A QUANTUM OF ORIGINALITY IN COPYRIGHT

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**Introduction**

To be eligible for copyright protection, a work must be “original.”1 Simply stated, original means not copied, and exhibiting a minimal amount of creativity.2 But can a work consisting of the selection and arrangement of simple public domain elements be sufficiently creative to be entitled to copyright protection? Certainly. “The requisite originality for copyright protection can also be found in the combination of unoriginal (and therefore uncopyrightable) elements.”3

There has been, however, some reluctance by the Copyright Office to register works that could be characterized as simple combinations of standard design elements. This may reflect an institutional concern about the creation of improper monopolies on commonplace expressions that would curtail other creative works. Nevertheless, relatively simple works are entitled to copyright protection so long as the necessary quantum of originality is present.4

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2 Key Publ’ns, Inc. v. Chinatown Today Publ’g Enters., Inc., 945 F.2d 509, 512 (2d Cir. 1991).

3 Express, LLC v. Fetish Group, Inc., 424 F. Supp. 2d 1211, 1225 (C.D. Cal. 2006); cf. Zidell v. Dexter, 262 F. 145, 146 (9th Cir. 1920) (“The fact that the elements were old, however, does not prove want of invention in assembling them into a single design” for a patent.).

This article will review the level of creativity required for copyright protection, and examine cases that applied the requisite creativity threshold to different combinations of public domain shapes and text. In addition, this article will discuss the judicial doctrine of “thin” copyrights that prevents only virtually identical copying for original works where the amount of originality is slight.

I. The Amount Of “Creativity” Required To Qualify For Copyright Protection Is Extremely Low

The Supreme Court in *Feist Publications v. Rural Telephone Service Co.*, held that the degree of creativity necessary in order to be entitled to copyright protection is “extremely low,” such that “[t]he vast majority of works make the grade quite easily.” Even a slight amount of original authorship will suffice.

*Feist* involved the compilation of names and telephone numbers into an alphabetical listing for a telephone book. The Court held that “there is nothing remotely creative about arranging names alphabetically in a white pages directory.” This alphabetical directory was not protected by copyright because “[i]t is an age-old practice, firmly rooted in tradition and so commonplace that it has come to be expected as a matter of course.”

Thus, the level of creativity necessary to qualify for copyright protection is based on whether the work presents a configuration embodying more than an “age-old practice” so

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5 *Feist Publ’ns v. Rural Tel. Serv. Co.*, 499 U.S. 340, 345 (1991); see also *Key Publ’ns*, 945 F.2d at 513 (“In practice, the requirement of originality has become ‘little more than a prohibition of actual copying.’” (citation omitted)).

6 *Feist*, 499 U.S. at 345.

7 *Id.* at 363. *But cf.*, *Key Publ’ns*, 945 F.2d at 514 (the arrangement of a telephone directory designed for use by the New York Chinese-American community “entailed the de minimis thought needed to withstand the originality requirement”).

8 *Feist*, 499 U.S. at 363; see also *Savata v. Lowry*, 323 F.3d 805, 810 (9th Cir. 2003) (“expressions that are standard, stock, or common to a particular subject matter or medium are not protectable under copyright law”).

8 Chi.-Kent J. Intell. Prop. 170
familiar and “commonplace” that it would be “expected as a matter of course.” Indeed, a simple work that shows some creative spark meets the threshold level of creativity, “no matter how crude, humble or obvious” it might be.\(^9\) Inasmuch as “an artist is a man who says a difficult thing in a simple way,”\(^10\) a creative spark may be found in a simple design.

II. Creative Combinations of Public Domain Elements

In evaluating a work for copyright protection under *Feist*, the focus of inquiry is not on the individual elements of the work, but on the combination of those elements in the work as a whole.\(^11\) Indeed, the arrangement of the elements, in and of itself, may be indicative of original authorship.\(^12\)

Lest “every song [be] merely a collection of basic notes, every painting a derivative work of color and stroke, and every novel merely an unprotected jumble of words,” a court cannot assess the originality of a work solely from the originality of the individual component parts. As *Feist* makes clear, *a work that is entirely a collection of unoriginal material nevertheless may be copyrighted if the material is selected, coordinated or arranged in an original fashion*. While component parts are not entitled to copyright protection simply by virtue of their combination into a larger whole, copyright may protect the particular way in which the underlying elements are combined—if the particular method of combination is itself original.\(^13\)

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\(^9\) *Feist*, 499 U.S. at 345 (citation omitted).


\(^11\) *Feist*, 499 U.S. at 358 (“to merit protection, the facts must be selected, coordinated, or arranged ‘in such a way’ as to render the work as a whole original”); accord *Roth Greeting Cards v. United Card Co.*, 429 F.2d 1106, 1109 (9th Cir. 1970) (“all elements of each card, including text, arrangement of text, art work, and association between art work and text, [must] be considered as a whole”); *Atari Games Corp. v. Oman*, 888 F.2d 878, 883 (D.C. Cir. 1989) (“*Atari II*”) (“the Register’s focus, even if initially concentrated on discrete parts, ultimately should be on the audiovisual work as a whole”).

\(^12\) *Atari Games Corp. v. Oman*, 979 F.2d 242, 243 n.1 (D.C. Cir. 1992) (“*Atari II*”) (“Recalling the creativity of the work of Mondrian and Malevich, for example, we note that arrangement itself may be indicative of authorship.”).

\(^13\) *Diamond Direct, LLC v. Star Diamond Group, Inc.*, 116 F. Supp. 2d 525, 528 (S.D.N.Y. 2000) (citations omitted) (emphasis added); see also *Savata*, 323 F.3d at 811 (“[A] combination of unprotectable elements is eligible for copyright protection only if those elements are numerous enough and their selection and arrangement original enough that their combination constitutes an original work of authorship.”).
Regardless of whether a design element in the public domain is categorized as ornate or simple, it would be considered unoriginal material and, hence, unprotectable on its own. To be entitled to copyright protection, such unoriginal design elements must be combined or arranged in an “original” manner, rather than in the mechanical application of a commonplace idea.  

A. Combination of Shapes

There is no per se prohibition against affording copyright protection to a design that is a combination of so-called simple shapes. As recognized by the D.C. Circuit in *Atari Games Corp. v. Oman* (“*Atari I*”), which involves a video game using simple geometric shapes, such as rectangles and squares, to represent a wall, a ball, and a paddle:

> Simple shapes, when selected or combined in a distinctive manner indicating some ingenuity, have been accorded copyright protection both by the Register and in court. See, e.g., *Soptra Fabrics Corp. v. Stafford Knitting Mills, Inc.*, 490 F.2d 1092, 1094 (2d Cir. 1974) (concluding that fabric design consisting of strip of crescents with scalloping or ribbons and rows of semicircles “constitutes modest but sufficient originality so as to support the copyright”); *Tennessee Fabricating Co. v. Moultrie Mfg. Co.*, 421 F.2d 279, 282 (5th Cir.) (holding that filigree pattern of intercepting straight and arc lines “possessed at least the minimal degree of creativity required for a copyright”), *cert. denied*, 398 U.S. 928, 90 S. Ct. 1819, 26 L. Ed. 2d 91 (1970); *Concord Fabrics, Inc. v. Marcus Bros. Textile Corp.*, 409 F.2d 1315, 1316 (2d Cir. 1969) (treating as subject to copyright protection fabric design consisting of a circle within a square within a circle); *In Design v. Lynch Knitting Mills, Inc.*, 689 F. Supp. 176, 178-79 (S.D.N.Y.) (upholding copyright of rhomboid pattern on a sweater), *aff’d*, 863 F.2d 45 (2d Cir. 1988).

Shortly after the Supreme Court’s decision in *Feist*, the Northern District of Illinois in *Runstadler Studios, Inc. v. MCM Ltd. Partnership* acknowledged that “combinations of standard

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14 See *Feist*, 499 U.S. at 363 (copyright protection denied for a work that was the product of “an age-old practice, firmly rooted in tradition and so commonplace that it has come to be expected as a matter of course”).

15 *Atari I*, 888 F.2d at 883-84. See infra Part II.D, for a detailed discussion of the *Atari* cases.
shapes may possess the requisite creativity for copyright protection.”16 The defendant had argued that the Copyright Office’s failure to register its spiral sculpture of glass rectangles “proves that the combination of glass rectangles cannot be a proper subject of copyright,” and that the plaintiff’s registered spiral sculpture of glass rectangles likewise should be denied copyright protection.17 This tit-for-tat argument was unsuccessful. The court noted that “[w]hatever the Copyright Office’s actions with respect to [defendant’s] application, the case law is contrary.”18

In Prince Group, Inc. v. MTS Products, the Southern District of New York noted that “a work may be copyrightable even though it is entirely a compilation of unprotectable elements.”19 The defendant had argued that the plaintiff’s registered Mega Dot pattern was simply a slight variation of the common polka dot design, which is a collection of circles – “a basic geometric shape that falls within the public domain, and is thus, uncopyrightable.”20 The court held that “the decision to place the polka dots in imperfect and conflicting diagonal lines at varying distances from each other giving the appearance of randomness, distinguishes this arrangement from the regularity of the generic polka dot design; thus, establishing a sufficient level of creativity for copyright validity.”21

These cases illustrate that copyright protection may be available for a combination of simple geometric shapes, such as rectangles or circles, where their arrangement establishes some modicum of ingenuity and creativity.

17 Id. at 1296 n.5.
18 Id.
20 Id. at 124.
21 Id. at 125; see also Thimbleberries, Inc. v. C&F Enterprises, Inc., 142 F. Supp. 2d 1132 (D. Minn. 2001) (repeating quilt pattern was sufficiently creative for copyright protection).
B. Shapes Combined With Text

The question of whether the combination of public domain shapes and text is entitled to copyright protection was presented in *Dahlen v. Michigan Licensed Beverage Association*, which concerned the layout of a poster containing paraphrased public domain material. The Eastern District of Michigan noted that the poster’s arrangement included font-related features such as “the use of bold or capitalized letters . . . to emphasize certain words,” and simple shapes such as “a box of text” and “a border around the outer edges of the poster.” The arrangement represented specific creative choices by the author. Quoting *Feist*, the court found that:

None of these features is essential to an informational poster. This arrangement does not conform to an “age-old practice,” nor is it “so commonplace that it has come to be expected as a matter of course.”

The *Dahlen* court upheld the validity of the copyright registration of the poster comprising standard fonts and box shapes. Even though boldfaced text and box shapes may not be individually copyrightable, the combination of these public domain features possessed sufficient creativity to qualify for copyright protection.

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23 *Id.* at 582.

