightforward to identify infringement of product patents, but 79% noted that it is not straightforward to identify infringement of process patents).

117. Patent Law of the People's Republic of China, *supra* note 14, at ch. 7 CHINA PAT. art. 61.

identical to the product produced by the patented process.¹¹⁸ The patentee must prevail in what amounts to a mini product infringement suit before the court will reverse the burden of proving process infringement. Second, the emphasis on the newness of the product limits the use of this doctrine to a class of inventions where a process patent is least needed—a new product.¹¹⁹ The patentee is better off obtaining and relying on product-based protection, especially since it must prove that the accused produced an identical product in any event. It should be noted that the same problem also exists for “system” claims that are directed to a specific system operating in a certain way, usually in the telecommunication or business method area. While a system claim is nominally based on a physical thing, it is in reality an organization of physical things in accordance with the operation of a specific process. Therefore, the proof of a system claim infringement relies on access to operations internal to the infringer, which poses the same difficulties as proving process infringement.

A recent opinion by the Chinese Supreme People’s Court illustrates this asymmetry between product and process patents. In *Eli Lilly v. Jiangsu Hansoh Pharmaceutical Co. Ltd.*, the Supreme People’s Court resolved a decade-long pharmaceutical patent dispute in favor of a Chinese generic drug maker.¹²⁰ The case stemmed from Jiangsu Hansoh Pharmaceutical Co. Ltd.’s (江苏豪森药股份有限公司) manufacture and sale of a generic version of Eli Lilly blockbuster cancer drug Gemzar in violation of, *inter alia*, Eli Lilly’s process patent directed to a method for purification and separation of a desirable intermediate (Patent II).¹²¹ The trial judge relied on an expert report from the Jiangsu provincial government and ruled in favor of Hansoh.¹²² On appeal to the SPC, Eli Lilly challenged the credibility of the new test report because the testing agency engaged in *ex officio* contact with Hansoh and failed to make all experts available for cross-examination. Eli Lilly also argued that Hansoh failed to prove the authenticity of the manufacturing process it provided to the experts and that the defendant never met its burden of showing that its process was non-infringing.¹²³

118. CLARK, *supra* note 103, at 122.

119. *Id.*

120. SUP. PEOPLE’S CT. OF CHINA, (Dec. 3, 2010), http://ipr.court.gov.cn/sjdjws/201104/t20110422_141610.html.

121. China Patent No. 95196272.8 (filed Nov. 1, 1995).

122. SUP. PEOPLE’S CT. OF CHINA, *supra* note 120.

123. *Id.*

Eli Lilly lost all of its arguments on appeal because the discovery and evidentiary practice was consistent with Chinese procedural process, and sufficient evidence showed that the patent was not infringed in any event. Interestingly, the Supreme People's Court noted that the burden never reversed in this case.¹²⁴ While Gemzar is undisputedly a new product, the patent is directed to the process of creating an intermediate, and Eli Lilly failed to show that defendant's intermediary product was identical to that produced by Eli Lilly's process. Query how Eli Lilly can obtain a genuine sample of a reaction intermediary from Hansoh to prove identity and reverse the burden of production if the reverse burden is necessary to prove its lack of process information in the first place.

Thus while product and process are equally eligible for patent protection, China's civil procedures seriously disadvantage process patents and system claims. As a result, the Chinese patent system offers much stronger protection for concrete physical products that are publicly available than for processes and systems practiced behind closed doors.

E. Summary

To recap, Chinese patent law exhibits several features traditionally associated with the copyrights paradigm. The prevalence of design and utility model protection, the patent eligibility rules and disclosure rules, and the institutional enforcement capacity favor narrow product based protection. The patent defenses trace the contour of copyright defenses, taking into account considerations of fair use, independent creation and actual copying. Infringement determination tends to depend more on side-by-side comparisons and less on sophisticated construction of claim scope. Together, the Chinese patent law is not so preoccupied with conferring the broad protection of an idea to the winner of a technological race. Instead, it is more focused on the protection of specific physical expressions of that idea from slavish copying.

II. A THEORY OF IP MODALS

The previous sections draw out features of the Chinese patent system that are commonly associated with copyright: the emphasis on physical fixation, a penchant for concrete, product based protection, the corresponding mushrooming of narrow rights, proliferating defenses to navigate the river of innovation around reefs of proliferating rights, and

124. *Id.*

enforcement organs that analyze patent disputes with a proclivity towards a comparison of similarities. However, it does not explain why this is so.

Is the analogy to copyright merely a fortuitous descriptive coincidence, or does it gesture towards a latent causal connection? While it is difficult to imagine a grand architect of the Chinese IP law consciously designing a patent system to resemble that of copyright, perhaps their resemblance emerged from the confluence of several forces that push Chinese patent law towards a copyrights regime: (1) the international preoccupation with unauthorized copying; (2) the domestic need to balance innovation incentive and access to knowledge; (3) the limited resources and experience to implement complex patent rules; and (4) the discursive persuasiveness of an anti-copying regime.

A. *International Pressure*

The post-TRIPS international IP regime is an offshoot of the prevailing trade order and embodies the fears and loathing of the IP rich against unauthorized copying. The imprimatur of anti-copy discourse is clearly visible in TRIPS negotiation and in bilateral IP disputes. The TRIPS Agreement that forms the foundation of the current international IP order was created to combat proliferating global infringement.¹²⁵ China, like many developing countries, initially adopted IP law in order to appease foreign governments and businesses whose primary concern is that of piracy and counterfeiting. Thus the anti-copy discourse lies in the genetic makeup of China's IP law.

Foreign critics of China primarily focused on counterfeiting and piracy, the subjects of trademark and copyright respectively.¹²⁶ However, this discourse to stop unauthorized copying can bleed over into patent law.¹²⁷ The tendency, of copy-based narrative to influence patent law, is clearly visible from the early days of the United States-China bilateral

125. Peter K. Yu, *Currents and Crosscurrents in the International Intellectual Property Regime*, 38 LOY. L.A. L. REV. 323, 356–58 (2004) (noting the desire of developed countries to introduce anti-counterfeiting provisions into the GATT trade agreement, which subsequently became the TRIPS agreement).

