OPEN SOURCE AND CHINA: INVERTING COPYRIGHT?

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I. INTRODUCTION

China's recent accession into the World Trade Organization (WTO)[1] has prompted much analysis of its WTO compliance. As of February 7, 2005, a deputy assistant secretary of state of the United States (hereinafter "the deputy") characterized China's WTO compliance as "uneven."[2] In particular, China's enforcement of intellectual property rights (IPR) under the Agreement for Trade-Related Aspects of Intellectual Property Rights (TRIPs) was described as "problematic."[3] Although China has created several task forces and allowed greater criminal penalties in dealing with intellectual property misuse, the deputy noted that there has been no reduction in the rates of piracy and counterfeiting.[4] Most damningly, he stated that "the reality on the ground remains that IP problems in China are pervasive, both at the small-scale and commercial-scale ends of the spectrum, in copyright, trademark, and patent infringement."[5]

At the same time, the official Chinese policy of the past several years has been to promote "open source" software—software whose source code is freely available and free to use and distribute. Open source licenses, such as the GNU Public License, mandate that software authors share their source code and any redistribution of the software must be accompanied by that same code. Thus, contrary to traditionally copyrighted software, anyone may use and sell open source licensed software.

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[1] China acceded to the WTO in December, 2001.

[2] *China and the WTO: Assessing and Enforcing Compliance: Hearing Before the U.S.-China Economic and Security Review Comm.*, 109th Cong. 65 (2005) (statement of Shaun E. Donnelly, Deputy Assistant Secretary of State, Economic Bureau), *available at* http://www.uscc.gov/hearings/2005hearings/transcripts/05_02_3_4.pdf.

[3] *Id.*

[4] *Id.*

[5] *Id.*

However, the power of open source licenses is derived from copyright law itself. Without specific and strong copyrights, such as the right to make derivative works, the contract created by an open-source license lacks substantive weight. Backed by strong copyrights, an author can license his work under any terms he chooses, since he is granted a monopoly over his work. A licensee who violates these terms infringes on the author's copyright. The various open-source licenses are innovative precisely because they use this protection to advance policy goals contrary to those of traditional copyrights, since non-compliance with the license terms of an open-sourced software product is a violation of the author's copyright.

The traditional rationale for copyright is to grant a temporary monopoly to authors in their work so that they have an incentive to create.[6] Open source software uses licenses to invert the protections of copyright back on their goals—instead of using copyrights to protect a work, the various open source licenses use those rights to mandate that works be shared by all. In effect, the policy for copyrights is totally undone by the prospect of open source; rights holders use their strong rights not to profit, but to share. Open source software development provides alternative incentives to developers who participate without compensation: the kudos of the community, the opportunity to work on high-profile software, and, not least, the chance to show prospective employers concrete work product that is not under the embargo of previous employers. But because of these alternative incentives, the traditional rationale for the grant of copyrights by a government is devalued. The incentives of open source do not depend on the grant of a temporary and exclusive monopoly. In fact, they require that the work be shown to as many people as possible, since several of these incentives, such as the opportunity to work on high-profile software and the kudos of community, depend on the participation of a vibrant community. Open source licenses thus require copyright in order to have any

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[6] *See, e.g.*, U.S. CONST., art. 1, § 8, cl. 8 ("The Congress shall have the power . . . To Promote the Progress of Science and the useful Arts, by securing for limited Times to Authors and Inventors the Right to their respective Writings and Discoveries.").

power, but the power is exercised for exactly the opposite reasons of traditional copyright—to promote the immediate free exchange of information, rather than the short-term profit-taking behind the "temporary and exclusive monopoly."

This Note will argue that China's turn to open source is the logical solution to software-related IPR enforcement in the aftermath of WTO accession, particularly since disputes among member states of the WTO are resolved in light of each state's policies and culture. Part II will give an overview of the open source philosophy. Part III will provide background on the current IPR situation in China. Part IV will discuss the potential effects of open source on enforcement of IPR in the Chinese software market, using the example of Linux, an open source operating system. Finally, Part V will conclude that recognizing open source as an important policy reason for strong copyright law will allow China to implement TRIPs-compliant laws and regulations addressing IP while avoiding a massive and ideologically uncomfortable crackdown on IPR violations.

II. A Brief Overview of Open Source: History and Ideals

The term "open source" refers to two distinct concepts. First and most importantly, it refers to several licenses distributed with free software. Of particular note are the GNU[7] General Public License (GPL) and the Berkeley Systems Distribution (BSD) license.[8] Second, it refers to an entire system of software development that preaches transparency and distributed responsibility as the foundation of quality software.[9] These two definitions encompass a wide range of software with varying copyright restrictions. The range is so broad, in fact, that the

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[7] GNU is a meaningless recursive acronym; it simply stands for "GNU's Not Unix."

[8] The GPL is legal language maintained by the Free Software Foundation. GNU General Public License, http://www.fsf.org/licenses/gpl.html (last visited Nov. 21, 2005); the BSD license was created by the University of California at Berkeley to distribute Unix software. Peter H. Salus, A Quarter Century of UNIX 142-43 (1994).

[9] Natasha T. Horne, *Open Source Software Licensing: Using Copyright Law to Encourage Free Use*, 17 Ga. St. U.L. Rev. 863, 865-66; *see also* David McGowan, *Legal Implications of Open-Source Software*, 2001 U. Ill. L. Rev. 241, 260.

Free Software Foundation provides an exhaustive list of definitions and diagrams to explain the intricacies of "free software" versus "open source."[10] For the purposes of this Note, only the first definition will be used, since Linux is licensed under the GPL and also includes significant non-GPL components.