24 In another case concerning the presentation of public domain text, a garden rock cast with a public domain poem was entitled to copyright protection. *Kay Berry, Inc. v. Taylor Gifts, Inc.*, 421 F.3d 199 (3d Cir. 2005). The court found that the fact that the plaintiff “selected an inspirational poem from the public domain, adapted that poem to make it visually and rhythmically appealing, and then cast it on its own sculptural work” showed the “quantum of creativity” sufficient to qualify for copyright protection. *Id.* at 207. The work reflected choices made with some creative thought. *Id.*


26 *Id.*

27 Providing copyright protection for a distinctive combination of public domain features is also consistent with pre-*Feist* precedent. For example, in *Reader’s Digest Ass’n v. Conservative Digest, Inc.*, 821 F.2d 800 (D.C. Cir. 1987), the Reader’s Digest magazine cover was found to be entitled to copyright protection even though none of the individual elements of the magazine cover (e.g., ordinary lines, typefaces, and colors) was entitled to copyright protection. *Id.* at 806. Reader’s Digest had “combined and arranged common forms to create a unique graphic design and layout” that was entitled to protection as a graphic work. *Id.; see also Amplex Mfg. Co. v. A.B.C. Plastic Fabricators, Inc.*, 184 F. Supp. 285, 288 (E.D. Pa. 1960) (“the distinguishable variation in the arrangement and

8 Chi.-Kent J. Intell. Prop. 174
Similarly, the question of whether the combination of public domain shapes within text is entitled to copyright protection was addressed in *Willard v. Estern*. The dispute in *Willard* centered on the use of a known “Caneel” petroglyph as the middle two zeros in the calendar year “2000,” which is reproduced below.\(^{28}\)

\[
\begin{array}{c}
2000
\end{array}
\]

There was no dispute that the “2” and the “0” used typical fonts and spacing, and that the “Caneel” petroglyph was a public domain shape. The *Willard* court held that this simple combination of public domain elements was a copyrightable work.\(^{31}\) This is consistent with the *Feist* precedent because the combination of a calendar year with a petroglyph does not represent an “age-old practice” so commonplace that it would be “expected as a matter of course.” A petroglyph (a rock carving which connotes the stone age) is not commonly associated with a calendar year (specifically, the “2000” millennium which connotes the most modern age).

In a case pre-dating *Feist*, the Eighth Circuit in *John Muller & Co., Inc. v. New York Arrows Soccer Team, Inc.*, upheld a refusal to register a logo consisting of four angled lines forming an arrow, with the word “arrow” in cursive script underneath, because it was not an abuse of discretion to find that the design lacked sufficient creativity to support a copyright.\(^{32}\) The reported decision, however, provides little context that would help indicate whether there

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\(^{29}\) A petroglyph is a carving or line drawing on rock, especially one made by prehistoric people. *The American Heritage College Dictionary* 1022 (3d ed. 1997).

\(^{30}\) The authors wish to thank Deborah Willard for graciously providing a sample of her copyrighted artwork. The original artwork that was registered also included an illustration of fireworks in the background.

\(^{31}\) *Willard*, 206 F. Supp. 2d at 725.

\(^{32}\) *John Muller & Co., Inc. v. N. Y. Arrows Soccer Team, Inc.*, 802 F.2d 989, 990 (8th Cir. 1986).
was some ingenuity in using an arrow shape with the word “arrow.” The John Muller decision can be harmonized with Feist to the extent that the combination of an arrow (→) with the word “arrow” represented an “age-old practice” that is so commonplace that it would be “expected as a matter of course.”

The choices made in selecting and combining the elements of a work in a distinctive manner can point to whether the originality requirement for copyright protection has been met. In Willard, the juxtaposition of an old petroglyph within the year 2000 indicated some ingenuity and creativity; whereas, without further context, the placement of the word “arrow” underneath an arrow shape in John Muller could be considered so commonplace as to be unoriginal.

C. Modifications in the Shape and Color of Lettering in a Logo

Recently, the Eastern District of New York in Sadhu Singh Hamdad Trust v. Ajit Newspaper Advertising, Marketing And Communications, Inc., addressed the issue of whether the stylized rendering of text in a logo was entitled to copyright protection. In this case, the plaintiff published a daily newspaper, the Ajit Daily, in the Punjab region of India. The defendant published a weekly newspaper called the Ajit Weekly, which is distributed in the United States, Canada, the United Kingdom and Europe. The plaintiff alleged that defendants deliberately copied the Ajit Daily’s logo in order to reap the benefits of a false association with

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35 Id. at 581.

36 Id.
the *Ajit Daily*.

The plaintiff had duly registered its masthead logo in India, and asserted copyright infringement in the United States based on the Berne Convention.

The logo in question consisted of the word “Ajit” (which means “unconquerable” and was the name of a famous Sikh warrior) using a modified Punjabi font. The top hook of the word in the Ajit logo was flattened and extended, and the bottom hook at the right-hand corner was cut off to form a flatter, lower hook than in standard Punjabi fonts, which is illustrated in the drawings from the defendant’s brief dated March 15, 2006, reproduced below:

![Standard font drawings](image)

The *Sadhu* court noted that “courts have also found in some cases that while the use of a particular form of extensively used lettering is not copyrightable, the arrangement of that lettering, and the manner of presentation, including background, letter size, and spacing, combined to give the product sufficient independent authorship to warrant copyright protection.” Here, “whether the Ajit logo, with its modification in color and shape from standard Punjabi font, possesses the requisite originality and creativity to warrant United States copyright protection is a close question.” Drawing all inferences in favor of the plaintiff who opposed a motion for summary judgment, the court concluded that “[a] reasonable juror could

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37 Id.

38 Id. at 583-84 (citing 17 U.S.C. § 104).

39 Id. at 588.


41 Id.
find that the combination of bright red coloring with the modification of some of the lettering is sufficient to establish such creativity.\textsuperscript{42}

D. \textit{A “Simple” Video Game}

The Copyright Office’s practice guidelines assert that “the simplicity of standard ornamentation” or “a simple combination of a few standard symbols” is not a basis of copyrightability.\textsuperscript{43} These guidelines, however, would be contrary to the controlling legal authority if applied as an indiscriminate per se rule against simple shapes and coloring. The Court of Appeals for the District of Columbia criticized the Copyright Office’s per se approach in \textit{Atari Games Corp. v. Oman (“Atari I”)},\textsuperscript{44} and \textit{Atari Games Corp. v. Oman (“Atari II”).}\textsuperscript{45} The work at issue was a video game called BREAKOUT.

\textbf{BREAKOUT} is a relatively early video game of comparative simplicity. The sound accompaniment is four basic tones. The screen shows the two players’ scores at the top. The players move a “paddle” to hit a “ball” against a “wall.” The wall is built of eight rows of rectangles arranged in four monochromatic stripes (red, amber, green, yellow). When the square blue ball hits a rectangle, the rectangle vanishes. When the ball breaks through the wall of rectangles to the empty space beyond, it ricochets at greatly increased speed until it reemerges. Both the ball’s speed and the size of the rectangular paddle change during play. The ball’s movement does not follow the laws of physics; instead, the angle of the ball’s rebound depends solely on where it impacts the paddle.\textsuperscript{46}

In \textit{Atari I}, the court found that the Register of Copyrights’ refusal of registration lacked clarity in a number of areas, including the standard of creativity and the consideration of the

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\item \textsuperscript{42} \textit{Id.} at 590.
\item \textsuperscript{43} \textsc{U.S. Copyright Office, Compendium II, Copyright Office Practices}, Sec. \textsection 503.02(a) (1984).
\item \textsuperscript{44} \textit{Atari Games Corp. v. Oman}, 888 F.2d 878 (D.C. Cir. 1989) (“Atari I”).
\item \textsuperscript{45} \textit{Atari Games Corp. v. Oman}, 979 F.2d 242 (D.C. Cir. 1992) (“Atari II”).
\item \textsuperscript{46} \textit{Id.} at 243.
\end{itemize}
work as a whole. The Register argued that BREAKOUT lacked “modest” creativity and “pointed to the Copyright Office regulation providing that ‘familiar symbols or designs’ and ‘mere variations of typographic ornamentation, lettering or coloring’ are not subject to copyright.” The appellate court, however, noted that copyright protection may be accorded to “simple shapes, when selected or combined in a distinctive manner indicating some ingenuity,” and concluded that “[w]e are thus uncertain whether or how the Register’s decision on BREAKOUT harmonizes with prior Copyright Office actions and court rulings on the creativity threshold.” The court also expressed concern “that the Register’s attention may have trained dominantly on components, not on the work as a whole.” The Atari I case was remanded “with instructions to return the matter of Atari’s application to the Register for renewed consideration consistent with this opinion.”

The dispute was later replayed in Atari II where, after remand, the Register of Copyrights again refused registration of BREAKOUT because it failed to meet the standard of creativity for a copyright.

In his second refusal to register BREAKOUT, the Register characterized the representations of the wall, ball, and paddle as “simple geometric shapes and coloring” which “per se are not copyrightable.” Letter at 3 (citing 37 C.F.R. § 202.1 (1988)). Viewing BREAKOUT “as a whole,” the Register found “no

47 Atari I, 888 F.2d at 883-84.
48 Id. at 883 (citing 37 C.F.R. § 202.1).
49 Id.
50 Id. at 884.
51 Id. at 883.
52 Id. at 886.

8 Chi.-Kent J. Intell. Prop. 179
original authorship in either the selection or arrangement of the images or their components.” Id. at 3-4.54

The “per se” prohibition against registering “simple geometric shapes” in the Register’s later refusal appears to be at odds with the Atari I court’s admonition that “simple shapes” may be accorded copyright protection. With regard to the Atari I court’s concern about how the prior refusal can be harmonized with prior court rulings on the creativity threshold, the Register apparently focused on the intervening Feist decision as supporting the decision to refuse registration.

The Register reported that he reconsidered BREAKOUT under the “generally accepted modest degree of creativity standard.” Letter at 1. On brief he contended that “Feist confirms the Copyright Office’s understanding of the statutory standard of original work of authorship.” Brief for Appellee at 21. We do not comprehend, however, how one reconciles Feist’s elucidation with the Register’s analysis in this case.55

As previously discussed, the quantum of creativity required under Feist is “extremely low.”56 The work, however, must be something more than the commonplace or expected result of an age-old practice firmly rooted in tradition.57

The Register, on the other hand, had focused on whether the geometric shapes being used were “simple,” rather than on whether those geometric shapes were being used in a traditional manner so commonplace as to be expected. Moreover, during oral argument, counsel for the Register suggested that the use of “nonrepresentational images” in the BREAKOUT videogame

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54 Id. (emphasis in original). The Register’s refusal also asserted that, “If the Copyright Office were to examine a painting consisting entirely of rectangles and find it copyrightable, it is important to understand that this decision would be based on creative elements such as depth, perspective, shading, texture of brushstroke, etc. and not on the geometric shapes per se.” Id. at 243 n.1.

55 Id. at 246.


57 Id. at 363.
shows a lack of creativity.\textsuperscript{58} For example, counsel for the Register argued that a brick wall composed of rows of colored rectangles was not fanciful or expressive because “[i]t is simply common symbols that had been run together.”\textsuperscript{59} The court rejected these arguments as being in “tension” with \textit{Feist}.\textsuperscript{60} “Abstract representation . . . is neither an ‘obvious’ nor an ‘inevitable’ choice.”\textsuperscript{61}

The \textit{Atari II} court found that “[t]he assemblage of elements in BREAKOUT does not appear to follow ‘a convention’ that is ‘purely functional,’ allowing ‘no opportunity for variation.’”\textsuperscript{62} Applying the abuse of discretion standard, the court held that “the rejection of BREAKOUT was unreasonable when measured against the Supreme Court’s instruction that “the requisite level of creativity [for copyrightability] is extremely low.”\textsuperscript{63} The case was remanded again with instructions for renewed consideration by the Register of Copyrights consistent with the \textit{Atari II} opinion.\textsuperscript{64}

\section*{III. A “Thin” Scope Of Protection}

While the minimum level of creativity for copyrightability is extremely low, if the quantum of originality just meets that bare minimum, it may only be entitled to “thin” copyright protection that prevents virtually identical copying.\textsuperscript{65} The Ninth Circuit in \textit{Satava v. Lowry},

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\item \textsuperscript{58} \textit{Atari II}, 979 F.2d at 246.
\item \textsuperscript{59} \textit{Id.} at 246-47.
\item \textsuperscript{60} \textit{Id.} at 246.
\item \textsuperscript{61} \textit{Id.} at 247. While a simple geometric shape on its own would not be copyrightable, such simple shapes may warrant copyright protection when selected and combined in a distinctive manner indicating some ingenuity. Thus, a simple shape that is selected as an abstract representation of something else can help show the creative spark necessary for copyright protection.
\item \textsuperscript{62} \textit{Id.} at 246 (citing \textit{Victor Lalli Enters. v. Big Red Apple, Inc.}, 936 F.2d 671, 673 (2d Cir. 1991)).
\item \textsuperscript{63} \textit{Id.} at 243 (quoting \textit{Feist}, 499 U.S. at 345).
\item \textsuperscript{64} \textit{Id.} at 247.
\item \textsuperscript{65} See, e.g., \textit{Beaudin v. Ben & Jerry's Homemade, Inc.}, 95 F.3d 1, 2 (2d Cir. 1996) (“Where the quantum of originality is slight and the resulting copyright is ‘thin,’ infringement will be established only by very close copying
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indicated that a thin copyright may be appropriate where there is some creativity in the work, but not enough to qualify for broad protection. However, “expressions that are standard, stock, or common to a particular subject matter or medium are not protectable under copyright law.”

