

DEFENSIVE USE OF PRIOR ART TO EXONERATE ACCUSED ACTS IN U.S. AND CHINESE PATENT LITIGATION

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Abstract

It is a fundamental principle of patent law that no one may exclude with his patent what is within the scope of the prior art. This article focuses on the 'practicing the prior art' defense, where the defendant defensively demonstrates that the accused acts fall within the prior art and therefore may be freely practiced, as implemented in U.S. and Chinese jurisprudence.

A defendant in U.S. patent litigation has no recourse to this defense with respect to literal infringement, and his options with regard to prior art defenses is limited to the offensive variant, prior art invalidity. In contrast, a defendant in a Chinese infringement suit may only invoke this defensive variant of the prior art defenses. We explore the rationale for and against the existence of the practicing the prior art defense, and examine the peculiarities of the Chinese approach of tying its practicing the prior art defense to the doctrine of equivalents.

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I. INTRODUCTION

A. The Relationships of the Prior Art Defenses with Other Doctrines of Patent Law and the Scope of this Article

To promote the creation and disclosures of inventions, governments grant patents to those who open up new technological territory. These monopoly rights allow patentees to exclude infringers through judicial proceedings and obtain damages and injunctions for intrusions.¹ Nonetheless, basic fairness dictates that the rewards of patent grants should be coextensive with the scope of the inventions.

A number of patent law doctrines, using comparisons to ascertain what may be patented or practiced, grow out of these fundamental principles. These doctrines can be conceptualized along two dimensions. The first is the object of comparison, which could be the patent claim or the prior art. The second is whether the doctrines are exclusive fences (“you shall not do X”) or inclusive safe-harbors (“you may do Y”). The reader familiar with Western law is familiar with the two key questions of prior art validity and infringement. Both doctrines are exclusive walls: the former forbids patenting within the prior art while the latter forbids practicing within the scope of patent claims. However, there is no theoretical objection to the existence of inclusive walls around the prior art and around patent claims as well. These doctrines that exclude/include based on prior art/patent claims are summarized in matrix form in Figure 1.

¹ Agreement on Trade-Related Aspects of Intellectual Property Rights [hereinafter TRIPS] arts. 42, 44, 45, Apr. 15, 1994, 33 I.L.M. 81

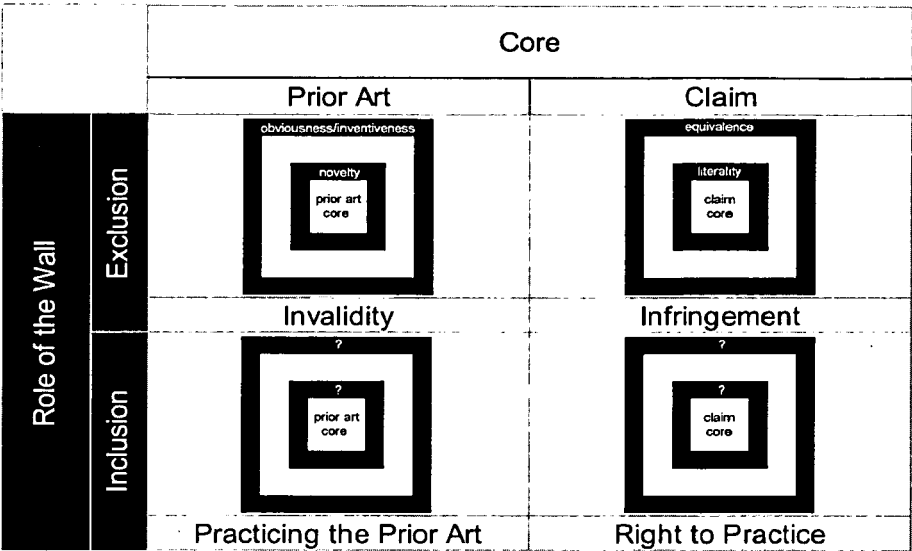


Figure 1: A Generalized View of Patent Law. The “inner walls” around each core are those that exclude/include around the exact bounds of the core. The “outer walls” around each core are those that exclude/include around a certain reach of the core.

The two doctrines on the left column are built around a comparison with the prior art:

- 1) patent claim invalidity – the defendant *offensively* compares the claims of the asserted patent in relation to the prior art, demonstrates that the claims fall within the scope of the prior art (a rule of exclusion), and thereby proves the invalidity of the claims; or
- 2) practicing the prior art – the defendant *defensively* demonstrates that his accused acts fall within the prior art, which therefore could not have fallen within any valid patent grant. That is, the accused acts can be freely practiced as against the patentee (a rule of inclusion).

The two differ on the subject compared to the prior art. The first is centered on the claim scope, while the second is centered on the accused acts. The first has an offensive character that the second lacks, because successful invocation of the first defense means that the asserted patent claim is unenforceable against the world, not just the accused infringer. The second defense only exonerates the accused acts, and the claim survives to be used by the patentee against other defendants.

Through these prior art defenses, the prior art takes a central role in patent law. The prior art, within the context of the offensive prior art invalidity defense, is the technological territory of patentability. The prior art, within the context of the defensive practicing the prior art defense, is the technological commons. How courts apply the prior art is critical to the operation of patent law.

The patent laws of the United States and the People’s Republic of China (“China”) are particularly suited to a study of the prior art defenses from a

comparative angle, because of the strong contrasts in local assumptions, procedures, and constitutional law groundings. In an earlier article,² we have discussed the offensive use of prior art to invalidate patents in U.S. and Chinese patent litigation. We have also explored the relationships between these prior art invalidity doctrines and the infringement doctrines.

In this companion article, we explore how the prior art may be used to defensively exonerate accused acts. As a matter of general principle, one who is practicing the prior art *should not* be liable for patent infringement. Chinese patent law permits a defendant to demonstrate that his accused acts falls within the prior art as a complete defense to claims of infringement. However, U.S. patent law does not permit such a practicing the prior art defense, and the defendant may only use the prior art to invalidate the asserted patent claims but not to exonerate accused acts. We examine the Chinese application of the existing technology defense (现有技术抗辩),³ and analyze the U.S. rationale for refusing the use of the defense.

B. Summary of the U.S. and Chinese Infringement and Prior Art Invalidity Doctrines

This article is best appreciated with an understanding of the U.S. and Chinese doctrines of infringement and prior art invalidity. A brief summary of these doctrines is provided here; the reader is directed to our previous article for a thorough discussion.⁴

Consistent with international practice,⁵ both U.S. and Chinese laws bifurcate infringement into literality and equivalence. Under U.S. patent law, “[t]o establish literal infringement, ‘every limitation set forth in a claim must be found in an accused product, exactly.’”⁶ The determination of equivalence is based on whether “the accused product or process contain[s] elements identical or equivalent to each claimed element.”⁷ In the element-by-element

² Timothy Lau, *Offensive Use of Prior Art to Invalidate Patents in U.S. and Chinese Patent Litigation*, 30 UCLA PAC. BASIN L.J. 2 (2013).

³ “Existing technology” (现有技术) is the Chinese term-of-art for prior art, and “existing technology defense” correspondingly refers to the practicing the prior art defense.

⁴ Lau, *supra* note 2. For a further discussion on the differences between the Chinese and U.S. doctrines of infringement, see Patrick King, Timothy Lau & Gautam Kene, *Navigating the Shoals of Joint Infringement, Indirect Infringement, and Territoriality Doctrines: A Comparative Analysis of the Patent Laws of the People’s Republic of China and the United States of America*, 25 COLUM J. ASIAN L. 276 (2012).

⁵ See Allan M. Soobert, *Analyzing Infringement by Equivalents: A Proposal to Focus the Scope of International Patent Protection*, 22 RUTGERS COMPUTER & TECH. L.J. 189 (1996) for a survey of the doctrine of equivalents within the patent laws of different countries.

⁶ *Becton, Dickinson & Co. v. Tyco Healthcare Grp.*, 616 F.3d 1249, 1253 (Fed. Cir. 2010) (citation omitted).