The GPL specifies several requirements. First, the source code must be freely available "in the same place" as the executable. This usually means the source file must be freely downloadable from the same website or on the same disk as the executable program.[11] Second, the source must be modifiable and redistributable, meaning that anyone who wishes to change the code and redistribute the program must be able to do so.[12] Third, and most importantly, anyone who distributes a modified version of GPL software must likewise license the software under the GPL.[13] As such, the GPL is often referred to as "viral" because it "infects" any software that includes GPL code.[14]

An important exception to the viral nature of the GPL is the "mere aggregation" clause, which states that GPL software can be distributed with other, non-GPL software if it is "merely aggregated" in the same place.[15] This means that a DVD-ROM disc containing Linux (licensed under the GPL) may also contain other, non GPL-software. The viral nature of the GPL only comes into play if GPL source code is modified and redistributed. For example, TiVo, Inc. markets a personal video recorder that uses a custom version of the Linux kernel running on

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[10] *See* Free Software Foundation, The Free Software Definition, http://www.fsf.org/philosophy/categories.html (last visited Oct. 22, 2004) (making the distinction between "free as in speech" and "free as in beer").

[11] *See* Free Software Foundation, Frequently Asked Questions About the GNU GPL, http://www.fsf.org/licenses/gpl-faq.html (last visited Oct. 22, 2004) (explaining in detail the requirements of the GPL).

[12] *Id.*

[13] *Id.*

[14] David S. Evans & Bernard J. Reddy, *Government Preferences for Promoting Open Source Software: A Solution In Search of A Problem*, 9 MICH. TELECOMM. & TECH. L. REV 313, 323 (2003).

[15] Free Source Foundation, GNU General Public License, version 2, http://www.fsf.org/licenses/gpl.html (last visited Oct. 22, 2004). "In addition, mere aggregation of another work not based on the Program with the Program (or with a work based on the Program) on a volume of a storage or distribution medium does not bring the other work under the scope of this License." *Id.*

PowerPC hardware. Its version of Linux is freely available on the web.[16] What most people think of as "TiVo," however, is actually a proprietary application that runs on top of the Linux operating system, which TiVo has not licensed under the GPL.[17] The application is "merely aggregated" with Linux on the TiVo hard drive, and the GPL cannot simply reach out and "take" it.

Linux is the most prominent GPL software currently available. It is a complete operating system, consisting of the main kernel and the user environment. A standard Linux distribution such as Red Hat Linux or Debian Linux consists of several components: a bootloader, which starts the machine; the kernel, which manages the system; drivers, which interface between hardware and the kernel; a user environment, which can be the familiar graphical user interface (hereinafter "GUI") or a text-based shell such as bash or tcsh; and several programs, which allow the user to accomplish general tasks like web browsing or word-processing.[18] Each of these components is independent of the others, allowing a binary distribution of Linux to include both GPL and non-GPL code under the "mere aggregation" clause. The general Linux GUI, for instance, is the X-Window system (X11), which is not licensed under the GPL, but under its own license, the XFree86 Project license.[19] Some popular software that runs on Linux is entirely proprietary, like the TiVo application mentioned above or the Linux versions of Adobe Acrobat and RealPlayer.

The implications of free software lie not in the exclusive use of the GPL, but in the nature of the software companies that

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[16] *See* TiVo – GNU/Linux Source Code, http://www.tivo.com/source/linux.asp (last visted Oct. 22, 2004).

[17] Tivo, Questions About Linux-TiVo Operating System, http://customersupport.tivo.com/knowbase/root/public/tv105201.htm (last visited Oct. 22, 2004). "The TiVo client application itself (the program that you interact with when you use your DVR) is proprietary software developed by TiVo Inc. Use of the TiVo client application is governed by the TiVo Service Agreement. The TiVo client application is NOT in the public domain, and the terms of the GPL do NOT apply to that application." *Id.*

[18] Red Hat Desktop, for example, comes with the Linux kernel, drivers for most standard PC hardware, the GNOME and KDE GUI environments, and several applications, including a version of Adobe Acrobat. *See* Redhat, Client Solutions, http://www.redhat.com/software/rhel/desktop/ (last visited Oct. 22, 2004).

[19] *See* XFree86® Licenses, http://www.xfree86.org/legal/licenses.html (last visited Nov. 21, 2005).

distribute open source software like Linux. Companies like Red Hat do not sell any proprietary software and do not expect to make a profit directly from the sale of open source software. Since all of the code is available, anyone who wants the software itself can simply download it. Instead, Red Hat sells service and support. In effect, its "product" is the reduction of complexity associated with Linux.[20] Similarly, IBM sells powerful servers that run Linux. IBM's advertising focuses on the fact that these servers run Linux, even though Linux grants no direct competitive advantage—Linux runs on virtually any available hardware.[21] The advertisements are marketing IBM's specialized skills in service and support, using Linux as a symbol of complexity.

Since there is no incentive to develop free software to directly make a profit, free software exists far outside the traditional rationale for copyright; however, free software still requires its protection. Copyright exists to grant an exclusive, temporary monopoly to authors to provide incentive for creation. An open source software author, be it a multinational corporation or a college student, explicitly rejects this monopoly in favor of the GPL (or some other open source license). However, open source authors explicitly depend on copyright laws as well, since these laws give power and meaning to the various licenses. As one commentator has stated:

> Far from being an IP-eating virus, the GPL is entirely founded on the courts upholding the rights holder's privilege to do exactly what he wants with his intellectual property. The GPL doesn't do lots of things people suspect it does: it doesn't stop you making money, it isn't designed to torpedo capitalism, and of course, it's no guarantee that

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[20] ERIC RAYMOND, THE CATHEDRAL AND THE BAZAAR 133, 137 (2001).

[21] For example, Google, Inc., which runs its search engine on Linux, started out of a dorm room at Stanford using "a computational Frankenstein built out of spare parts." *See The Birth of Google*, WIRED, Aug., 2005, *available at* http://www.wired.com (follow "News Archive" hyperlink; then follow go to "August 2005" in the "Archive Browser" then follow "Wired Issue 13.08 Aug 2005" hyperlink).

> the software is any good. But it does exactly what it says on the tin: which is to prevent developers hoarding code.[22]

As such, the open source author's interest in copyright protections is unconventional (because there is no expectation of directly profiting from the software) but explicit (because the power of the license is derived from copyright law). A user of software under the GPL who claims that the GPL does not bind her like any other license "would merely open herself to an infringement action" under copyright law.[23]

Without at least theoretically strong copyrights, a license like the GPL fails to be legally binding. Copyright law grants the author a "bundle of sticks," with each stick representing a different right in the work. Open source licenses depend on the recognition that the author of a work has explicit rights in the work—that the "bundle of sticks" is held by the author to do with as he or she pleases. A license like the GPL is only powerful if it can be enforced, and enforcement of the GPL happens in the realm of copyright infringement.