“There must be something more than a ‘merely trivial’ variation, something recognizably the artist’s own.”

The work at issue in Satava was a glass-in-glass jellyfish sculpture that was described as a “vertically oriented, colorful, fanciful jellyfish with tendril-like tentacles, and a rounded bell encased in an outer layer of rounded clear glass that is bulbous at the top and tapering toward the bottom to form roughly a bullet shape, with the jellyfish portion of the sculpture filling almost the entire volume of the outer, clear glass shroud.” In applying the originality requirement to these sculptures, the court was concerned over whether the expressions in the sculptural work varied from the standard manner of expression in that medium, namely, a glass-in-glass jellyfish sculpture.

Satava may not prevent others from depicting jellyfish with tendril-like tentacles or rounded bells, because many jellyfish possess those body parts. He may not prevent others from

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66 Satava v. Lowry, 323 F.3d 805 (9th Cir. 2003); see also Express, LLC v. Fetish Group, Inc., 424 F. Supp. 2d 1211, 1227 (C.D. Cal. 2006).

67 Satava, 323 F.3d at 810; see also Feist Publ’ns v. Rural Tel. Serv. Co., 499 U.S. 340, 363 (1991) (Copyright protection denied for a telephone directory that was the result of “an age-old practice, firmly rooted in tradition and so commonplace that it has come to be expected as a matter of course.”).

68 Satava, 323 F.3d at 810; see also Express, 424 F. Supp. 2d at 1227 (Thin copyright protection was available for “creativity beyond the standard elements.”).

69 “Glass-in-glass sculpture is a centuries-old art form that consists of a glass sculpture inside a second glass layer, commonly called the shroud. The artist creates an inner glass sculpture and then dips it into molten glass, encasing it in a solid outer glass shroud. The shroud is malleable before it cools, and the artist can manipulate it into any shape he or she desires.” Satava, 323 F.3d at 809.

70 Id. at 807.

71 Id. at 812.
depicting jellyfish swimming vertically, because jellyfish swim vertically in nature and often are depicted swimming vertically.

Satava may not prevent others from depicting jellyfish within a clear outer layer of glass, because clear glass is the most appropriate setting for an aquatic animal. He may not prevent others from depicting jellyfish “almost filling the entire volume” of the outer glass shroud, because such proportion is standard in glass-in-glass sculpture. And he may not prevent others from tapering the shape of their shrouds, because that shape is standard in glass-in-glass sculpture. These elements are so commonplace in glass-in-glass sculpture and so typical of jellyfish physiology that to recognize copyright protection in the combination effectively would give Satava a monopoly on lifelike glass-in-glass sculptures of single jellyfish with vertical tentacles.

Satava could not prevent other artists from using such “standard and stereotyped elements,” but the court noted that Satava “has made some copyrightable contributions: the distinctive curls of particular tendrils; the arrangement of certain hues; the unique shape of jellyfishes’ bells.” To the extent that these choices in shape and color were not governed by jellyfish physiology or the glass-in-glass medium, they may be entitled to “a thin copyright that protects against only virtually identical copying.”

The Central District for California later applied the doctrine of “thin” copyright protection in Express, LLC v. Fetish Group, Inc., noting that one reason for the narrow scope of protection for a “thin” copyright is “the threat of copyright protection expanding to the point of

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72 Id. at 811.
73 Id. at 812 (citation omitted) (emphasis added); see also Aliotti v. R. Dakin & Co., 831 F.2d 898, 901 (9th Cir. 1987) (“No copyright protection may be afforded to the idea of producing stuffed dinosaur toys or to elements of expression that necessarily follow from the idea of such dolls.”).
74 Satava, 323 F.3d at 812.
75 Id.: Ets-Hokin v. Skyy Spirits Inc., 323 F.3d 763, 766 (9th Cir. 2003) (“When we apply the limiting doctrines, subtracting the unoriginal elements, Ets-Hokin is left with only a ‘thin’ copyright, which protects against only virtually identical copying”); Apple Computer v. Microsoft Corp., 35 F.3d 1435, 1439 (9th Cir. 1994) (“When the range of protectable expression is narrow, the appropriate standard for illicit copying is virtual identity.”); see also Sadhu Singh Hamdad Trust v. Ajit Newspaper Adver., Mktx and Komm’n’s, Inc., 503 F. Supp. 2d 577, 591 (E.D.N.Y. 2007) (“Plaintiff’s Ajit logo, with its particular letter shapes and spacing, appears to be virtually identical to that of defendant’s Ajit logo.”).
providing a monopoly on commonplace expressions or expressions that are driven more by the limitations of the medium or the subject than by creativity.”

Here, Express was accused of violating Fetish’s copyright for a camisole having “scalloped lace edging along the hemline and around the top and a three-flower embroidery design below the right hip.”

The court sought to identify the elements in which Fetish could claim a copyright. Assessing the originality of the separate elements (such as the placement of lace trim and the use of cut-out lace flowers with the embroidery design) and of the combination of those elements, the court found that neither were entitled to broad protection. In assessing the separate elements, the court found them to be “standard elements” of camisoles. Although not all of these elements are used on every camisole, “they appear with enough frequency that it would be a disservice to creativity to allow Fetish to claim a monopoly in the use of them.” In addition, most of these elements could be found in prior art garments, such that the combination of these elements in Fetish’s camisole should not, in general, be considered protected by copyright law.

The court, however, did find that the floral embroidery design established “some small amount of creativity beyond the standard combination of standard elements” because the design was

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76 Express LLC v. Fetish Group Inc., 424 F. Supp. 2d 1211, 1226 (C.D. Cal. 2006); cf. Great Atl. & Pac. Tea Co. v. Supermarket Equip. Corp., 340 U.S. 147, 152-3 (1950) (“A patent for a combination which only unites old elements with no change in their respective functions . . . obviously withdraws what is already known into the field of its monopoly and diminishes the resources available to skillful men.”).

77 Express, 424 F. Supp. 2d at 1214.

78 Id. at 1214-5. Fetish had filed a supplemental registration for its copyright which stated that the lace trim on the garment was preexisting material and Fetish claimed no copyright in the lace trim. Id. at 1216. Express argued that the amended copyright registration covered only the embroidery design, whereas Fetish argued that the copyright included the placement and arrangement of the lace. Id. at 1221. Because the court concluded that the embroidery design was the only aspect of the camisole entitled to copyright protection, the dispute about the scope of the copyright registration was, “in the end, irrelevant.” Id. at 1221-2.

79 Id. at 1226.

80 Id. at 1226-7.

81 Id. at 1227.

82 Id.
fairly intricate and did not represent the only way that stems and leaves can be depicted.\textsuperscript{83} Thus, Fetish was entitled to thin copyright protection that guards only against virtually identical copying.

Fetish had filed a motion for summary judgment of copyright infringement which required that there be no genuine issue of fact that Fetish’s and Express’ camisoles were “substantially similar.”\textsuperscript{84} “The Ninth Circuit applies a two-part test in determining substantial similarity: the extrinsic test and the intrinsic test.”\textsuperscript{85}

The extrinsic test is based on several objective criteria:

First, the copyright holder must identify the concrete elements which are similar. Second, the court must determine whether the allegedly similar elements are protected by copyright. Third, the court must define the scope of the plaintiff’s copyright—i.e., whether it is entitled to broad or thin protection.\textsuperscript{86}

The intrinsic test asks “whether the ordinary, reasonable person would find the total concept and feel of the works to be substantially similar.”\textsuperscript{87} The court noted, however, that “while the intrinsic test is inherently subjective and therefore often inappropriate for summary judgment, where the works are so overwhelmingly identical that the possibility of independent

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\textsuperscript{83} \textit{Id.} at 1227.
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\textsuperscript{84} \textit{Id.} Access by the alleged infringer is an additional requirement for copyright infringement, but Express had conceded that it had actual knowledge of Fetish’s camisole, so this issue was not in dispute. \textit{Id.} at 1227-8.
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\textsuperscript{85} \textit{Id.} at 1228.
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\textsuperscript{86} \textit{Id.} (citations omitted). \textit{cf.} Beaudin v. Ben & Jerry’s Homemade, Inc., 95 F.3d 1, 2 (2d Cir. 1996) (The “ordinary observer” test for copyright infringement should be applied using a “more discerning” standard where the copyright is “thin”).
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\textsuperscript{87} \textit{Express}, 424 F. Supp. 2d at 1228 (\textit{quoting} Three Boys Music Corp. v. Bolton, 212 F.3d 477, 481 (9th Cir. 2000)); \textit{cf.} Yurman Design, Inc. v. PAJ, Inc., 262 F.3d 101, 111 (2d Cir. 2001) (The standard test for substantial similarity between two works is whether an “ordinary observer, unless he set out to detect the disparities, would be disposed to overlook them, and regard [the] aesthetic appeal as the same.” (citations omitted)).
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creation is precluded,’ it is not necessary for a jury to decide the questions raised by the intrinsic test.”

The court ruled that Fetish’s and Express’ camisoles, as a whole and with respect to the embroidery design, were “virtually identical.” Although not precisely identical, the court found that these slight discrepancies were eclipsed by the almost total likeness in the arrangement and placement of the two designs on the garments. Summary judgment of copyright infringement was granted based on Express’ “virtually identical” copying of Fetish’s “thin” copyright notwithstanding the court’s concerns about providing a monopoly on standard elements or standard combinations of such elements.

Concern about providing a monopoly on commonplace expressions may have animated the Register’s reluctance to allow registration of the “simple” videogame in the Atari cases. This concern, however, can be addressed by the doctrine of “thin” copyright protection, which was applied in Satava and Express to address the protectable elements of works that, on the surface, appeared less simple but which consisted largely of standard and stereotyped elements.

Conclusion

While standard geometric shapes, or the coloration of such shapes, by themselves typically do not have the quantum of original creative authorship essential for copyright

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88 Express, 424 F. Supp. 2d at 1228 (quoting Twentieth Century-Fox Film Corp. v. MCA, Inc., 715 F.2d 1327, 1330 (9th Cir. 1983)); see also Peter Pan Fabrics, Inc. v. Dan River Mills, Inc., 295 F. Supp. 1366, 1369 (S.D.N.Y.), aff’d, 415 F.2d 1007 (2d Cir. 1969) (In view of the “remarkable likeness” of the designs, “the similarities are so obvious that there can be no genuine issue of fact that defendant’s design was copied from plaintiffs’”).

