Any economically efficient intellectual property rights system must contain a balance between the required creativity and innovation needed to obtain the intellectual property rights and the economic investment needed to obtain that level of creativity. Most intellectual property rights systems are uniform across all industries. However, this results in inefficiencies in certain industries that may need more or less intellectual property rights protection than others. Governments that attempt to correct the inefficiencies can create long-term consequences in the quality or quantity of new creative works. On one hand, granting more intellectual property rights to certain industries may result in spoilage of IP assets. However, curtailing intellectual property rights and excusing fair use may impair economic incentive to create new IP. This is the balancing that both the United States and China must recognize when attempting to correct and adjust their intellectual property systems.

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STRIKING THE "RIGHTS" BALANCE AMONG PRIVATE INCENTIVES AND PUBLIC FAIR USES IN THE UNITED STATES AND CHINA

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INTRODUCTION

The proper valuation of the public domain and fair use is necessary to create an economically efficient intellectual property rights ("IPR") system. The process of perfecting IPR requires a balance between the innovation and creativity supported by granting IPR that directly encourage investment in innovation and creativity, and the innovation and creativity that takes place in the shadow or lacuna of IPR. The issue of the proper balance between IPR and "fair use" is critical both in developed economies and in developing economies. IPR affect the rate of technological growth, and technological growth is the most significant factor in long-term economic growth. Consequently, the proper balance of IPR and exceptions to IPR is of critical importance.

Governments do not establish IPR on an industry-by-industry basis; rather, while an economically efficient intellectual property ("IP") policy requires specific policies tailoring IPR to each industry,3 most IP law is uniform across different

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*** Available at www.jmripl.com.

1 Keith E. Maskus, Intellectual Property Challenges for Developing Countries: An Economic Perspective, 2001 U. ILL. L. REV. 457, 459 (2001) ("The issues involved in analyzing the role of IPRs in promoting economic development and growth are subtle and difficult. Strengthening IPRs may improve growth prospects under some circumstances but offer no improvement, or even discourage development under other circumstances.").


industries. In the case of some industries, increased IPR are necessary to assure optimal investment and the most productive use of IP. This results in inefficiency in other industries, which need a different allocation of IPR in order to insure adequate investment to create new IP. Some industries that may need even higher levels of IP protection, but usually IP policy makers create IP policy based on the needs of industries that require the highest levels of IPR in order to assure adequate investment and innovation. Thus, industries that require lower levels of IPR protection free ride on the coattails of industries that require higher levels of IPR protection and thus obtain an inefficient and unjustified level IPR protection.

In both developed and developing economies, governments face a constant clamor to extend the scope and duration of existing IPR and to create new forms of IPR. Often, there is no clear connection between expanding IPR or withdrawing IP from the public domain to some more general societal benefit (other than the private benefit granted to the IPR owner) or in the case of free trade agreements, access of another country’s markets through trade concessions. Unfortunately because of a lack of reliable data, too often the voice of the “public interest” attempting to demonstrate the value of the intellectual property in the public domain, the value of limited IPR, or the value of excused infringement also known as “fair use” may only feebly and unpersuasively make their arguments to policy makers.

Gifting unnecessary IPR may at first blush appear to be a minor inadvertent, incremental side effect of the IPR system, and one that imposes minimal costs on the economy. Nonetheless, these costs may have long-term consequences in terms of property laws, including the protection of semiconductor chips, of gathered information in the form of databases, industrial designs, and plant varieties).

See Burk & Lemley, supra note 3, at 1634–36 (justifying uniformity because non-uniform patent laws may not be TRIPS compliant, statutes may not be able to prescribe the right rules for each industry, substantial administrative costs may arise, and some inventions fall into more than one industry).


See, e.g., 35 U.S.C. § 156(c) (2006) (providing for an increase in the patent term for the “regulatory review period for the approved product” in the pharmaceutical industry because of possible regulatory delay before the new drug is licensed for sale).

See Burk & Lemley, supra note 3, at 1618 (noting that there is a significant scholarly debate as to whether business method patents require any incentive, much less a patent’s exclusivity period of twenty years). “As many commentators have noted, however, companies have ample incentives to develop business methods even without patent protection . . . . Because new business methods do not generally require substantial investment in R&D, the prospect of even a modest supracompetitive reward will provide sufficient incentive to innovate.” Id.

Depoorter, supra note 3, ¶¶ 6–8.


Throughout this article, unless the context requires another interpretation, the term “fair use” will be used to refer to acts that would otherwise be infringing unless excused by law. The author recognizes that “fair use” is a term of art in both copyright and trademark law, and this use is not consistent with the term “fair use” as understood in different disciplines of intellectual property law.

Cf Pager, supra note 9, at 246 (“WTO negotiations are difficult for consumer advocates and other non-producer interests to monitor, let alone influence.”).
subsequent innovation and long-term economic development. There is no guarantee that an increase in IPR will result in an increase in the quantity or quality of creative works or of innovation. But there is a substantial likelihood that some IPR owners will prevent others from exploiting IP assets that the IPR owner is no longer either willing or able to exploit directly or through a license. This waste or spoilage of IP assets may be caused in many different ways. One example of this waste is the transaction cost of locating the IPR owner, negotiating, and agreeing on license terms that exceed the practical benefit of the license. Many times, the IPR owner's motivation is not one of rational economic self-interest but rather one motivated by ego, ideology, or beliefs. This "loss" of IP is significant because technology is instrumental to economic development. The long-term economic impact of even modest IPR in excess of that which is necessary to provide a fair incentive to invest in the creation of new IP is significant if it impairs the rate of creating new IP and technological innovation. Even if the effect is marginal, as Nobel laureate Robert M. Solow observed in his lecture accepting the Alfred Nobel Prize for economics honoring his work modeling the role of innovation in the economy: "Adding a couple of tenths of a percentage point to the growth rate is an achievement that eventually dwarfs in welfare significance any of the standard goals of economic policy." If creativity and innovation suffer, society loses new works of authorship and new inventions. Unless infringement of the existing IPR under these limited circumstances is legally excused, the intellectual property commons will contain less IP "capital" long term to support future creativity and innovation.

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Generally, the cases [in the United States] reveal that market failure may sometimes justify labeling an infringing use as fair if it is socially desirable and excusing it will not substantially harm the copyright owner's incentives. These market failures generally fall into one of three categories: (i) high transaction costs that frustrate private bargaining; (ii) positive externalities that prevent the infringer from being able to pay the copyright owner's price for a license; and (iii) the failure of any market for the particular use to develop.

Id.
I. THE VALUE-ADDED BY IPR AND ITS EXCEPTIONS

Research into copyright intensive industries (copyright-based industries) may provide data that scholars may use to speculate as to the effect of broader fair use rights in the context of patent intensive industries (patent-based industries). While the copyright incentive model is not a perfect model on which to understand patent intensive industries, the copyright incentive model provides a useful paradigm on which to begin discussing the economic effects of greater fair use rights (excused infringement) from the anecdotal to the factual. Existing research into the economic value that copyright-based industries is highly problematic. One commentator observed that:

Measuring the contribution of copyright faces many methodological difficulties. In the first place, measuring supply is difficult because there is no registration for copyright goods. Demand-side calculations are equally challenging because of the multiple effects a copyright product has on the market at different stages: the creation, production, distribution and consumption of copyrighted goods. At a basic level, the market for such goods is split into two: primary and secondary. The primary market includes all sales of consumer goods, such as books and CDs, while the secondary market consists of the use of these goods in other settings, that is the public performance of sound recordings, films and so on.

Because copyright is not a registered right, surveys tend to focus on creative industries in general and determining those whose wealth creation is dependent on copyright. The usual approach has been to separate the industries into two categories: core and interdependent. Core copyright industries are made up of industries that fundamentally exist to produce copyrighted goods for ultimate consumption by the consumer, as well as industries that exist primarily to distribute copyrighted goods to consumers and/or businesses. The production and distribution functions of these industries are often interdependent, for example in broadcasting and, often, in film production and distribution.

Accordingly, researchers and policymakers should be cautious in relying on this data in the context of copyright based industries much less readily using it to support

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17 Cf. Standing Committee on Copyright and Related Rights, World Intellectual Property Organization, WIPO Guide on Surveying the Economic Contribution of the Copyright-Based Industries ¶ 3 (2003), available at http://www.wipo.int/edocs/mdocs/copyright/en/scrr_10/scrr_10_4.pdf. Although existing research in this field has provided evidence of the contribution of the copyright-based industries to the national economy, that contribution remains largely unstudied, particularly in developing countries and countries in transition. Of the studies done so far differences in methodologies, practices and objectives adopted have made it difficult to compare their results.

Id.

policies relating to industries that rely on a patent law model to provide economic incentives for innovation. Recent research on the value of copyright-based industries usually follows the methodology and recommendations contained in the 2003 WIPO Guide on Surveying the Economic Contribution of the Copyright-Based Industries ("WIPO Survey Guide"). This article draws no conclusion as to the reliability or soundness of the WIPO Survey Guide’s research methodology, other than to assume that by comparing the economic impact of the copyright-based industries and using the identical methodology to determine the value of the copyright fair use-based industries, a reasonable comparison is possible.

While some commentators may be uncomfortable with the staggering estimated $1.3 trillion impact of copyright-based industries their discomfort is magnified by the estimated $4.5 trillion impact of the copyright fair-use based industries in the U.S. economy. The WIPO Survey research methodology has been used in numerous countries. Thus, despite any flaws, the WIPO Survey research methodology is the gold standard and the benchmark on which these discussions take place—at least until a superior alternative becomes available.

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19 WORLD INTELLECTUAL PROPERTY ORGANIZATION, GUIDE ON SURVEYING THE ECONOMIC CONTRIBUTION OF THE COPYRIGHT-BASED INDUSTRIES (2003), available at www.wipo.int/copyright/en/publications/pdf/copyright_pub_893.pdf; see STEPHEN E. SIWEK, COPYRIGHT INDUSTRIES IN THE U.S. ECONOMY: THE 2006 REPORT, PREPARED FOR THE INTERNATIONAL INTELLECTUAL PROPERTY ALLIANCE (IIPA) 1 (2006), available at http://www.iipa.com/pdf/2006_siwek_full.pdf ("For example, studies have been concluded in Singapore, Latvia, Hungary, and Canada . . . . Studies are underway or about to be launched in Malaysia, the People’s Republic of China, Brazil, the Philippines, Mexico, Colombia, Peru, Jamaica, Lebanon, Morocco, Bulgaria, Romania, Croatia, Russia and Ukraine.").

20 See generally Dimiter Gantchev, The WIPO Guide on Surveying the Economic Contribution of the Copyright Industries, 1 REV. OF ECON. RES. ON COPYRIGHT ISSUES 5, 10 (2004) ("[The WIPO Survey Guidelines document] does not discuss issues related to the valuation of copyright, it does not focus on establishing the strict economic impact of copyright legislation, and it will not allow identifying the proportion of counterfeit products circulating on the market.”).