Given the incredible variety of open source software,[24] the clear implication is that software authors have found an alternative incentive to create. Given the stunning ubiquity and quality of some open source software—some 67 percent of websites run on Apache, an open source webserver[25]—a further implication is that the alternative incentive must be a pretty good one. As McGowan notes:

> The social structure of the projects themselves is . . . a large part of the point of open-source production. To some and perhaps many programmers, the community of a given project—including its hierarchy—may be as relevant a product of their work as the code itself. For open-source

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[22] Andrew Orlowski, *Microsoft Offshores Patent War - So Goes the WTO?*, REGISTER, Nov. 19, 2004, http://www.theregister.co.uk/2004/11/19 (follow "Microsoft offshores patent war – so goes the WTO?" hyperlink).

[23] McGowan, *supra* note 9, at 289.

[24] As of Nov. 22, 2005, there were 1,179,715 authors working on 106,424 open-source projects listed at SourceForge.net, one major clearinghouse of open-source software.

[25] Netcraft, October 2004 Web Server Survey, Oct. 1, 2004, http://news.netcraft.com (follow "Dates: Full Index" hyperlink; then follow "October 2004 Web Survey" hyperlink).

> production, therefore, the social consequences of cost-reducing technology are as significant as the ability of such technology to lower the cost of production.[26]

Participation in an open source project thus provides the aspiring software author with a link to a project with perhaps some name recognition, status in a community, and a defined place in a hierarchy—all bankable, useful rewards for time spent working in a community.[27] The key lesson of open source is that it thoroughly subverts the original purpose and intent of copyright to create greater value in alternative incentives.[28]

III. CHINA AND THE IMPLEMENTATION OF TRIPS

China gained approval to join the World Trade Organization in 2001.[29] As a member of the WTO, China is compelled to abide by the Agreement on Trade-Related Aspects of Intellectual Property Rights.[30] The TRIPs agreement "is to date the most comprehensive [international] agreement on intellectual property."[31] It encompasses every type of intellectual property, including copyright.[32] It also establishes minimum standards of protection with a provision for rules of enforcement.[33] In contrast to previous international intellectual property law, TRIPs requires members to provide procedures and remedies to enforce

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[26] McGowan, *supra* note 9, at 286.

[27] *Id.*

[28] *Id.*

[29] Paul Blustein & Clay Chandler, *WTO Approves China's Entry; Move Expected to Speed Beijing's Transition to Capitalism*, WASH. POST, Nov. 11, 2001, at A47.

[30] *See generally id.* (discussing the numerous ramifications of China's membership and its responsibilities as a member country of the WTO).

[31] Adrian Otten & Hannu Wager, *Compliance with TRIPS: The Emerging World View*, 29 VAND. J. TRANSNAT'L L. 391, 392 (1996) (outlining the main features of the TRIPs Agreement).

[32] The intellectual property rights protected by the TRIPs Agreement are copyright and related rights, trademarks, geographical indications, industrial designs, patents, layout-designs of integrated circuits, and undisclosed information. Agreement on Trade-Related Aspects of Intellectual Property Rights, art. 9-39, Apr. 15, 1994, 1869 U.N.T.S. 299, 33 I.L.M. 81 [hereinafter TRIPs Agreement].

[33] Otten & Wager, *supra* note 31, at 392.

the claims of copyright owners.[34] However, TRIPs does not require member states to "grant more extensive intellectual property protection beyond . . . [a] minimum baseline."[35]

In the case of software copyright, TRIPs provides that "Members shall comply with Articles 1 through 21 of the Berne Convention (1971) and the Appendix thereto."[36] Furthermore, Article 10 states that "[c]omputer programs, whether in source or object code, shall be protected as literary works under the Berne Convention (1971)."[37] The Berne convention is an international copyright doctrine first concluded in 1886 and since amended.[38] It provides foreign authors with "the same rights as national authors" when published in a country not of the author's origin.[39]

China brought its copyright law into compliance with the Berne Convention in 1992, and it substantially meets the guidelines in the TRIPs agreement.[40] The China National Copyright Administration (NCA) is the state council's copyright administrative department, which has the power to investigate copyright infringement cases that affect the whole of the country, but local enforcement is left to provincial copyright offices and municipalities.[41] A change of primary importance came in 1995, when software was granted traditional copyright protection instead of merely being registered with the administrative department of

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[34] TRIPs Agreement, *supra* note 32, arts. 41-61 (requiring members to provide administrative, civil, and criminal procedures and remedies for the enforcement of intellectual property rights).

[35] Laurence R. Helfer, *Adjudicating Copyright Claims Under the TRIPs Agreement: The Case For a European Human Rights Analogy*, 39 HARV. INT'L L.J. 357, 360 (1998) ("TRIPs is at its core a 'minimum standards' agreement.").

[36] TRIPs Agreement, *supra* note 32, art. 9, para. 1.

[37] *Id.* at art. 10, para. 1.

[38] Berne Convention for the Prot. of Literary and Artistic Works, Sept. 9, 1886, 25 U.S.T. 1341, 828 U.N.T.S. 221 (last revised at Paris, July 24, 1971) [hereinafter Berne Convention].

[39] *Id.* art. 5, para. 3.

[40] Manavinder Singh Bains, *Software, Sovereignty and the Internet: Circumventing Chaos through Trips*, 4 COLUM. SCI. & TECH. L. REV. 1, 16 (2002/2003).