89 Express, 424 F. Supp. 2d at 1228.

90 Id. Thus, “virtually identical” copying does not require that the works be “precisely” identical. Id.

91 Id. at 1229. For cases involving a “thin” copyright, Express suggests that such cases would likely be amenable to summary judgment since there may be little difference between the “virtually identical” standard for infringing a “thin” copyright and the “overwhelmingly identical” standard for granting summary judgment of copyright infringement in general. Id.
protection, a combination of such design elements could very well have the necessary creative spark to warrant copyright protection. The focus should be on whether the work is the expected result of a standard or commonplace practice.

The Copyright Office, on the other hand, seems more focused on whether the elements of a work can be categorized as being “simple,” rather than on whether the combination of those elements is the expected or mechanical result of a commonplace practice. This is reflected in its COMPENDIUM II, COPYRIGHT OFFICE PRACTICES, which asserts that “the simplicity of standard ornamentation” or “a simple combination of a few standard symbols” is not a basis of copyrightability. The Copyright Office may be concerned that allowing the registration of a so-called simple work could provide an improper monopoly on standard design elements and unduly curtail other creative works. However, this concern can be addressed by the judicial doctrine of “thin” copyright protection that prevents only virtually identical copying. In addition, the Copyright Office could consider any express admission by the applicant that the work may only be entitled to a “thin” copyright.

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93 See Express, 424 F. Supp. 2d at 1226 (noting “the threat of copyright protection expanding to the point of providing a monopoly on commonplace expressions or expressions”). This tension between broad and narrow protection is also present in patent law. For example, a design patent may be entitled to only a “narrow” scope of protection where “a field is crowded with many references relating to the design of the same type of appliance.” Litton Sys., Inc. v. Whirlpool Corp., 728 F.2d 1423, 1444 (Fed. Cir. 1984).

94 See Satava, 323 F.3d at 812. The Satava court, however, also suggested that the unprotectable elements had to be “numerous enough” to constitute an original work of authorship. Id. at 811.

95 See Express, 424 F. Supp. 2d at 1219 (The scope of a registered copyright is determined by the registration application, “even if the Copyright Office does not extensively examine the registration applications or apply rigorous standards.”). An analogy may be drawn with patent law where statements made during the prosecution of a patent application may estop the patent owner from taking an inconsistent position in later litigation. See Cordis Corp. v. Medtronic AVE, Inc., 511 F.3d 1157, 1177 (Fed. Cir. 2008), reh’g and reh’g en banc denied, 2008 U.S. App. LEXIS 10499 (Apr. 9, 2008) (unpublished), cert. denied, 129 S. Ct. 201 (2008) (the doctrine of prosecution disclaimer in patent law limits claim scope where a “clear and unmistakable” statement is made by the patentee during prosecution); cf. Express, 424 F. Supp. 2d at 1219 (Although a presumption of validity attached to a registered copyright because the Copyright Office has passed judgment on the claimed copyright, “it does not create the same strong presumption of validity that attaches to patents.”).
The Copyright Office also should give consideration to an applicant’s explanation of the context of a so-called simple work in order to establish that the work is creative and not merely the mechanical result of some age-old practice. This may include the inspiration for the work, the choices available for combining the elements of the work, the reasons for making the choices, and whether those choices represent commonplace expressions or not. While the Copyright Office should not weigh the artistic merit of a work, such explanations could help provide a basis for finding the quantum of originality needed for a copyright. Rather than an apparent per se approach that focuses on the alleged simplicity of the work, the Copyright Office should give such explanations due consideration in the registration process.

96 What is “creative,” of course, often depends on context. Compare Kellerman v. Coca-Cola Co., 280 F. Supp. 2d 670 (E.D. Mich. 2003) (a novelty hat in the shape of a wing nut for fans of the Detroit Red Wings hockey team was sufficiently creative to warrant copyright protection) with Past Pluto Prods. Corp. v. Dana, 627 F. Supp. 1435 (S.D.N.Y. 1986) (a novelty hat in the shape of the Statue of Liberty crown lacked sufficient originality); cf. In re Oppendahl & Larson LLP, 373 F.3d 1171, 1173 (Fed. Cir. 2004) (The hypothetical of “tennis.net” which “produces a witty double entendre relating to tennis nets” was used to illustrate the reasoning for rejecting a bright line rule that a top-level-domain component could not demonstrate distinctiveness for a trademark.).

97 “It would be a dangerous undertaking for persons trained only to the law to constitute themselves judges of the worth of pictorial illustrations outside of the narrowest and most obvious limits.” Bleistein v. Donaldson Lithographing Co., 188 U.S. 239, 251 (1903).
THE ECONOMIC ESPIONAGE ACT AND THE THREAT OF CHINESE ESPIONAGE IN THE UNITED STATES

Jonathan Eric Lewis

Abstract

With the advent of computers and the Internet, American national security became inexorably linked with the safeguarding of the nation’s trade secrets and critical technological infrastructure. In light of the threat posed by corporate and economic espionage, Congress passed the Economic Espionage Act in 1996. The Economic Espionage Act was the first federal statute to criminalize the theft of trade secrets.

The Economic Espionage Act had two primary provisions, one criminalizing domestic economic espionage, and another criminalizing trade secret theft intended to benefit a foreign power. Since the passage of the Act over a decade ago, the vast majority of law review articles and commentaries have focused on the Economic Espionage Act’s domestic provision. This article seeks to fill a gap in the existing scholarship by focusing mainly on the provision that criminalizes trade secret theft intended to benefit a foreign power. As the overwhelming number of cases under this provision involved a connection with the Chinese government, this article seeks to analyze the efficacy of the Economic Espionage Act by studying recent cases of Chinese economic espionage in the United States. As such, this article takes a comprehensive look at Chinese economic and military rivalry and focuses on several recent high-profile economic espionage cases in California. Finally, I draw parallels between the problem of economic

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espionage that Congress responded to in 1996 and the problem of hacking and cyber espionage that the Obama Administration considers a vital national security concern.

**Introduction**

During the Cold War, Soviet espionage posed a danger to American national security. The targets of Soviet espionage were primarily military and political. The best-known Cold War espionage case was *United States v. Rosenberg*, in which Ethel and Julius Rosenberg were convicted of violating the Espionage Act, 50 U.S.C. § 32. The Rosenbergs were eventually executed for having passed atomic secrets to the Soviet Union.

With the end of the Cold War, the American industrial base became the new target of foreign espionage. Foreign intelligence agencies began devoting substantial efforts to spying upon American corporations seeking to steal American trade secrets. For instance, in 1990, China’s Ministry of State Security, (“MSS”) formed as a joint intelligence and espionage service, sent Bin Wu, a university professor, to the United States to acquire American high-tech items. Wu was subsequently caught by the Federal Bureau of Investigation (“FBI”) in a complex scheme in which he sought to acquire night-vision technology for the Chinese military. The America of the 1990s had “become the chief target of the world’s economic spies.”

Because of the dire threat of a foreign intelligence service pilfering American technology, Congress finally

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5. *Id.; see also*, IRA WINKLER, *SPIES AMONG US* 81 (2005) (contending that “[a]lmost all foreign governments put economics as the main focus of their intelligence efforts”).
7. *Id.* at 25, 28.
8. *Id.* at 4.
took action and passed the Economic Espionage Act of 1996 ("EEA" or "the Act"), which made
the theft of trade secrets a federal crime.9 The Act was a “single vehicle [that prohibited] the
theft of trade secrets and proprietary information by both private individuals and corporations
and by foreign governments acting on their behalf..."10 The Act was the first federal statute that
provided criminal penalties for the misappropriation of trade secrets.11

Testifying on the passage of the Economic Espionage Act of 1996, Senator Kohl of
Wisconsin stated that, “[s]ince the end of the cold war, our old enemies and our traditional
friends have been shifting the focus of their spy apparatus. Alarmingly, the new target of foreign
espionage is our industrial base. But for too many years, we were complacent and did not heed
these warnings.”12 FBI Director Louis Freeh testified that in 1996 the FBI was investigating
allegations of economic espionage against the United States by over twenty different countries.13
The CIA noted that France, Israel, Russia, China, and Cuba were engaged in economic espionage
against the United States.14

Over a decade has elapsed since the passage of the Economic Espionage Act of 1996;
however, the threat of foreign-sponsored economic espionage has by no means subsided.15

Against Espionage and Trade Secret Theft, 42-OCT B. J. 10, September/October 1998. For a cynical take on the
FBI’s role in combating economic espionage, see Pamela B. Stuart, The Criminalization of Trade Secret Theft: The
yet apparent, the passage of the Economic Espionage Act of 1996 might be viewed as the FBI agent full
employment act . . . . It is yet one more step in the progress of the effort to criminalize conduct that was formerly of
interest only to commercial lawyers.”).
14 Chris Carr, Jack Morton, & Jerry Furniss, The Economic Espionage Act: Bear Trap or Mousetrap?, 8 TEX.
15 According to the FBI, billions of dollars are lost every year to foreign competitors who deliberately target
economic intelligence and trade secrets. Investigative Programs Counterintelligence Division: Focus on Economic
Espionage, http://www.fbi.gov/hq/ci/economic.htm (retrieved on September 19, 2008); for a reference to French
According to the FBI, China is currently linked to about a third of all economic espionage cases.\(^\text{16}\) Due to the severity of the threat, the FBI increased the number of agents working on countering alleged Chinese espionage from 150 agents in 2001 to more than 350 agents as of summer 2007.\(^\text{17}\) According to one author writing nearly a decade ago, “[b]y far the largest, most problematic player is the People’s Republic of China, (‘PRC’), a nuclear power which is using U.S. technology and some of the profits from a ballooning trade surplus with the United States to modernize its army, navy, and air force.”\(^\text{18}\) U.S. allies also engage in economic espionage against the United States; however, due to the particular economic and military challenges posed by China, I shall focus on Chinese espionage in this paper.\(^\text{19}\)

Chinese economic espionage is likely to increase in the years ahead and to appear in different forms. This paper is the first to synthesize the numerous recent Economic Espionage Act cases involving Chinese espionage. I argue that the Economic Espionage Act is a necessary, but not sufficient, response to the threat of Chinese-government-sponsored economic espionage activities that imperil American national security.\(^\text{20}\) Although the drafters of this legislation were prescient, with the exponential growth of the Internet and advanced technology in the decade since, the threat of economic espionage now must be linked with the threat of foreign-

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\(^{16}\) http://usatoday.com/printedition/money/20070724/china_spy2.art.htm; see also David J. Lynch, \textit{Law Enforcement Struggles to Combat Chinese Spying}, USA TODAY, July 23, 2007, available at http://www.usatoday.com/printedition/news/20070723/1a_cover23.art.htm (“About one-third of all economic espionage investigations are linked to Chinese government agencies, research institutes or businesses, according to Bruce Carlson of the FBI’s counterintelligence division, who leads the bureau’s efforts to combat Chinese spying.”). France and Israel also engage in significant economic espionage against the United States. See, \textit{Winkler, supra} note 5, at 93.

\(^{17}\) http://usatoday.com/printedition/money/20070724/china_spy2.art.htm.

\(^{18}\) \textit{FIALKA, supra} note 6, at 12.