21 SIWEK, supra note 19, at 2.


23 See SIWEK, supra note 19, at 1 (naming the other countries where research has been applied). Some representative examples from national studies of copyright industries using the WIPO Survey methodology: using 2002 data, copyright-based industries accounted for 5.38% of Canada’s GDP, and, using 2001 data, copyright-based industries accounted for 5.7% of Singapore’s GDP. Copyright-Based Industries: Assessing Their Weight, 3 WIPO MAG. 22, 23–24 (2005), available at http://www.wipo.int/wipo_magazine/en/2005/03/article_0012.html [hereinafter Copyright-Based Industries]. Compare this to the United States which reported an estimated 12% of the GDP based on copyright-based industries. Id. Other countries using different methodologies reported the following percentages of their GDP: Argentina 6.6% (1993), Brazil 6.7% (1998), India 5.06% (1995), Mexico 6.7% (1998), and Uruguay 6.0% (1997). INT’L INTELL. PROP. ALLIANCE (IIPA), INITIAL SURVEY OF THE CONTRIBUTION OF THE COPYRIGHT INDUSTRIES TO ECONOMIC DEVELOPMENT 9–10 (2005) [hereinafter INITIAL SURVEY].
A. The Value Added by Copyright-Based Industries

In sum, based on the initial surveys of copyright-based industries using the WIPO Survey guidelines in Canada, Latvia, Singapore, and the United States, the WIPO concluded that copyright-based industries made an economic contribution that was more significant than was suggested by prior research. Copyright-based industries had “a higher overall growth rate than the rest of the economy .... Compared to traditional sectors of the economy, [copyright based industries] both contract and expand more rapidly in response to fluctuations in the economy.” In 2005, this resulted in an estimated $819 billion or 6.56% of the U.S. gross domestic product (“GDP”) from “core” copyright industries, up from the 2004 estimate of 6.48% of the U.S. GDP ($760.5 billion). U.S. “total” copyright industries accounted for an estimated $1.38 trillion or 11.12% of GDP in 2005, up from 11.09% of the U.S. GDP ($1.3 trillion) in 2004. The “core” copyright industries were responsible for 12.96% of the growth achieved in 2005 for the U.S. economy as a whole. The “core” copyright industries employed 5.38 million workers in 2005 (4.03% of U.S. workers), up from 5.34 million workers in 2004 (4.07%). The “total” copyright industries employed 11.3 million workers in 2005 (8.49%), up from 11.2 million workers in 2004 (8.53%). In 2005, estimated foreign sales and exports of the core copyright industries increased to at least $110.8 billion, leading other major industry sectors.

These figures suggest that sound copyright policy has been, and will continue to be, an instrumental element in the continued economic growth of the United States.

The authors regret that they were unable to locate a similar study of the People’s Republic of China (“PRC”). However, of special interest to China copyright scholars are the 2001 estimates for the economies of Hong Kong, SAR that reported 3.8% of GDP, and for Taiwan, China that reported 5.9% of GDP as a result of copyright-based industries. Therefore, a reasonable assumption is that copyright-based industries
play a significant, but as yet unmeasured, role in the economic development of the PRC.

B. The Value Added by Fair Use ("Excused Infringement") Based Industries

Although there had been studies estimating the value of copyright-based industries, it was not until 2007 that the first study on the value of copyright-based fair use industries was released.\(^3\) In 2007, the Computer & Communications Industry Association ("CCIA") published *Fair Use in the U.S. Economy: Economic Contribution of Industries Relying on Fair Use*.\(^4\) Using the copyright based industry research methodology established in the WIPO Survey Guide, the study concluded that fair use-intensive industries were responsible for $4.5 trillion dollars of revenue, 18% of the U.S. economic growth, and nearly one out of every eight American jobs is in an industry that benefits from fair use limitations.\(^5\) Fair use dependent industries grew at a faster pace than the overall economy, were more productive, and were responsible for an estimated $194 billion in exports in 2006.\(^6\)

At first, the fact that the economic significance of fair use-based industries is substantially larger than that of copyright-based industries may appear inherently contradictory. Fair use-based copyright industries are a larger portion of the economy than copyright industries because copyright-based industries are merely a small but significant subset of the fair use-based industries. Copyright-based industries require access to fair use content as inputs to create new intellectual property.\(^7\) From computer programmers, who require access to uncopyrightable

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\(^3\) See ROGERS & SZAMOSSZEGI, supra note 22; see also Xuan-Thao Nguyen, *Collateralizing Intellectual Property*, 42 GA. L. REV. 1, 9-10 (2007) (noting that copyright-based industries such as the music, film, and software industries are growing quickly and dominating global attention).

\(^4\) ROGERS & SZAMOSSZEGI, supra note 22.

\(^5\) Carrier, supra note 13, at 49.

\(^6\) ROGERS & SZAMOSSZEGI, supra note 22, at 6-9.

\(^7\) Id.
programming languages to write the copyrighted computer programs used in the software industry; to writers and directors, who use facts, public domain works, scenes a faire, stock characters, historical events, and other uncopyrightable works in the entertainment industries; to the mundane creators of factual databases that contain de minimis creativity in their selection and organization, copyright-based industries rely on copyright limitations in order to produce economic value. In contrast, fair use-based industries may be do not necessarily require copyright-based IPR in order to provide incentives to create new works and may even exist with an economic incentive model in which the legal protection of exclusivity granted to the creation of new copyrightable works is largely irrelevant. For example, Internet search engines rely on fair use access to copyrighted content to organize content so that it can be searched and used conveniently, but a search engine's sources of revenue are not obtained through copyright-based exclusivity but rather through advertising. In short, many modern business models may or may not depend on copyrighted works as input, but do not rely on the legal protection of copyright to create significant value for their investors.

C. Economic Speculation on Why Fair Use Adds Economic Value to an Economy

New products of the mind, either copyrightable works of authorship or patentable inventions, require preexisting products of the mind as inputs. Laws that decrease the availability of these inputs or that increase their costs may result in creating less IP. Modern Western tradition promotes IP by creating statutory monopolies that are limited in both duration and scope. First, one needs to understand the effects of monopolies, at least at a very basic level, in order to understand the impact of an IP monopoly on the cost of IP “inputs” and long-term creation of IP.

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39 See Sears, Roebuck & Co. v. Stiffel Co., 376 U.S. 225, 229 (1964) (stating that the grant of a patent is intended to encourage invention by rewarding the inventor with a statutory monopoly for a term of years fixed by the patent).
As Graph 1 demonstrates, a monopoly results in higher prices and a smaller quantity of the monopolized items being consumed. This results in a deadweight loss when compared to a free market in the good. Since, IP is non-rivalrous and easily copied, under free market conditions there would be less than an optimal quantity of IP produced absent legal monopoly protection or other incentives. However, while promoting and creating IP, the statutory IPR monopoly model ignores the effects of the deadweight loss of the IP monopoly on economic, technological and social development.

One way to lessen the impact of an IP monopoly's deadweight loss on the economy and encourage even further creation of IP is to create exceptions to the monopoly that minimize the deadweight loss while not affecting the monopoly price

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Graph 1: Marginal Revenue vs. Price—Effects of Monopolies

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41 Id. at 3; see Mark A. Lemley, Property, Intellectual Property, and Free Riding, 85 TEX. L. REV. 1031, 1058-59 (2005). Overbroad IP rights distort markets, create static and dynamic inefficiencies, interfere with the creation of new IP, and promote socially wasteful rent-seeking behavior. Id. Furthermore, the enforcement of IP rights creates administrative costs and may result in overinvestment. Id.
42 Barnett, supra note 40, at 3.
43 See David W. Barnes, A New Economics of Trademarks, 5 NW. J. TECH. & INTELL. PROP. 22, 43 (2006), http://www.law.northwestern.edu/journals/njtip/v5/n1/2/Barnes.pdf (recognizing four ways that copyright and patent markets address market failures associated with the non-rivalry and non-excludability of patents and copyrights).
Another way to reduce deadweight loss is to permit IP owners to engage in efficient price-discrimination. As price-discrimination approaches perfect-price discrimination, deadweight loss is reduced and simultaneously the monopolist captures an increasing portion of the consumer surplus.

One day, technology that reduces transaction costs may permit IP owners in some industries to gain sufficient knowledge about consumers, and digital rights management or other technical protection measures may render the possibility of charging each consumer the maximum price that he or she is willing to pay the approachable goal of near perfect price discrimination. Furthermore, price discrimination may be legally problematic in the United States because of the Robinson-Patman Act ("RPA") and the doctrine of patent misuse.

Under the price-discrimination model, the value of the IP monopoly should increase and, in theory, this should result in additional investment in IP. Economists assume that the patent owner, consistent with economic efficiency, is capable and willing, to the greatest degree possible, of capturing the entire consumer surplus and decreasing deadweight loss. However, perfect price-discrimination is problematic. For example it would eliminate secondary markets such as public libraries and may lead to under-investment or under-production. Even if perfect price discrimination is theoretically possible, there still remain some possible gains through robust fair use.

D. Copyright Limitations

Properly interpreted copyright limitations that “excuse” infringement allow the quantity of the IP consumed to be increased without decreasing the author’s monopoly price incentive. Copyright limitations, especially fair use in copyright law, do this by establishing legal principles that weigh the value of the monopoly incentive against the right of the public to access and use the work so as to reduce the deadweight loss.

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46 See Matthew A. Edwards, Price and Prejudice: The Case Against Consumer Equality in The Information Age, 10 LEWIS & CLARK L. REV. 559, 560 (2006) (discussing recent technological advances that are allowing retailers to gather accurate data enough to engage in unequal pricing towards its consumers).
48 See Abramowicz, supra note 45, at 160. But see Edwards, supra note 46, at 583 (“In sum, neither the RPA nor any other federal law mandates an equal pricing policy for end consumers.”).
50 Id. at 264–65 (explaining that in the context of a monopolist that has gained a dominant position through a valid patent on an innovation, price discrimination may increase welfare resulting in declining marginal costs from scale, learning economies, and opening new markets).
The effect upon plaintiff's potential market for or value of the copyrighted work “emerges as the most important, and indeed, central fair use factor.” “Fair use, when properly applied, is limited to copying by others which does not materially impair the marketability of the work which is copied.” The potential harm to be considered encompasses not only that which usurps the demand for the original market, but also harm to markets for derivative works. More importantly, the factor “poses the issue of whether unrestricted and widespread conduct of the sort engaged in by the defendant (whether in fact engaged in by the defendant or by others) would result in a substantially adverse impact on the potential market for or value of the plaintiff’s present work.”

Accordingly, the proper application of copyright law’s fair use exceptions reduces the deadweight of the copyright monopoly while preserving the economic incentives of copyright law to create new works.

In Appendix III to Fair Use in the U. S. Economy: Economic Contribution of Industries Relying on Fair Use, the authors provide a selected list of fair uses under U.S. copyright law. This section presumes that the copyright fair uses listed in the appendix are especially relevant to copyright fair-use based industries and provides an illustrative model on which to compare fair use rights under U.S. copyright law with their analogues in the laws of the Peoples Republic of China.

1. Independent Creation

Perhaps, the most significant limitation on the scope of U.S. and Chinese copyright law is that copyright law only protects the author of the work against illicit copying of protected expression. Anyone is free to rely on his or her own creativity, public domain works, or fair use of copyrighted works to create a new work of authorship. The new work may be identical to the senior or first work as long as

(fourth fair use factor “effect of the market”): Berne Convention art. 9(2) (allowing member countries to permit, by legislation” the reproduction of [protected] works in certain special cases) provided that such reproduction does not conflict with a normal exploitation of the work and does not unreasonably prejudice the legitimate interests of the author.”); Agreement on Trade-Related Aspects of Intellectual Property Rights art. 13, Apr. 15, 1994, 33 I.L.M. 1197 (1994), 1869 U.N.T.S. 299 [hereinafter TRIPS Agreement] (“Members shall confine limitations or exceptions to exclusive rights to certain special cases which do not conflict with a normal exploitation of the work and do not unreasonably prejudice the legitimate interests of the right holder.”).