[41] Regulations on Implementation of Copyright Law of the People's Republic of China (promulgated by the State Council, Aug. 2, 2002, effective Sep. 15, 2002), art. 37, *translated in* 2 CHINA L. FOREIGN BUS. 14,621, 14,633 (2002) [hereinafter Regs. on Implementation of Copyright Law].

the electrical industry.[42] In direct response to TRIPs, the copyright law was further amended to include thirteen specific rights for authors.[43] The scope of "fair use" was also narrowed to comply with TRIPs, and the protection term for software was lengthened from twenty-five years to fifty, with a specific grant of lease rights to the author.[44]

Where Chinese compliance has been "uneven" is in enforcement—indeed, there has been an almost complete lack of enforcement of those laws.[45] Of particular import to this Note, as of 2002, only 4 percent of the software in use in China was estimated to be legitimate.[46] Launching a full-scale enforcement effort against nearly every computer user in the country would be both unpopular and unwieldy. Instead, a combination of independent IPR monitoring groups and the local copyright offices have taken to fully prosecuting the most egregious infringement cases, software and otherwise.[47] For example, "VCD houses," which showed pirated Hollywood films, were popular and operated without sanction until accession. Since that time, several have been shut down across China.[48]

A further problem stems from the vast differences between the Chinese legal system and that of the United States. China follows a civil law tradition, in which case law does not serve as precedent. From the perspective of a copyright lawyer in the United States, "a Chinese court's judgment is too fact specific, [and] cannot be used to predict what will happen in the next

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[42] Paul B. Birden, Jr., *Trademark Protection in China: Trends and Directions*, 18 LOY. L.A. INT'L & COMP. L.J. 431, 441-42 (1996).

[43] Copyright Law of the People's Republic of China (promulgated by the Standing Comm. Nat'l People's Cong., Oct. 7, 1990, revised Oct. 27, 2001, effective June 1, 1991), art. 10, *translated in* Judicial Protection of IRP in China, http://www.chinaiprlaw.com/english/laws/laws10.htm (last visited Dec. 1, 2005). The thirteen specific rights are rights in copying, issuing, renting, exhibiting, performing, filming, broadcasting, rebroadcast through internet, photographing, editing, translating, arranging, and other rights belonging to the copyright owner. *Id.*

[44] *See Restrictions Lifted on Foreign Ownership of Many Businesses*, WANG & WANG, http://www.wangandwang.com/news4.htm (last visited Nov. 30, 2005).

[45] Yahong Li, *The Wolf Has Come: Are China's Intellectual Property Industries Ready for the WTO?, 20* UCLA PAC. BASIN L.J. 77 *passim* (2002).

[46] *Id.* at 92.

[47] *Id.* at 99.

[48] *Id.*

case."[49] In addition, China's copyright law does not have provisions requiring that remedies for copyright infringement be proportional to the harm caused by infringement.[50] This means that judges may determine remedies as they see fit, since Chinese judges do not set precedent or make law.[51] As such, a common refrain among foreign attorneys pursuing copyright actions in China is "the small amount of damages and delays in the court system reduced the deterrent effect" of the damages eventually rewarded.[52]

Further, there are a number of caveats to TRIPs that allow for slow implementation of the agreement in certain instances. TRIPs provides that its objective is to "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."[53] Furthermore, the agreement explicitly recognizes the "special needs of the least-developed country Members in respect of maximum flexibility in the domestic implementation of laws and regulations in order to enable them to create a sound and viable technological base."[54] The least-developed country members constitute a group with an ambiguous membership, since China qualifies at least as a developing country under the United Nations definition but would be considered a "less-developed country" under the World Bank taxonomy.[55] Under either definition, China is entitled to a ten-year grace period before implementing TRIPs.[56] Specifically,

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[49] Naigen Zhang, *Intellectual Property Law Enforcement in China: Trade Issues, Policies, Practices*, 8 FORDHAM INTELL. PROP. MEDIA & ENT. L.J. 63, 81 (1997).

[50] *See* Ying Li, *Procedural Provisions for Intellectual Property in GATT and the Legislation in China*, 4 CHINA PAT. & TRADEMARKS 17, 21 (1994) (noting that lack of specific remedial provisions in China's law prevents China's enforcement measures from achieving deterrent effect required by TRIPs).

[51] *See* ALBERT HUNG-YEE CHEN, AN INTRODUCTION TO THE LEGAL SYSTEM OF THE PEOPLE'S REPUBLIC OF CHINA 114 (1992) (noting that "there is no established doctrine of precedent" in the Chinese court system).

[52] *Beijing Court Awards Damages to U.S. Firms in Software Piracy Suit*, WEST'S LEGAL NEWS, Apr. 23, 1996, 1996 WL 260085.

[53] TRIPs Agreement, *supra* note 32, art. 7.

[54] *Id.* pmbl.

[55] Bains, *supra* note 40, at 15.

[56] *See* TRIPs Agreement, *supra* note 32, art. 66, para. 1.

under Article 66, China may not need to apply the provisions of TRIPs until 2011—ten years after its accession to the WTO.[57] Combined with Article 65, section 3, which allows an even greater delay for a member nation that is in the process of transition from a managed economy to a free-market system and "which is undertaking structural reform of its intellectual property system and facing special problems in the preparation and implementation of intellectual property laws and regulations,"[58] China may be able to delay indefinitely, because it may never complete its transition to a free-market economy.

The provision for delay must be read in conjunction with Article 8, which states: "[m]embers may, in formulating or amending their laws and regulations, 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."[59] China is thus granted at least a ten-year period, perhaps much longer, in which to formulate a copyright policy that promotes its socio-economic interests.

China's socio-economic interests may be fundamentally incompatible with the Western notion of intellectual property, however. In his September 23, 2004 speech before the Trade Policy Staff Committee, the president of the U.S.-China Business Council remarked that the most far-reaching problem in China's WTO compliance efforts was "the continuing pervasiveness of intellectual property violation."[60] He further indicated that the problem was systemic throughout the Chinese political system.[61]

> I would add here that it will be essential, in my view, for the prosecution of major intellectual property violations in China to go wherever thorough investigation takes it; the implicit message, to Chinese society, of an investigation that suddenly goes cold as it approaches sensitive levels of

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[57] *Id.*

[58] *Id.* art. 65, para. 3.

[59] *Id.* art. 8, para. 1.

[60] Robert A. Kapp, President, U.S.-China Bus. Council, Oral Remarks to the Trade Policy Staff Committee Hearing on China's Progress in Implementing its WTO Accession Commitments (Sept. 23, 2004), *available at* http://www.uschina.org/public/documents/2004/09/tpsc_remarks.html.