\(^{20}\) \textit{FIALKA, supra} note 6, at 206 (Fialka, writing in the late 1990s, called the EEA a “good start”).
government supported computer hacking designed not only to steal trade secrets, but also to disrupt our critical technological infrastructure.\textsuperscript{21}

The question is whether federal criminal law is the best mechanism for dealing with a complex economic, political, and potential military threat from a 21\textsuperscript{st}-century superpower. On the one hand, the EEA has given federal prosecutors a framework to prosecute persons who, with the aim of benefiting the Chinese governmental-industrial complex, seek to steal American trade secrets. The EEA, however, cannot alone counter the threat posed by Chinese espionage. The federal government should employ the EEA along with political and diplomatic initiatives aimed at mitigating the threat of Chinese economic espionage. That said, Congress should revise the Economic Espionage Act to include stricter penalties for the theft of trade secrets intended to benefit a foreign government or entity. Furthermore, Congress should enact new federal legislation that makes it a federal crime to aid knowingly, conspire to aid, or to engage in computer hacking designed to steal trade secrets or to disrupt American corporate or governmental computer systems with the intent of benefiting a foreign government or entity. While there is already federal legislation criminalizing the unlawful use of a computer, Congress should enact new, comprehensive anti-hacking legislation that would give federal prosecutors further investigative authority and prosecutorial power to counteract foreign-government-sponsored hacking.

This paper is divided into four parts. First, I shall discuss the myriad ways in which legislators and commentators have defined economic espionage and, for coherence, shall focus on Congress’s definition of economic espionage in the Economic Espionage Act of 1996.

Second, I will analyze several cases in which federal prosecutors have employed the Economic Espionage Act in order to prosecute persons engaged in economic espionage intended to benefit the Chinese government. Third, I shall argue, in light of the serious national security threat posed by Chinese governmental economic espionage in the United States, the EEA should be revised to increase criminal penalties and to redefine what acts constitute economic espionage. I shall also argue that the EEA, while an effective statute, cannot serve as a substitute for a comprehensive political and diplomatic strategy aimed at countering Chinese espionage. Fourth, I shall examine the vast number of computer hacking incidents of the past two years, incidents in which intelligence officials attribute to the Chinese government. I will argue that the EEA provides a good model for a federal criminal anti-hacking law that should be designed as a counterintelligence provision.

I. The Economic Espionage Act of 1996 (EEA)

A. Defining Economic Espionage

What exactly is economic espionage? According to the Office of the National Counterintelligence Executive, “[t]here is no consensus within the US government on the definition of economic espionage.” The Counterintelligence Report, however, decided to use the definition employed by the Attorney General, namely “the unlawful or clandestine targeting or acquisition of sensitive financial, trade, or economic policy information; proprietary economic information, or critical technologies.” Economic espionage, or high-technology espionage, has been colorfully defined as “a high-stakes cloak-and-dagger spy game – the theft of critical

22 As of September 2006, the FBI’s office in Palo Alto, California, was investigating “approximately a dozen economic espionage cases with suspected ties to China.” K. Oanh Ha, Silicon Valley a Hotbed of Economic Espionage?, THE ARGUS (Fremont-Newark, CA), Sept. 29, 2006, available at WL 16889362.
24 Id.
American technology and trade secrets by foreign companies and governments."

Political-military espionage occurs when a foreign intelligence agency seeks to infiltrate another country’s political system to influence clandestinely the political process or to gain access to government-held industrial and military secrets. Economic espionage occurs when a foreign intelligence agency spies on foreign corporations and industry in order to gain a competitive advantage or to utilize foreign technology as a means of bolstering its military capabilities.

One writer has succinctly defined economic espionage as “business spying against an American company. More specifically, it’s theft, copying, or destruction of a trade secret, meant to harm the trade secret’s owner and to benefit a foreign government or its interests.”

Canadian intelligence has defined economic espionage as “illegal, clandestine, coercive, or deceptive activity engaged in or facilitated by a foreign government designed to gain unauthorized access to economic intelligence, such as proprietary information or technology, for economic advantage.” Yet another author has defined economic espionage as “a foreign government’s sponsoring, coordinating, or assisting intelligence efforts directed at a domestic government, corporation, establishment, or person that involves the unlawful or clandestine targeting or acquisition of (1) trade secrets or (2) sensitive financial, trade, or economic policy information.”

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28 Sepura, supra note 26, at n.5.
29 Tucker, supra note 1, at 1112.
Notable in the latter definition is that the focus of the foreign government’s intelligence efforts could be on a “domestic government,” or a “[domestic] corporation.” Thus, according to this author’s definition, economic espionage would occur when the foreign intelligence service of Country X spies on either American Agency Y or American Corporation Z. The problem with this definition is that it is too broad. Foreign intelligence service X’s spying on American Agency Y is traditional political-military espionage because the target is the American government. When foreign intelligence service X devotes its energies to spying on private American Corporation Z, X is conducting economic espionage.

For the purposes of this paper, the working definition of economic espionage comes from § 1831 of the Economic Espionage Act of 1996, which deals with foreign-sponsored espionage. Section 1831(a) defines economic espionage as the acts of a person who “knowingly performs targeting or acquisition of trade secrets to . . . knowingly benefit any foreign government, foreign instrumentality, or foreign agent.” Unlike the broader definition of economic espionage as including the targeting of “sensitive financial, trade, or economic policy

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30 Id.

1831. Economic espionage
(a) In general.--Whoever, intending or knowing that the offense will benefit any foreign government, foreign instrumentality, or foreign agent, knowingly--
(1) steals, or without authorization appropriates, takes, carries away, or conceals, or by fraud, artifice, or deception obtains a trade secret;
(2) without authorization copies, duplicates, sketches, draws, photographs, downloads, uploads, alters, destroys, photocopies, replicates, transmits, delivers, sends, mails, communicates, or conveys a trade secret;
(3) receives, buys, or possesses a trade secret, knowing the same to have been stolen or appropriated, obtained, or converted without authorization;
(4) attempts to commit any offense described in any of paragraphs (1) through (3); or
(5) conspires with one or more other persons to commit any offense described in any of paragraphs (1) through (3), and one or more of such persons do any act to effect the object of the conspiracy, shall, except as provided in subsection (b), be fined not more than $500,000 or imprisoned not more than 15 years, or both.
(b) Organizations.--Any organization that commits any offense described in subsection (a) shall be fined not more than $10,000,000.
information,” the EEA defines economic espionage solely in terms of “trade secrets.” Although the statutory text of the EEA does not preclude the holder of the misappropriated trade secret from being an American governmental agency, the legislative history of the EEA makes it reasonably clear that Congress intended to protect corporate trade secrets.

Notwithstanding the statutory definition of economic espionage, a consideration of how Congress might have defined it differently bolsters the notion that Congress defined economic espionage correctly. Indeed, Congress might have adopted the Canadian intelligence service’s definition and created a statute that singularly criminalized foreign-government-sponsored espionage of a purely economic nature. Such a statute would have had a broader reach than the EEA. Congress, however, decided to criminalize the theft of trade secrets by both foreign intelligence services and corporate competitors in separate provisions, §§ 1831 and 1832. While the statutory definition of economic espionage in the EEA is the one that federal prosecutors must rely on in prosecuting cases involving the theft of trade secrets, Congress, as in all cases, retains the option to revise the statutory definition in the future.

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34 See 18 U.S.C. § 1831(a)(1) (“obtains a trade secret”). The statutory text of Section 1831 does not explicitly mention who the holder of the trade secret would have to be in order for the EEA to come into play. For a definition of “trade secret” under the EEA and subsequent case law, see Part I.C, infra.
36 The traditional statutory espionage provision is found at 18 U.S.C. § 794 (“Gathering or delivering defense information to aid a foreign government”) (effective Oct. 11, 1996). 18 U.S.C. § 794(a) criminalizes the conduct of “[w]hoever, with intent or reason to believe that it is to be used to the injury of the United States or to the advantage of a foreign nation, communicates, delivers, or transmits ... either directly or indirectly, any document, writing, code book, signal book, sketch, photograph, photographic negative, blueprint, plan, map, model, note, instrument, appliance, or information relating to the national defense ... .”
37 The Chinese government-sponsored espionage in the United States which seeks to steal corporate trade secrets often has a traditional military espionage component. For instance, there are several cases when the Chinese government or its agents have encouraged or sponsored economic espionage against American defense contractors. See infra, Part I.B.
38 See infra, Part I.B.
B. Congress Responds to the Problem of Economic Espionage

Prior to the passage of the EEA, federal prosecutors relied on three statutes to prosecute the theft of trade secrets: 18 U.S.C. § 1341 (mail fraud); 18 U.S.C. § 1343 (wire fraud); and 18 U.S.C. § 2314 (National Stolen Property Act). According to one Assistant U.S. Attorney working on computer crime, “[f]ederal prosecutors often had difficulty fitting trade secret cases within the existing statutes.”

According to Thierry Desmet, this was “because corporate spying does not involve the use of the mail or wire.” This is overstated, because, although not the case in many of the § 1831 cases, corporate spying might well involve the use of the mail or telecommunications. However, technological advances often outpaced the federal government’s resources to counter new forms of crime.

_Dowling v United States_ is instructive. In _Dowling_, prosecutors had used the National Stolen Property Act to prosecute the distributor of bootlegged Elvis Presley records. The National Stolen Property Act, for instance, criminalizes the interstate shipment of stolen “goods, wares, merchandise, securities or money, of the value of $5,000 or more.” However, the statute’s definition of stolen property did not appear to reach intangible, intellectual property.

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39 _Id._ at n.258; see also, Thierry Olivier Desmet, _The Economic Espionage Act of 1996: Are We Finally Taking Corporate Spies Seriously?_, 22 Hous. J. Int’l L. 93, 103-04 (1999).
41 Desmet, _supra_ note 40, at 104; see also, Fischer, _supra_ note 41, at 250, n.62 (noting that, in his testimony to the House Subcommittee on Crime of the Committee of the Judiciary in 1996, FBI Director Freeh asserted that the non-tangible nature of proprietary information caused some prosecutors to decline prosecuting economic espionage cases).
42 See _infra_, Part II.B.
44 18 U.S.C. § 2314 reads, in pertinent part, “[w]hoever transports, transmits, or transfers in interstate or foreign commerce any goods, wares, merchandise, securities or money, of the value of $5,000 or more, knowing the same to have been stolen, converted or taken by fraud . . . ” (emphasis added).
45 Desmet, _supra_ note 39, at 104 n.27 (“The NSPA was designed, however, to prevent traditional property crimes and it does not function adequately to intangible property.”).
The Supreme Court held that “interference with copyright does not easily equate with theft, conversion, or fraud.”\textsuperscript{46} The Court suggested that the aforementioned terms are associated with “physical removal” rather than with copyright infringement. “There is no dispute in this case that Dowling’s unauthorized inclusion in his bootleg albums or performances of copyrighted compositions constituted infringement of those copyrights. It is less clear, however, that the taking that occurs when an infringer abrogates the use of another’s protected work comfortably fits the terms associated with physical removal . . .\textsuperscript{47} Thus, in resolving a circuit split as to whether the National Stolen Property Act applied to interstate shipment of bootlegged musical recordings, the Court held that, under the rule of lenity, the statute did not apply to Dowling’s conduct.\textsuperscript{48}

Prosecutors also met a major stumbling block in the prosecution of trade secret theft in \textit{United States v. Brown}.\textsuperscript{49} In \textit{Brown}, the Tenth Circuit held that the National Stolen Property Act did not apply to a defendant who had stolen “a computer program in source code form.”\textsuperscript{50} In 1994, Peter Toren, a trial attorney with the Computer Crime Unit of the Department of Justice’s Criminal Division, observed with some degree of concern that “after the Brown decision, there are certain situations that a United States Attorney’s Office might very well decline to prosecute under 18 U.S.C. § 2314, even if someone misappropriates an extremely valuable trade secret.”\textsuperscript{51} Toren recommended that Congress amend the National Stolen Property Act “to specifically

\textsuperscript{46} Dowling, 473 U.S. at 217.
\textsuperscript{47} Id.
\textsuperscript{48} Id. at 213, 228.
\textsuperscript{49} United States v. Brown, 925 F.2d 1301 (10th Cir. 1991).
\textsuperscript{50} Id. at 1302 (“The United States appeals from a dismissal by the district court of an indictment charging the defendant . . . with three counts of violations of the National Stolen Property Act . . . The indictment was dismissed on the ground that the allegedly stolen property, a computer program in source code form, did not come within the ambit of 18 U.S.C. §§ 2314 and 2315 as goods, wares or merchandise. We affirm.”)
\textsuperscript{51} Toren, supra note 39, at 96.
include the interstate transportation of stolen intangible property.” He further cited the possible need for Congress to enact “new comprehensive legislation that criminalizes the theft of trade secrets.”