ROGERS & SZAMOSSZEGI, supra note 22, app. III. This section in so far as it cites or discusses U.S. fair use law closely follows the text and analysis of Appendix III. Id. The author wishes to explicitly acknowledge his intellectual debt to the materials provided in Appendix III, Fair Use in the U.S. Economy: Economic Contribution of Industries Relying on Fair Use as a concise summary of U.S. fair use law.

See Sheldon v. Metro-Goldwyn Pictures Corp., 81 F.2d 49, 54 (2d Cir. 1936), aff’d, 309 U.S. 390 (1940) (“If by some magic a man who had never known it were to compose anew Keats’s Ode on a Grecian Urn, he would be an ‘author,’ and, if he copyrighted it, others might not copy that poem, though they might of course copy Keats’s.”).

there was no copying of protected expression.\textsuperscript{57} This limitation satisfies market demand by allowing the creation of new works that are in some sense substitutes for other copyrighted works. For example, if books about young wizards in an English boarding school are popular, anyone is free to write his or her own book, but may not copy J.K. Rowling's \textit{Harry Potter} novels or use well developed characters from \textit{Harry Potter} to create other works. Similarly, independent creation permits the programmers to write functionally similar software through a clean-room process because there is no copying of protected expression.\textsuperscript{58}

Under Chinese copyright law, there is no explicit definition of originality, but Chinese scholars consider "originality" as a foundational principle of copyright law. Like the United States, Chinese scholars distinguish between the concept of originality in copyright law and the novelty requirement in patent law. Novelty is an objective requirement in patent law—only new inventions for which there is no prior art are eligible for patentability. However, a determination of originality of a copyrighted work is subjective, that means that if two people create a copyrighted work with the same or identical content independently, then both works are separately protected under either the Chinese Copyright Law or the U.S. Copyright Act.\textsuperscript{59}

2. Facts, Idea/Expression Dichotomy, and Software Interface Specifications

\hspace{1em}a. Non-Copyrightability of Facts

In both the United States and China, the fact/expression dichotomy makes facts non-copyrightable subject matter thus limiting the scope of protection in fact-based works so that copyright law protects only the value-added original expression of the author.\textsuperscript{60} Article 5 of the Copyright Law of China provides that copyright law "shall not be applicable to: (1) laws; regulations; resolutions, decisions and orders of State organs; other documents of a legislative, administrative or judicial nature; and their official translations; (2) news on current affairs; and (3) calendars, numerical tables

\footnotesize
\begin{itemize}
  \item \textsuperscript{57} Sheldon, 81 F.2d at 54.
\end{itemize}
and forms of general use, and formulas. \(^6\)

Furthermore, Article 5 Implementation Regulations of Chinese Copyright Law provides that “[f]or the purposes of the Copyright Law and these Regulations, the following expressions shall have the meanings here under assigned to them: (1) ‘news on current events’ means the mere facts or happenings conveyed through the media such as by newspapers, periodicals and radio and television programmes [sic]. . . .” \(^6\)

Generally, under Chinese law, history, personal information, and business information, such as the stock-market information, are mere facts and are not protected under copyright law. But, if such facts were later compiled and that compilation embodied the originality required under copyright law, then the amalgamation of factual data can be protected as compilation work but the individual factual elements remain uncopyrightable.

### b. Idea/Expression Dichotomy

Another foundational principle of both U.S. and Chinese copyright law is the idea/expression dichotomy. The idea/expression dichotomy under U.S. and Chinese copyright law limits copyrightable subject matter to the expression of an idea, but not the idea itself. \(^6\) The U.S. Copyright Act excludes protection for “any idea, procedure, process, system, method of operation, concept, principle, or discovery . . . .” \(^6\)

If there is only one or a limited number of ways to express an idea, then the expression itself is not copyrightable. The idea/expression dichotomy is thus an important principle in copyright law.

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\(^{61}\) Copyright Law (promulgated by the Standing Comm. Seventh Nat'l People's Cong., Sept. 7, 1990, effective June 1, 1991), art. 5, translated in INTELL. PROF. LAWS & REGS 128 (P.R.C.) [hereinafter Copyright Law (P.R.C.)].


\(^{64}\) Baker v. Selden, 101 U.S. 99, 102–04 (1879). ZHENG, CHENGSI, COPYRIGHT LAW 41–48, (CHINA RENMIN UNIVERSITY PRESS 1997); LI MINGDE & XU CHAO, COPYRIGHT LAW 26–31 (Law Press 2003). There are also series of Chinese cases involving idea/expression dichotomy, such as Nintaus Electrical Industries Co. v. Motorola (China) Electronics Ltd. In June, 1997, Nintaus began to advertise the DVD product on CCTV by using images of famous people including Galileo, Copernicus, Bruno, Li Shizhen and Quyuan, and a DVD machine in “fierce fire” accompanied with the words “zhēn jīn bù pà huǒ lián” (true gold fears no fire, a person of integrity or product of high quality can stand severe tests). Nintaus Elec. Indus. Co. v. Motorola (China) Elecs. Ltd., available at http://www.msflawyers.com/html/2006-02/165.shtml (China). In 1998, Motorola (China) advertised its interphone GP88s on Guangzhou Daily and Shenzhen Daily, respectively. Id. The picture of the advertisement was composed of the interphone in “fierce fire,” and the words “zhēn jīn bù pà huǒ lián” and “Motorola GP88s interphone.” Id. Nintaus sued Motorola (China) for copyright infringement before the Guangzhou intermediate court. Id. In October, 1998, the court ruled that copyright law protects expressions but not ideas, so the idea of using a product in fire to indicate the quality of the goods cannot be protected by copyright law. Id. “zhēn jīn bù pà huǒ lián” is an old idiom which is collected in different kinds of dictionaries, has fallen into public domain and anyone can use it without authorization. Id. Furthermore, there are differences in the size of the flame, picture, and fonts of the words between the two advertisements. Id. Consequently, the court ruled in the defendant’s favor. Moreover, in December, 1998, Nintaus appealed to the Guangdong High Court and the court ruled that it maintained the original judgment. Id.
merges with the idea and becomes non-copyrightable subject matter.\textsuperscript{65} Article 6 of the Chinese Regulations for Software Protection provides that “copyright offered by this Regulation may not be extended to the ideas, processing operations, operating methods or algorithm concepts for creating the software.”\textsuperscript{66} Article 29 provides that the “[s]imilarity of a creator's software with the software already published due to the limited number of available forms of expression shall not constitute the infringement on the copyright in the software already published.”\textsuperscript{67} This limitation is one of several copyright limitations that assure that authors may not use copyright law to gain quasi-patent advantages in the marketplace.

c. Non-Protectionability of Interface Specifications

Neither the United States nor China protects software interface specifications. A specific application of the idea/expression dichotomy is that copyright law does not protect interface specifications.\textsuperscript{68} Under U.S. copyright law, interface specifications are not copyrightable because they are unprotectable “methods of operation” under section 102(b) of the Copyright Act or because the specifications are required by concerns relating to efficiency or technological or social necessity and, therefore, lose protection under the merger doctrine.\textsuperscript{69} Chinese copyright law is unclear on the subject, because there are no statutes or regulations, on the status of interface specifications.\textsuperscript{70} However, there is a court case that may indicate the current law on interface specifications in China. In May 2004, Join-Cheer Software Co. Ltd. sued Tian Chen Computer Software Co. Ltd. for copyright infringement before the Shanghai Second Intermediate People's Court (nisi prius)\textsuperscript{71} The court ruled that both the source code and object code of Tian Chen's software were different from Join-Cheer's copyrighted computer program.\textsuperscript{72} There were some similar elements such as menus, buttons, and columns of specific information.\textsuperscript{73} However, the copied elements were not original so the Shanghai Second Intermediate Court did not find copyright infringement.\textsuperscript{74} Furthermore, the Shanghai High Court (the court of appeals) ruled

\begin{footnotesize}
\textsuperscript{65} See Baker, 101 U.S. at 102-04.
\textsuperscript{66} Software Protection (P.R.C.), supra note 63, art. 6.
\textsuperscript{67} Id. art. 29.
\textsuperscript{69} 17 U.S.C. § 102(b) (2006); N.Y. Mercantile Exch., Inc. v. Intercontinental Exch., Inc., 497 F.3d 109, 117 (2d Cir. 2007).
\textsuperscript{70} See, e.g., Peter K. Yu, From Pirates To Partners: Protecting Intellectual Property in China in the Twenty-First Century, 50 AM. L. REV. 131, 221, nn.445-46 (2000). China has a civil law system and therefore, Chinese court decisions do not have the legal force of precedent. Id. Professor Yu cites one commentator who suggests that there may be quasi-precedent effects of court decisions or de facto precedent without precedent existing as de jure legal authority. Id: Copyright Law (P.R.C.), supra note 61, art. 3.
\textsuperscript{72} Id.
\textsuperscript{73} Id.
\textsuperscript{74} Id.
\end{footnotesize}
that plaintiff's user interface was functional and that the design of the interface was based on the functional requirements of customers such as the user's specific requirements and habits. Consequently, the Shanghai High Court affirmed the decision of the lower court. Under current Chinese law, while it may be theoretically possible to copyright a software interface specification, because interface specifications are usually functional and meet practical requirements, in reality, it is not easy to get copyright protection.

3. Useful Article

Neither the United States nor China protect useful articles under copyright law. Under U.S. copyright law, copyright protection is limited to the expressive features or aspects of a work and does not protect those features or aspect of the copyrighted article that useful. When an expressive work is integrated into a utilitarian object, copyright protection only extends to those aspects of the work that “can be identified separately from, and are capable of existing independently of, the utilitarian aspects of the article.” While the test is easy to state, the U.S. courts have not been consistent in determining and applying factors useful in making this determination.

The 1991 Copyright Law of China did not provide any protection for useful articles. However, with the enactment of the 1985 Patent Law of China, it became possible to protect a useful article under patent law. In order to bring Chinese law into conformity with the Berne Convention, the State Council promulgated Provisions on the Implementation of International Copyright Treaties in September 1992. Article 6 provides that “[t]he term of protection of foreign works of applied art shall be 25 years from the completion of such works.” Thus, useful articles created

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76 Id.
78 Pictorial, graphic, and sculptural works... shall include works of artistic craftsmanship insofar as their form but not their mechanical or utilitarian aspects are concerned; the design of a useful article... shall be considered a pictorial, graphic, or sculptural work only if, and only to the extent that, such design incorporates pictorial, graphic, or sculptural features that can be identified separately from, and are capable of existing independently of, the utilitarian aspects of the article.
79 Id. “A ‘useful article’ is an article having an intrinsic utilitarian function that is not merely to portray the appearance of the article or to convey information. An article that is normally a part of a useful article is considered a ‘useful article.’” Id.
80 Id; see also Kieselstein-Cord v. Accessories by Pearl, Inc., 632 F.2d 989, 993 (2d Cir. 1980).
81 See generally Brandir Int'l, Inc. v. Cascade Pac. Lumber Co., 834 F.2d 1142 (2d Cir. 1987) (discussing various tests used by courts to apply the useful article doctrine).
by non-Chinese citizens may be protected under Chinese law, but useful articles created by Chinese citizens are not eligible for protection. Article 4(8) of the Implementing Regulations of the Copyright Law of the People’s Republic of China provides that “works of fine art are two-or three-dimensional works created in lines, colors or other medium which, when being viewed, impart aesthetic effect, such as paintings, works of calligraphy, sculptures and works of architecture.” Chinese scholars infer from article 4(8) that only the “aesthetic effect” of a two-dimensional or a three-dimensional work is eligible for copyright protection. Consequently, by negative implication Chinese copyright law does not protect the utilitarian or useful aspects of such a work.