126. See DIMITROV, *supra* note 105, at 266. (“[P]atents have been free of both foreign and domestic pressure for enforcement.”); ORCUTT & SHEN, *supra* note 6, at 127–28 (“China’s counterfeiting/piracy problems are primarily trademark and copyright problems, not patent problems.”).

127. DIMITROV, *supra* note 105, at 59–67 (discussing the role of foreign pressure on copyright and trademark issues).

trade-IP conflicts.¹²⁸ Beginning in 1989, China consistently occupied the USTR's annual Special 301 watch list as a result of widespread copyright piracy.¹²⁹ The concern for copyright violations, and the definition of piracy quickly expanded into technology protection, at first through the crossover area of software protection and then quickly into areas of chemical engineering traditionally covered by patent law.¹³⁰ This statement regarding China in the 1991 Special 301 Report provides an early example:

China is our only major trading partner to offer neither product patent protection for pharmaceuticals and other chemicals, nor copyright protection for U.S. works. In addition, trademarks are granted to the first registrant in China, regardless of the original owner. Trade secrets are not adequately protected in China. As a result, piracy of all forms of intellectual property is widespread in China, accounting for significant losses to U.S. industries.¹³¹

From the perspectives of the USTR, all areas of Chinese IP law—including issues of patentable subject matter in chemicals—are conjoined at the hip via the trade discourse of piracy and measured according to the severity of this condition. This is a pattern that will continue and grow more elaborate for the next twenty years, as increasing Chinese manufacturing capability expands its ability to duplicate an ever more sophisticated menu of products. For most of the history of the Special 301 Reports, the USTR made scant reference to Chinese innovation policy even though that is the traditional preoccupation of the patent system. To the extent any innovation policy is mentioned with any detail, the discussion centered on eliminating trade barriers to United States pharmaceutical companies as a means to support pharmaceutical innovation.¹³² The USTR first referenced Chinese innovation policy in

128. *Id.* at 54–55 (discussing the history of the Special 301 trade sanctions).

129. Peter S. Menell, *Economic Implications of State Sovereign Immunity from Infringement of Federal Intellectual Property Rights*, 33 *LOY. L.A. L. REV.* 1399, 1457 (2000). See generally Kim Newby, *The Effectiveness of Special 301 in Creating Long Term Copyright Protection for U.S. Companies Overseas*, 21 *SYRACUSE J. INT'L L. & COM.* 29 (1995) (discussing the use of Special 301 actions on China); Yu, *Intellectual Property and Asian Values*, *supra* note 1 (listing China's presence on the 301 watch list).

130. See, e.g., SPECIAL 301 ON INTELLECTUAL PROPERTY FROM THE UNITED STATES TRADE REPRESENTATIVE 7 (1989) (listing “Improved and adequate patent protection for all classes of inventions” as one of three goals).

131. SPECIAL 301 ON INTELLECTUAL PROPERTY FROM THE UNITED STATES TRADE REPRESENTATIVE 2 (1991).

132. SPECIAL 301 ON INTELLECTUAL PROPERTY FROM THE UNITED STATES TRADE REPRESENTATIVE 7 (2009).

2006.¹³³ And it was not until 2010 that the USTR used the term “indigenous innovation” and examined China’s innovation policy in greater detail.¹³⁴ The same tendency to emphasize problems of unauthorized copying can be seen in the JCCT meetings as well as International Trade Commission studies.¹³⁵

To be sure, from the perspectives of non-Chinese governments and businesses the primary objective of Chinese IP protection is to protect their foreign technology from being duplicated in China and to preserve their competitive advantage. They have few reasons to promote IP for the sake of developing innovation capacity in China. Interestingly, even academic writers without an immediate economic stake in the international trade system tend to examine Chinese IP primarily through the lens of IPR theft and copying—a theme reflected in the titles of seminal monographs in the field of Chinese IP law such as: *To Steal a Book is an Elegant Offense* by Professor William Alford, *The Politics of Piracy* by Professor Andrew Mertha, and *Piracy and the State* by Professor Martin Dimitrov. Law review articles discussing piracy and counterfeits are legion.¹³⁶

133. SPECIAL 301 ON INTELLECTUAL PROPERTY FROM THE UNITED STATES TRADE REPRESENTATIVE 17 (2006). The report states:

[T]he United States is alert to U.S. industry concerns about the possibility that laws or policies in a variety of fields might be misused to favor domestic over foreign IPR. Such concerns are especially relevant in light of recently issued Chinese government policies establishing a procurement preference for domestically innovated products, statements and consideration of legal changes regarding such areas as compulsory licensing and the use of IPR in setting standards, and other emerging legal and policy developments that have the potential to affect IPR protection and market access for IPR-bearing goods and services.

Id.

134. SPECIAL 301 ON INTELLECTUAL PROPERTY FROM THE UNITED STATES TRADE REPRESENTATIVE 19 (2010).

135. *U.S.-China Joint Commission on Commerce and Trade*, USTR, <http://www.ustr.gov/about-us/press-office/fact-sheets/2009/october/us-china-joint-commission-commerce-and-trade> (last visited Apr. 12, 2012) (reporting primarily copyright content concerns in the IPR section); USITC Pub. 4199, i (2010) (“This is the first of two reports requested by the U.S. Senate Committee on Finance (Committee) on the effects of IPR infringement and indigenous innovation policies in China on U.S. jobs and the U.S. economy.”).

136. See, e.g., Ralph Oman, *Copyright Piracy in China*, 5 J. MARSHALL REV. INTELL. PROP. L. 583 (2006); Yu, *From Pirates To Partners supra* note 49. A search by the author in the Westlaw database for “pirate” or “piracy” and “China” or “Chinese” returned 46 articles and comments on the topic.