Toren would see his recommendations acted on in October 1996, when the Economic Espionage Act became effective. No longer would prosecutors be faced by the limitations of the National Stolen Property Act. As the first federal statute to criminalize trade secret theft, the EEA would become a useful tool for federal prosecutors in the decade ahead. The statutory text of the EEA has nine provisions, two of which define the criminalizing of conduct resulting in the theft of trade secrets. First, § 1831 criminalizes the theft of trade secrets by foreign governments or foreign-sponsored entities. Second, § 1832 criminalizes the “theft of trade secrets carried out for economic or commercial advantage, whether the perpetrator is foreign or domestic.” Thus, § 1832 applies to cases when an agent of one domestic corporation steals the trade secrets of his own corporation or of a competitor.

In his signing statement of the EEA, President Clinton reiterated the national security implications of the statute: “[t]rade secrets are an integral part of virtually every sector of our economy and are essential to maintaining the health and competitiveness of critical industries operating in the United States. Economic espionage and trade secret theft threaten our Nation's national security and economic well-being.” (emphasis added). President Clinton’s statement

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52 Id.
53 Id. at 97 (arguing that a specific federal statute criminalizing the theft of trade secrets would “a strong message that the theft of trade secrets from American businesses will not be tolerated”).
54 Tucker, supra note 1, at 1138.
56 Tucker, supra note 1, at 1140-48.
57 PUB. PAPERS 1814-15 (Oct. 11, 1996); see also, Gerald J. Mossinghoff, J. Derek Mason, & David A. Oblon, The Economic Espionage Act: A New Federal Regime of Trade Secret Protection, 79 J. PAT. & TRADEMARK OFF. SOC'Y, 191 (1997) (“The overriding reasons behind the enactment of the legislation were the fully documented efforts of
that trade secret theft threatens American “national security and economic well-being” should be read as endorsing the notion that the economic well-being of the United States is a fundamental component of American national security. Corporate trade secrets, although privately held, are integral to the financial well being of the American economy, and hence, to that of the American public.

The EEA is thus a hybrid form of legislation. It serves both as a deterrent to corporate competitors engaging in the theft of trade secrets and as a form of national security legislation. It was designed to give federal law enforcement a framework into which prosecutors can fit cases where a foreign government’s intelligence service sought to spy on, and steal trade secrets from, an American corporation. Of course, an issue may arise as to what is a “trade secret.” It is to this subject that I shall now turn.

C. The Trade Secret Conundrum

Defining a “trade secret” is perhaps not the easiest of tasks. The Restatement (Third) of Unfair Competition § 39 defines a trade secret as “any information that can be used in the operation of a business or other enterprise and that is sufficiently valuable and secret to afford an actual or potential economic advantage over others.”58 The Uniform Trade Secrets Act (“UTSA”), adopted by the majority of states, defines a trade secret as:

information, including a formula, pattern, compilation, program, device, method, technique, or process, that:

(i) derives independent economic value, actual or potential, from not being generally known to, and not being readily ascertainable by proper means by, other persons who can obtain economic value from its disclosure or use, and

(ii) is the subject of efforts that are reasonable under the circumstances to maintain its secrecy.\textsuperscript{59}

Prior to the passage of the EEA, the UTSA governed some cases in which competitors or others misappropriated trade secrets. However, the UTSA is not a criminal statute; rather, it creates a “cause of action in tort” for the theft of trade secrets.\textsuperscript{60} For American Corporation Z to sue in a state court foreign intelligence service X for the theft of a trade secret likely would be unworkable for several reasons.\textsuperscript{61} First, it would likely raise a separation of powers issue, as it could be interpreted as a state court’s intrusion into foreign policy. Second, it is highly unlikely that a foreign intelligence service, particularly one hostile to the United States, would recognize the jurisdiction of an American state court. Third, any judgment rendered against a foreign intelligence agency in a state court would almost certainly never be honored. Furthermore, the alleged harm done in a cause of action under the UTSA is to the corporation itself rather than to the public. Because the EEA is a criminal, rather than a civil, statute, the harm is to society as a whole, thus giving the federal government authority to prosecute those who engage in trade secret theft against private American corporations.

The EEA definition of trade secret is similar to that of the UTSA in that the information “derives independent economic value, actual or potential” from the fact that the general public does not have readily ascertainable access to the information. However, the definition of what sorts of information constitute a trade secret is broader in the EEA. Unlike the UTSA, which lists “a formula, compilation, device, method, technique, or process,” the EEA lists “\textit{all forms and types} of financial, business, scientific, technical, economic, or engineering information . . . .”

\textsuperscript{59} Unif. Trade Secrets Act § 1-4. Connecticut law defines trade secret identically to that of the UTSA. The statutory definition is at C.G.S.A. § 35-51(d) (West 2008).
\textsuperscript{60} Fischer, supra note 41, at 253.
\textsuperscript{61} But see infra, Part III.A. (discussing how derivative suits might be used to counter economic espionage).
(emphasis added). One commentator observed that the EEA “actually expands the traditional view of trade secrets to allocate control and use of other information.” Information, broadly construed, falls under the purview of the EEA.

Under the EEA, almost any information that the owner takes reasonable steps to keep secret and which has economic value because of its secret nature is a trade secret. Notable in the EEA definition is the specific reference to engineering information. Should the engineering trade secret pertain to the national defense, it would appear that a prosecutor could choose to invoke either the EEA (engineering factor) or 18 U.S.C. § 794(a), the federal statute criminalizing the gathering or delivering of defense information to aid a foreign government. The theft of business proprietary information, by contrast, would most likely be brought under the provisions of the EEA.

The expansive definition of trade secrets in the EEA has not gone unchallenged. In United States v. Hsu (Hsu IV), the defendant, Kai-Lo Hsu, contended that the EEA was unconstitutionally vague. In an indictment under § 1832 of the EEA, Hsu was charged in a FBI sting operation concerning the theft of technology. Hsu argued “that the definition of ‘trade secret’ in 18 U.S.C. § 1839(3) offends due process with its vagueness because it does not define either ‘reasonable measures’ to keep the information secret, or what is meant by information not being ‘generally known’ or ‘readily ascertainable’ to the public.” The court was troubled by the EEA’s definition of trade secret. “With the proliferation of the media of communication on technological subjects, and (still) in so many languages, what is ‘generally known’ or

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64 Id. at 626.
‘reasonably ascertainable’ to the public at any given time is necessarily never sure.” However, as applied to the facts of that particular case, the court held that the “term ‘generally known to, and not being readily ascertainable through proper means by, the public,’ is not unconstitutionally vague.” The *Hsu* court did, however, leave open the door to future challenges under the void-for-vagueness doctrine.

In *United States v. Krumrei*, also a § 1832 case, the defendant filed a motion to dismiss, claiming that the definition of trade secret was unconstitutionally vague. In *Krumrei*, the government had indicted the defendant for transmitting a trade secret to the owner of a corporate competitor. The court noted that the defendant knew that the information was proprietary. Citing *Hsu*, the Sixth Circuit held that the definition of trade secret in the EEA was not unconstitutionally vague as applied to the defendant.

*Hsu* and *Krumrei* were § 1832 cases rather than § 1831 cases, which deal with economic espionage intended to benefit a foreign government. However, the constitutionality of the EEA definition of trade secret strengthened prosecutors’ abilities to apply the EEA toward a more serious economic espionage crime, foreign-government-sponsored economic espionage against American corporations. It is to a particular country’s extensive efforts at engaging in economic espionage in the United States to which I shall now turn.

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65 *Id.* at 630.
66 *Id.*
68 *Id.* at 539.
II. China’s Economic War Against the United States

The Chinese Military’s Long-Term Strategy

China seeks to be the dominant military power in East Asia. In particular, Beijing seeks to build an offensive naval capability in East Asia and seeks technology that can aid the country in improving its naval capability. Such naval capability would be employed in any potential military confrontation over Taiwan. Furthermore, according to two analysts, “Chinese leaders believe their rule depends on secure sea lanes.” To aid them in this quest, the Chinese government and its agents have engaged in economic espionage against American institutions that have critical warship technology. The Chinese People’s Liberation Army also “is in the midst of a major transformation in order to prepare for what the top leaders call the new era of information warfare.” China seeks to upgrade its military and industrial base. Ira Winkler contends that “[i]ndustrial espionage has always played an important role in Chinese economic development. For many years, China has used its military intelligence capabilities for economic purposes.”

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72 Holmes & Yoshihara, supra note 72.
75 WINKLER, supra note 5, at 86.
The Chinese government relies heavily upon Chinese scientists and students in the United States, as well as upon the Chinese-American Diaspora, to spy on American corporations.\textsuperscript{76} Unlike the efforts of other countries, the Chinese espionage effort is decentralized. Chinese students at American universities may be particularly susceptible to approaches from China’s intelligence services.\textsuperscript{77}

\textbf{B. Chinese Economic Espionage in the United States}

Economic espionage is one of the primary ways by which the Chinese government seeks to boost its long-term military capability. Due to the seriousness of § 1831 cases, the Attorney General must authorize local prosecutions.\textsuperscript{78} Three years after the passage of the EEA, two commentators noted that President Clinton’s accolades for the statute vastly overstated the statute’s significance and noted that, no prosecutions had been brought under § 1831.\textsuperscript{79} However, at the turn of the century, federal prosecutions brought numerous indictments under § 1831. The majority of § 1831 cases have involved Chinese-government-sponsored economic espionage.\textsuperscript{80} It is these cases, and the interconnections between them, that I shall now discuss.

\textsuperscript{76} See Nicholas Eftimiades, Chinese Intelligence Operations 28 (1994). China is not the only country to rely upon ethnic kin in the United States for espionage purposes. See also, Winkler, supra note 5, at 94 (“Similarly to the Chinese, the Israelis also utilize ethnic targeting to recruit many of their agents”).

\textsuperscript{77} Winkler, supra note 5, at 86. None of this, of course, is meant to imply that Chinese-Americans or Chinese students in the United States should be targets of ethnic profiling.

\textsuperscript{78} Memorandum from the Office of the Att’y Gen. on Renewal of Approval Requirement Under the Economic Espionage Act of 1996 to all United States Attorneys, all First Assistant United States Attorneys, all Criminal Chiefs, all Criminal Division Section Chiefs and Office Directors (Mar. 1, 2002) (on file with author).


Given its centrality to the computer and technology industry, Silicon Valley is a focal point for economic espionage. On November 23, 2001, federal agents arrested Fei Ye and Ming Zhong at the San Francisco International Airport as they attempted to board a flight to the PRC with stolen trade secrets in their possession. Although both men were originally from China, Fei Ye was also an American citizen; Ming Zhong was a permanent resident of the United States. On December 4, 2002, the two men were indicted by a federal grand jury on ten counts, including conspiracy, economic espionage, possession of stolen trade secrets, and foreign transportation of stolen property. With regard to the EEA charges, Fei Ye and Ming Zhong were indicted under both § 1831 and 1832.