⁷ *Warner-Jenkinson v. Hilton Davis Chem. Co.*, 520 U.S. 17, 40 (1997).

comparison of the accused product with the patent claim, U.S. courts may apply the “triple identity” test, that is, “whether a substitute element matches the *function*, *way*, and *result* of the claimed element,” or alternatively ask “whether the substitute element plays a role substantially different from the claimed element.”⁸

According to the judicial explanations of the Chinese Supreme People’s Court, infringement includes literal⁹ (相同) and equivalent (等同) components.¹⁰ The literal infringement inquiry is the same as that of the United States. In contrast, in determining equivalence, Chinese people’s courts not only apply the triple identity test, that is, the “equivalent feature . . . uses basically the identical way, effectuates basically the identical function, and accomplishes basically the identical effect as the claimed technical feature,” but additionally impose a requirement that the equivalent feature be one “which a person of ordinary skill in the art would be able to conceive of without inventive labor” (该领域的普通技术人员无需经过创造性劳动就能够联想到的特征).¹¹

Again, consistent with international practice,¹² both U.S. and Chinese patent laws bifurcate the prior art invalidity determination into novelty and obviousness/inventiveness. Under U.S. law, invalidation on novelty grounds “requires the presence in a single prior art disclosure of all elements of a claimed invention arranged as in the claim.”¹³ Where there is no such “single prior art disclosure” of all claim limitations, a defendant must resort to obviousness to establish prior art invalidity:

the scope and content of the prior art are to be determined; differences between the prior art and the claims at issue are to be ascertained; and the level of ordinary skill in the pertinent art resolved. Against this background, the obviousness or nonobviousness of the subject matter is determined.¹⁴

U.S. courts have held that “evidence of secondary considerations, such as commercial success, long-felt but unresolved need, failure of others, copying,

⁸ *Id.*

⁹ Technically, the translation for “相同” is “identical.” The Chinese counterpart of the U.S. literal infringement doctrine should therefore more properly be translated as “identical infringement.” The words “literal infringement” are used here because the use of “literal infringement” has become entrenched in the legal literature.

¹⁰ Guanyu Shenli Zhuanli Jiufen Anjian Shiyong Falu Wenti De Ruogan Guiding (关于审理专利纠纷案件适用法律问题的若干规定) [Several Provisions on Issues Concerning the Law Applicable to the Adjudication of Patent Disputes] (promulgated by the Sup. People’s Ct., June 19, 2001, effective July 1, 2001) 2001 SUP. PEOPLE’S CT. GAZ. 130 (China) [hereinafter 2001 Judicial Explanations], art. 17.

¹¹ *Id.*

¹² TRIPS, *supra* note 1, art. 27.

¹³ *Connell v. Sears, Roebuck & Co.*, 722 F.2d 1542, 1548 (Fed. Cir. 1984).

¹⁴ *Graham v. John Deere Co.*, 383 U.S. 1, 17-18 (1966).

and unexpected results, is probative in the obviousness analysis.”¹⁵ The overall approach is “expansive and flexible.”¹⁶

The Chinese novelty analysis is roughly similar to its American counterpart. The people’s courts compare the patent claim with the prior art to identify differentiating technical features (区别技术特征). Lack of novelty is established by the lack of differentiating technical features.¹⁷ However, Chinese people’s courts will not find a differentiating technical feature where the prior art has disclosures similar in “structure” (结构), “technical effects” (技术效果), “technical problem solved” (解决的技术问题), and “role” (作用), mirroring the equivalence test of “way” (手段), “function” (功能) and “effect” (效果). The Chinese novelty doctrine therefore extends beyond the literal scope of the prior art.

Under the Chinese Patent Law, for an invention to have the requisite inventiveness, it must, “in comparison to the existing technology,” possess: (1) “prominent substantive features”; and (2) “notable improvement.”¹⁸ The inquiry for the first prong of “substantive features” follows the general framework as articulated below by the Beijing High People’s Court:

When determining whether a patent claim possesses inventiveness, [a people’s court] should compare the claimed technical solution with the *most proximate existing technology* (最接近的现有技术), identify the *differentiating technical features* (区别技术特征) between the two, and determine whether or not the existing technology *as a whole* (整体上) provides the *suggestion* (启示) for applying these differentiating technical features to this most proximate existing technology in order to solve the *present technical problem* (解决其存

¹⁵ Ruiz v. AB Chance Co., 234 F.3d 654, 660 (Fed. Cir. 2000).

¹⁶ KSR Int’l Co. v. Teleflex Inc., 550 U.S. 398, 419 (2007).

¹⁷ See, e.g., Zhangqiu Riyue Huagong Youxian Gongsi Yu Guojia Zhishi Chanquan Ju Zhuanli Fushen Weiyuan Hui Zhuanli Quan Wuxiao Xingzheng Jiufen Yian (章丘日月化工有限公司与国家知识产权局专利复审委员会专利无效行政纠纷一案) [Zhangqiu Riyue Chem. Indus. Co. v. St. Intell. Prop. Office Pat. Reexamination Bd.] (Beijing High People’s Ct. 2008) (China), available at http://ipr.court.gov.cn/bj/zlq/200805/t20080523_109725.html.

¹⁷ Zhangqiu Riyue Huagong Youxian Gongsi Yu Guojia Zhishi Chanquan Ju Zhuanli Fushen Weiyuan Hui Zhuanli Quan Wuxiao Xingzheng Jiufen Yian (章丘日月化工有限公司与国家知识产权局专利复审委员会专利无效行政纠纷一案) [Zhangqiu Riyue Chem. Indus. Co. v. St. Intell. Prop. Office Pat. Reexamination Bd.] (Beijing High People’s Ct. 2008) (China), available at http://ipr.court.gov.cn/bj/zlq/200805/t20080523_109725.html.

¹⁸ Zhuanli Fa (专利法) [Patent Law] (promulgated by the Standing Comm. Nat’l People’s Cong., Mar. 12, 1984, amended Dec. 27, 2008, effective Oct. 1, 2009) 2009 STANDING COMM. NAT’L PEOPLES CONG. GAZ. 27 (China) [hereinafter Patent Law] art. 22, translated in <http://www.wipo.int/wipolex/en/details.jsp?id=5484>. It should be noted that the Patent Law imposes a lower requirement for patentability of utility models, which need only possess: (1) “substantive features;” and (2) “improvement.”

在的技术问题)。If there is such a suggestion present in the existing technology, the [claimed] technological solution is obvious.¹⁹

The second prong in the Chinese inventiveness inquiry is “improvement,” concerned with the difference in technical effect (技术效果) between the patent claim and the prior art. Improvement has no counterpart in the U.S. obviousness determination.²⁰

It should be noted that the doctrines of novelty and inventiveness are not invoked in Chinese civil patent litigation. Rather, they are only applicable in administrative litigation challenging the decisions of the Patent Reexamination Board.²¹ The people’s courts can only render judgment concerning the correctness of the application of the law by the Board; a declaration of patent validity or invalidity is not an available remedy.²² Practicing the prior art, the defensive variant of the prior art defense, is the only prior art defense available to the defendant in a Chinese patent infringement dispute.²³

U.S. patent law recognizes an exact linkage between novelty and literal infringement, that is, “that which would literally infringe if later anticipates if earlier.”²⁴ However, it rejects any connection between equivalence and

¹⁹ Supoer Jituan Youxian Gongsi, Zhejiang Sheng Supoer Gufen Youxian Gongsi Yu Fang Zhanchong, Guojia Zhishi Chanquan Ju Zhuanli Fushen Weiyuan Hui Zhuanli Wuxiao Xingzheng Jiufen An (苏泊尔集团有限公司、浙江省苏泊尔股份有限公司与方展崇, 国家知识产权局专利复审委员会专利权无效行政纠纷案) [Supor Grp. v. Fang Zhanchong] (Beijing High People’s Ct. 2008) (China), available at http://ipr.court.gov.cn/bj/zlq/200804/t20080418_109579.html.

²⁰ China is not the only country whose patent law insists on improvement. For a discussion of how the corresponding requirement of improvement in Indian patent law affects the pharmaceutical industries inside and outside India, see Vikas Bajaj & Andrew Pollock, *Patent v. Patient*, N.Y. TIMES, Mar. 7, 2012, at B1.

²¹ Patent Law, *supra* note 18, art. 46.

²² Rugao Shi Aijike Fangzhi Jixie Youxian Gongsi Su Guojia Zhishi Chanquan Ju Zhuanli Fushen Weiyuan Hui, Disanren Wang Yushan Shiyong Xinxing Zhuanli Wuxiao Jiufen Tishenan (如皋市爱吉科纺织机械有限公司诉国家知识产权局专利复审委员会、第三人王玉山实用新型专利无效纠纷提审案) [Rugao City A.J.Q. Textile Mach. Co. v. St. Intell. Prop. Office Pat. Reexamination Bd.] (Sup. People’s Ct. 2007) (China), available at http://www.legaldaily.com.cn/misc/2008-11/17/content_982987.htm. The decision is “typical” case number 47 in the 2008 list of “Top 10 Cases and 50 Typical Cases of Judicial Protection of Intellectual Property Rights in China” promulgated by the Supreme People’s Court. Zuigao Renmen Fayuan Guanyu Fabu 2008 Nian Zhongguo Zhishi Chanquan Sifa Baohu 10 Da Anjian He 50 Jian Dianxing Anjian De Tongbao (最高人民法院关于发布 2008 年中国知识产权司法保护 10 大案件和 50 件典型案件的通报) [Circular of the Supreme People’s Court Concerning the Top 10 Cases and 50 Typical Cases of Judicial Protection of Intellectual Property Rights in China in 2008] (promulgated by the Sup. People’s Ct., Apr. 21, 2009), available at <http://www.court.gov.cn/xwzx/rdzt/zscq/jdal/201004/P020100420591176417599.doc>.