[61] *Id.*

> political or economic power would be extremely unhelpful.[62]

This goal might be quite difficult to achieve, since Chinese culture is traditionally hostile to intellectual property rights.[63] Works of the mind have not always been viewed as property, frustrating enforcement of ownership claims.[64] Furthermore, some authors have claimed that China's ancient culture would have prevented the grant of ownership rights to authors because it would have "frustrated the emperor's goal of making ideas widely accessible to the people."[65]

Coupled with the ideological stance of the Chinese government, copyright enforcement is an issue equally political and social. The Chinese government controls the press, print, and electronic media with near-total control and the power of censorship. The overriding concern is that media voices must "serve the people and socialism."[66] The Chinese Constitution is explicit about that requirement, stating, "[the] State promotes the development of literature and art, the press, broadcasting and television undertakings, publishing and distribution services, libraries, museums, culture centers and other cultural undertakings, *that serve the people and socialism*" (emphasis added).[67] While such a clause is the basis of copyright law (incentivizing creation), the qualifier is all-important. In the current environment, "serving people and socialism" means concern about the influences of Western culture.[68]

Regulating the influence of Western culture, while providing Western authors strong copyright protection, is a particularly thorny issue for the Chinese government.[69] As a result, there is a systemic disinclination to strongly enforce copyright, because

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[62] *Id.*

[63] Julia Cheng, *China's Copyright System: Rising to the Spirit of TRIPs Requires an Internal Focus and WTO Membership*, 21 FORDHAM INT'L L.J. 1941, 1952 (1998).

[64] *Id.*

[65] *Id.*

[66] *See* Zhang, *supra* note 49, at 78.

[67] XIN FA [Constitution] art. 22, § 1 (1993) (P.R.C.).

[68] Zhang, *supra* note 49, at 78.

[69] *Id.*

such enforcement would undermine the service of socialism.[70] China's socialist ideology informs every level of decision making in the government: "In spite of fundamental shifts in China's official stance on foreign involvement, the Chinese bureaucracy, in particular, still harbors a deep mistrust for private companies, which they view as beyond their control or influence."[71] Given the structure of Chinese copyright enforcement, with the local copyright offices handling most cases, it is hard to see foreign companies garnering favorable treatment from those same bureaucrats.

Without a top-level directive to harshly punish copyright infringers or a bureaucratic class interested in protecting the private interests of Western foreigners, the attitude of the Chinese public regarding copyrights is unlikely to change. Currently, software piracy is acceptable even among knowledgeable PC users.[72] Furthermore, piracy of Microsoft software in particular is seen as trivial because of widespread rumors that Microsoft embeds secret applications in Windows that enable the United States National Security Agency to spy on end users.[73]

It would be a significantly unpopular move for the Chinese government to instruct judges to impose harsh sentences on copyright infringers. Essentially, the government would be allowing foreigners—specifically, American software and media companies—to sue Chinese citizens for hewing to a social norm. Particularly since pirating Microsoft software is seen as a protest against Western imperialism, punishing citizens for harming Microsoft would send mixed messages. Given the choice between exposing nearly every citizen to liability and simply ignoring the issue, China seems to have implemented enough law on the books to conform to TRIPs, but has studiously avoided any attempt to actually enforce that law. The government has instead focused on Linux and open source as an alternative path to technological parity. It would require a massive state investment

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[70] *Id.*

[71] Christopher Duncan, *Out of Conformity: China's Capacity to Implement World Trade Organization Dispute Settlement Body Decisions After Accession*, 18 AM. U. INT'L. L. REV. 399, 423-24 (2002).

[72] Jonah Greenberg, *Linux in China: Not ready for Prime Time*, SALON.COM, Aug. 9, 2000, http://dir.salon.com/tech/feature/2000/08/09/linux_china/index.html.

[73] *Id.*

for the Chinese software industry to develop technology capable enough to compete in a global marketplace without the use of open source software—an investment without a guaranteed return.

Given the size of the Chinese market, proprietary software vendors are understandably unwilling to concede the issue to Linux. Microsoft chairman Steve Ballmer, in a speech before various representatives of Asian governments, engaged in traditional hard-sell tactics, claiming that open-source software was inherently insecure: "We think our software is far more secure than open-source software. It is more secure because we stand behind it, we fixed it, because we built it. Nobody ever knows who built open-source software."[74] In light of the common perception that Microsoft colludes with the United States government in enabling security backdoors so that the CIA can shut down Chinese networks during a war with Taiwan,[75] reiterating that Microsoft is the sole controller of Windows code is perhaps not the best sales strategy.

Sales of Windows, however, will go up if Microsoft is successful in convincing Asian governments that use of Linux is simply illegal. In the same speech, Ballmer claimed that Linux violated more than 228 patents, stating, "Someday, for all countries that are entering the WTO, somebody will come and look for money owing to the rights for that intellectual property."[76] Allegations of patent violations are highly disputed, however, and only the U.S.-based SCO Group has come forward with suits against IBM and Novell, alleging that Linux violates patents on commercial UNIX code.[77] Perhaps not surprisingly, this suit has the backing of Microsoft, which has become an investor of SCO.[78]

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[74] *Microsoft Warns Asian Governments of Linux Suits*, CNN.COM, Nov. 11, 2004, http://www.cnn.com/2004/TECH/biztech/11/19/tech.microsoft.linux3.reut/index.html.

[75] Greenberg, *supra* note 72.

[76] *Microsoft Warns Asian Governments of Linux Suits*, *supra* note 74.

[77] Steven J. Vaughan-Nichols, *"Novell Pushes for End to SCO's Suit,"* EWEEK.COM, Nov. 11, 2004, http://www.eweek.com/article2/0,1759,1724744,00.asp.

[78] Stephan Shankland, *Fact and Fiction in the Microsoft-SCO Relationship*, ZDNET.COM, Nov. 15, 2004, http://news.zdnet.com/2100-3513_22-5450515.html.