Fei Ye and Ming Zhong had engaged in a scheme to steal trade secrets belonging to Sun Microsystems, Inc. and Transmeta Corporation, as well as two other companies, to develop and to sell new microprocessors in China. The government’s appellate brief to the Ninth Circuit indicates that the defendants possessed the trade secrets to benefit China by promoting the development of the Chinese integrated circuit industry through an entity known as ‘Supervision.’ According to the indictment, Ye and Zhong had told others that funding for

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84 See id.
85 Id. According to the government, federal agents seized trade secrets from Transmeta in both Ye’s and Zhong’s luggage and seized trade secrets from Sun in Ye’s luggage only. Federal agents seized other trade secrets from Sun, Transmeta, NEC Electronics Corporation, and Trident Microsystems, Inc., in other locations. For the purposes of the Section 1831(a)(3) charges, however, all the seized evidence was from the luggage at the airport. For the Section 1831(a)(5) charge, the location seized included luggage, residences, and Zhong’s office.
Supervision was being provided by the government of Hangzhou, China; that Supervision was applying for funding from the 863 Program; and that Supervision was working with a Chinese university professor, who was helping them to obtain 863 Program funding. Run by the PRC central government and linked to its military, the 863 Program invests in corporations with new technologies. The FBI suspects, with good reason, that the 863 Program is involved in many economic espionage cases. Testifying before the Senate Judiciary Committee, U.S. Attorney Kevin J. O’Connor referenced the 863 Program as a “funding plan created and operated by the government of the People’s Republic of China, also known as the national High Technology Research Development Program.” The 863 Program will likewise play a role in the Le case. In that case, the government referenced the fact that the General Armaments Division of the People’s Liberation Army “had a regular role in, and was a major user, of the 863 Program.” According to Larry M. Wortzel, a former military intelligence officer, the 863 Program “is part of the climate in China that rewards stealing secrets” and the program “is related to state-directed and economic espionage, but it is only one of the actors.”

In December 2006, Ye and Zhong pled guilty to the charge of economic espionage to benefit a foreign government, the first convictions under § 1831. Significantly, this case, like many federal criminal cases, did not go to trial. However, the question remained as to how

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88 K. Oanh Ha, supra note 22.
89 Id.
extensive the Chinese government’s involvement in the Ye case really was.\textsuperscript{93} The EEA does not require that prosecutors prove that a foreign government or entity needed to be involved, directly or indirectly, in the theft of trade secrets. Rather, what is required is for a person or organization to act in such a way that will benefit a foreign government or entity. Congress likely settled upon this language for two practical reasons. First, it would be much more difficult for a prosecutor to prove, beyond a reasonable doubt, that a foreign intelligence service aided or encouraged the acts by a hypothetical principal in an economic espionage case. Second, because of the sensitive nature of counterintelligence operations, the government would be unlikely to want to advertise directly that a foreign government, especially an ally like France or Israel, was caught engaging in economic espionage against American corporations.\textsuperscript{94}

In the Ye case, however, because of the Chinese connection, prosecutors likely felt that the guilty pleas of both men would serve to deter potential further Chinese-sponsored economic espionage activities. At the very least, the first § 1831 conviction involving a Chinese connection would serve as a validation of the Congressional intent to enact the EEA. The Ye case would, however, be only the first in a string of cases all involving a Chinese connection and all occurring in California.

\textit{United States v. Xiodong Sheldon Meng}

In December 2006, in a 36-count criminal indictment, the government indicted a Chinese-Canadian, Xiodang Sheldon Meng, under § 1831 of the EEA and under the Arms

\textsuperscript{93} Jordan Robertson, \textit{A Victory Against Economic Espionage}, HOUSTON CHRON., Dec. 16, 2006, 2006 WL 21887869 ("[T]he settlement leaves unanswered one of the key underlying questions of the case: Did the Chinese government or any of its officials know the trade secrets were stolen?").

\textsuperscript{94} See WINKLER, supra note 5, at 104 ("Although relatively few Israeli espionage cases hit the media, it is extremely likely that Israel is every bit as active in this arena as are the French and the Chinese.").
Control Export Act, as well as other ancillary charges. From June 19, 2000, to March 7, 2003, Meng, of Cupertino, California, was employed at a San Jose, California company, Quantum3D, Inc. He later pled guilty to misappropriating trade secrets, including a product known as nVSensor, a corporate night-vision technology product used exclusively in military applications for training and simulation applications. The government alleged that Meng intended his actions to benefit the PRC Navy Research Center in Beijing. The defense, in court documents, maintained that Meng did not engage in espionage on behalf of a foreign government.

According to Joseph P. Russoniello, the U.S. Attorney for the Northern District of California, “[i]n this case, a Silicon Valley trade secret was used in a demonstration project in Beijing with the intent to Benefit the PRC Naval Research Center.” The investigation also indicated that Meng used the military application trade secrets in a demonstration and in a sales proposal to the Malaysian Air Force and the Thai Air Force. However, according to Assistant U.S. Attorney Mark Krotoski, who prosecuted the case, “it was Meng’s focus on profits, not a foreign allegiance, that drove him to steal the trade secrets and to try to sell them to the highest

98 See Press Release, U.S. Dep’t of Justice, Chinese Nat’ Sentenced for Economic Espionage, supra note 80 (“... With the Intent To Benefit China Navy Research Center”).
The Justice Department, however, emphasized the national security dimension to the *Meng* case with a specific press release from the National Security Division.\(^{103}\)

As in the *Ye* case, the question remains as to how extensive was the Chinese government’s role. Was the *Meng* case primarily a theft-of-trade-secrets case, a counterintelligence case, or both? If it was primarily a theft-of-trade-secrets case, then § 1831 of the EEA proved to be an adequate statutory provision. However, despite the relative seriousness of the offense, Meng was sentenced to only two years in prison, a comparatively light sentence given that § 1831 allows for up to 15 years imprisonment.\(^{104}\)

Categorizing *Meng* as primarily a counterintelligence case utilizing the EEA makes more sense because of the connection to the PRC Naval Research Center. Had this case occurred during the Cold War and involved the Soviet Navy, prosecutors would have brought this case under the Espionage Act.\(^{105}\) Indeed the case, at least theoretically, meets the statutory provision of 18 U.S.C. § 794(a), which makes it a crime to communicate to the “naval force within a foreign country . . . any document, writing, code book, signal book, sketch, photograph, photographic negative, blueprint, plan, map, model, note, instrument, appliance, or information relating to the national defense . . .”\(^{106}\) The statutory language noticeably does not refer to trade secrets; however, it does refer to “information relating to the national defense.’ This phrase is probably broad enough to encompass the night-vision technology trade secret. However, the statutory language of the EEA has the advantage of being more precise. The best explanation of why the government chose to prosecute Meng under the EEA rather than under the Espionage

\(^{102}\) *Engineer Who Tried to Sell Secrets to China Gets 24 Months*, CHICAGO TRIBUNE, June 19, 2008, WL 11538443.

\(^{103}\) See http://www.usdoj.gov/opa/pr/2008/June/08-nsd-545.html.

\(^{104}\) See supra, notes 2-3 and accompanying text.

\(^{105}\) See supra, note 99.

Act is that the government likely did not want to disclose any information obtained during the investigation of Chinese intelligence operations. Such information might have had to be revealed in court had the prosecutors chosen to bring the case under the Espionage Act and had Meng chosen to go to trial. Nevertheless, with a plea agreement in a § 1831 case, the government was able to send a strong message that Chinese-sponsored theft of trade secrets in Silicon Valley would be discovered and prosecuted. As the following case will show, the interconnections between the Silicon Valley cases should not be underestimated.

United States v. Lan Lee and Yuefei Ge

On September 26, 2007, the Department of Justice announced the indictment of Lan Lee ("Lan Li"), an American citizen, of Palo Alto, California, and Yufei Ge, a Chinese national, of San Jose, on charges of economic espionage. The U.S. Attorney’s Office brought the charges under both § 1831 and § 1832. The superseding indictment alleged that Lee and Ge conspired to steal trade secrets from their employer, NetLogics Microsystem, and from Taiwan Semiconductor Manufacturing Corporation. The indictment also alleged that the men created a company, SICO Microsystems, Inc., registered in Delaware, “for the purpose of developing and marketing products derived from and using the stolen trade secrets.” The men allegedly stole blueprints that they intended to use to reproduce a super-fast microchip in China.

Similar to the Ye case, the 863 Program played a role in the Lee case as well. In 2003, SICO signed a deal with a Chinese company run by venture capitalist Liu Baisen, who allegedly

108 Id.
109 Id.
110 Cha, supra note 92.
111 See supra, notes 90-95 and accompanying text.
agreed to secure funding from the 863 Program and the General Armaments Department. In the Department of Justice press release, the government explicitly referenced both the Chinese government and the 863 Program. “The defendants sought to obtain venture capital funding for their company from the government of China, in particular the 863 Program and the General Armaments Department.” The government also specifically singled out the 863 Program’s ties with the Chinese military-industrial complex: “[t]he program was designed by leading PRC scientists to develop and encourage the creation of technology in the PRC and focused on issues such as high technology communications and laser technology, with an emphasis on military applications.” According to one press report, Lee and Ge “allegedly reached out to Chinese government agencies for help funding the business, including a branch of the Chinese military responsible for the development of weapons systems, and an agency that funnels money toward technology companies with a military bent.” The Lee case represents the intersection of trade secret theft and national security. Indeed, Lee is exactly the type of case that prompted Congress to enact § 1831. Here, a Chinese national working for a California employer allegedly stole trade secrets intended to benefit the PRC. Making the case even more threatening to national security was the linkage to the 863 Program.

The Lee case should not be seen in a vacuum, but rather in the context of a systematic effort by individuals in California to steal trade secrets that would benefit China. Levine has postulated that the Department of Justice has, in economic espionage cases, “an apparent strategy of trading sentencing leniency for one pair of defendants in order to help convict another pair on

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112 Cha, Even Spies Embrace, infra note 126.
113 Press Release, U.S. Dep’t of Justice, Two Bay Area Men Indicted on Charges of Economic Espionage, supra note 107.
114 Id.
higher-profile charges . . .”

Here, Levine specifically references the apparent ties between the Ye and Lee cases. He hints that in Ye and Zhong’s plea agreement with the government, the two men provided information to the U.S. Attorney’s Office that was then utilized to indict Lee and Ge for economic espionage. “Ye and Zhong’s plea deal doesn’t specify who they gave up, but they admitted to applying for funding from the same Chinese venture group that Lee and Ge had allegedly solicited.”

Although there is no mention of venture capitalist Liu in the publicly-available Ye documents, such a linkage would suggest that Liu may have been a conduit between the defendants and the 863 Program. According to the Washington Post, “[o]ne of the four addresses listed in Liu’s former company’s official registration papers is a room in the basement of a heavily guarded, unmarked government security complex in Beijing’s Zhongguancun neighborhood, which is known as China’s Silicon Valley.”

As of now, the Lee case raises more questions about the interconnections between the different California economic espionage cases than answers.