4. No Copyright in Government Works

Neither the U.S. nor Chinese governments protect works created by government employees within the scope of their employment. In the United States, federal government works do not require a copyright incentive in order to be created and, therefore, all works authored by the U.S. government employees within the scope of their employment are not eligible for protection under the U.S. Copyright Act and immediately enter the public domain. This assures that the works are promptly available as inputs to create other copyrighted works. Although, Article 5(1) of the Chinese Copyright Law only excludes from the scope of copyright “laws; regulations; resolutions, decisions and orders of State organs; other documents of a legislative, administrative or judicial nature; and their official translations . . . ” As a practical matter, most works created by government employees are not protected under Chinese copyright law.
5. Fair Use: Criticism, Comment, News Reporting, Teaching, Scholarship, Research, etc.

The United States and China have taken different approaches to “generic” fair use. The United States has two methods of protecting users of copyrighted works from liability for using a copyrighted work without permission of the copyright owner. First, there is 17 U.S.C. § 107 that provides a general illustrative list of factors a court must consider as an affirmative defense to copyright infringement. The Copyright Act also provides other specific statutory exemptions from liability.

China’s copyright law, on the other hand, more closely mirrors the provisions of the Berne Convention, and China has elected to provide a detailed list of limited exceptions to the rights of copyright owners. Section 107 of the U.S. Copyright Act protects the fair use of a copyrighted work for a non-exhaustive illustrative list of purposes such as criticism, comment, news reporting, teaching (including multiple copies for classroom use), scholarship, or research. The U.S. Copyright Act provides guidelines and factors that a court must consider when determining whether an infringing use is a fair use. However, courts are free to add or create other factors depending on the facts of the case. And, of course U.S. federal courts have judicial discretion to weigh the factors as appropriate according to the facts of a given case.

In contrast, the Copyright Law of China spells out in detail which activities are excused. Article 22 of the Copyright Law of China provides that:

a work may be exploited without permission from, and without payment of remuneration to, the copyright owner, provided that the name of the author and the title of the work shall be mentioned and the other rights enjoyed by the copyright owner by virtue of this Law shall not be prejudiced:

(1) use of a published work for the purposes of the user's own private study, research or self-entertainment:

(2) works created in the course of employment where the copyright is, in accordance with laws, administrative regulations or contracts, enjoyed by the legal entity or other organization.

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Id.

87 Id. §§ 108–112.
88 See, e.g., Copyright Law (P.R.C.), supra note 61, arts. 22, 23, 42; cf Berne Convention, Art. 9(2) (“It shall be a matter for legislation in the countries of the Union to permit the reproduction of such works in certain special cases, provided that such reproduction does not conflict with a normal exploitation of the work and does not unreasonably prejudice the legitimate interests of the author”).
89 17 U.S.C. § 107. In addition to being one of the illustrative examples provided for in the section, the court may also weigh the following factors:

(1) the purpose and character of the use, including whether such use is of a commercial nature or is for nonprofit educational purposes; (2) the nature of the copyrighted work; (3) the amount and substantiality of the portion used in relation to the copyrighted work as a whole; and (4) the effect of the use upon the potential market for or value of the copyrighted work.

Id.

90 Id.
91 Id.
92 See, e.g., Copyright Law (P.R.C.), supra note 61, arts. 22, 23, 42.
appropriate quotation from a published work in one’s own work for the purposes of introduction to, or comments on, a work, or demonstration of a point;
(3) reuse or citation, for any unavoidable reason, of a published work in newspapers, periodicals, at radio stations, television stations or any other media for the purpose of reporting current events;
(4) reprinting by newspapers or periodicals, or rebroadcasting by radio stations, television stations, or any other media, of articles on current issues relating to politics, economics or religion published by other newspapers, periodicals, or broadcast by other radio stations, television stations or any other media except where the author has declared that the reprinting and rebroadcasting is not permitted;
(5) publication in newspapers or periodicals, or broadcasting by radio stations, television stations or any other media, of a speech delivered at a public gathering, except where the author has declared that the publication or broadcasting is not permitted;
(6) translation, or reproduction in a small quantity of copies, of a published work for use by teachers or scientific researchers, in classroom teaching or scientific research, provided that the translation or reproduction shall not be published or distributed;
(7) use of a published work, within proper scope, by a State organ for the purpose of fulfilling its official duties;
(8) reproduction of a work in its collections by a library, archive, memorial hall, museum, art gallery or any similar institution, for the purposes of the display, or preservation of a copy, of the work;
(9) free-of-charge live performance of a published work and said performance neither collects any fees from the members of the public nor pays remuneration to the performers;
(10) copying, drawing, photographing or video recording of an artistic work located or on display in an outdoor public place;
(11) translation of a published work of a Chinese citizen, legal entity or any other organization from the Han language into any minority nationality language for publication and distribution within the country; and
(12) transliteration of a published work into Braille and publication of the work so transliterated.

The above limitations on rights shall be applicable also to the rights of publishers, performers, producers of sound recordings and video recordings, radio stations and television stations.\(^3\)

Some of the Chinese Article 22 fair use limitations also find analogues in sections of the U.S. copyright law other than § 107. For example, China has a clear provision on library use,\(^4\) and these library uses in the United States are protected both generally under § 107 and more specifically under § 108 of the U.S. Copyright Act, which

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\(^3\) Copyright Law (P.R.C.), supra note 61, art. 22.

\(^4\) Id. art. 22(8).
contains detailed fair use provisions that protect the interests of libraries and the public to have access to copyrighted works.\textsuperscript{95}

\textit{a. Fair Use: Reverse Engineering}

Under both U.S. and Chinese law, reverse engineering is permissible, but in some contexts the actual exercise of the right may be problematic. Pursuant to judicial opinions in the United States, it is fair use to disassemble a computer program to discover the uncopyrightable functional elements of the program for legitimate purposes, as long as there are no other means to discover the unprotected elements. As a practical matter, reverse engineering fair use is limited by the custom of using unbargained for mass-market license agreements that require the end-user to waive any right to reverse engineer the software.\textsuperscript{96} Article 17 of the Chinese Regulation Computer Software Protection provides that a “piece of software may be used by its installing, displaying, transmitting or storing for the purposes of studying or researching the design ideas or principles embodied therein, without permission form, and without payment of remuneration, to the software copyright owner.”\textsuperscript{97} Yet, it is likely that Chinese courts might permit licensors to include contract terms that prohibit reverse engineering. Under Chinese law, standard-form shrink-wrap contracts or “web-wrapped” contracts are acceptable. These contracts may contain terms that require the user to waive the user’s right to reverse engineer the product.\textsuperscript{98}

Chinese courts will determine whether shrink-wrap contracts or “web-wrapped” contracts are valid on a case-by-case basis. In China, there is already a case where the plaintiff sued an anti-virus software company because he could not see the standard form contract prior to opening the software package.\textsuperscript{99} Arguably, defendant did not comply with his obligation under Chinese law to inform consumers of the existence of the standard form contract.\textsuperscript{100} Furthermore, even if the defendant

\textsuperscript{95} 17 U.S.C. § 108.
\textsuperscript{96} Sega Enter. Ltd. v. Accolade, Inc., 977 F.2d 1510, 1517 (9th Cir. 1992); Atari Games Corp. v. Nintendo of Am., 975 F.2d 832, 843-44 (Fed. Cir. 1992).
\textsuperscript{97} See, e.g., Bowers v. Baystate Techs., Inc., 320 F.3d 1317, 1323 (Fed. Cir. 2003).
\textsuperscript{98} Software Protection (P.R.C.), supra note 63, art. 17 (explaining without the license of and payment to the software copyright owner, a person may use software for learning and studying the design idea and principle of the software in the form of loading, display, transmission or storage).
\textsuperscript{99} Available at http://moonflute.blog.bokee.net/bloggermodule/blog_printEntry.do?id=1280451 (China) (discussing the validity of "prohibiting reverse engineer" clause in sale contract).
\textsuperscript{100} Available at http://soft.ccw.com.cn/news/htm2007/20070718_288946.shtml (China) (discussing a case where a customer sued Kingsoft Company, claiming 1 Yuan in compensation).

Where a contract is concluded by way of standard terms, the party supplying the standard terms shall abide by the principle of fairness in prescribing the rights and obligations of the parties and shall, in a reasonable manner, call the other party’s attention to the provision(s) whereby such party’s liabilities are excluded or limited, and shall explain such provision(s) upon request by the other party.
satisfies the procedural requirement to adequately informs the prospective contractee of the standard form shrink-wrap contract, the courts should still review the substantive provisions of the standard form shrink-wrap contract to ensure that the substantive provisions are consistent with Chinese law.\textsuperscript{102}

Chinese scholars contend that the decision whether to permit licensors to include contract terms that prohibit reverse engineering must be made on a case-by-case basis. Some scholars argue that under most circumstances, terms waiving the right to reverse engineer are unacceptable because these terms may constitute an abuse of a dominant market position.\textsuperscript{103} Other scholars argue that these waiver terms are generally acceptable because these contract provisions embody individual freedom of contract. These scholars argue waivers of the right to reverse engineer is unacceptable only if the licensor abused its dominant position under Anti-Monopoly Law of the People’s Republic of China.\textsuperscript{104} Article 17 of Anti-Monopoly Law of the People’s Republic of China provides that

Business operators with a dominant market position are prohibited from committing any of the following acts of abusing the dominant market position:

\ldots

\begin{itemize}
\item Standard terms are contract provisions which were prepared in advance by a party for repeated use, and which are not negotiated with the other party in the course of concluding the contract.
\end{itemize}

\textit{Id.}\textsuperscript{103} Contract Law (P.R.C.), \textit{supra} note 101, art. 40. The “Invalidity of Certain Standard Terms” states:

A standard term is invalid if it falls into any of the circumstances set forth in Article 52 and Article 53 hereof, or if it excludes the liabilities of the party supplying such term, increases the liabilities of the other party, or deprives the other party of any of its material rights.

\textit{Id.} Article 52 states:

A contract shall be null and void under any of the following circumstances:

(1) A contract is concluded through the use of fraud or coercion by one party to damage the interests of the State;
(2) Malicious collusion is conducted to damage the interests of the State, a collective or a third party;
(3) An illegitimate purpose is concealed under the guise of legitimate acts;
(4) Damaging the public interests;
(5) Violating the compulsory provisions of the laws and administrative regulations.

\textit{Id.} art. 52. Article 53 states:

The following immunity clauses in a contract shall be null and void:

(1) those that cause personal injury to the other party;
(2) those that cause property damages to the other party as a result of deliberate intent or gross fault.

\textit{Id.} art. 53.


(5) Implementing tie-in sales or imposing other unreasonable trading conditions at the time of trading without any justifiable causes;

. . . .