²³ Patent Law, *supra* note 18, art. 62.

²⁴ Bristol-Myers Squibb Co. v. Ben Venue Labs., Inc., 246 F.3d 1368, 1378 (Fed. Cir. 2001).

obviousness, and the Federal Circuit has held that “[the] two legal principles [of obviousness and equivalence] require different analytical frameworks.”²⁵

Chinese patent law does not explicitly acknowledge the linkages between the prior art invalidity doctrines of novelty and inventiveness and the infringement doctrines of literality and equivalence, but they enjoy *de facto* recognition. As stated above, the Chinese novelty test incorporates a test similar to the equivalence triple identity test. Therefore, the reach of the novelty doctrine from the core of prior art is greater than that of literality from the core of the patent claim, and, unlike their U.S. counterparts, these doctrines are not exactly linked. The Chinese equivalence doctrine incorporates an element that the equivalent feature be one “which a person of ordinary skill in the art would be able to conceive without inventive labor.”²⁶ Thus, equivalence shares component tests with inventiveness, but the linkage between the two is not exact. Chinese patent law does not require accused acts to have improvement to escape infringement by equivalence, and so inventiveness imposes more of a burden on one seeking a patent than equivalence imposes on one seeking to avoid infringement.

II. USING PRIOR ART DEFENSIVELY TO ESTABLISH ENTITLEMENT TO PRACTICE LITIGATION

A. “Practicing the Prior Art” Defense Unavailable Against Claims of Literal Infringement in U.S. Patent Litigation

In 2002, the Federal Circuit in *Tate Access Floors, Inc. v. Interface Architectural Resources, Inc.*, crystallized the principle that “there is no ‘practicing the prior art’ defense to *literal* infringement.”²⁷ In one of the string citations, the *Tate Access Floor* court wrote, however, that if the infringement theory is based on the doctrine of equivalents, “the defendant would have had a ‘complete defense’ if practicing the prior art, because ‘the *prior art* and prosecution history estoppel provide independent ‘policy oriented’ limitations on the *doctrine of equivalents*.”²⁸ As the Federal Circuit clarified in 2009, this

²⁵ *Siemens Med. Solutions USA, Inc. v. Saint-Gobain Ceramics & Plastics, Inc.*, 637 F.3d 1269, 1282 (Fed. Cir. 2011), reh’g den., 647 F.3d 1373 (Fed. Cir. 2011), cert. denied, 132 S. Ct. 2679 (2012).

²⁶ 2001 Judicial Explanations, *supra* note 10, art. 17.

²⁷ *Tate Access Floors, Inc.*, 279 F.3d 1357, 1365 (Fed. Cir. 2002) (emphasis added). See also *In re Omeprazole Patent Litig.*, 536 F.3d 1361, 1377 (Fed. Cir. 2008) (“[it] is well established . . . that ‘practicing the prior art’ is not a defense to infringement”) (quoting *Tate Access Floors, Inc. v. Interface Architectural Res., Inc.*, 279 F.3d 1357, 1365–1369 (Fed. Cir. 2002)); *Zenith Elec. Corp. v. PDI Comm’n Sys.*, 522 F.3d 1348, 1363 (Fed. Cir. 2008) (“the defense of noninfringement cannot be proved by comparing an accused product to the prior art.”).

²⁸ *Id.* at 1367 (citing *Sextant Avionique, S.A. v. Analog Devices, Inc.*, 172 F.3d 817, 827 (Fed. Cir. 1999) (emphasis in original)).

defense to equivalents infringement, also known as “ensnarement,” “bars a patentee from asserting a scope of equivalency that would encompass, or ‘ensnare,’ the prior art.”²⁹

Such an exception, because it is applicable only against equivalents infringement theories, is rarely invoked.³⁰ As John Allison has pointed out in a 2007 empirical study, “[the] doctrine of equivalents was largely dead by 1998.”³¹ The exception, if it still exists, might as well be a dead letter because equivalence has itself gone out of fashion; for the remainder of the discussion, the “practicing the prior art” defense will be treated as though it does not exist in U.S. patent law.³²

²⁹ *DePuy Spine, Inc. v. Medtronic Sofamor Danek, Inc.*, 567 F.3d 1314, 1323 (Fed. Cir. 2009) (citing *Wilson Sporting Goods Co. v. David Geoffrey & Assoc.*, 904 F.2d 677, 683 (Fed. Cir. 1990)).

³⁰ To the best of the author’s knowledge, the Federal Circuit has addressed this defense only once in a nonprecedential opinion since 2010. *Icon Health & Fitness, Inc. v. Octane Fitness, LLC*, 496 F. App’x 57, 65 (Fed. Cir. 2012), rev’d on other grounds, 134 S. Ct. 1749 (2014).

³¹ John R. Allison & Mark A. Lemley, *The (Unnoticed) Demise of the Doctrine of Equivalents*, 59 STAN. L. REV. 955, 976–977 (2007).

³² The position of the Federal Circuit with regards to a practicing the prior art defense becomes more muddled when indirect infringement is considered. In *Kinetic Concepts Inc., v. Blue Sky Medical Group Inc.*, the Federal Circuit stated that,

[the plaintiff] may be correct that “practicing the prior art” is not a defense to patent infringement. However, it does not follow that a defendant’s belief that it can freely practice inventions found in the public domain cannot support a jury’s finding that the intent required for induced infringement was lacking.

Kinetic Concepts Inc., v. Blue Sky Med. Grp., 554 F.3d 1010, 1025 (Fed. Cir. 2009) (citation omitted). The subject of indirect infringement is beyond the scope of this article.

B. Existing Technology Defense in Chinese Patent Infringement Litigation

1. Statutory Basis

Unlike the United States, China is one of the countries that does offer a practicing the prior art defense in patent law.³³ Article Sixty Two of the Patent Law explicitly makes the existing technology defense available in patent infringement litigation:

第六十二条 在专利侵权纠纷中，被控侵权人有证据证明其实施的技术或者设计属于现有技术或者现有设计的，不构成侵犯专利权。

*Article Sixty Two When in a patent infringement dispute an accused infringer is able to demonstrate that the technology or design he practices belongs to existing technology or existing designs, such technology or design shall not constitute patent infringement.*³⁴

The Supreme People's Court further clarified the nature of the defense in Article Fourteen of the 2010 Judicial Explanations:

³³ The practicing the prior art defense can be structured in many different ways. For example, South Korea also has a practicing the prior art defense, but it is invoked in a form of administration adjudicative called a trial to confirm the scope of a patent right. Sang Jo Jong provides the following explanation:

A "trial to confirm the scope of a patent right" is a quasi-judicial trial where the [Intellectual Property Tribunal] determines whether the allegedly infringing product falls under the scope of a patent right in a patent right dispute. . . . The trial to confirm the scope of a patent right, similar to any other confirmation trial (Feststellungsklage), has both an active confirmation trial and a passive confirmation trial; the former is where the patentee actively sets the scope of their patent right and the later is where the opposing interested party requests a confirmation on their working method's non-infringement. . . .

. . . An interesting point is that the court *denies that the defendant's invention lies within the scope of the plaintiff's patent right* not because it is identical or easily created from a publicly known or worked invention or in itself invalid, but *upon the argument that the defendant's invention merely utilizes a publicly known or worked invention*. In other words, although you cannot invalidate an invention lacking inventive step in a trial to confirm the scope of a patent right (unlike an invalidation trial), you can confirm that a patent claim that is easily created from a publicly known or worked invention, does not lie within the scope of a right in question. The important question is whether this "publicly known or worked invention" defense can also be used in civil or criminal suits as is in the trial to confirm the scope of a patent right.

Sang Jo Jong, *Patent Litigation in Korea*, 6 J. KOREAN L. 201, 205 (2007) (citation omitted) (emphasis added).

³⁴ Patent Law, *supra* note 18, art. 62.