These non-Chinese perspectives have had a profound impact on the historical evolution of Chinese patent law, detailed in these articles and book-length treatments.¹³⁷ A summary will suffice here. In 1992, China faced threats of trade sanctions from the USTR for failing to curb rampant copying of IP owned by United States interests.¹³⁸ In response, the Chinese government agreed to a 1992 Memorandum of Understanding that led to its membership in the Berne Convention for the Protection of Literary and Artistic Works and the Geneva Phonograms Convention, as well as the expansion of its patent law to protect pharmaceuticals.¹³⁹ Later, following another round of negotiation, the United States and China entered into the 1995 Agreement Regarding Intellectual Property Rights, which gave rise to the State Council Working Conference on Intellectual Property Rights.¹⁴⁰ A later patent law revision in 2001 came about as part of China's effort to join the World Trade Organization. It has been noted that the amendments in 1992 and 2001 were adopted to be "as familiar as possible to that of foreign investors" in order to attract foreign investments.¹⁴¹

Complaints of foreign IP owners primarily focused on unauthorized copying, be it movie piracy or industrial reproduction. This foreign pressure prominently shaped and continues to shape Chinese patent law. It is no surprise that Chinese patent law should become preoccupied with IPR theft and copying.

B. Domestic Needs

Although IPR protection in China initially arose in response to charges of IPR theft, the government has turned the focus on IPR inward to address domestic needs.¹⁴² To be certain, unauthorized copying is more rampant in China than in the United States and Chinese piracy undermines Chinese rights owners to an even greater extent than foreign

137. See generally ALFORD, *supra* note 18, at 30–55 (reviewing historical foreign pressure against Chinese copyright piracy); ANDREW MERTHA, *THE POLITICS OF PIRACY 3* (2005) (identifying the guiding question of the book as: "What has been the impact of external pressure on China's policymaking and implantation processes?").

138. ALFORD, *supra* note 18.

139. *Id.*

140. Agreement Regarding Intellectual Property Rights, Feb. 26, 1995, U.S.–P.R.C., 34 I.L.M. 881 (1995).

141. EU-CHINA PROJECT ON THE PROTECTION OF INTELLECTUAL PROP. RIGHTS, *supra* note 4, at 1.

142. *Id.* at 50 (recognizing the third revision of the patent law as a way of enhancing China's innovation capacity and economic and social development).

rights owners.¹⁴³ The characteristics of Chinese patent law—its emphasis on physical fixation and embodiments, its myriad defenses, and its reliance on similarity tests—is every bit the product of China’s own social, economic and technological needs.

Justin Lin, the Chief Economist and the Vice President of the World Bank, attributes the rise, fall and re-rise of the Chinese civilization to the relative technological developments between the West and China.¹⁴⁴ For developing countries like China, he recommends a strategy of “comparative advantage following,” where, instead of investing in capital-intensive heavy industry or costly research and development sectors, China should operate according to its comparative advantage of cheap labor and gradually improve its technology base instead of pursuing capital intensive technology upgrades. Thus Chinese innovation tends to take the form of incremental and cumulative inventions.¹⁴⁵

This model of innovation, according to Peter Yu, corresponds to the prevalence of design and utility model patents.¹⁴⁶ Yet this congruence goes beyond the specifics of design and utility models and dovetails nicely with the broader notion of technology protection via the copyright paradigm where concrete claims based on exemplars is sufficient to protect specific incremental improvements against a copyist while their narrow scope and defenses leave ample room for competitors to invent around, creating a spillover effect.

The mode of patent law may also reflect the nature of infringements in the relevant territory. As Peter Yu, and William Hennessey have noted in their contributions to this symposium volume, pervasive unauthorized copying in China has recently taken on the label of “*Shanzhai* culture,” a reference to mountain bandit hideouts of yore and the accompanying morally ambiguous Robinhoodism.¹⁴⁷ In contrast, copying is “rare” in United States patent disputes.¹⁴⁸ Infringements frequently arise out of independent creation as companies at the forefront of their

143. DIMITROV, *supra* note 105, at 67–68 (noting the importance of domestic media and IPR interest group because “[t]he government is ultimately more concerned about domestic audiences than about the wishes of foreign governments”).

144. JUSTIN LIN, *DEMYSIFYING THE CHINESE ECONOMY*, 124–51 (2011) (discussing “comparative advantage following”).

145. *See* Yu, *Intellectual Property Law and Asian Values*, *supra* note 1.

146. *See id.*

147. *See* William Hennessey, *Deconstructing Shanzhai—China’s Copycat Counterculture: Catch Me If You Can*, 34 *CAMPBELL L. REV.* 609 (2012); Peter K. Yu, *The Rise and Decline of the Intellectual Property Powers*, 34 *CAMPBELL L. REV.* 525 (2012).

148. Cotropia & Lemley, *supra* note 8, at 1457.

fields vie for the next breakthrough technology.¹⁴⁹ The preoccupations of the Chinese patent system with the duplication of specific embodiments and the United States patent system with the breadth of coverage are entirely consistent with the different patterns of patent disputes and levels of technological development.

Chinese judicial guidelines give official expression to these sentiments. For example, the Chinese Supreme People's Court (the SPC) recently issued judicial guidelines for IP infringement adjudication titled *Opinion on Several Issues Relating to Sufficient Utilization of IP Adjudication to Foster Development and Prosperity of Socialist Culture and to Promote Autonomous and Coordinated Economic Development*.¹⁵⁰ The guideline urges courts to balance between claim scope and socio-economic condition.¹⁵¹ Pioneering invention involving a high degree of innovation, research and development investment or contribution to economic growth should receive broader protection and more liberal application of the doctrine of equivalents. Incremental inventions, on the other hand, should receive narrower protection.¹⁵² The SPC also endorsed the "principle of balanced construction" (折衷解释原则), a doctrine of claim construction first promulgated by the High People Court of Beijing 10 years ago.¹⁵³ Under the principle of balanced construction, courts should avoid constructing claims based purely on peripheral claiming according to the text of the claims or central claiming of the heart of the invention.¹⁵⁴ Instead, courts should balance these two extremes when interpreting the claim scope.¹⁵⁵ Since modern patent claims generally follow

149. See *id.* at 1425–26.

150. Youguan Yu Dao Fu Si Te De IP Cai Jue De Zugou Shiyong Xiangguan De Ruogan Wenti De Jianjie Fazhan He Shehuizhuyi Wenhua De Fanrong He Cujin Zizhi He Xietiao Jingji Fazhan (有关与到非专利的IP 裁决的足够使用相关的若干问题的见解发展和社会主义文化的繁荣和促进自治和办经济) [Opinion on Several Issues Relating to Sufficient Utilization of IP Adjudication to Foster Development and Prosperity of Socialist Culture and to Promote Autonomous and Coordinated Economic Development], 2011 Sup. People's Ct. Gaz. (Sup. People's Ct. 2011) (China); see also Benjamin Bai & Helen Cheng, *Chinese Supreme Court Brings About Sea Change for Patent Litigation in China*, ALLEN & OVERY (Feb. 13, 2012), <http://www.allenoverly.com/AOWEB/Knowledge/Editorial.aspx?contentTypeID=1&contentSubTypeID=7944&itemID=65464&prefLangID=410>.