(7) Other forms of abusing the dominant market position as determined by the Anti-monopoly Law Enforcement Agency under the State Council.105

b. Fair Use: Browser Copies

Under the fair use doctrine in the United States, the local cache storage by a web browser of copyrighted work is a fair use if the use is noncommercial, transformative, necessary for essential Internet functions, and does not hinder the copyright owner's legitimate exploitation of the copyrighted work.106 China (and other developing countries) have opposed attempts to make temporary copies explicitly "copies" under the WIPO Internet Treaty and, consequently the WIPO Internet Treaty does not address this issue. These Internet uses may also be permissible under concepts of implied license.107 By placing copyright works on the Internet, copyright owners implicitly grant permission to make the necessary copies to use the technology in a reasonable manner.108 Generally under Chinese Law, a temporary copy cannot constitute copyright infringement.109 Banning temporary copying involves prohibiting end-users to use online works, however, it is not realistic to prohibit the end-user's non-commercial use.110


106 Perfect 10, Inc. v. Amazon.com, Inc., 487 F.3d 701, 726 (9th Cir. 2007).

107 See Johnson v. Jones, 149 F.3d 494, 500 (6th Cir. 1998) (stating that an implied license is an affirmative defense to copyright infringement); see also John G. Danielson, Inc. v. Winchester-Conant Props., 322 F.3d 26, 40 (1st Cir. 2003) ("Uses of the copyrighted work that stay within the scope of a nonexclusive license are immunized from infringement suits.").


c. Fair Use: Search Engine Cache Copies

Under both U.S. and Chinese law, because of the Internet search engine's significant social utility, a search engine's reproduction of the images and text search database “discovered” on the World Wide Web and subsequent display of these materials in search results is a fair use. In July 2005, seven record companies including EMI Group, Warner Music Group, and Universal Music sued China's top Internet search engine Baidu in the Beijing First Intermediate Court because Baidu users could locate copyright infringing works and download these works from third-party websites. Beijing First Intermediate Court ruled that there is no legal basis for liability for a search engine service that has no capability to determine whether a work on a website is a copyright infringing work. Further, there is no legal basis for liability for the content it indexes and the use may be by individuals locating web-based content. In other words, a search engine service does not constitute secondary contributory infringement. On appeal, the Beijing High People's Court affirmed this judgment.

d. Fair Use: Time and Space Shifting

Under either U.S. or Chinese law, time shifting is permissible. Under principles of the fair use doctrine, television viewers may record a television program for later personal viewing, and such personal use is consistent with the objectives of the U.S. Copyright Act. Similarly, Article 22(1) of Copyright Law of the People's Republic of China provides that the “use of a published work for the purposes of the user's own personal study, research or self-entertainment” may constitute fair use.

i. Library Uses

The U.S. and Chinese laws have copyright law provisions to protect and promote library uses. The U.S. Copyright Act permits libraries and archives to make reproductions for purposes of preservation or replacement of damaged copies, and inter-library loans. Similarly, Article 22(8) of the Copyright Law of the People's Republic of China provides that “reproduction of a work in its collections by a library, archive, memorial hall, museum, art gallery, etc. for the purposes of the display, or preservation of a copy, of the work” does not infringe the rights of the copyright owner.

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111 Kelly v. Arriba Soft, 336 F.3d 811 (9th Cir. 2003); Field v. Google, 412 F. Supp. 2d 1106 (D. Nev. 2006); Perfect 10, 487 F.3d at 719.
112 Jerry Yuin Zhang, Copyright Owners' Rights Over the Internet, 20 CHINA L. & PRAC. 7, available at 2006 WLNR 18690720 (Sept. 1, 2006).
113 Id.
116 Copyright Law (P.R.C.), supra note 61, art. 22(1).
owner. Libraries increase the dissemination of copyrighted materials without affecting the copyright owner's economic expectations. Libraries also assure a consistent demand for books that are not best sellers to encourage publishers to take a chance on unknown authors or scholarly tomes. Libraries create a demand for expensive works such as scientific reference works or journals that no one reader could afford to purchase. Yet their purchase and collective use justify their acquisition because these reference works often play a significant role in economic development. Finally, libraries preserve works so that at the end of the copyright term, the work is available to be used as a public domain work.

7. First Sale Doctrine

The first sale doctrine limits the ability of a copyright owner to control subsequent transfers of ownership of the copyrighted work once there has been a sale of the copyrighted work. The U.S. Copyright Act permits the owner of a lawfully made copy to sell or lend that copy to others. There does not appear to be an explicit provision in Chinese laws or regulations on whether Chinese law recognizes as first sale of a copyrighted work as exhausting the copyright owner's right to control further distribution or sale. Scholars opine that Chinese copyright law should recognize a first sale doctrine to ensure the consumers' rights to use, transfer, or lease goods. These goods, which are protected by the intellectual property rights, may circulate freely in different areas affecting the balance between the interests of copyright owners and the public. Therefore, the copyright owner may not prohibit the resale or use of the goods once copyrighted goods have been released in the stream of commerce.

8. Ephemeral Recordings

Under the U.S. Copyright Act, and under Chinese law, a radio station may make ephemeral copies of sound recordings for its own use in its service area. Article 42 of the Copyright Law (P.R.C.) provides that:

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118 Copyright Law (P.R.C.), supra note 61, art. 22(8).
120 Id.
123 See generally Copyright Law (P.R.C.), supra note 61 (omitting any provision on exhaustion based on first sale doctrine); see also id. art. 18 (discussing that the transfer of ownership of a work does not necessarily transfer the copyright of such work; however, this provision does not explicitly state that it exhausts the copyright owner's right to control further distribution or sale).
125 17 U.S.C. § 112(a)(1); Copyright Law (P.R.C.), supra note 63, art. 42.
A radio station or television station that broadcasts an unpublished work created by another person shall obtain permission from, and pay remuneration to, the copyright owner.

A radio station or television station that broadcasts a published work created by another person does not need permission from, but shall pay remuneration to, the copyright owner.\(^{126}\)

This law discusses the statutory licensing of a radio station or a television station, while the term “broadcast” has a relatively broad meaning that includes ephemeral recordings for the purpose of broadcast.

9. Exception to Sound Recording Performance Right

Under the U.S. Copyright Act, there is no performance right in sound recordings, except for performances by digital audio transmission, e.g., web-casting.\(^{127}\) Pursuant to Article 15, Section 3 of the WIPO Performances and Phonograms Treaty (“WPPT”),\(^{128}\) when China filed its instrument of access to the WPPT, China filed a reservation to Article 15, Section 1.\(^{129}\) Article 15, Section 15(1) provides that “(1) Performers and producers of phonograms shall enjoy the right to a single equitable remuneration for the direct or indirect use of phonograms published for commercial purposes for broadcasting or for any communication to the public.”\(^{130}\)

The producer of a sound recordings or video recordings shall enjoy the right to authorize others' to reproducing, distributing or renting the sound recording or video recording or making it available to the public through an information network and to receive remuneration therefrom. The term of protection for such right shall be fifty years, expiring on December 31 of the fiftieth year after the first completion of the recording.

Any one who is authorized to reproduce or, distribute a sound recording or video recording or making it available to the public through information network shall, in addition, obtain permission from, and pay remuneration to, both the copyright owner and the performer.

Any one who is authorized to reproduce, distribute and communicate to the public on an information network a sound recording or video recording shall also obtain permission from, and pay remuneration to, the copyright owner and the performer as presented by regulations.

Id.\(^{130}\) WPPT, supra note 128, art. 15, § 1.
Under Chinese copyright law, only authors enjoy a mechanical performance right, but performers do not receive equivalent protection under the Copyright Act. For example, if a restaurant plays a sound recording for attracting customers, then it must pay a licensing fee to the author of the musical work, but not the performers or the producers of the sound recording.

10. Sui Generis Software Fair Uses

a. Backup, Adaptation, Essential Step Copies:

U.S. and Chinese law permit the making of backup copies, adaptations, and "essential step" copies of software. The U.S. Copyright Act permits the owner of a copy of a computer program to make a copy of that program as an essential step in the utilization of the program in conjunction with a computer or for archival purposes. This provision is problematic under U.S. law. For most mass-market software, the case law is unclear whether the end-user or consumer is an owner for the purposes of asserting a section 117 defense to copyright infringement or whether the end-user is a mere licensee or lawful possessor who does not enjoy section 117 protection. The more consistent line of cases analyzes the economic reality of the transaction, and not solely to the manner the relationship is characterized by the licensor. These cases find that the end-user licensee of mass-market software is an owner for the purposes of section 117. Also, the owner of a copy of software may

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131 Copyright Law (P.R.C.), supra note 61, art. 10(9). "The term 'copyright' shall include the following personal rights and property rights: . . . (9) the right of performance, that is, the right to publicly perform a work, and to publicly communicate the performance of work by any means or process . . . ." Id.; see also Copyright Law (P.R.C.), supra note 61, art. 37.

A performer shall, in respect of the performance, enjoy the following rights:
(1) to claim performership;
(2) to protect the image inherent in his performance from distortion;
(3) to authorize others' live broadcasting or communicating to the public of his performance, and receive remuneration therefrom;
(4) to authorize others' making of sound recordings and video recordings of his performance, and receive remuneration therefrom;
(5) to authorize others' reproduction and distribution of the sound recordings and video recordings of his performance, and receive remuneration therefrom; and
(6) to authorize others' making of his performance available to the public through information network, and receive remuneration therefrom.

Id.


133 See Gibbons, supra note 131, at 545.


A mass-market copy of a computer program sold like any other mass-market good in a one-time transaction, with a single payment, and with no reasonable expectation that a consumer will ever return the copy is a sale no matter the label attached to it . . . In the end, if a transaction looks like a duck, walks like a duck, and talks like a duck, it is a duck.

Id.
adapt or modify that software by creating new versions if that adaptation or modification is essential to use the software.\textsuperscript{135} The adaptations, copies, or modifications cannot be transferred and the owner of the software must destroy them upon sale of the software. Further, the making of such a copy is excused under section 117 of the U.S. Copyright Act, but, if the software is patented, this act may infringe the patent owner’s rights.\textsuperscript{136}

Article 16 of the Regulation for Computer Software Protection provides:

Owners of lawful copies of software shall enjoy the following rights:

(1) to install and store the software in devices with information processing capabilities, such as computers, according to the need of their use;

(2) to make backup copies against damage, provided that such owners do not offer others in any way the backup copies for their use and that they destroy such copies once they lose the ownership thereof; and

(3) to make necessary alterations to the software in order to implement it in an actual environment of computer application or to improve its functions or performance, provided that such owners do not, except otherwise agreed in the contract, offer any third party the altered software without permission from the software copyright owner.”\textsuperscript{137}

It does not appear yet that Chinese law recognizes a distinction between owner and lessee for the purposes of this section. While Chinese contract law in general promotes freedom of contract, the authors were unable, with a quick look at a few standard-form software contracts, to locate terms that limited these rights or attempted to change the economic reality of the transaction.

\textit{b. Machine Maintenance or Repair}

The U.S. and Chinese copyright laws permit the owner or lessee of a computer, for purposes of maintaining or repairing that computer, to make or authorize the making of a copy of a computer program that is made solely by virtue of activating the computer.\textsuperscript{138} Under some circumstances the exercise of these rights, while permissible under the Copyright Act, could violate the patent rights in the

\textsuperscript{135} 17 U.S.C. § 117(a)(1). \textbf{See generally} Aymes v. Bonnelli, 47 F.3d 23 (2d Cir. 1995) (discussing ownership, adaptation, and modification of computer programs).