第十四条 被诉落入专利权保护范围的全部技术特征，与一项现有技术方案中的相应技术特征相同或者无实质性差异的，人民法院应当认定被诉侵权人实施的技术属于专利法第六十二条规定的现有技术。

*Article Fourteen Where all the technical features accused of falling within the protective scope of patent rights are identical to or not substantively different from the corresponding features of an existing technical solution, the people's court shall find that the technology practiced by the accused infringer belongs to the existing technology set forth in Article Sixty Two of the Patent Law.*³⁵

The language “technical features . . . identical to or not substantively different from the corresponding features of an existing technical solution” states a direct linkage between the standards of the existing technology defense and the standards for literal and equivalents infringement.

2. The Existing Technology Defense in Practice

As expected from the language of the 2010 Judicial Explanations, the existing technology defense closely tracks literality and equivalence and includes all of their subtests.³⁶ In denying a retrial in *Strix v. Ningbo Sunlight Electrical Appliance*, the Supreme People's Court stated:

³⁵ Guanyu Shenli Qinfan Zhuanli Quan Jiufen Anjian Yingyong Falu Ruogan Wenti Di Jieshi (关于审理侵犯专利权纠纷案件应用法律若干问题的解释) [Explanations on Several Issues Concerning the Law Appropriate for the Adjudication of Patent Rights Infringement Disputes] (promulgated by the Sup. People's Ct., Dec. 21, 2009, effective Jan. 1, 2010) 2010 SUP. PEOPLE'S CT. GAZ. 5 (China), art. 14.

³⁶ In an article in *China Law & Practice* titled *Prior Art Defence in Patent Litigation: A Legal Quagmire?*, Fang Qi suggests that there has been no clear standard for the existing technology defense:

Despite these three different standards [of novelty, infringement, and inventiveness], for some reason, the Supreme People's Court created a new [standard] for the Prior Art Defense [in the 2010 Judicial Explanations]: not substantially different. In the past two years since the *Patent Law* was amended [in 2009], it appears courts have not come to an agreement for the criterion to determine the level of variation that falls under the “not-substantively-different” test. The decided cases generally fall into three categories. In the first group, courts literally followed the novelty standard and reasoned that the Prior Art Defense requires that the technical features be derived from a prior art directly and undoubtedly by persons skilled in the art. Courts in some other cases instead read “not substantively different” as identical to equivalents and apply directly the standard of comparison as in the doctrine of equivalents to the Prior Art Defense. There is still a third group of cases where courts believe that “not-substantively-different” applies even a greater degree of variation than equivalents and is actually close to the inventiveness standard. Thus, in these cases, courts ruled that the Prior Art Defense only requires that the allegedly infringing technical features

The existing technology defense only inquires into whether all those technical features of the accused product accused of falling within the protective scope of the patent rights are *identical* (相同) or *equivalent* (等同) to the corresponding technical features already disclosed in other existing technical solutions.³⁷

In *China Environmental Project Technology v. Huayang Electric Power*, the Supreme People's Court considered the arguments by the appellants that the accused desulfurization method and aeration device they practiced in their power plant belonged to the prior art.³⁸

can be obtained by the persons skilled in the art without inventive work based on the teachings of a prior art.

Fang Qi, *Prior Art Defence in Patent Litigation: A Legal Quagmire?*, 25 CHINA L. & PRAC. 16, 18 (2012).

The author does not agree with Qi's [I am frankly not certain which is his last name.] statement that the standard for the prior art defense set in the Supreme People's Court's 2010 Judicial Explanations is "new." The Explanations appear clear about the connection between the existing technology defense and the doctrine of equivalents. As the remainder of this section shows, the Supreme People's Court itself consistently uses the equivalence standard when applying the existing technology defense in *China Environmental Project Technology v. Huayang Electric Power*, *infra* note 38. The importance of the case is highlighted by its designation as a "Top" case in the 2009 list of "Top 10 Cases and 50 Typical Cases of Judicial Protection of Intellectual Property Rights in China." Short of an article enshrined in a judicial explanation, the case is as authoritative as anything one could find from the people's courts. Qi may be correct that different people's courts may deviate from the standard applied by the Supreme People's Court; but since he does not provide any citation in support of his contention, his assertions are impossible to verify.

³⁷ Sheteli kesi youxian gongsi su ningbo shenglida dianqi zhizao youxian gongsi, huapu chaoshi youxian gongsi qinfan faming zhuanli quan jiufen shenching zaishen an (施特利克斯有限公司诉宁波圣利达电器制造有限公司、华普超市有限公司侵犯发明专利权纠纷申请再审案) [Strix Ltd. v. Ningbo Sunlight Elec. Appliance Co.] (Sup. People's Ct. 2007) (China), *available at* <http://www.chinaiprlaw.cn/file/2008041712898.html>. The decision is ranked as "typical" case number 1 in the 2008 list of "Top 10 Cases and 50 Typical Cases of Judicial Protection of Intellectual Property Rights in China" promulgated by the Supreme People's Court. *See supra* note 22.

³⁸ Wuhan jingyuan huanjing gongcheng youxian gongsi, riben fushi huashui gongye zhushi huishe, huayang dianye youxian gongsi qinfan faming zhuanli quan jiufen yian (武汉晶源环境工程有限公司、日本富士化水工业株式会社、华阳电业有限公司侵犯发明专利权纠纷一案) [China Env'tl Project Tech. Inc. v. Huayang Elec. Power Co.] (Sup. People's Ct. 2009) (China), *available at* http://ipr.court.gov.cn/sdjdws/201104/t20110413_98892.html. The decision is ranked as the "top" case number 3 on the 2009 list of "Top 10 Cases and 50 Typical Cases of Judicial Protection of Intellectual Property Rights in China" promulgated by the Supreme People's Court. Auigao renmen fayuan guanyu fabu 2009 nian zhongguo fayuan zhishi chanquan sifa baohu 10 dai anjian he 50 jian dianxing anli di tongzhi (最高人民法院关于印发 2009 年中国法院知识产权司法保护 10 大案件和 50 件典型案例的通知) [Circular of the Supreme

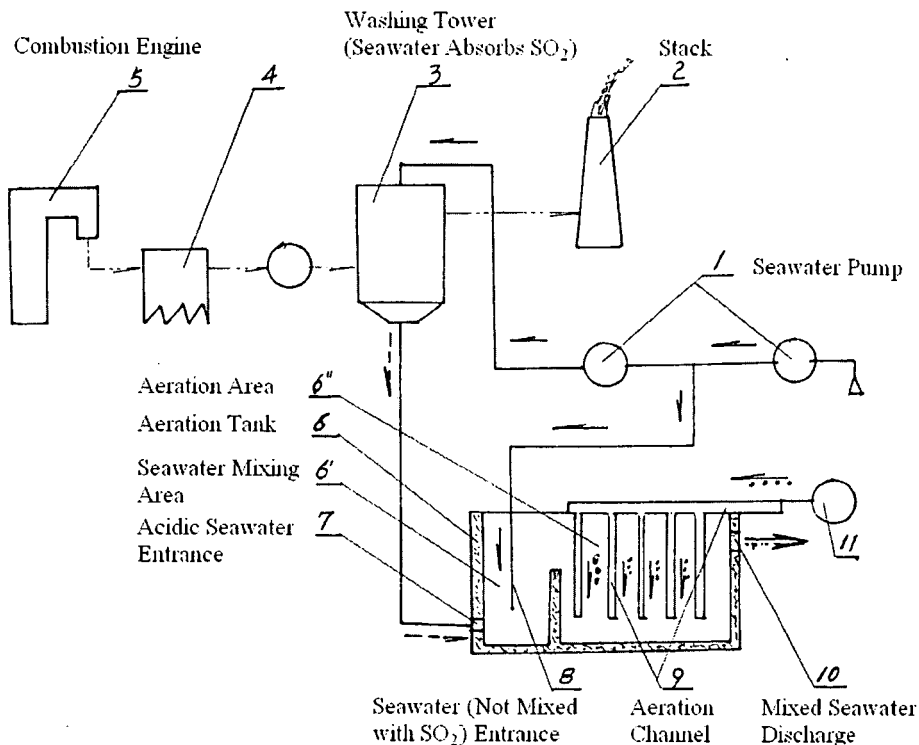


Figure 2: The figure of CN 9519389.9, the asserted patent in *China Environmental Project Technology v. Huayang Electric Power*, illustrating the structure of the claimed smoke desulfurization and aeration device.³⁹ English labels are provided to aid in understanding. SO₂ rich air is introduced in from the combustion engine 5, which is then mixed in with seawater in the washing tower 3. The SO₂-rich (and therefore acidic) seawater from the washing tower is then aerated with SO₂-poor seawater in the aeration tank 6.