151. See Bai & Cheng, *supra* note 150.

152. See *id.*

153. You Guan Ruo Gan Wen Ti De Zhuan Li Qin Fan Jian Jie (有关若干问题的专利侵权见解) [Patent Infringement Opinions on Several Issues], 2001 Beijing Sup. People's Ct. 229 (Beijing Higher People's Court Sept. 29, 2001), available at http://www.sipo.gov.cn/zcfg/flfg/zl/dfs/wj/200804/t20080403_369126.html.

154. See *id.* at ¶ 6.

155. See *id.*

the principle of peripheral claiming, the explicit blending of peripheral and central claiming tendencies drives Chinese patent claims toward exemplars and embodiments.

The Chinese Viagra patent illustrates the relationship between claim scope and spillover effect nicely. Although Pfizer identified the use of cGMP PDE-5 inhibitors to treat male erectile dysfunction, its Chinese patent aimed at the eventual commercial embodiment only. Once the general inventive insight is allowed to enter the public domain, it becomes the building block for future improvements. Firms in China are then allowed to build on the research and development of others and harvest previously uncommercialized possibilities. The disparate impact of the copyright paradigm on groundbreaking versus incremental innovations in turn translates into a disproportional impact on foreign patent fillers, since multinational corporations tends to have more cutting edge innovations according to their comparative advantage. The practical reality is that foreign companies are less likely to seek a Chinese patent for minor improvements.¹⁵⁶

One may take China to task for the shrewd practice of granting narrow patents or recognizing extensive defenses, but this model of innovation commands legal, historical and economic legitimacy. Legally, China's patent law complies with its obligation under the primary international IP treaty framework embodied in the TRIPS Agreement.¹⁵⁷ The law does not discriminate foreign companies on its face and therefore does not run afoul the principle of national treatment under the WTO rules.¹⁵⁸ With respect to specific features of the copyright paradigm examined here, the substantive patent requirements of TRIPS accepts the existence of design and utility model patents, the description requirement, limitation on patentable subject matters, and variations in the test of infringements and defense.¹⁵⁹

Historically, the copyright paradigm seems no worse than the development path adopted by the United States itself. In its early days, the United States patent system relied on a system of claiming by embodiments, and working models were a required part of the patent applica-

156. This tendency is consistent with the well-documented patent filing pattern of foreign companies in China, which concentrates almost exclusively in invention patents to the exclusion of design and utility model patents.

157. 2011 REPORT TO CONGRESS, *supra* note 14.

158. See Agreement on Trade-Related Aspects of Intellectual Property Rights, art. 3, para. 1, Apr. 15, 1994, Marrakesh Agreement Establishing the World Trade Organization, Annex 1C, 1869 U.N.T.S. 299 (1994)

159. See *id.* at art. 27-34, 1869 U.N.T.S. 299.

tion until 1870.¹⁶⁰ The United States also offered more defenses in the past, including a broad prior user defense and the judicial attitude disfavoring “paper patents” that were never turned into a commercially viable embodiment.¹⁶¹ As far as discriminatory practices were concerned, foreigners could not obtain patents in the United States until 1836, and even then they were charged application fees that are ten times or more expansive than the United States citizens.¹⁶²

In fact, the copyright paradigm is substantially more equitable than the United States approach to free ride on the back of the British industrial revolution outright. It at least ensures that the innovator receives the economic benefit of the commercial embodiment and helps extend the first mover advantage. The Chinese Viagra patent, despite its narrow claim scope to a single active ingredient, successfully stopped copying by a group of twelve generic pharmaceutical manufacturing companies.¹⁶³ To the extent others are trying to invent around it, this is no different from the attempts by other multinational pharmaceutical companies that are stepping around Pfizer’s patent with me-too drugs drawn from the same chemical family as sildenafil—Cialis® from Eli Lilly and Levitra® from Bayer.¹⁶⁴

Third, it is possible that the problem actually lays with the United States patent law, the poster child for the patent paradigm. In recent years the United States patent system has come under attack for losing

160. Act of July 8, 1870, ch. 230, § 26, 16 Stat. 198, 201 (requiring only a written description of the invention or discovery). For a general discussion of the history of working embodiments, see Douglas R. Nemeck & Emily J. Zelenock, *Rethinking the Role of the Written Description Requirement in Claim Construction: Whatever Happened to “Possession is Nine-Tenths of the Law?”* 8 MINN. J.L. SCI. & TECH. 357, 365–70 (2007).

161. Dayton R. Stemple Jr., *Nonuser or Patent Patents*, 34 J. PAT. OFF. SOC’Y 23 (1952) (discussing “paper patents”); THE UNITED STATES PATENT AND TRADEMARK OFFICE, REPORT ON THE PRIOR USER RIGHTS DEFENSE, 5–6 (2012) (discussing historical precedents of prior user rights defense in the United States patent law).

162. Act of July 4, 1836, ch. 357, § 9, 5 Stat. 117, 121. See generally Llewellyn Gibbons, *Do as I Say (Not as I Did): Putative Intellectual Property Lessons for Emerging Economies from the Not So Long Past of the Developed Nations*, 64 SMU L. REV. 923, 932 (2011) (discussing historical structural barriers of the U.S. patent law to favor domestic applicants).

163. See Andrews, *supra* note 49, 10–11; Timothy Roe, *Pfizer Emerges Victorious in China Viagra Patent Battle*, SEEKING ALPHA (Nov. 05, 2007), <http://seekingalpha.com/article/52698-pfizer-emerges-victorious-in-china-viagra-patent-battle>.