\textsuperscript{136} Lee A. Hollaar, Justice Douglas Was Right: The Need For Congressional Action On Software Patents, 24 AIPLA Q.J. 283, 297 (1996) (“Patents on computer programs... could preempt many of the user rights provided under the Copyright Act, particularly section 117.”).

\textsuperscript{137} Software Protection (P.R.C.), supra note 63, art. 16.

\textsuperscript{138} 17 U.S.C. § 117(e); \textit{see also}, Storage Tech. Corp. v. Custom Hardware Eng’g & Consulting, Inc., 421 F.3d 1307, 1311–13 (Fed. Cir. 2005). (explaining the meaning of “repair” and “maintenance”).
software. As discussed in the preceding section, Article 16 of the Regulation for Computers Software Protection (P.R.C.) provides that owners of lawful copies of software shall enjoy the rights to (1) install and store the software and (2) to make backup copies against damage.

II. Copyright Term

Both the United States and China limit the term of Copyright protection. Consistent with Article I, Section 8 of the United States Constitution, the U.S. Congress may only provide authors with exclusive rights for “limited times,” therefore, copyrights expire after the expiration of the statutory period and then enter the public domain. The duration of copyright in the United States created on or after January 1, 1978, is the life of the author plus seventy years or, in the case of a work-for-hire, ninety-five years from publication, or 120 years from creation, whichever is shorter. Article 21 of the Copyright Law (P.R.C.) provides that:

The term of protection for the right of publication and the rights as provided for in Subparagraph (5) through Subparagraph (17) of the first paragraph in Article 10 of this Law shall be the lifetime of the author and fifty years after his death . . . .

In respect of a work of a legal entity or other organization or a work which is created in the course of employment and the copyright (except the right of authorship) in which is enjoyed by a legal entity or other organization, the term of protection for the right of publication and the rights as provided for in Subparagraph (5) through Subparagraph (17) of the first paragraph in Article 10 of this Law shall be fifty years, expiring on December 31 of the fiftieth year after the first publication of such work; however, such work shall no longer be protected under this Law if it is not published within fifty years after the completion of its creation.

Accordingly, the term of a copyright in the P.R.C. is substantially shorter than in the United States, especially in the case of works-for-hire.

In the United States, moral rights are protected through a complex hybrid of state and federal laws that range from the visual works of art eligible for protection under copyright law to other works that may be protected under trademark law.

139 Hollaar, supra note 136, at 297.
140 Software Protection (P.R.C.), supra note 98, art. 16.
143 Id.
144 Copyright Law (P.R.C.), supra note 61, art. 21.
Each body of law that protects the moral rights of authors contains differing scopes of protection and duration. China, on the other hand, recognizes all moral rights for an unlimited duration.\footnote{See Copyright Law (P.R.C.), supra note 61, art. 20 (“No time limit shall be set on the term of protection for an author’s rights of authorship and revision and his rights to protect the integrity of his work.”).}

12. Online Service Provider Safe Harbors

Both U.S. and Chinese laws limit liability of an online service provider (“OSP”), if the OSP complies with the safe harbor provisions of the statute. Under the U.S. Digital Millennium Copyright Act, limited copyright remedies are available against OSPs engaged in the following activities: transitory communications, system caching, storage of information on systems or networks at direction of users, and utilization of information location tools.\footnote{17 U.S.C. § 512.} In China, Article 23 of the Regulation on Protection of the Right to Network Dissemination of Information provides that:

A network service provider that provides searching or linking services to a service object, and has disconnected the link to a work, performance, or audio-visual recording infringing on an other’s right after receiving notification from the owner, shall not be liable for compensation; however, if it knew or should have known that the linked work, performance, or audio-visual recording has infringed upon an other’s right, it shall bear liability for joint infringement.\footnote{Network Dissemination (P.R.C.), supra note 108, art. 23.}

Both U.S. and Chinese law contain similar provisions limiting the liability of OSPs for the infringing acts of their customers or users unless the OSP has knowledge of the infringing activity. Absent such provisions, the \textit{ad terrorem} effect of liability would motivate OSPs to limit access to (or use by their customers of) content that was clearly licensed and would prohibit access to or use of content that may be legal under fair use exceptions, in the public domain, or otherwise licit.

13. Sony Principle (Staple Articles of Commerce)

The sale of an article in commerce can be used for both infringing and non-infringing purposes. However, this does not constitute secondary infringement if the product is capable of substantial non-infringing use (“\textit{Sony Principle}”).\footnote{Sony Corp. of Am. v. Universal City Studios, Inc., 464 U.S. 417, 442 (1984).} Indeed, Chinese IP scholars share the same opinion with American professors that under the new technological environment, the application \textit{Sony} Principle might require modification. For example, some Chinese scholars contend that some new technologies such as peer-to-peer (“P2P”) file sharing do not have substantial non-infringing uses. However, this discussion of P2P file sharing is merely a specific
factual application of the *Sony* Principle rather than a challenge to the underlying doctrine.\textsuperscript{150}

There is a consistent theme to all these limitations on copyright and exceptions to liability for copyright infringement. In each of these instances, these uses do not compromise either the copyright owner's reasonable commercial expectations or the owner's exploitation of promoting new uses of copyrighted materials.\textsuperscript{151} Many of the exceptions are similar in both the United States and China, although, the differing legal and economic traditions result in different advantages and disadvantages.

The United States, as part of a common-law legal system, provides more general rules or factors that courts may employ to develop a law of copyright that meets the changing needs of commerce and technology.\textsuperscript{152} The United States does this at the cost of predictive certainty. China, however, as a civil-code country, has more detailed laws governing legal exceptions to the rights of copyright owners.\textsuperscript{153} This detailed enumeration of limitations provides more certainty as to whether an act of infringement will be excused. But, the lack of judicial discretion requires China's People's Congress and government agencies to regularly review the copyright law to insure that it meets the needs of changing technology and commercial practices.

II. POSSIBLE PATENT LESSONS TO BE LEARNED FROM COPYRIGHT FAIR USE

As of 2008, there is no published WIPO methodology for surveying the value of patent-based industries and its effect on the economy. Additionally, there are not even *ad hoc* patent studies that are similar to the copyright surveys discussed above. This article assumes that patents like copyrights have a significant impact on the economy. Clearly, patent rights, like copyright protection, are subject to a monopoly deadweight loss. Therefore, a reduction of the deadweight loss will benefit innovation and spur long-term development. Looking to copyright's fair use provisions to improve patent law is not a novel innovation.\textsuperscript{154} Both copyright and


\textsuperscript{151} See Edward C. Wilde, *Replacing the Idea/Expression Metaphor with a Market-based Analysis in Copyright Infringement Actions*, 16 WHITTIER L. REV. 793, 796–98 (1995) (“Because copyright law protects only the abstract, nonexclusive qualities of the product made of nonexclusive materials, there is inherent difficulty in determining what aspect(s) of a product require(s) protection.”).

\textsuperscript{152} See Brief for of Professors Peter S. Menell, David Nimmer, Robert P. Merges, and Justin Hughes as Amici Curiae in Support of Petitioners at 5, Metro-Goldwyn-Mayer Studios, Inc. v. Grokster, Ltd., 545 U.S. 913 (2005) (No. 04-480). Nimmer and other prominent legal scholars state that "the common law nature of both direct and indirect infringement liability has eschewed bright line rules in favor of open-ended balancing that is sensitive to the changing circumstances—technological and otherwise—that affect the rights of copyright owners and users of copyrighted works." Id.

\textsuperscript{153} See e.g., Copyright Law (P.R.C.), supra note 61, arts. 22, 23, 42; see generally ASIA BUSINESS LAW SERIES, CHINA INTELLECTUAL PROPERTY LAW GUIDE ¶¶ 32-500 to 32-540 (Kluwer Law Int'l 1st ed. 2005).

\textsuperscript{154} See, e.g., 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 how fair use in the patent system would "promote the Progress of Science and useful Arts"); O'Rourke, supra note 16, at 1180 (analyzing how a fair use defense would apply to patent law); Dan. L. Burke,
patent law share the same fundamental principle, both provide a limited monopoly sufficient to create incentives to spur creativity and innovation. Unsurprisingly, courts and policy makers have looked to each of these branches of intellectual property law to better improve their understanding of the other branch.

With a few exceptions, patents in the United States grant the patent owner the exclusive right to make, use, sell, offer for sale, or import the patented invention for the duration of the patent term. The violation of any of these exclusive rights is an infringement of the patent owner's legal monopoly rights, unless law otherwise excuses the act of patent infringement. 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. "Fair use," or excused infringement, in patent law is nominally limited to activities that fall within the rubric of the experimental use defense. Each of these exceptions is narrowly interpreted to maximize the extent of protection for the patent owner's legal monopoly. Consequently, the accused infringer carries the burden of demonstrating that the infringement is legally excused.


156 See, e.g., *eBay Inc. v. MercExchange, L.L.C.*, 547 U.S. 388, 392 (2006) (looking at the treatment of permanent injunctions in copyright law and applying it to patent law); *Sony Corp. of Am. v. Universal City Studios, 464 U.S. 417, 441–42 (1984).* In *Sony*, the Supreme Court applied patent law's policy of prohibiting a patentee from using contributory infringement into extending the scope of the patent beyond its legal limits. *Id.* In doing so, the Court held there is no liability for contributory copyright infringement when there are substantial non-infringing uses. *Id.* at 442.


158 See, e.g., 35 U.S.C. § 282(1) ("The following shall be defenses in any action involving the validity or infringement of a patent and shall be pleaded: (1) Noninfringement, absence of liability for infringement . . ."); 35 U.S.C. § 271(e)(1) (excusing genetic manipulation techniques "solely for uses reasonably related to the development and submission of information under a Federal law which regulates the manufacture, use, or sale of drugs or veterinary biological products" from infringement actions); *Madey v. Duke Univ.*, 307 F.3d 1351, 1362 (Fed. Cir. 2002), cert. denied, 539 U.S. 958 (2003) (limiting the experimental use exception to "actions performed for amusement, to satisfy idle curiosity, or for strictly philosophical inquiry") (quoting *Embrey, Inc. v. Serv. Eng'g Corp.*, 216 F.3d 1344, 1349 (Fed. Cir. 2000)); *see also Medtronic Vascular, Inc. v. Boston Scientific Corp.*, 348 F. Supp. 2d 316, 322 (D. Del. 2004) ("There is a narrow common law exception for de minimis non-commercial use."); *aff'd sub nom, Advanced Cardiovascular Sys. v. Medtronic Vascular, Inc.*, 182 F. App'x 994, (Fed. Cir. 2006); *John Gladstone Mills III et al. v. 4 Patent Law Fundamentals § 20-1 (2d ed. 2003) ("Contrary to widely held belief, the statute does not immunize or exempt personal or noncommercial use.")