As to infringement of claim one of the asserted patent, the Supreme People's Court first dismissed the process diagram from an Indian power plant the appellants submitted, which the appellants admitted "did not disclose the [claimed and infringing] ratio of air and seawater mix as well as the aeration time." Then, applying the "which a person of ordinary skill in the art would be able to conceive of without inventive labor" prong of the Chinese doctrine of

People's Court Concerning the Top 10 Cases and 50 Typical Cases of Judicial Protection of Intellectual Property Rights in Chinese Courts in 2009] (promulgated by the Sup. People's Ct., Apr. 14, 2010), available at <http://www.court.gov.cn/xwzx/rdzt/zscq/jdal/201104/P020110420567143135866.doc>.

³⁹ *Id.*

equivalents in the context of the existing technology defense,⁴⁰ the Supreme People's Court dismissed the appellant's argument that Figure 5 of U.S. Patent No. 4,085,194 (reproduced below as Figure 3) supplied the requisite knowledge to calculate the ratio:

... because the ratio of air and seawater mix and the aeration time claimed in this patent is determined by multiple factors in concert, therefore, even with Figure 5 of U.S. Patent No. 4,085,194 taken into consideration, the [appellants] still has not proven that the aforementioned ratio and time parameters can be arrived at without inventive labor by a person of ordinary skill in the art.⁴¹

Under the Chinese standard of inventiveness, the fact that obtaining a claimed species requires varying a wide range of parameters indicates that obtaining the claimed species requires inventive labor.⁴² The Supreme People's Court's analysis seen above, where the fact that the technical feature of the accused technical solution is "determined by multiple factors in concert" (由多个条件共同决定的) is taken as a sign of inventive labor, is entirely consistent with this component test of inventiveness.

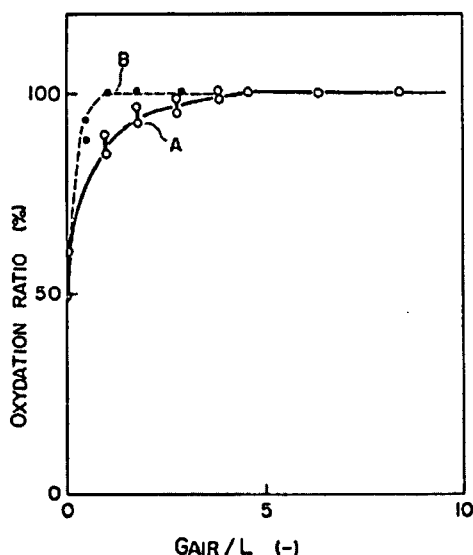


Figure 3: Figure 5 of U.S. Patent No. 4,085,194, entitled "Waste Flue Gas Desulfurizing method," which according to the

⁴⁰ 2001 Judicial Explanations, *supra* note 10, art. 17.

⁴¹ China Env'tl Project Tech. Inc., *supra* note 38.

⁴² See Zhangqiu riye huagong youxian gongsi yu guojia zhishi chanquan ju zhuanli fushen weiyuan hui zhuanli quan wuxiao xingzheng jiufen yian (章丘日月化工有限公司与国家知识产权局专利复审委员会专利无效行政纠纷一案) [Zhangqiu Riyue Chem. Indus. Co. v. St. Intell. Prop. Office Pat. Reexamination Bd.] (Beijing High People's Ct. 2008) (China), available at http://ipr.court.gov.cn/bj/zlq/200805/t20080523_109725.html. A more detailed discussion of this doctrine is provided in our earlier article. See Lau, *supra* note 2.

appellants in *China Environmental Project Technology v. Huayang Electric Power* demonstrated the ratio of air and seawater mixing ratio.

The Supreme People's Court also rejected the appellant's existing technology defense against infringement of claim five of the asserted patent. Applying the triple identity test of the equivalence to the existing technology inquiry, the Supreme People's Court looked to the "function" (功能) and "effect" (效果) of the technical feature of the accused technical solution:

[The process diagram of the Indian power plant introduced as evidence of the existing technology by the appellants] shows that [in this Indian power plant] the acidic seawater is introduced from the top side of the mixing area and the pure seawater is introduced from the reservoir on the left of the top side of the mixing area. As [one of the appellants] maintained in the first instance, the acidic seawater [as practiced by the appellants] is introduced in the bottom side of the mixing area which is layered over by the pure sea water [on the top side], so as to ensure atmospheric isolation when the seawater mix together. The fact that the acidic seawater is introduced into the top side of the mixing area in the [Indian power plant] means that [the Indian power plant and the accused technical solution] are obviously different in function and effect.⁴³

As the Supreme People's Court's analysis demonstrates, all prongs of the literal and equivalents infringement inquiries are incorporated into the existing technology defense. And because some of the inventiveness tests are shared with equivalence, certain concepts of inventiveness are applied to the existing technology defense as well. These tests and standards from the infringement and inventiveness doctrines appear to be adopted within the existing technology defense without modification or adjustment.

C. Should the United States Adopt a Practicing the Prior Art Defense?

The prior art is, in principle, the domain of the public. The U.S. Supreme Court itself has in dicta stated that, "once the patent or copyright monopoly has expired, the public may use the invention or work at will and without attribution." Anyone should be able to practice what is in the prior art; why not permit it to be an affirmative defense? In this section, we explain why U.S. patent law should incorporate such a defense, examining, on the way, justifications for and against the defense.

1. The Federal Circuit's Justification Against a Practicing the Prior Art Defense

⁴³ *China Env'tl Project Tech. Inc.*, *supra* note 38.

We begin by confronting the Federal Circuit's justification for the lack of a "practicing the prior art" defense, articulated as follows in *Tate Access Floors v. Interface Architectural Resources*,

Our law requires patent challengers to prove invalidity by clear and convincing evidence. Where an accused infringer is clearly practicing only that which was in the prior art, and nothing more, and the patentee's proffered construction reads on the accused device, meeting this burden of proof should not prove difficult. Nevertheless, accused infringers are not free to flout the requirement of proving invalidity by clear and convincing evidence by asserting a "practicing prior art" defense to literal infringement under the less stringent preponderance of the evidence standard.⁴⁴

Taken at face value, the Federal Circuit's language points to a concern that infringers can circumvent the heightened burden of proof for invalidity by demonstrating that they are "practicing the prior art."

But such a literal reading should give us pause. There is, first of all, no reason to equate the practicing the prior art defense with the prior art invalidity defense. As we have seen in the example of Chinese patent law, it is possible to structure practicing the prior art to be an entirely separate defense. And indeed, letting a defendant prevail on the basis of practicing the prior art does not logically mean that the patent becomes unenforceable. To be sure, in the trial, the patentee must have argued that the defendant's accused acts fall within the scope of his claims. If these accused acts do fall within the scope of prior art, the patentee's patent claims would be invalid if they actually read on the accused acts. But the patentee is not bound by this position in all future litigation, precisely because the judgment about practicing the prior art does not rest on a decision about the scope of the patent claims. The U.S. Supreme Court has stated that, in considering the application of judicial estoppel, which would bind the litigant to his initial position, "courts regularly inquire whether the party has succeeded in persuading a court to accept that party's earlier position, so that judicial acceptance of an inconsistent position in a later proceeding would create 'the perception that either the first or the second court was misled.'"⁴⁵ In performing the practicing the prior art inquiry, the court has performed no analysis of the scope of the claims at all. The patentee therefore can claim no "success" in persuading the tribunal about the scope of his claim. As the Supreme Court noted, "[a]bsent success in a prior proceeding, a party's later inconsistent position introduces no 'risk of inconsistent court determinations,' and thus poses little threat to judicial integrity."⁴⁶ The patentee is free, in future litigation, to change his position about the scope of his claims.

In aggressively equating the practicing the prior art defense with the invalidity defenses, the Federal Circuit's position in *Tate Access Floors* can

⁴⁴ *Tate Access Floors, Inc. v. Interface Archit. Res., Inc.*, 279 F.3d 1357, 1367 (Fed. Cir. 2002).

⁴⁵ *New Hampshire v. Maine*, 532 U.S. 742, 750–751 (2001) (quoting *Edwards v. Aetna Life Insurance Co.*, 690 F.2d 595, 599 (6th Cir. 1982)).