164. Li, *supra* note 70, at 54 (characterizing Cialis and Levitra as “me too” drugs of Viagra).

its proper economic mooring.¹⁶⁵ The standard of patent eligible subject matter is in a flux and culminated in Supreme Court decisions that reined in eligible matters by invalidating a risk hedging method in *Bilski v. Kappos* and medical diagnostic method in *Mayo v. Prometheus*.¹⁶⁶ Critics charge that the scope of patents is too amorphous, turning the claim construction process into a haphazard guessing game.¹⁶⁷ The discovery process for ascertaining infringement is costly and difficult.¹⁶⁸ Biotech, business methods and process patents especially demand high transaction cost during patent enforcement and allow patent owners to seek nuisance value settlement.¹⁶⁹ The lax disclosure requirements where a single exemplar enables a broad patent scope allow claims to cover after-arising technology and stifle technological progress.¹⁷⁰ Given the excess of the United States patent system, it is reasonable that China would demand more robust boundaries for intangible property rights in the form of higher disclosure and subject matter requirements and offer more immunity for defendants who go about their business without intent to infringe.

C. Institutional Limitations

For another pragmatic reason to adopt a copyright approach to patent law, the embodiment based claim and similarity based infringement test better matches China's administrative capacity and institutional weakness. Patent administration requires the highly technical and unpredictable process of constructing patent claims, followed by an equally technical process of assessing whether a product falls within the claim

165. Several book length critiques of the patent system emerged in recent years. See, e.g., BESSEN & MEURER, *supra* note 13; DAN L. BURK & MARK A. LEMLEY, *THE PATENT CRISIS AND HOW THE COURTS CAN SOLVE IT* (2009); ADAM B. JAFFE & JOSH LERNER, *INNOVATION AND ITS DISCONTENTS: HOW OUR BROKEN PATENT SYSTEM IS ENDANGERING INNOVATION AND PROGRESS, AND WHAT TO DO ABOUT IT* (2012).

166. *Bilski v. Kappos*, 130 S. Ct. 3218 (2010); *Mayo Collaborative Servs. v. Prometheus Labs., Inc.*, 132 S. Ct. 1289 (2012).

167. Schwartz, *supra* note 85, at 248–49, 259–60.

168. The American Intellectual Property Law Association (AIPLA) estimates the average cost of completing discovery to be \$3.6 million for a patent dispute where the amount of controversy is over \$25 million. See AIPLA, *REPORT OF THE ECONOMIC SURVEY*, tbl Q42e (2011).

169. BESSEN & MEURER, *supra* note 13, at 131–32, 244–46 (discussing the legal cost of patent litigation and the boundary problem in biotech and software area).

170. Christopher A. Cotropia, "After-Arising" Technologies and Tailoring Patent Scope, 61 N.Y.U. ANN. SURV. AM. L. 151 (2005), available at http://www.law.nyu.edu/ecm_dl/v1/groups/public/@nyu_law_website__journals__annual__survey_of_american_law/documents/documents/ecm_pro_064628.pdf.

scope. Institutions in developing countries simply are not equipped to handle this high level of abstraction required to draw a fixed property boundary from claim language. In contrast, copyright administration is perceived to be simpler to administer. Putting aside the intricacy of copyright defenses, copyright protection exists as soon as the work becomes fixed in tangible form, and the primary basis of enforcement is an inference of copying drawn from a comparison of similarities between two works.

Administrative capacity can explain several strains of copyright tendencies in Chinese patent law observed in the previous Section. First, it manifests in the petty patent context. Despite the charge of being less innovative “junk patents,” practitioners note that “the straightforward nature of the utility model patent makes it easier to comprehend and, as a result, easier to assert in certain venues of China.”¹⁷¹ The “straightforward nature” likely refers to the simpler and physically fixed patent scope. Second, it is consistent with the product-centric tendency to default towards the copyright paradigm as a result of limited civil discovery tools. This is also an explanation for the words of the State Food and Drug Administration bureaucrats who are much more comfortable analyzing accused compounds instead of processes.¹⁷² Ditto the Customs agent.¹⁷³ Interestingly, the United States has been content to let Customs address patent issues in China even though U.S. domestic law requires its own patent disputes to proceed through a judicial or quasi-judicial process. In any event, the unauthorized copying of a patented product is a lesser-and-included offense of patent infringement, where the product itself acts as a fallback guide of claim scope and a map of claimed elements for the purpose of infringement analysis.

China’s nascent legal culture provides an even more important reason for adopting a copyright-based approach. Critics have often noted concerns of local protectionism, corruption and the lack of judicial independence as potential impediments to the implementation of IPR rules in China.¹⁷⁴ The classic patent claim construction and infringement analysis is highly subjective and susceptible to willful misinterpretation by a judge hostile to the patent. As a result, a broad patent claim may be

171. Li, Xie & Yang, *supra* note 47.

172. See *supra* note 112 and accompanying text.

173. See *supra* note 108 and accompanying text.

174. CLARK, *supra* note 103, at 4–5; T. Bender, *How to Cope with China’s (Alleged) Failure to Implement the TRIPS Obligations on Enforcement*, 9 J. WORLD INTELL. PROPERTY 230, 235 (2006) (declaring a “very serious problem is the often incompetent and corrupt judiciary” as a major impediment to IP enforcement in China).

interpreted away from infringement, more easily stretch to cover invalidating prior arts, and more likely to fail the written description standard.¹⁷⁵ Where the patent protection is unequivocal on its face, judges and bureaucracies are more likely to enforce the patent correctly. Clear legal entitlement also increases the cost of subterfuge. A corrupt decision-maker would have to think twice before rendering a decision that appears clearly contrary to law. A neutral decision-maker can better withstand extra-legal influences when the potential outcome is clear.

Viewed in this light, those patentees who lament the narrow scope of a Chinese patent may be missing the mark. Given the youth of patent law and the limited capacity of China's legal institution, narrow patents rooted in physical embodiments and exemplars have a greater chance of being enforced and are therefore more valuable than a broad but malleable patent.