159 See *Madey*, 307 F.3d at 1361; *R. Carl Moy, Moy's Walker on Patents § 14-50 (4th ed. 2007).*

160 *Madey*, 307 F.3d at 1361; *Mills III*, supra note 160, § 20-4. "Contrary to widely held belief, the statute does not immunize or exempt personal or noncommercial use." *Id.* *Medtronic Vascular*, 348 F. Supp. at 322. But, "[i]there is a narrow common law exception for de minimis non-commercial use." *Id.*
A. EXPERIMENTAL USE UNDER U.S. LAW

Experimental use is a judicially created exception to the rights granted under the Patent Act.\(^1\) Experiment use is a very narrow defense.\(^2\) It is limited to experiments “for amusement, to satisfy idle curiosity, or for strictly philosophical inquiry.”\(^3\) Additionally, “[f]urther, use does not qualify for the experimental use defense when it is undertaken in the ‘guise of scientific inquiry’ but has ‘definite, cognizable, and not insubstantial commercial purposes.’”\(^4\) Even the “slightest commercial implication” is sufficient to disqualify an experimental use defense.\(^5\)

For example, in *Madey v. Duke University*,\(^6\) the United States Court of Appeals for the Federal Circuit rejected the district court’s interpretation of the scope of experimental use, “inoculate[] uses that are ‘solely for research, academic, or experimental purposes,’ and that the defense covers uses ‘made for experimental, non-profit purposes only.’”\(^7\) This reasonable interpretation was soundly rejected.\(^8\) In fact, in an earlier case, the United States Court of Appeals for the Federal Circuit held that “unlicensed experiments conducted with a view to the adaptation of the patented invention to the experimenter’s business is a violation of the rights of the patentee to exclude others from using his patented invention.”\(^9\) Therefore, “use in keeping with the legitimate business of the alleged infringer does not qualify for the experimental use defense.”\(^10\) 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.

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\(^1\) Madey, 307 F.3d at 1355.

\(^2\) Id. at 1362 (“[T]he experimental use defense is very narrow and strictly limited.”).

\(^3\) Id.

\(^4\) Id.

\(^5\) Id.

\(^6\) Id.


\(^8\) Madey, 307 F.3d at 1361.

\(^9\) *Roche Prods.*, 733 F.2d at 863.

\(^10\) Id.
There is some sign of change in the United States to an alternative, broader, understanding of the experimental use defense. U.S. Circuit Judge Newman of the United States Court of Appeals for the Federal Circuit, in a well-reasoned and persuasive dissent, articulated a new robust definition of experimental use.¹⁷¹

The purpose of a patent system is not only to provide a financial incentive to create new knowledge and bring it to public benefit through new products; it also serves to add to the body of published scientific/technologic knowledge. The requirement of disclosure of the details of patented inventions facilitates further knowledge and understanding of what was done by the patentee, and may lead to further technologic advance. The right to conduct research to achieve such knowledge need not, and should not, await expiration of the patent. That is not the law, and it would be a practice impossible to administer.¹⁷²

Judge Newman opined that "[t]he information contained in patents is a major source of scientific information.... A rule that this information cannot be investigated without permission of the patentee is belied by the routine appearance of improvements on patented subject matter...."¹⁷³ The boundary between permissible research on a patented invention under the experimental use defense and infringement of the patent owner's rights is where the limitations affect patent law's incentives to encourage innovation.¹⁷⁴ Judge Newman also "distinguish[es] between investigation into patented things," which should be permitted, and "investigation using patented things," which must be prohibited.¹⁷⁵

Even though commercial purposes motivate research, that alone should not vitiate the experimental use defense.¹⁷⁶ Rather than the current rule that focuses on the subjective motivation of the researcher, Judge Newman proposed a better rule:

"[T]o recognize the exemption for research conducted in order to understand or improve upon or modify the patented subject matter, whatever the

¹⁷¹ Integra Lifesciences I, 331 F.3d at 872 (Newman, J., concurring in part, dissenting in part); see de Larena, supra note 154, at 796–97. But, at least one judge on the United States Court of Appeals for the Federal Circuit has questioned the continued viability of the "experimental use" or "de minimis infringement" defenses. Embrex, Inc. v. Serv. Eng'g Corp., 216 F.3d 1343, 1352–53 (Fed. Cir. 2000) (Rader, J., concurring).

[I]n my judgment, the Patent Act leaves no room for any de minimis or experimental use excuses for infringement.... Because the Patent Act confers the right to preclude "use," not "substantial use," no room remains in the law for a de minimis excuse. Similarly, because intent is irrelevant to patent infringement, an experimental use excuse cannot survive. When infringement is proven either minimal or wholly non-commercial, the damage computation process provides full flexibility for courts to preclude large (or perhaps any) awards for minimal infringements.

Id.

¹⁷² Integra Lifesciences I, 331 F.3d at 873 (Newman, J., concurring in part, dissenting in part).

¹⁷³ Id. at 875.

¹⁷⁴ Id.

¹⁷⁵ Id. at 878 n.10.

ultimate goal. That is how the patent system has always worked: the patent is infringed by and bars activity associated with development and commercialization of infringing subject matter, but the research itself is not prohibited, nor is comparison of the patented subject matter with improved technology or with designs whose purpose is to avoid the patent.\textsuperscript{177}

In sum, Judge Newman's interpretation of the experimental use defense is that it should be more analogous to fair use under copyright law where the focus is not necessarily on the intent of the user but rather the effect of the use on the copyright incentives granted to authors under the copyright law. She would then apply a more nuanced test that clearly considers the interests of society in promoting innovation through access and use with the interests of the patent owner in exploiting the patent monopoly exclusivity, and in close cases, the rights and interests of the patent owner must be given priority.

B. Experimental Use in the Peoples Republic of China

China has a broader experimental use provision than the United States. Article 63(4) of the Patent Law of the People's Republic of China provides: "None of the following shall be deemed an infringement of the patent right: . . . (4) Where any person uses the patent concerned solely for the purposes of scientific research and experimentation."\textsuperscript{178} In the early 1990s in a case before the Shanghai High Court, the court held that:

Article 63 of Patent law of China (2000) means under lab circumstance, using a patent for the purpose of developing further discovery that based on the patent technology does not constitute patent infringement.

On the other hand, if the new discovery which based on the patent technology had been grant a patent, the further patent owner should get the permission of and pay royalty to first patent owner before commercialized his or her patent.\textsuperscript{179}

Therefore under Chinese patent law it is legal to make or use a patented product for research purposes. Whether the accused infringer is researching the patented product out of idle scientific curiosity or researching the product for the purposes of developing a new commercial product is not legally relevant to determining whether he or she falls within the experimental use exception.\textsuperscript{180} However, subsequent commercial exploitation of the initial research that infringes on the rights of the

\textsuperscript{177} \textit{Integra Lifesciences I}, 331 F.3d at 876.

\textsuperscript{178} Patent Law (P.R.C.), supra note 80, art. 64(4).


\textsuperscript{180} See Patent Law (P.R.C.), supra note 80, art. 63(4).
patent owner may constitute patent infringement, and a broad experimental use exception may be valuable as an economic development incentive.\textsuperscript{81} Broad experimental use exceptions encourage local industry to research and apply for improvement patents on imported patented technologies that are specifically tailored to local needs this should encourage local and regional innovation.

\textit{C. Experimental Use Under the TRIPS Agreement}

Any change of domestic patent law of the U.S. or of China takes place in the context of international trade obligations. Consequently, a robust doctrine of experimental use must comport with the TRIPS Agreement.\textsuperscript{82} In comparison, both U.S. and Chinese law are similar to the TRIPS Agreement art. 28, which mandates that members grants the patent owner the right "to prevent third parties not having the owner's consent from the acts of: making, using, offering for sale, selling, or importing for these purposes that product."\textsuperscript{83} Articles 30 and 31 provide the legal authority for member states to grant fair use type exceptions, such as experimental use.\textsuperscript{84} Finally, Article 27.1 limits the scope of the exceptions permitted by Articles 30 and 31 by assuring that all patented technologies by treated similarly.\textsuperscript{85} The proposed experimental use provision as envisioned by this article is strictly limited by the weighing of the patent owner's customary economic exploitation of the patent against the interests of the public to promote innovations. Accordingly, this proposal must be in compliance with the obligations imposed on member states as part of the TRIPS Agreement.\textsuperscript{86}

TRIPS Article 30 permits member states to "provide limited exceptions to the exclusive rights conferred by a patent, provided that such exceptions do not unreasonably conflict with a normal exploitation of the patent and do not unreasonably prejudice the legitimate interests of the patent owner, taking account

\textsuperscript{81} See de Larena, supra note 154, at 804 (discussing how broad experimental use exceptions in German and Japanese patent law provide incentives to U.S. companies to outsource research to those countries).
\textsuperscript{82} TRIPS Agreement, supra note 52, art. 1 (stating that all members shall give effect the minimum standards established by this agreement).
\textsuperscript{83} Id. art. 28.
\textsuperscript{84} See Panel Report, \textit{Canada—Patent Protection of Pharmaceutical Products—Complaint by the European Communities and their Member States}, ¶ 7.19, WT/DS114/R (Mar. 17, 2000) [hereinafter \textit{Canada—Patent Protection of Pharmaceutical Products}]. The panel considered whether Canada could authorize the making and use of generic pharmaceutical products prior to the expiration of the patent for regulatory testing and regulatory review, as well as the stockpiling of these patented products to be sold immediately upon the expiration of the patent. \textit{Id.} ¶¶ 3.1–3.2. The panel cited experimental fair use as an example but explicitly declined to opine on the question. \textit{Id.} ¶ 7.69.
\textsuperscript{85} See TRIPS Agreement, supra note 52, art. 27.1.
\textsuperscript{86} See Thomas A. Haag, \textit{TRIPS Since Doha: How Far will the WTO Go Toward Modifying the Terms for Compulsory Licensing?}, 84 J. PAT. & TRADEMARK OFF. SOC'Y 945, 960–61 (2002) ("the legislative history of Article 30 indicates that it was intended to exempt from infringement the use of patented inventions for (1) private, noncommercial purposes, (2) academic research, (3) experimentation for testing or improvement, and (4) educational purposes.")
of the legitimate interests of third parties."  

1. Limited Exceptions

The first element considers whether the exception is limited and focuses on an analysis of the legal effect of the exception. A limited exception is a narrow exception that “makes only a small diminution of the rights in question” and is “measured by the extent to which the exclusive rights of the patent owner have been curtailed.” It cannot be measured solely “by simply counting the number of legal rights impaired by an exception. A very small act could well violate all five rights provided by Article 28.1 and yet leave each of the patent owner’s rights intact for all useful purposes.”

2. Normal Exploitation

The second element considers whether the exception obstructs the normal economic exploitation of the patent rights. Here, “normal exploitation” of the patent “refers to the commercial activity by which patent owners employ their exclusive patent rights to extract economic value from their patent...” The term can be understood to refer either to an empirical conclusion about what is common within a relevant community, or to a normative standard of entitlement. “The normal practice of exploitation by patent owners... is to exclude all forms of competition that could detract significantly from the economic returns anticipated from a patent’s grant of market exclusivity.” As a practical matter, how specific patent rights in different technologies can be commercially exploited may differ depending on the technology, marketing channels, and the customs in the industry. This suggests that an exception must be sufficiently flexible to accommodate the ever-changing needs of commerce. “Patent laws establish a carefully defined period of market exclusivity as an inducement to innovation, and the policy of those laws cannot be achieved unless patent owners are permitted to take effective advantage of that inducement once it has been defined.”
3. Legitimate Interests

The third element considers whether the exception is "justifiable’ in the sense that [it is] supported by relevant public policies or other social norms." Justification for Article 30 exceptions may be found in TRIPS itself. For example, Article 7 requires that:

The protection and enforcement of intellectual property rights should contribute to the promotion of technological innovation and to the transfer and dissemination of technology, to the mutual advantage of producers and users of technological knowledge and in a manner conducive to social and economic welfare, and to a balance of rights and obligations.