⁴⁶ *Id.* (citation omitted).

hardly be reconciled with its position in *Siemens Medical Solutions* discussed in our previous article.⁴⁷ To have reached its conclusion that asserting a practicing the prior art defense is “[flouting] the requirement of proving invalidity by clear and convincing evidence,” the Federal Circuit in *Tate Access Floors* must have concluded that a practicing the prior art defense is tantamount to an invalidity defense.⁴⁸ But in *Siemens Medical Solutions*, where the patentee seeks to exclude the defendant by equivalence from territory covered by the defendant’s separate patent, the court refused to import the higher evidentiary standard for invalidity into the equivalence determination. In reaching this conclusion, six of eleven judges concluded that the invocation of an equivalence theory against the accused acts is not tantamount to the invalidation of a patent over the same accused acts on obviousness grounds, but is merely the assertion of the right to exclude over what is “in effect a dominant patent.”⁴⁹

This outcome is all the more surprising, when one considers that a practicing the prior art defense is strictly focused on the accused acts, and requires no claim construction, no infringement analysis, and no adjudication over the merits of the asserted patent. In contrast, in *Siemens Medical Solutions*, where the accused activities are covered by a patent separate from the asserted patent, the same accused and separately patented acts are analyzed using the triple identity test of equivalence, that is, “whether a substitute element matches the function, way, and result of the [asserted] claimed element.”⁵⁰ Because the asserted patent itself is prior art to the defendant’s patent over the accused acts, this equivalence analysis will by its nature compare the defendant’s patent to the prior art. In relation to the ‘practicing the prior art’ defence, which requires no analysis of the asserted patent, the equivalence analysis in *Siemens Medical Solutions* comes far closer to being a prior art challenge over the validity of a patent.

Moreover, if the Federal Circuit is truly concerned with the flouting of evidentiary standards, it very well can impose a requirement that practicing of prior art be proved by clear and convincing evidence. In *Therasense Inc. v. Becton, Dickinson & Co.*, the court has demonstrated a willingness to “tighten the standards for finding both intent and materiality [of the inequitable conduct invalidity defense] in order to redirect a doctrine that has been overused to the detriment of the public.”⁵¹ Rather than foreclosing the practicing the prior art defense altogether, the court could use the same

⁴⁷ See Lau, *supra* note 2.

⁴⁸ *Tate Access Floors*, 279 F.3d at 1367.

⁴⁹ *Siemens Med. Solutions USA, Inc. v. Saint-Gobain Ceramics & Plastics, Inc.*, 647 F.3d 1373, 1375 (Fed. Cir. 2011) (per curiam), cert. denied, 132 S. Ct. 2679 (2012). (Lourie, J., concurring in denial of the petition for rehearing en banc).

⁵⁰ *Warner-Jenkinson Co. v. Hilton Davis Chem. Co.*, 520 U.S. 17, 40 (1997) (emphasis added).

⁵¹ *Therasense, Inc. v. Becton, Dickinson & Co.*, 649 F.3d 1276, 1290 (Fed. Cir. 2011) (en banc).

solution of ratcheting up the evidentiary standard to correct for possible abuses. The Federal Circuit in reaching the outcome of *Tate Access Floors* must have been aware of this possibility.

2. Other Justifications Against a Practicing the Prior Art Defense

Therefore, we would have to search elsewhere for an explanation of the Federal Circuit's foreclosure of a practicing the prior art defense. And what may be the true driving force is a policy to compel defendants to invalidate patents, rather than ring fence their activities, with the prior art they find. There may be good reason to do so. As the Supreme Court has stated, "a patent is an exception to the general rule against monopolies, and to the right to access to a free and open market," whose "far-reaching social and economic consequences . . . give the public a paramount interest in seeing that patent monopolies . . . are kept within their legitimate scope."⁵² If defendants have to embark on a search for prior art as part of their defense, it may be more beneficial to society to make them hunt for the best art that invalidates patents rather than the best art that exonerates their actions from infringement liability. This would, in principle, free up more technological territory for public use.

Viewed in this light, the above stated contradiction in *Tate Access Floors* and *Siemens Medical Solutions* seems less jarring. In *Tate Access Floors*, the Federal Circuit can be seen as compelling the defendant to search for art better tasked for invalidation. In *Siemens Medical Solutions*, the plaintiff in seeking to establish equivalence is unlikely to be conducting the type of prior art search that can be directed towards invalidation of the defendant's patent. It does not seem quite right to force the plaintiff to do a patent-invalidating prior art search in the course of proving infringement.

This argument however fails to take into account the practicalities of patent trials. It is well known that vast majority of patent disputes are settled. As Jay Kesan's empirical study shows, only some 15% of all U.S. cases terminated through some resolution on the merits, including summary dispositions and trials.⁵³ The patent defendants, for various factors such as high costs, generally do not litigate to the point where patent validity is adjudicated. Indeed, Kesan's study shows that cases where claims were invalidated constitute only a small subset, roughly 2.3% of all cases.⁵⁴ Consequently, the technological territory for the public to practice that defendants have freed up through patent invalidation does not actually amount to much.

Having a practicing the prior art defense may actually increase the number of cases adjudicated to final merits. After all, if a defendant is truly

⁵² *Precision Instrument Mfg. Co. v. Auto. Maint. Mach. Co.*, 324 U.S. 806, 816 (1945).

⁵³ Jay P. Kesan & Gwendolyn G. Ball, *How Are Patent Cases Resolved? An Empirical Examination of the Adjudication and Settlement of Patent Disputes*, 84 WASH. U. L. REV. 237, 271 (2006).

⁵⁴ *Id.* at 276.

practicing the prior art, he is very likely to know the prior art pieces he has practiced. Therefore proving the practice of the prior art defense requires easy discovery. The defendant can supply all the information by himself, which he can readily find by looking up his old lab notebooks. The defense is also conducive to summary resolution, since the tribunal need only decide whether the documentation supplied by the defendant, if they qualify as prior art, allows the defendant to practice the accused acts. Moreover, unlike a prior art invalidity judgment, which, "once secured, benefits everyone,"⁵⁵ a successful practicing the prior art defense immunizes only the defendant's accused acts itself. The defendant is far less worried with helping his competitors by a successful invalidity defense. Because the defendant can recycle the same argument whenever accused of infringement, this immunity he obtains exists against the world.⁵⁶ With the availability of this defense, defendants are far likelier to litigate to the merits than to settle.

A practicing the prior art defense can therefore have a positive consequence in terms of the territory defendants can open to the public. By demonstrating at court that their acts are practicing the prior art, defendants have opened up their own accused acts to be practiced by all others in the public. To be sure, the territory opened up by each successful practicing the prior art defense is narrower than the territory opened by a successful invalidity defense. But if the availability of this defense encourages more defendants to litigate rather than settle, the amount of technological territory freed up for the public through practicing the prior art defenses may collectively end up being larger.

Another argument against a practicing the prior art defense is that it may stunt technical innovation by encouraging the reuse of old solutions. In principle, the prior art invalidity defense can ensure that the prior art be freely practiced. But the engineer in the laboratory or shop designing a new product is unlikely to know whether some existing patent claim reads on what he aims to practice and whether he can invalidate such a claim. He does, however, know the sources of information that inform his design. The availability of the defense increases the certainty to such an engineer that, if his sources were old enough to be prior art to unexpired patents, he is practicing the prior art and therefore cannot infringe patents.

Consequently, for businesses encountering problems that have long been solved, hitting old textbooks to copy old answers may provide a more economic and liability-proof option than improvisation and innovation. That could be costly to society. Computer algorithms already written to solve a problem may not get optimized; chemical formulas known to achieve an outcome acceptably well will not be retested or substituted. Dynamism in technological development is the objective of a well-functioning patent

⁵⁵ Joseph S. Miller, *Joint Defense or Research Joint Venture? Reassessing the Patent-Challenge-Bloc's Antitrust Status*, 2011 STAN. TECH. L. REV. 5 (2011).

⁵⁶ Subject, of course, to the timestamp of the prior art the defendant used in establishing his defense.

system. It ought not be discouraged by the provision of easy escapes for those who work in fear of infringement.

Appealing though this argument may seem, it is not very convincing. A fear of patent infringement sufficient to drive businesses to reuse old solutions may also drive businesses not to develop products altogether. And as many observers have noted, patent thickets have developed in many industries that have the possibility of choking off the production of new products and entrance of new market participants who do not have patent portfolios of their own.⁵⁷ In navigating through patent thickets, an innovator simply cannot be certain what component of his new product may be read on by what patent. Therefore, he has to run the risk of having all of his inventive efforts and investments wasted because some component that was not even the focus of his attention was read on by some patent he never knew about. This is where a practicing the prior art defense may be useful.