D. *Discursive Coherence*

Another appealing feature of the copyright paradigm is its discursive coherence and normative palatability. While the concerns of heading off international criticism, promoting domestic industry, and acknowledging institutional limitations reflect important socio-economic strain, these utilitarian concerns need not correspond to a movement towards the copyright paradigm. At this time, China possesses sufficient economic strength to resist foreign demands.¹⁷⁶ Foreign investments are not likely to leave China even with its IP enforcement problems, thereby limiting the effect of foreign pressure.¹⁷⁷ Courts can promote the domes-

175. See Karen Halverson, *China's WTO Accession: Economic, Legal and Political Implications*, 27 B.C. INT'L & COMP. L. REV. 319, 353 (2004) (connecting broad, discretionary legal standard with susceptibility to "a range of extralegal factors, including the political influence of the CCP, corruption, and the traditional importance in Chinese culture of personal relationships (*guanxi*)").

176. See Joseph Fan, et al, *Institutions and Foreign Direct Investment: China versus the Rest of the World*, 37 World Development 852 (2009) (noting China as the recipient of the most foreign direct investment in the world and the limited impact of weak IP regime in China on foreign direct investment given other country factors such as population size and demographics).

177. See, e.g., Eliza Strickland, *A Test Case for Intellectual Property in China*, IEEE SPECTRUM (March 2012), <http://spectrum.ieee.org/green-tech/wind/a-test-case-for-intellectual-property-in-china>. Despite the potential loss of IP to Chinese infringement, the CEO of an American wind power equipment company AMSC opined that the company cannot afford to withdraw from China: "It is an economic reality that we must do business in China, and I believe we can do it securely and profitably." *Id.*; see also 2010 Shanghai IPR Roundtable—Candid Commentary From Industry ¶ 13, WIKILEAKS, <http://wikileaks.org/cable/2010/02/10SHANGHAI53.html> (last visited June 18, 2012).

tic industry in an *ad hoc* and protectionist fashion, of which China has frequently been accused.¹⁷⁸

IP paradigms reflect narratives that justify the existence of their respective law, which in turn informs the contour of the doctrines.¹⁷⁹ Some notions, like Locke's concept of morale desert or utilitarian-based exclusivity to avoid free-riding, apply to patents and copyrights with equal force. Others have greater relevance to the patent paradigm than copyright paradigm. Edmund Kitch's prospect theory envisions the patent system as a tool that enables a technology pioneer to concentrate and fence off the research agenda against followers.¹⁸⁰ This in turn encourages the initial developer to efficiently and cost-effectively develop and exploit a technological space while avoiding economic rent dissipation.¹⁸¹ Henry Smith attributes the differences between copyright and patent to the relative information cost of delineating and policing different uses of that IPR.¹⁸²

The patent paradigm presupposes the acceptance of the idea that the first creator should exercise exclusive dominion over a technological space. In comparison, the copyright paradigm presupposes the acceptance of a more modest norm: the idea that one should not copy the work of another. The copynorm is a lesser-included norm of the patent norm, the primary difference being that the discursive power of the copyright narrative stops at the edge of independent creation.

When it comes to IPR protection in China and developing countries, commentators regularly attribute its success and failings to the distance between contemporary legal regime and social norms.¹⁸³ The close-

("Notably, none of the industry participants indicated they would be leaving the China market despite their ongoing IPR problems.").

178. DIMITROV, *supra* note 105, at 96 ("Most scholars take a dim view of Chinese legal reform, focusing on the numerous obstacles facing the courts: low professionalism, local protectionism, and lack of independence from the Communist Party.").

179. Justin Hughes, *The Philosophy of Intellectual Property*, 77 *GEO. L.J.* 287 (1988); Tom G. Palmer, *Are Patents and Copyrights Morally Justified? The Philosophy of Property Rights and Ideal Objects*, 13 *HARV. J.L. & PUB. POL'Y* 817 (1990).

180. See generally Edmund W. Kitch, *The Nature and Function of the Patent System*, 20 *J.L. & ECON.* 265 (1977).

181. *Id.*; John F. Duffy, *Rethinking the Prospect Theory of Patents*, 71 *U. CHI. L. REV.* 439 (2004).

182. Henry E. Smith, *Intellectual Property As Property: Delineating Entitlements in Information*, 116 *YALE L.J.* 1742, 1807 (2007) (comparing the claiming styles of copyrights and patents).

183. Chen, Chun-Hsien, *Explaining Different Enforcement Rates of Intellectual Property Protection in the United States, Taiwan, and People's Republic of China*, 10 *TULANE J. OF TECH. & INT'L PROP.* 211, 254-55 (2007) (attributing weak IP protection to low levels of

er a legal regime aligns with social norms the more traction it has. What is less appreciated is the different level of norm acceptance required for copyrights and patents in societies with a limited appreciation for intangible property. All things being equal, one must first accept that it is wrong to copy before he can accept that the first winner takes all (more so if he is rarely the first winner). This is true whether the acceptance is based on deontological or utilitarian grounds, and whether the subject is creative expression or industrial innovation.

China has now accepted the copynorm discourse against free-riding copies but rejects the winner-takes-all patent norm. Whether or not stealing a book was ever elegant in China, it is now a recognized offense even by those who practice it.¹⁸⁴ Today the self-imposed *shanzhai* (mountain bandit) label for unauthorized improvers acknowledges its own illegality while seeking justification through the language of an alternative ethos and social justice.¹⁸⁵ For another point of comparison, in mid-2011 the IPR commitment of the Chinese government and CSR Corporation Limited, the State-owned train manufacturer, came under attack for supposedly misappropriating high speed rail technology from foreign rolling stock industry.¹⁸⁶ The CSR deputy general manager responded that Chinese trains embody substantial improvements and is not a mere copy of the original foreign models.¹⁸⁷ While the manager appears to underappreciate the nuance of patent law that an improvement may still infringe, his mistaken legal understanding reveals a con-

IP awareness); Peter K. Yu, *International Enclosure, the Regime Complex, and Intellectual Property Schizophrenia*, 2007 MICH. ST. L. REV. 1, 21 (stressing the importance of “enabling environment for effective intellectual property protection.”).

184. See generally ALFORD, *supra* note 18, at 9–29 (reviewing the historically permissive attitude China displayed towards copying). But see Wei Shi, *Cultural Perplexity in Intellectual Property: Is Stealing a Book an Elegant Offense?*, 32 N.C. J. INT’L L. & COM. REG. 1, 6–7 (2006) (rejecting the historical and cultural explanation to IPR infraction in China).