An expanded robust experimental use exception may fall squarely within the policy goal stated in Article 7. Further, Article 8 provides that "[m]embers may ... adopt measures necessary ... to promote the public interest in sectors of vital importance to their socio-economic and technological development, provided that such measures are consistent with the provisions of this Agreement." Consequently, there are at least two textual provisions in TRIPS itself on which to find a robust experimental use that are justifiable legitimate interests. This is in addition to any other public policies that may exist under national or international laws.

4. Uniformity of Patent Exceptions

There are further limitations on the possible exceptions granted under TRIPS Agreement Article 30. Article 27 requires "that patents shall be available and patent rights enjoyable without discrimination as to the place of invention, the field of technology and whether products are imported or locally produced." This requirement suggests that an experimental use exception cannot discriminate between different patented technologies or sources of the patented products. "A discriminatory exception that takes away enjoyment of a patent right is discrimination as much as is discrimination in the basic rights themselves." Article 27 does not require that Article 30 exceptions be applied to patents for all types of patentable subject matter. Rather Article 27 prohibits:

[Discrimination as to the place of invention, the field of technology, and whether products are imported or produced locally. Article 27 does not prohibit bona fide exceptions to deal with problems that may exist only in certain product areas. Moreover, to the extent the prohibition of

\(^{196}\) Id. § 7:69.
\(^{197}\) See e.g., TRIPS Agreement, supra note 52, art. 7.
\(^{198}\) Id.
\(^{199}\) Id. art. 88.
\(^{200}\) Id. art. 27(1).
\(^{201}\) Canada—Patent Protection of Pharmaceutical Products, supra note 184, § 7.91.
\(^{202}\) Id.
\(^{203}\) Id. § 7.92.
discrimination does limit the ability to target certain products in dealing with certain of the important national policies referred to in Articles 7 and 8.1, that fact may well constitute a deliberate limitation rather than a frustration of purpose.204

This interpretation of Article 27 suggests that Article 30 exceptions, such as a robust experimental use, should be an exception of general applicability. The exceptions cannot be tailored to considerations such as place of invention, a specific technology, or place of production: absent a finding of that the exception would be justified as an important national interest under Articles 7 and 8.1.

D. A New Model of Experimental Use in the United States

Learning from the model of industries that develop in the shadow of the exceptions to copyright law, a new experimental use provision in U.S. patent law should consist of, at the bare minimum, a common sense weighing of the social value of the experimentation against the rights of the patent owner. Patent law grants the owner of a patent the exclusive rights to make, use, sell, offer for sale, or import the item.205 The terms “make” and “use” are terms of art in patent law and have historically been given a broad interpretation so as to maximize the property rights of patent owners. These terms could be narrowed either through legislative or judicial means so that the inventor gets an adequate incentive to invent, while allowing society to capture more of the unrealized deadweight loss of the monopoly by permitting uses that do not compete with the ordinary commercial uses of the patent. This article suggests that a broad experimental use exception is compatible with use that will not normally conflict with the legitimate expectations of the patent owner and the normal exploitation of the economics rights of the patent owner. In sum, we can have our cake and eat it too. Strong patent rights are compatible with a strong experimental use policy that promotes innovation.

Possible and legitimate experimental uses include: first, where the object of the experiment is not to learn more about the patented invention but rather to reverse engineer, or otherwise discover, a trade secret that is associated with the invention.206 Trade secrets are not protected against reverse engineering, and incidental use of the patented invention should not serve as a bar against their discovery.207 Second, the object of the experiment is to understand the invention better so as to create a new patentable invention that does not infringe on the patent claims. Patent law does not protect against others from discovering new patentable

\[204 Id.\]
\[205 35 U.S.C. § 154(a)(1) (2006). But cf. Herman v. Youngstown Car Mfg. Co., 191 F. 579, 584–85 (6th Cir. 1911). “A patent is not the grant of a right to make or use or sell. It does not, directly or indirectly, imply any such right. It grants only the right to exclude others.” \textit{Id.}\]
\[207 Kewanee v. Bicron, 416 U.S. 470, 476 (1974); Chi. Lock Co. v. Fanberg, 676 F.2d 400, 405 (9th Cir. 1982).\]
inventions as long as the new invention does not infringe an existing patent. Third, the object of the experiment is to understand the invention so as to improve upon it. Patent law should not stand as an obstacle to improvement patents. Fourth, and probably the most problematic, the object of the experiment is to understand the invention so that as soon as the patent expires there can be competition for the patented product. In this instance, the patent owner would be protected during the period of the patent, but would lose some of the first mover advantage because other competitors could enter the market sooner after the expiration of the patent.

While each of these experimental uses may be motivated by commercial aspirations, none of them violate the incentive monopoly rights that patent owners should reasonably expect. Additionally, each of these experimental uses decreases deadweight loss. There are other possible examples of experimental uses, and in each case, depending on the type of patent, the type of industry, and the normal methods of exploiting the patented invention, a careful balancing of the rights of the patent owner and the rights of the public must be made. However, such a balance is inherent in the protection of any form of property right.

E. U.S. Copyright Fair Uses in the Patent Experimental Use Context

The proper application of copyright fair uses in the patent law context may result in additional innovation and creativity without affecting the patent law monopoly incentives. While many of the copyright fair uses may be instructive in an analysis of patent law, this section will discuss two of them. First, this section will address 17 U.S.C. § 107, the general “fair use” section of the Copyright Act, and then 17 U.S.C. § 117, the specific limitations on the rights in the case of computer programs. Each of these reflects a balance between IPR and public user rights.

1. General Factors of §107 Fair Use

The Copyright Act provides a general list of illustrative purposes that are examples of fair use. These are uses that tend not to affect the copyright owner

209 But see TRIPS Agreement, supra note 52, art. 30.
210 See Patent Competitiveness and Technological Innovation Act of 1990, H.R. REP. NO. 101-960(I), at 48 (1990) (stating that making or using of a patented invention solely for research or experimentation shall not be an act of patent infringement unless the patented invention has a primary purpose of research or experimentation). The U.S. House of Representatives did consider legislation analogous to what this article suggests:
[If] it shall not be an act of infringement to manufacture or use one of these inventions to study, evaluate, or characterize it or to create a product outside the scope of the patent covering the particular invention ... If the patented invention has a primary purpose of research or experimentation, the exemption does not apply once a decision is made to commercialize the fruits of the research or experimentation.
Id. at 55–56.
rights, albeit they may affect demand for the work.\textsuperscript{212} For example, a truly scathing review of a movie may reduce demand and ticket sales but does not change the legal rights of the copyright owner. Under copyright law, the copyright owner is entitled to authorize public performances; however, copyright law does not give the owner the right to an audience for the work.\textsuperscript{213} Similarly, patent law grants the patent owner rights of exclusion to the making, using, selling or importing of the patented product.\textsuperscript{214} It does not grant rights to prohibit research into potentially competitive patentable products.

\textit{a. Purpose and Character of the Use}

In the patent context, this factor should evaluate whether the researcher is getting some right for free that he or she would normally have to license from the patent owner. Researching how a patented laboratory tool works would be potentially excused, but research using that same patented laboratory tool would weigh against a finding of fair use. The copyright case law on transformative uses would be instructive by analogy in the patent context to aid in distinguishing fair patent experimental use that adds new meaning or value to the work and those uses that are slavish uncreative exploitations of the copyrighted work.

\textit{b. Nature of the Underlying Work}

In copyright law, the nature of the copyright work focuses on whether the work is factual or more creative and expressive.\textsuperscript{215} There is arguably a stronger need for access to factual works than for creative works. The analogous factors in the patent context may be another me-too patent in a patent thicket and a broad pioneering patent. In a thicket of patents, fair use factors may weigh in favor of fair use in order to aid developing new patented products, while in the context of the pioneering patent there should be a broad scope of protection to protect the economic interests of the patent owner because the inventor of an invention protected under pioneering patent has made a greater eventual contribution to the intellectual property commons.

\textit{c. Amount and Substantiality Used of the Underlying Work}

The amount and substantially test seems to have some similarity to the current questions that courts ask now, such as \textit{de minimis} infringement and experimental use. Unlike copyright, where an infringer may use part of a work, in the case of

\begin{itemize}
  \item \textsuperscript{212} Campbell v. Acuff-Rose Music, 510 U.S. 569, 591–92 (1994).
  \item \textsuperscript{213} See 17 U.S.C. § 106(4); Columbia Pictures Indus., Inc. v. Aveco, Inc., 800 F.2d 59, 63 (3d Cir. 1986).
  \item \textsuperscript{214} 35 U.S.C. § 154(a)(1).
\end{itemize}
patents, claims are either infringed or not. There is rarely partial infringement. Alternatively, Article 30 of TRIPS allows for use one that does not normally interfere with the normal exploitation of the work.

\[ \text{d. Effect of the Market on the Underlying Work} \]

In copyright and in patent, this should be the most important factor, specifically where this use interferes with the normal exploitation of the patent. Patent protection exists to provide an incentive to invest in innovation. Any use that significantly interferes with that incentive should not be a “fair use.”

\[ \text{2. Specific Limitations on Rights—Computer Programs} \]

Computer programs are an example why patent law requires broader fair use rights. In some circumstances, copyright law grants rights to owners that they may not be able to exercise without violating patent rights. As new technologies, such as computer software, need both copyright and patent protection, patent law will have to become more malleable so that patent law does not inadvertently prohibit copyright fair uses. Yet, in the appropriate context, copyright fair use should not weaken patent protection to the point that its extension weakens the patent law monopoly.

\[ \text{CONCLUSION} \]

A rational IPR policy is a delicate balance. Rational IPR policies balance the IPR incentives needed to create new works of authorship and new inventions with the access of the public to use the existing IP as building blocks to create the intellectual property of the future. Policy makers should consider that the individual or institutions that created new intellectual property did not do it alone. As Isaac Newton quipped, “If I have seen farther than others, it is because I have stood on the shoulders of giants.” Today's authors and inventors stand on the shoulders of those who came before and must be prepared to be the pillars upon which future innovators and authors will stand.

\[ \text{New intellectual property is built using} \]

\[ \text{216 BMC Res., Inc. v. Paymentech, L.P., 498 F.3d 1373, 1380 (Fed. Cir. 2007).} \]
\[ \text{217 TRIPS Agreement, supra note 52, art. 30.} \]
\[ \text{219 Cf. Dastar Corp. v. Twentieth Century Fox Film Corp., 539 U.S. 23, 33–34 (2003) (harmonizing “origin” under Lanham Trademark Act with the right to use formerly copyrighted works now in the public domain).} \]
\[ \text{221 See generally Carrier, supra note 13, at 48 (discussing the problem of “intergenerational bottlenecks” and “cumulative innovation,” in which innovators sequentially build on each other’s discoveries).} \]
components from the public domain, existing proprietary intellectual property, plus the creativity of the author or inventor to see new ways to arrange these components. Some authors in the case of groundbreaking copyrighted works, or inventors in the case of pioneer patents, may expand not only the quantity of intellectual property, but also the boundaries of the IP commons. Innovation is not possible without inputs, and these inputs are often protected by IPR. IPR must thus be narrowly tailored to promote innovation but not so broadly drafted that it becomes a deadweight hindering creativity.