Even more interesting is the fact that Microsoft has used UNIX code in the past, most notably in the networking component of Windows, which is based on the Berkeley Systems Distribution of UNIX,[79] and in its Hotmail service, which runs on some servers running FreeBSD.[80] Even with the financial and legal assistance of Microsoft, however, SCO is having a hard time proving that either IBM or Novell has misappropriated patented code.[81] If patent infringement claims against Linux vendors are unsuccessful in the United States, which enjoys strong IP protection laws, it is difficult to see how they could be enforced globally under TRIPs.

A WTO dispute settlement board (hereinafter "DSB") resolves TRIPs disputes.[82] In the event of a TRIPs dispute, a DSB would balance various factors in determining whether an infringement claim under Chinese law fell outside the objectives of TRIPs—specifically, the promotion of copyright to "contribute to the promotion of technological innovation . . . in a manner conducive to social and economic welfare."[83] As has been discussed, China's social and economic welfare is not well served by reliance on a single supplier of proprietary software. According to one estimate, even if Microsoft were to halve the price of its software in China, it would still pocket some US$625 million per year.[84] The Chinese government is obligated to find a way to keep at least some of that revenue inside its borders, and to prevent a monopoly based on single vendor lock-in. Since open source depends on the existence of copyright law as the basis of its licenses, China could make a strong case before a DSB that it has implemented copyright law in accordance with TRIPs, but that aggressive enforcement of those laws would have a chilling effect on Chinese adoption of technology. According to Jonah

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[79] Lee Gomes, *Microsoft Uses Free Code*, WALL ST. J., June 18, 2001, at B6.

[80] *Id.*

[81] Maureen O'Gara, *SCO vs. Novell Update: Novell, the Spoilsport*, ENTERPRISE OPEN SOURCE MAGAZINE, Nov. 13, 2004, http://www.linuxbusinessweek.com/story/47050.htm.

[82] Rochelle Cooper Dreyfuss & Andreas F. Lowenfeld, *Two Achievements of the Uruguay Round: Putting TRIPs and Dispute Settlement Together*, 37 VA. J. INT'L L. 275, 279 (1997).

[83] TRIPs Agreement, *supra* note 32, art. 7.

[84] Greenberg, *supra* note 72.

Greenberg, most Chinese see computers as a particularly Western creation and are hesitant to use them.[85] If China were to clamp down on widespread piracy and begin to prosecute those citizens who use pirated software, technology adoption would drop, as the vast majority cannot afford to pay for legal software.[86] Furthermore, even if China were to lose a case before a DSB, any Chinese attempt to comply with such a ruling will likely be met with failure.[87] As Greenberg relates, "'[E]xpectations in the United States [and other WTO Member States] about the effects of China's accession would benefit from realistic perspectives on current Chinese conditions,' and Members should restrain hope for genuine change in China's political and legislative landscape."[88] As a result of this troubling reality, most WTO member nations have expressed reservations about bringing cases before a DSB in order to get China's "house in order."[89] In essence, "nobody is spoiling for a trade fight."[90] On the other hand, passage of TRIPs-compatible copyright law allows the GPL and other open source licenses to function in the same way they do in the United States and other countries. Since the owner of a copyrighted work has theoretically strong rights over his work, he also has the right to cede those rights to others and demand compliance with license terms. Without at least theoretically strong copyright law, the GPL is impossible. China may well be implementing copyright provisions to further its economic and social agenda, but the agenda may be quite different from that of the other members of the WTO.

IV. THE IMPACT OF OPEN SOURCE ON CHINA

For a country like China, whose entry to the WTO requires that its formerly weak IP laws must now be made to conform to the TRIPs, the rising popularity of open source software means

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[85] *Id.*

[86] *Id.*

[87] Duncan, *supra* note 71, at 492.

[88] *Id.* (quoting Stanley Lubman, *Bird in a Cage: Chinese Law Reform After Twenty Years*, 20 NW. J. INT'L L. & BUS. 338, 415 (2002)).

[89] *Id.* (quoting David Murphy, *Riding the Tiger of Trade*, FAR E. ECON. REV., Nov. 22, 2001, at 44).

[90] *Id.* at 496 (quoting Murphy, *supra* note 89, at 40-41).

that a major growth industry may simply not care about the condition of IP laws. It need only have copyright laws strong enough to support a licensing scheme like the GPL. Furthermore, given the Chinese government's stated preference for Linux, and the active efforts to develop a state version, open source software could potentially become the backbone of the Chinese software industry.[91] Consider a state in which the government distributes a robust, secure operating system for free—an operating system whose ideological underpinnings (the power of many authors creates better software) just happen to mesh well with official government doctrine (socialist worker's paradise). The domestic software industry would be at a huge advantage because it has the unique skills necessary to tailor services to an exclusive market without first building the necessary installed base of users required by foreign firms.

Although China was bound to implement TRIPs, it was also "free to determine the appropriate method of implementing the provisions of [TRIPs] within [its] own legal system and practice"[92] and "design legislation that is compatible with [its] own level of development and with [its] own economic and technological policies."[93] Given the stark contrast between China's economic policies and those of other WTO members, it is not hard to see why the Chinese implementation of TRIPs has not yet achieved any notable results. China remains the "worst country in the world for copyright infringement and trademark violations, costing artists, writers, computer software developers, designers, drug companies, shampoo makers—just about anyone with a product for sale—billions of dollars a year."[94] In addition, there are significant issues of "brain drain" in Chinese IP industries, particularly software.[95] Many of the best Chinese software

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[91] Matt Berger, *LinuxWorld Expo: Chinese Government Raises Linux Sail*, INFOWORLD, Aug. 13, 2002, http://www.infoworld.com (follow "news" hyperlink; then follow "Search by Date" hyperlink; then follow "2002Archive" hyperlink; then follow "August 13" hyperlink).

[92] TRIPs Agreement, *supra* note 32, art. 1, para. 1.

[93] CARLOS CORREA, INTELLECTUAL PROPERTY RIGHTS, THE WTO AND DEVELOPING COUNTRIES: THE TRIPS AGREEMENT AND POLICY OPTIONS 8 (1999).

[94] John Pomfret, *Chinese Pirates Rob "Harry" of Magic, and Fees*, WASH. POST, Nov. 1, 2002, at A1.