185. Hennessey, *supra* note 147, at 634 (“‘Outlaws’ in the *shanzhai* counterculture live by their own internal ethos and according to mutually acknowledged rules, albeit ‘outside the law.’”).

186. Brian Spegele, *Train Spat with Japan Heats Up*, CHINA REAL TIME REPORT (July 8, 2011, 7:32 PM), <http://blogs.wsj.com/chinarealtime/2011/07/08/train-spat-with-japan-heats-up/>.

187. See Xin Dingding, *High-speed Technology Eyes US Patents*, CHINADAILY.COM.CU (June 23, 2011, 7:54 AM), http://www.chinadaily.com.cn/cndy/2011-06/23/content_12756524.htm (“Our technologies may originate from foreign countries, but it doesn’t mean that what we have now all belongs to them. We have added our knowledge gained from experiments to the train and made designs to satisfy our needs, so the new train is not theirs anymore.”) (internal quotation marks omitted).

sciousness that slavish copying (and only slavish copying) is wrong in the industry context.

Although the *shanzhai* players and state-owned rolling stock company occupy the two extremes of China's industry ecology, they share a common IP mindset that is anchored to a copynorm—a norm that channels the influence of foreign pressure, domestic technology aspirations, and institutional limitations into a cohesive and coherent normative discourse—which in turn shapes the contour of Chinese patent law and practice.

III. IMPLICATIONS OF A COPYRIGHT-CENTRIC PATENT REGIME

Having arrived at a heuristic theory at the end of our inquiry, this Part reflects upon the implications of China's copyright-centric patent regime. There are three main lessons. First, the discursive framework allows us to better predict the future evolution of China's patent law as well as forming better strategies for protecting patent rights in China. Second, it provides a clearer account of China's patent system as a model for other developing countries, in contrast with the India model. Third, it provides a natural experiment to current policy and doctrinal debates in the patent discipline generally.

A. *Domestic Prognosis*

If the Chinese patent system indeed reflects the strong influence of a copyright system, then two claims exist. The first claim is predictive, that the Chinese patent system will stabilize around its current state without harmonizing with the winner-take-all model that the patent system has come to follow. A discourse against slavish copying has certain coherence and persuasiveness. It represents an equilibrium point along the path from low protection to high protection. Therefore, Chinese patent law will stabilize around this concept for some time. Those who envision a Chinese patent system on a steady march from low protection to high protection will be disappointed. The protection against unauthorized copying will probably grow stronger, but the breadth of protection may remain stagnant. This emerging model echoes Peter Yu's suggestion that China may assume the position of being a "norm maker" as it experiments and domesticates patent law. A copyright-like patent system may be precisely one of these emerging new norms.

The second claim is prescriptive. Non-Chinese patentees will do well to adapt their IPR strategy to the organizing principles of the Chinese patent law, such as describing working embodiments, leveraging

trade secret protection and taking out narrow but fast utility model and design patents. Doing so is likely to be more fruitful than fighting for a broad patent scope.

B. *Development Alternatives*

Scholars of the international patent system and development have long recognized the need of individual countries to adopt an innovation system consistent with the local condition and the Chinese experience offers an interesting variation of the local adaptation process.¹⁸⁸ Developed countries can better afford a high level of protection while developing countries can better benefit from a low level of protection. As international trade increases, local preferences create considerable friction among countries, as we have seen in the debate regarding the generic pharmaceutical industry in India and counterfeit in China. A closer look at the Chinese patent system offers a lesson that it is possible to have a patent system that offers both high and low level of protection at the same time. This proposition may appear nonsensical until we realize that a patent system actually consists of one legal regime nestled in another: one that discourages copy-based free-riding and one that apporions emerging technological fields among pioneers.

The examination of China's patent system is an attempt to separate the two-tiered function of patent law. It demonstrates that even though China is still a developing country, it is possible to recognize and accept the anti-copying strand of patent law and design a system aimed to curtail wasteful duplication of existing technology. This patent law is consistent with the literature on industry development that describes a progression from pure copying to incremental innovation to groundbreaking innovation as a country develops.

A similar path was taken by the Japanese patent system during the 1980s and 1990s, which encouraged narrow claims and actual working examples as a way of promoting domestic companies to invent around

188. Bernard M. Hoekman et al., *Transfer of Technology to Developing Countries: Unilateral and Multilateral Policy Options*, 33 *WORLD DEVELOPMENT*, 1587, 1592 (2005) (acknowledging that "a 'one size fits all' approach to policy is inappropriate" for the design of IP and technology transfer policy); Jean-Eric Aubert, *Promoting Innovation in Developing Countries: A Conceptual Framework*, World Bank Policy Research Working Paper 7 ("Consequently, innovation policy schemes, have to be tailored to countries' specific characteristics in line with the recognized fact that 'one size does not fit all,' . . .").

these narrow rights and foster “me-too” innovation.¹⁸⁹ It is no surprise that the Chinese patent system was historically connected with that of the Japanese patent system.¹⁹⁰ In contrast, India’s patent system historically resisted even the anti-copying component of patent law. India rejected drug patents to permit its generics industry to flourish from the direct copying of foreign drugs.¹⁹¹ Only in recent years has India recognized drug patents, but a vestige of its copy-friendly patent regime remains for pharmaceutical improvement. India will permit the patenting of improvement drugs only if it can demonstrate better efficacy than its predecessor.¹⁹² As a result, many Indian companies remain free to pursue pharmaceutical derivatives without fear of patent infringement but at a cost to incremental innovation at home.¹⁹³

Ultimately, framing China’s adaptive strategy in terms of a shift towards the copyright paradigm sharpens the menu of policy models for developing countries, as one with coherence beyond the specificity of pharmaceutical innovation, patent scope or compulsory license issues. Policymakers can explicitly recognize activities to be discouraged (slavish copying) and promoted (incremental innovation) and borrow copyright concepts that are designed to distinguish between these activities.