As Isaac Newton wrote, “[i]f I have seen further it is by standing on the shoulders of Giants.” Newton’s statement concerns basic scientific research, not technological innovation, but it captures one key insight about the development of knowledge. Technical problems and circumstances may be new. But they can all be broken down into simpler problems, many of which have already been solved. One may be innovating in response to a new challenge, but in doing so one may reuse old answers to component questions that have been previously solved. As seen in the above quote, even Newton, hardly known for charity to his scientific colleagues, acknowledged that his novel discoveries were built on the work of his predecessors. The U.S. Supreme Court itself also recognizes that, “inventions in most, if not all, instances rely upon building blocks long since uncovered, and claimed discoveries almost of necessity will be combinations of what, in some sense, is already known.”⁵⁸ Few innovate answers on every single component questions on the way to reaching a new answer to a new question. That would be, if anything, completely wasteful.

With the availability of a practicing the prior art defense, an innovator in developing a new product can calibrate his risk of patent infringement. He can elect to practice the prior art in dealing with all the component problems that are not the key focus on the product, and therefore risk infringement only on those features where the prior art does not reach or where a new solution may indeed prove better than old ones.⁵⁹ The barriers to navigating through a patent thicket becomes much lower when the prior art can be used to serve as a metaphorical pathway of safety that the innovator can wander off into the bushes when and where he so chooses. This resulting increase in innovation may well balance the increased copying of old solutions.

⁵⁷ See, e.g., Michael A. Heller & Rebecca S. Eisenberg, *Can Patents Deter Innovation? The Anti-Commons in Biomedical Research*, 280 SCIENCE 698 (1998).

⁵⁸ KSR Int’l Co. v. Teleflex Inc., 550 U.S. 398, 418–419 (2007).

⁵⁹ And if all the component questions have old answers, then the innovator who chooses these old answers manageably risks the infringement of only one patent – the patent covering his precise selection of answers.

3. Justifications For a Practicing the Prior Art Defense⁶⁰

An analysis of possible justifications against a practicing the prior art defense shows that very little is convincing. We have also come upon some justifications for the defense, such as its ability to help guide inventors through patent thickets. But more, indeed, can be said for the defense.

The best justification, already alluded to above, is the improvement in judicial economy and vigor. Adjudication of a practicing the prior art defense is fundamentally easy. It requires understanding only the accused device or acts and the prior art that the defendant points to. The accused device or act is something put in actual practice, which could either be brought to the court

⁶⁰ Interestingly enough, the primary justification for the Chinese existing technology defense is not applicable to U.S. patent law. The Supreme People's Court provides the following explanation, which is in the context of design patents but which is more generally applicable:

The law in effect in this country uses the model of separately conducting the procedures for determining patent validity and those for determining patent infringement. It would cause an imbalance between the protective scope of the design patent and the patentee's creative contribution if the accused infringer were not permitted to maintain an existing design defense in civil patent litigation and if accused products that belong to existing design are still adjudged as infringing the asserted patent.

Zhushi huishe puli sitong yu zhejiang hangtingdun gongniu xiangjiao youxian gongsi, beijing banglexin luntai youxian gongsi qinfan zhuanli quan jiufen yian (株式会社普利司通与浙江杭廷顿公牛橡胶有限公司、北京邦立信轮胎有限公司侵犯专利权纠纷一案) [*Bridgestone Corp. v. Zhejiang Huntington Bull Rubber Co., Ltd.*] (Sup. People's Ct. 2011) (emphasis added), available at http://ipr.court.gov.cn/zgrmfy/201207/t20120718_149633.html. In contrast, U.S. patent law explicitly allows courts to invalidate patents in civil patent litigation. See *Microsoft Corp. v. i4i Ltd. P'ship*, 131 S. Ct. 2238, 2242 (2011) ("Among other defenses under § 282 of the Patent Act of 1952 (1952 Act), an alleged infringer may assert the invalidity of the patent—that is, he may attempt to prove that the patent never should have issued in the first place. A defendant may argue, for instance, that the claimed invention was obvious at the time and thus that one of the conditions of patentability was lacking."). *Bridgestone v. Huntington Bull Rubber* is "typical" case number 4 in the 2011 list of "Top 10 Cases and 50 Typical Cases of Judicial Protection of Intellectual Property Rights in Chinese Courts" promulgated by the Supreme People's Court. *Zuigao renmen fayuan bangongting guanyu yinfa 2011 nian zhongguo fayuan zhishi chanquan sifa baohu 10 dai anjian he 50 jian dianxing anjian anli di tongzhi* (最高人民法院办公厅关于印发 2011 年中国法院知识产权司法保护 10 大案件和 50 件典型案例的通知) [Circular of the Supreme People's Court General Office Concerning the Top 10 Cases and 50 Typical Cases of Judicial Protection of Intellectual Property Rights in Chinese Courts in 2011] (promulgated by the Sup. People's Ct., Apr. 18, 2012), available at <http://rmfyb.chinacourt.org/paper/page/1/2012-04/18/02/2012041802.pdf>.

or which the court can observe in person. The court can develop its comprehension through interacting with or touching it.

Comparing the prior art with this accused device is not a difficult task. If the defendant really did practice the prior art, the prior art pieces he brings to the attention of the court are the *actual* basis on which he developed the accused device or acts. The intellectual distance between these pieces of prior art and the accused device or acts is something that the defendant himself can explain to the court, which the court can evaluate for credibility or for compliance with the legal standards.

In contrast, the intellectual distance between pieces of prior art cited against a patent and the patent itself is likely to be significantly greater. The prior art cited is unlikely something that the patentee is aware of, much less something the patentee based his invention on. There will necessarily exist incompatibilities, such as differences in terminology, implementation, or conceptualization that the court is asked to bridge when evaluating the prior art invalidity defense. The amount of mental gymnastics required of the court, most likely not trained in the technical arts, is therefore significantly higher in adjudicating an invalidity defense. It is a fundamental principle of patent law that no one can infringe by practicing the prior art. There is no reason not to allow courts to dispose of patent cases on this easy ground when it is not conceptually in conflict with first principles.

A successful practicing the prior art defense also dispenses with the need of the court to understand the asserted patent at all. The primary benefit is that the court is saved from claim construction. The problems of claim construction are well known. As Dan Burk summarizes,

Patent law has provided none of the certainty associated with the definition of boundaries in real property law. Literally every case involves a fight over the meaning of multiple terms, and not just the complex technical ones. Recent Federal Circuit cases have had to decide plausible disagreements over the meanings of the words “a,” “or,” “to,” “including,” and “through,” to name but a few. Claim construction is sufficiently uncertain that many parties don’t settle a case until after the court has construed the claims, because there is no baseline for agreement on what the patent might possibly cover. Even after claim construction, the meaning of the claims remains uncertain, not only because of the very real prospect of reversal on appeal but also because lawyers immediately begin fighting about the meaning of the words used to construe the words of the claims.⁶¹

There is no clearer sign of the practical difficulties of claim construction than the existence of doctrines from the Federal Circuit concerning the construction of claim constructions devised by the district courts.⁶² All of this does not improve the quality of the adjudication, and if anything harms the dignity of the courts. Courts and litigants simply should not be required to invest time and attention battling over words of a claim if there can be other

⁶¹ Dan L. Burk & Mark A. Lemley, *Fence Posts or Sign Posts? Rethinking Patent Claim Construction*, 157 U. PA. L. REV. 1743, 1744–1745 (2009) (citation omitted).

⁶² *Cordis Corp. v. Boston Sci. Corp.*, 658 F.3d 1347, 1356 (Fed. Cir. 2011).

ways of adjudicating the merits of a patent case. A practicing the prior art defense could improve the current state of affairs.

D. Has The Chinese Patent Law Structured its Existing Technology Defense Well?

Having concluded that the United States would benefit from an introduction of a practicing the prior art defense, we turn our attention to the Chinese implementation of the existing technology defense and analyze its merits. Being a doctrine that is involved with the prior art, the existing technology defense should be connected in some way with the prior art invalidity doctrines. And as we have concluded in our earlier article, there ought to be links between the prior art invalidity doctrines and the infringement doctrines. There are therefore several possibilities that Chinese patent law could take to structure the existing technology defense. As we have seen in *China Environmental Project Technology*, the Supreme People's Court requires a defendant who asserts the defense to demonstrate that he has not exceeded the range of the triple identity test from the prior art and that he has not performed inventive labor in obtaining the accused device and acts.⁶³ This gives the existing technology defense the exact same range around the prior art as equivalence possesses around the asserted claim.