[95] Li, *supra* note 50, at 94-95.

programmers and engineers either immigrate to the United States or work in the Chinese offices of U.S. firms.[96] Ultimately, this results in Chinese government-trained and -funded developers working for foreign companies on proprietary software. Given the intense problem of piracy, it is no surprise that Chinese software firms find it difficult to survive.[97]

The economics of the software market do not bode well for domestic software firms either. Microsoft, for example, is able to lose money in China due to piracy because it makes enough in other markets to cover the loss. A Chinese firm, on the other hand, does not have that luxury, and may be driven to extinction by piracy.

Piracy has damaged the Chinese software industry in a much more concrete way, and it is precisely the reason Microsoft is willing to lose the money upfront: market share through mindshare.[98] If the entire population has easy access to bootleg Microsoft software, there is no reason for them to pay for Chinese software. Over time, Microsoft believes that the piracy problem will be solved, and people will begin paying for software at a rate more befitting a developed WTO member country.[99] When that happens, Microsoft intends for its software to be the de facto standard so that Chinese-developed software will fail in the market regardless. Their argument is simple: "If everybody you know uses Microsoft Word, then you will find life easier if you use it too."[100] This is not as far-fetched a plan as it sounds, particularly not for Microsoft, which has demonstrated a willingness to lose large sums of money in a new market simply to win the mindshare battle. For example, Microsoft's XBox console video game system is a resounding failure in Japan, selling just 196 units in the entire country in a typical week in 2005 while Sony's competing PlayStation 2 sold 33,705 units in an identical period.[101] Yet Microsoft has remained in the market, cutting

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[96] *Id.*

[97] *Id.*

[98] *Id.*

[99] *See* Sam Williams, *Profits from Piracy*, SALON.COM, Sept. 26, 2002, http://www.salon.com/tech/feature/2002/09/26/piracy_unlimited.

[100] *The New Economy Survey*, ECONOMIST, Sept. 23, 2003, at 27, 30.

[101] Andrew Wilson, *Japanese Hardware Chart (7/31)*, GAME GOSSIP, Aug. 5, 2005, http://www.gamegossip.com/comment.php?id=14310.

prices on the system to the point where it is losing money on each console sale, hoping to make up the difference in game sales and, eventually, mindshare for their new product, the XBox360.[102]

Enter open source. The Chinese government, realizing that a crucial moment was passing, announced plans to develop a version of Linux to be used by the government and, as per the terms of the GPL, to be freely available to the public.[103] Open source represents the only method by which the Chinese software industry can compete with foreign companies willing to lose money due to piracy. Since the economics of open source do not depend on direct income from software sales, free distribution becomes a non-factor, and the Chinese companies can begin to compete in the marketplace and win critical mindshare. One commentator stated, "It was a rather smooth chess move by the Chinese government to avoid copyright infringement and 'software piracy' issues by simply promoting an operating system that obviates the issues."[104]

As an added benefit, open source software depends on copyright law for its continued survival; the GPL is powerless unless backed by copyright law. The Chinese government's promotion of Linux suggests, albeit in a somewhat obtuse manner, that it considers its copyright law to be sufficiently developed to support open source licenses. This is critically important, particularly in terms of the WTO. If China considers open source a policy reason to pass strong copyright laws, then international copyright disputes judged before a DSB will have to account for the fact that the Chinese policy reasons for their copyright laws are remarkably different from the traditional basis for copyrights. Coupled with the fact that there would be only a solitary civil judge's order as the basis of the suit,[105] and not a written

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[102] Rob Fahey, *MS to Lose £525m on Xbox This Year*, GAMESINDUSTY.BIZ, June 26, 2002, http://www.gamesindustry.biz/content_page.php?section_name=pub&aid=210; *see also* Joris Evers, *Microsoft Loses Money on Xbox: Despite Healthy Sales and Push into Online Gaming, Xbox Losses Almost Double*, PCWORLD.COM, Feb. 3, 2003, http://www.pcworld.com/news/article/0,aid,109172,00.asp.

[103] Doc Searls, *Raising the Red Flag*, LINUXJOURNAL.COM, Jan. 30, 2002, http://www.linuxjournal.com/article.php?sid=5784.

[104] *Id.*

[105] *See* Zhang, *supra* note 49, at 66, 81.

decision based on a body of precedent, the workings of a DSB in regards to a copyright infringement claim would be tortured and all too reminiscent of the "trade fight" the other powerful members of the WTO wish to avoid.[106]

There are already several Linux companies in China. The most prominent is Red Flag, the distribution company favored by the Chinese government. Red Flag has a unique status in the open source community: given its nature and the efforts of the government behind it, at least one commentator has speculated that it may be the world's most widely deployed Linux distribution, topping such notable Linux companies as Red Hat, IBM, and SuSE.[107] Red Flag has signed agreements with Dell to ship Red Flag Linux on Dell hardware sold in China,[108] as well as on IBM, HP, and others.[109] In this case, the problem of "brain drain" is a non-issue. Improvements made to open source software at other companies, Chinese or not, are available to Chinese companies as well. Red Flag is thus free to expend resources on customizing Linux for the Chinese market[110] and marketing the world's only operating system designed with China in mind. "[I]mported technologies plus the knowledge of the Chinese market will give domestic enterprises a comparative advantage over foreign companies."[111] This is "technology transfer" at its most extreme, with potentially enormous benefits both financial and political.

Furthermore, a license like the GPL would allow Chinese software firms to restrict certain aspects of their products from the eyes of foreign competitors using the "mere aggregation" clause; while Red Flag's Linux distribution may be open sourced,

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[106] Duncan, *supra* note 71, at 492.

[107] Searls, *supra* note 103.

[108] Press Release, Linux, Dell Expands Red Flag Linux Operating System into Client Product Category in China (Mar. 15, 2004), http://www.redflag-linux.com/jujiao/enews_view.php?id=1000000021.

[109] *See* Redflag Software Co., Partners, http://www.redflag-linux.com/hezuo/elb.php?id=3 (last visited Dec. 1, 2005).

[110] Red Flag Linux is based on Red Hat Linux, a major U.S. distribution, with most of the changes occurring to support Chinese. *See* Matt Michie, *Red Flag, China's Home-Grown Linux Distribution, is a Good Start*, NEWSFORGE.COM, Feb. 2, 2002, http://www.newsforge.com/article.pl?sid=02/02/21/2211255 (last visited Dec. 1, 2005).