C. Doctrinal Experimentation

The insight yielded by China’s patent law may also benefit developed countries. In examining harmonizing and diversity trends of global patent law, John Duffy recognized the value of divergent national

189. See Reiko Aoki, Kensuke Kubo, & Hiroko Yamane, *Patent Policy and Public Health in Developing Countries: Lessons from Japan*, WORLD HEALTH ORGANIZATION, May 2006, at 417, available at <http://www.who.int/bulletin/volumes/84/5/417.pdf>.

190. See ALFORD, *supra* note 18, at 69.

191. U.S. International Trade Commission, *The Emergence of India’s Pharmaceutical Industry and Implications for the U.S. Generic Drug Market 2* (2007), available at http://www.usitc.gov/publications/332/working_papers/EC200705A.pdf (discussing India’s earlier IP strategy that enabled the development of its generics industry).

192. See The Patents Act of 1970, No. 39 of 1970, India Code (1970) (“[T]he mere discovery of any new property of new use for a known substance or of the mere use of a known process, machine or apparatus unless such known process results in a new product or employs at least one new reactant”); Kevin E. Noonan, *Indian Supreme Court to Rule Gleevac Patent*, PATENTDOCS (March 12, 2012), <http://www.patentdocs.org/2012/03/indian-supreme-court-to-rule-on-gleevac-patent.html> (discussing the Gleevac litigation involving the application of section 3(d) of the Patents Act of 1970).

193. See Aoki, Kubo, & Yamane, *supra* note 189, at 418.

practices as a way of experimenting with patent law.¹⁹⁴ China now appears to be the proving ground to test some of the latest discussions in the patent community that look to appropriate insights from copyright and exploring potential cross pollination between the two regimes.¹⁹⁵

For example, Bessen and Meurer criticize the current patent system for failing to demarcate a clear property boundary and posit that “[t]he world of movie production and copyright clearance provides a glimpse of what the patent system should aspire to achieve in terms of notice and clearance.”¹⁹⁶ They singled out biotech patents of early-stage innovations and software patents as particularly vague and difficult to enforce patent entitlements because their boundaries are ill-defined.¹⁹⁷ Similarly, Jeanne Fromer concluded her study of intellectual property claims with a proposal to improve the boundaries in patent rights by incorporating copyright claim features such as central claiming by exemplar.¹⁹⁸ As we have seen, Chinese patent law adheres to the “technical solution” test for patent eligible subject matter and the strict disclosure requirement, which reduce the prevalence of business method patents and broad patents in the unpredictable arts. As a further fix, Bessen and Meurer also recommend broader immunity for good-faith infringers in the flavor of copyright defenses, which materializes through the broader prior independent creation defenses in Chinese patent law.¹⁹⁹ If these commentators are right, the Chinese patent system may in fact offer a policy balance that better nurtures innovation and public interest than a winner-takes-all patent paradigm as it exists in the United States.

CONCLUSION

Twenty years ago Jerome Riechman situated non-traditional IPs (industrial designs, mask work, databases and so forth) along a “bipolar structure” stretching from patents at one end to copyrights at the other

194. John Duffy, *Harmony and Diversity in Global Patent Law*, 17 BERKELEY TECH. L.J. 685, 708 (2002).

195. See, e.g., Long, *supra* note 60, at 499–501 (differentiating patent and copyright law based on a theory of claim information); Smith, *supra* note 182, at 1807 (comparing the claiming style of copyright and patent); Fromer, *supra* note 9 (comparing the claiming style of copyright and patent).

196. BESSEN & MEURER, *supra* note 13, at 48.

197. See *id.* at 244–46 (recommending limitation on abstract patents in the biotech and software area).

198. See Fromer, *supra* note 9, at 780–81.

199. See BESSEN & MEURER, *supra* note 13, at 248–52 (urging an expanded prior-user defense in United States patent law).

end.²⁰⁰ Riechman explained their proliferation as a coping mechanism for incentivizing incremental innovation.²⁰¹ The Chinese legal system has been asked to tackle a similar need and now offers the full panoply of hybrid rights that Riechman examined in his article. On top of this, the Chinese patent system is now evolving, consciously or unconsciously, in a way that fundamentally changes the bipolar analytical framework itself.

This Article attempts to capture seemingly disparate movements in different areas of the Chinese patent law, from prosecution to litigation, and from the nature of the entitlement to the nature of the institutions, in order to depict an entire choreography. During this process, the patent pole is moving towards the copyright pole, shrinking the doctrinal distance between these two bodies of creative IP law. Duffy reserved the benefit of experimentation onto the developed countries, cautioning: “It may also be unwise for less-developed nations to undertake risky experiments with their embryonic patent systems, which may not be able to weather a failure.”²⁰² Yet it appears that a developing country like China is more open to broader experimentations. Since its passage in 1984, the Chinese patent law has been amended in regular intervals of eight to nine years in response to the condition of the marketplace.²⁰³ It also appears that the risk of experimentation is higher in the United States, where a slight legal change may have unintended retroactive effects on existing stakeholders. As Judge Moore noted in her concurrence to the *Association for Molecular Pathology v. United States Patent and Trademark Office*:

If I were deciding this case on a blank canvas, I might conclude that an isolated DNA sequence that includes most or all of a gene is not patentable subject matter I believe we must be particularly wary of expanding the judicial exception to patentable subject matter where both settled expectations and extensive property rights are involved.²⁰⁴

In contrast, China’s thirty years young patent system is saddled with fewer “settled expectations and extensive property rights” and allows it

200. See generally Reichman, *supra* note 16.

201. See *id.* at 2444.

202. John Duffy, *supra* note 194, at 708.

203. See, e.g., EU-CHINA PROJECT ON THE PROTECTION OF INTELLECTUAL PROP. RIGHTS, *supra* note 141, at 1-11 (discussing the motivation and history behind the third revision of Chinese patent law in response to existing implementation).

204. *Ass’n for Molecular Pathology v. U.S. Patent and Trademark Office*, 653 F.3d 1329, 1366–67. (Fed. Cir. 2011) (Moore, J., concurring), *vacated sub nom.* *Ass’n for Molecular Pathology v. Myriad Genetics, et al.*, No. 11-725, 2012 WL 986819, at*1 (U.S. Mar. 26, 2012).

to experiment with rules along an alternative path. What is at stake then, perhaps, is an experiment on the viability of an alternative patent system.