It is easy to understand why Chinese patent law hitches the existing technology defense with the doctrines that extend from the core, inventiveness or equivalence, as opposed to the doctrines protecting the core, novelty or literality. Rare is it that someone introduces a product into the market that exactly practices what is disclosed in the prior art, and rarer still is a plaintiff who wastes money litigating against such a defendant. To make the existing technology defense meaningful, such as allowing it to be a guide through a patent thicket, there has to be some latitude for defendants to practice some distance away from the core of the prior art.⁶⁴

⁶³ *China Env't Project Tech. Inc. v. Huayang Elec. Power Co.*, *supra* note 38.

⁶⁴ A helpful comparison may be drawn to the U.S. practicing the prior art defense to equivalents infringement. The Federal Circuit has explicitly connected the defense to the invalidity doctrines, not to the infringement doctrines as in Chinese patent law:

A helpful first step in an ensnarement analysis is to construct a hypothetical claim that literally covers the accused device. . . . Next, the district court must assess the prior art introduced by the accused infringer and determine whether the patentee has carried its burden of persuading the court that the hypothetical claim is patentable over the prior art. Ultimately, "[i]f such a claim would be unpatentable under 35 U.S.C. §§ 102 or 103, then the patentee has overreached, and the accused device is noninfringing as a matter of law."

DePuy Spine, Inc., 567 F.3d at 1324-25 (citation omitted).

But like its Chinese counterpart, the U.S. defense is linked to a doctrine that extend from the core, obviousness, codified in 35 U.S.C. § 103.

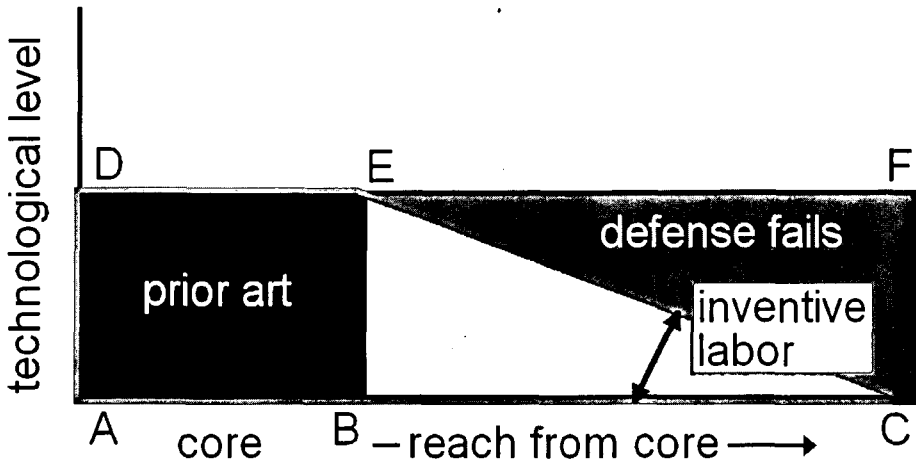


Figure 4: Schematic of the existing technology defense in Chinese patent law. The diagram assumes that there is some correlation between technological level and inventive labor, and therefore segment CE is drawn diagonally.

But linking the existing technology defense with equivalence as opposed to the invalidity doctrines creates some oddities, as Figure 4 illustrates. Area ACED marks the areas where defendants are protected by the existing technology defense. This includes the area exactly within the core of the prior art, area ABED, and the area covered by the triple identity test and inventive labor tests, area BCE.

But this area does not fully cover the area of unpatentability. After all, to overcome the inventiveness hurdle, the patentee must prove improvement, and no patent may fall below segment DF. Not incorporating the improvement test within the existing technology defense means that there exists a zone, area CEF, that is within the zone of unpatentability but not covered by the existing technology defense.⁶⁵ The Chinese existing technology defense therefore does not determine noninfringement based on the idea that the accused device practices what is not patentable. What it does is establish entitlement to practice within a radius around the prior art core.

Such an apparent oversight is most likely by design than by omission, and the practicalities of adjudication provide the likeliest explanation. Section B.2. has referred to the following statement from the Supreme People's Court about the defense:

The existing technology defense only inquires into whether all those technical features of the accused product accused of falling within the protective scope of the patent rights are identical or equivalent to the corresponding technical features already disclosed in other existing technical solutions.⁶⁶

⁶⁵ The reader comparing Figure 4 with Figure 4 of our earlier article would note that zone CEF has a similar nature to the patentee tax. See Lau, *supra* note 2.

⁶⁶ Strix Ltd. v. Ningbo Sunlight Elec. Appliance Co., *supra* note 37.

Clumsy as the translated language may seem, there are two insights that can be derived.

First, only those technical features accused of falling within the patent scope are considered against the prior art. This statement reflects a recognition that, most of the time, the accused device is a species of the genus that the asserted claim allegedly covers. The accused device likely has additional technical features that qualifies it for the environment it is designed for, which is unlikely the exact same as the problem the patentee was trying to solve.

Second, the application of the “equivalent to” standard requires comparison with possibly more than one technical solution from the prior art. It is unlikely that a plaintiff will ever assert a patent against a defendant who actually can argue that he is practicing something within the exact disclosure of one piece of prior art. Rather, a defendant is likely to have done a bit more, and even if he is not practicing outside of the realm of inventiveness in light of the prior art, has at least practiced something sufficiently different that multiple pieces of prior art have to be used to bridge the differences.

If the existing technology defense is to mirror inventiveness rather than the equivalence, then the people’s courts will have to look into the improvement provided by the accused product. But this improvement is not measured based on the entire product, but only with regard to the accused technical features of the accused product. In other words, the people’s court in making this determination will have to ask how this subset of the technical features in the accused product provides a technical benefit above a combination of prior art pieces. Therefore, the people’s court must first conceptually piece together the prior art, then mentally dissect out the accused technical features from the accused product, and then compare the two. This is not a simple exercise for a people’s court that may be dealing with technology it is unfamiliar with.

Moreover, the litigants are also put in an awkward position. The plaintiff has to praise the product he accuses by arguing that it provides improvement beyond the prior art, while the defendant has to criticize his own product by doing just the opposite.⁶⁷ Seen in that light, omitting an improvement prong from the existing technology defense and channeling defendants who need this prong to rely on the noninfringement defense may ease the difficulties in adjudication.

CONCLUSION

There are two forms of prior art defenses that may be used in patent litigation. In the offensive variant, the defendant uses the prior art to

⁶⁷ This dynamic can be observed in *DePuy Spine v. Medtronic Sofamor Danek*, a Federal Circuit case applying the U.S. practicing the prior art defense to equivalents infringement, where the defendant attempted to prove his accused device was non-infringing by arguing that the device, as described by a hypothetical claim, was obvious in view of the prior art. 567 F.3d at 1324-29.

invalidate the asserted patent. In the defensive variant, the defendant demonstrates his entitlement to practice the accused acts by showing that these acts belong to the prior art. In this article, we have examined the use of the defensive variant of the prior art defenses in U.S. and Chinese patent litigation. We have also discussed the absence of the practicing the prior art defense, the defensive form of the prior art defenses, in U.S. patent law. We looked into the Chinese implementation, the existing technology defense, as applied in patent infringement disputes. We concluded that the United States would benefit from an introduction of the practicing the prior art defense, and that the Chinese linkage of the existing technology defense with equivalence is a well-calibrated approach.

This article concludes a study started in our earlier article into the prior art defenses in patent litigation. However, as Figure 1 shows, the prior art defenses are only a portion of an interconnected web of patent law doctrines. In particular, the doctrines of prior user rights and patent exhaustion are naturally suited as an extension of this current study. Both doctrines are fundamentally allied with practicing the prior art, in that all three defenses are doctrines of inclusion built on similar concepts of fairness – that one is fairly entitled to practice based on prior use, prior purchase, and prior art. Of course, the three doctrines serve very different policy objectives, and the definitions of prior use, prior purchase, and prior art have important substantive differences. Tests and inquiries that may be useful in the context of one may not be easily transferred to the other. The comparative approach used in this study could be employed to investigate these doctrines and their relationships with other patent law doctrines.⁶⁸ The conclusion of this exploration of the prior art defenses should only be viewed as a component of a broader investigation of patent law.

⁶⁸ Indeed, the USPTO has used a comparative law approach in its brief survey of prior user rights in its report to the U.S. Congress. U.S. PATENT & TRADEMARK OFFICE, REPORT ON THE PRIOR USER RIGHTS DEFENSE 22-28 (2012), available at http://www.uspto.gov/aia_implementation/20120113-pur_report.pdf.