[111] Li, *supra* note 50, at 106.

certain bundled applications could be closed-source, retaining the competitive advantages of localized Chinese development. The "mere aggregation" clause of the GPL would also allow the Chinese government to distribute a state version of an open source operating system with built-in monitoring programs to better control citizen access to the Internet, without having to reveal the source code to such software, or even admit that such software was being installed. The Chinese government is extremely sensitive about information on the Internet, and if most citizens are running official state versions of the Linux operating system, the "mere aggregation clause" would allow the government to install filters and monitor internet traffic at the level of the individual client without revealing the source code of the filter or the methods of filtration.[112]

In terms of TRIPs, this move to open source places the Chinese government in a very peculiar position—just as it has embraced the WTO and begun to make inroads to curb its staggering IP theft problems, it stands to create a powerful domestic open source software industry that does not depend on traditional IPR enforcement at all. Since TRIPs allows each country to write its own TRIPs-compatible law in accordance with "economic and social policy," it stands to reason that China may simply decide that its economic and social policy in regards to computer software is to strongly promote open source. Regardless of the concessions China has recently made to foreign capitalist enterprise, it remains a Marxist (and Maoist) country. "The acquisition of private property was largely forbidden in China because traditional Marxism considered the renunciation of private property essential to economic growth. Consequently, the concept of copyright as a private property right conflicted with the basic tenets of Marxism."[113] What could be more Marxist than a computer operating system owned by no one and capable of defeating a profiteering Western company in the open marketplace?

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[112] The Chinese government currently monitors and filters the Internet at the Internet Service Provider (ISP) level. *See* Jonathan Zittrain & Benjamin Edelman, Inaccessible Sites Tested by Users of the Real-Time Testing System: Real-Time Testing of Internet Filtering in China, http://asp-cyber.law.harvard.edu/filtering/list.html (last visited Dec. 1, 2005).

[113] Cheng, *supra* note 63, at 1981.

V. CONCLUSION: INVERTING COPYRIGHT

Political statements aside, open source represents an elegant end run around the troublesome issue of copyright enforcement in China. Although the traditional rationale for copyright law is the strong interest of governments to incentivize creation, open source licenses fundamentally alter the intended application of copyright law. By using copyright as the basis of a mandate to redistribute, open source provides an alternative answer to the question of "Why have copyright?" If the policy reasons behind copyright law are no longer strictly economic, but instead cultural, China's entire IPR system suddenly seems far less chaotic. "[Open source software] uncouples the economic incentives from the creative process."[114] If China's copyright law exists to enable open source, rather than to provide incentive for authors, the problem of enforcement becomes much more manageable. Only gross violations of open source licenses need be prosecuted, and since the impetus for enforcement is that violators are *not acting in the interests of the community*, the distrust of private corporations at the bureaucratic level becomes a positive attribute of the system rather than a critical point of failure.

Furthermore, a state policy friendly towards, or even mandating, open source allows the Chinese government to thoroughly screen and censor unwelcome Western influences. Although it is not a desirable result from the perspective of the rest of the world, mandating open source in the software field enables the government to literally tear apart the work of every software company in the state to look for politically unwanted elements. Given the Chinese predilection for control, the transparency of open source software allows the government to promote and support private enterprise while monitoring it closely. In addition to monitoring the software of foreign firms, the prospect of a free operating system distributed by the government would allow finer control and monitoring of individual citizens. Because such monitoring software would be "merely aggregated" with the distribution of the operating system, and thus not subject to the GPL, those who wished to bypass it could not easily

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[114] Patrick K. Bobko, *Open-Source Software and the Demise of Copyright*, 27 RUTGERS COMPUTER & TECH. L.J. 51, 91 (2001).

disassemble it. While the monitoring of each citizen's communication is not a direct benefit of open source, the Chinese government would likely see such a possibility as an additional reason to distribute a free operating system to its citizens.

In addition to the alternative reward structure of open source, in which authors work for kudos and status in the community instead of economic benefit,[115] an official Chinese policy favoring open source carries several international benefits for the Chinese worker. A generation of Chinese software engineers leaving their mark on the software that literally runs the Internet would be a major step up on the world stage.[116] A generation of Chinese software engineers respected worldwide for their coding skills would do more to create economic and technological parity between China and the West than any number of well-meaning DSB decisions. Furthermore, increasing familiarity with Chinese workers and their skills leads to increasing trust, which could lead to foreign multinationals outsourcing work to Chinese companies. An official policy friendly towards open source advances the goals of Chinese WTO accession without compromising any uniquely Chinese ideals.

Open source software has led to a transformation in the software industry. Licenses such as the GPL take traditional property rights in works of the mind and use them to enforce a sense of community.[117] By enforcing an author's rights in a work in order to mandate free redistribution as opposed to a temporary and exclusive monopoly, open source inverts the traditional rationale for copyright protection. The rise and popularity of open source has caused no end of consternation in the software business in the United States and other Western countries. Now that accession to the WTO has given China the opportunity to completely re-write its copyright laws, the ideals of open source

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[115] McGowan, *supra* note 9, at 274.

[116] It could be argued that this is analogous to the "kudos" received by the open source author in any other country, but the fact remains that as of yet, Chinese technology companies have not yet achieved the status of their foreign counterparts. *See, e.g.*, Connie Tan, *Creative Ramping Up Production, Wants to Win MP3 War*, CHANNEL NEWSASIA, Jan. 12, 2005, http://www.channelnewsasia.com/stories/singaporebusinessnews/view/127025/1/.html. (Sim Wong Hoo, CEO of Creative, Inc., using an example of Chinese MP3 players as the "cheapest" and "worst").

[117] McGowan, *supra* note 9, at 287.

may well become the policy reasons behind Chinese copyright law. If China can show that it values copyright as the power behind open source rather than as the traditional monopoly incentive for authors, it will have solved some of its most troubling problems as a new member of the WTO. An IPR regime based around copyright as the basis for open source instead of economic incentive could very well take China's WTO compliance from "uneven" to "revolutionary."