United States v. Dongfan “Greg” Chung

Although the Department of Justice did not arrest Greg Chung until February 2008, in many respects the Chung case began in 1985 when Chi Mak and his wife became naturalized citizens in Los Angeles. Described by federal prosecutors as the “perfect sleeper agent,” Chinese-born Chi Mak arrived in the United States in the 1970s and built a career working for a defense contractor, Power Paragon, in an effort to develop a submarine propulsion system. His

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117 Id.
118 Cha, supra note 92.
119 Peter Grier, Spy Case Patterns the Chinese Style of Espionage, CHRISTIAN SCIENCE MONITOR, Nov. 30, 2005.
job and security clearance gave him access to Navy ship, submarine, and weapons technology.\textsuperscript{121} In 2003, federal authorities began investigating Mak. The FBI discovered that Mak had copied thousands of technical documents onto computer disks which he then arranged to be sent to China.\textsuperscript{122}

Mak admitted that he had been placed in the United States to steal defense-industrial secrets. Mak was allegedly handled by “PRC official A,” a senior Chinese intelligence official who was the mastermind in \textit{United States v. Bergersen}. In \textit{Bergersen}, a Department of Defense weapons system analyst pled guilty in U.S. District Court in Alexandria, Virginia, to conspiracy to disclose national defense information to persons not entitled to receive it, in violation of 18 U.S.C. §§ 793(d) and (g).\textsuperscript{123} Notably, the Justice Department announced the charges against Bergersen on the very same day as they announced charges against Chung.\textsuperscript{124}

On October 28, 2005, federal agents arrested Chi Mak, his wife, and his brother.\textsuperscript{125} A federal jury convicted Mak of both illegally exporting American defense technology and being an unregistered foreign agent.\textsuperscript{126} Mak was eventually sentenced to 293 months in federal prison for exporting technical information about Navy warship technologies and sensitive American military technology to the PRC.\textsuperscript{127}

\begin{itemize}
\item \textsuperscript{121} \textit{Id.}
\item \textsuperscript{122} \textit{Id.}
\item \textsuperscript{125} Warrick & Johnson, \textit{supra.}
\item \textsuperscript{127} Press Release, U. S. Att’ys Office, Central Dist. of Cal., \textit{supra} note 73.
\end{itemize}
The Mak case is linked with the Chung case.\textsuperscript{128} As previously described, on February 11, 2008, federal agents arrested Dongfan “Greg” Chung of Orange, California, on economic espionage charges.\textsuperscript{129} Unlike some of the previous cases where prosecutors brought charges under both §§ 1831 and 1832, here, the economic espionage charges in the indictment were solely under §§ 1831(a)(1) and 1831(3).\textsuperscript{130} The October 2007 Grand Jury indictment alleges that Chung conspired to steal possess Boeing trade secrets intended to benefit the PRC or its agents.\textsuperscript{131} Chung allegedly took Boeing trade secrets relating to the Space Shuttle, a military transport aircraft, and the Delta IV rocket.\textsuperscript{132} The indictment is explicit in asserting a direct connection between Chung and the Chinese government. “Defendant received requests from officials of the PRC to provide American technology to the PRC.”\textsuperscript{133}

The indictment alleges that Gu Weihao of the PRC’s Ministry of Aviation wrote Chung a letter dated May 2, 1987, asking Chung for “assistance on technical issues” for various aviation programs.\textsuperscript{134} The letter also suggested cover stories for Chung’s travel to China.\textsuperscript{135} More interesting, however, is a letter from Gu Weihao dated April 12, 1988, in which Weihao “stated that Chi Mak’s wife, Rebecca, was in China and had told Gu that the Maks and Chungs had a good relationship.”\textsuperscript{136} Gu Weihao also wrote “that it was faster and safer to send information through Chi Mak.”\textsuperscript{137} Although the indictment does not provide further detail on the relationship

\textsuperscript{129} Id.
\textsuperscript{130} United States v. Chung, Indictment, February Feb. 6, 2008, at 1. (copy on file with author).
\textsuperscript{131} Id. at 7.
\textsuperscript{132} Press Release, U.S. Att’ys Office, Central Dist. of Cal., Former Boeing Eng’r Charged with Econ. Espionage in Theft of Space Shuttle Secrets, supra note 128.
\textsuperscript{133} United States v. Chung at 8.
\textsuperscript{134} Id. at 15.
\textsuperscript{135} Id.
\textsuperscript{136} Id.
\textsuperscript{137} Id. at 16.
between the Maks and the Chungs, one can infer that Chi Mak and Greg Chung had an ongoing relationship relating to their mutual espionage activities.

The Chung case is best viewed as a turning point in the government’s approach to prosecuting economic espionage cases in which there was a Chinese connection. In contrast to the Ye, Meng, and Lee cases, where the references to an official Chinese governmental role were not nearly as explicit, in Chung, the Government likely felt confident enough not only to publicize an official Chinese governmental role in a § 1831 case, but also to provide clues as to the linkages between Chung and both Mak and Bergersen. The case also demonstrates how bold the Chinese government has been in planting agents in the United States and in stealing American trade secrets that could benefit its military-industrial complex.

Given the escalating threat to American national security of economic espionage, it is worth considering whether federal criminal law is an appropriate mechanism for countering the Chinese military’s long-term strategy. Congress should consider modifying the EEA to counter what appears to be a rising, concentrated effort by the PRC to pilfer American military technology. It is to that subject that I shall now turn.

III. The EEA and the Problem of Chinese Espionage

Although the EEA has only been in existence for over a decade, it is not too soon to attempt a critical assessment of § 1831 and its role in combating Chinese-government-sponsored economic espionage in the United States. The § 1831 cases where there was a connection to the Chinese government provide a good basis upon which to begin such an assessment. Because many of the documents in the cases remain sealed, providing a comprehensive picture of the role
of U.S. Attorney’s offices in investigating and prosecuting economic espionage crimes remains difficult. Furthermore, in some ways the cases provide more questions than answers. However, in light of the information that is publicly available, I offer three primary assessments of the role of the EEA in combating Chinese economic espionage.

First, the EEA alone cannot solve the problem. While the EEA has proved to be both a necessary and useful tool to prosecute actors who engage in economic espionage on behalf of the Chinese government or with the intent to benefit the PRC, federal criminal law is limited in what it can do to solve the overarching problem of U.S.-Chinese economic and military competition. Here, the problem is not the “overexpansion of federal criminal law,” but whether economic espionage is also a diplomatic problem. Furthermore, it must be noted that there is also a role for private lawsuits in countering Chinese economic espionage.

Second, Congress properly defined economic espionage as the theft of trade secrets and properly defined trade secrets broadly. This has allowed for federal prosecutors to apply the statute in myriad cases where the mail and wire fraud statutes did not apply. Furthermore, the broad, inclusive definition of trade secrets in the EEA makes certain that those who engage in economic espionage to benefit the Chinese government cannot mount a successful defense by contending that the materials they were charged with misappropriating were not trade secrets.

Third, in light of the overarching national security threat posed by trade secret theft, Congress should enhance the penalties for those § 1831 crimes where the defendant’s acts are

139 John S. Baker, Jr., Jurisdictional and Separation of Powers Strategies to Limit the Expansion of Federal Crimes, 54 AM. U. L. REV. 545, 547 (2005). Although even Baker, a critic of the expansion of federal criminal law, seems to note that the EEA is not necessarily such an example of overexpansion of federal criminal law, as the EEA protects “special economic interests.”
intended to benefit a foreign government’s military or military-industrial complex. Although this enhancement likely would not serve as a deterrent to ideologically committed agents of a foreign power, it would signal the fact that Congress is taking the threat seriously. This would give prosecutors greater leeway to make deals with defendants to obtain useful information regarding ongoing espionage in the United States.

A. The EEA Alone Cannot Solve the Problem of Chinese Economic Espionage

When Congress passed the EEA in 1996, it was not clear whether any legislators had China specifically in mind. In the Senate hearings prior to the enactment of the EEA, perhaps with diplomatic protocol in mind, no senator specifically referenced China. However, China’s rise as an economic competitor and its history of espionage activities were known in the intelligence community. It is just as likely that legislators were as concerned with economic espionage conducted by friendly countries such as France and Israel. However, in light of the fact that the overwhelming number of § 1831 criminal prosecutions have had a Chinese connection, the best assessment of the efficacy of § 1831 of the EEA must be determined with reference to those cases that prosecutors chose to bring in court. It should be noted, however, that just because prosecutors have chosen to bring charges against Chinese persons it does not mean that federal law enforcement has not discovered numerous cases of the French and Israelis engaging in similar conduct. Because of the negative diplomatic and political repercussions of bringing legal charges against agents of friendly powers, it is possible that acts of the French and Israelis have been dealt with quietly, outside the formalities of the American legal system.

Although prosecutors have been successful in combating PRC-sponsored economic espionage in the United States, the problem of Chinese economic espionage is not purely one for
federal law enforcement. Unlike domestic trade secret theft where federal law enforcement should have exclusive jurisdiction, trade secret theft where Chinese agents steal American defense technology has implications for U.S.-Chinese economic, military, and political relations. Indeed, the problem of Chinese-sponsored economic espionage cannot be so easily separated from the numerous areas of tension between the United States and China, ranging from disputes over currency\textsuperscript{140}, China’s rising influence in Africa\textsuperscript{141}, and climate change.\textsuperscript{142}

Diplomacy must play a preeminent role in any effort to deal with the problem of Chinese economic espionage in a comprehensive manner. The U.S. Ambassador to China, for instance, may express concerns about Chinese economic espionage to the Chinese Foreign Ministry. Such conversations would demonstrate that the United States considers economic espionage as much of a diplomatic problem as a legal one. Indeed, the United States could link the problem of economic espionage to wider concerns about China’s long-term military intentions and quietly create a deal in which China would agree to end its economic espionage in return for American concessions in some area that Beijing considers vital to China’s national interests. Furthermore, diplomats would have the luxury of creating a grand bargain outside the formalities of the American legal system. Such an approach would be proactive, rather than the reactive approach of the EEA.

Corporations themselves should be required to ensure that their trade secrets, particularly those that have national security value, are not stolen. One commentator has cited the threat of a


\textsuperscript{141} Craig Simons, \textit{China’s Influence Among African Nations Spurs Concerns, ATLANTA J.-CONST.}, Nov. 30, 2008 (noting that China is the biggest purchaser of oil from Sudan).

foreign power, such as China, planting information-gathering technology into commercial and
industrial products sold in the United States and used by U.S. government agencies.\textsuperscript{143} Robert
Bracknell, citing the threat of technological espionage specifically from China, organized crime,
and terrorists, has argued that the law, borrowing from the American legal concept of products
liability, “can impose special duties on companies engaged in information technology commerce
aimed at U.S. consumers, including the U.S. government, and can require them to take prudent
steps mandated by law to ensure that the products they sell are as ‘espionage-safe’ as
possible.”\textsuperscript{144} Although Bracknell was concerned about the potential of a foreign government to
deliberately place information seeking technology in exports, his notion of having private actors
involved in counterespionage merits attention. Indeed, although I have previously cautioned
against the practicality of American corporations bringing suit against foreign intelligence
agencies in state courts\textsuperscript{145}, there is, nevertheless, a role for private actors in combating Chinese
economic espionage.

Here, the case of \textit{In re Caremark} is instructive. In \textit{Caremark}, the Delaware Court of
Chancery noted that corporate boards may have a duty to maintain a nominal internal control and
reporting system that would keep track of possibly illegal acts by employees, so as to avoid
liability under the duty of care.\textsuperscript{146} The court held that “a director’s obligation includes a duty to
attempt in good faith that a corporate information and reporting system, which the board,
concludes is adequate exists” and that a failure to do so could result in liability.\textsuperscript{147} The court’s

\textsuperscript{143} Robert Gray Bracknell, \textit{Trust Not Their Presents, Nor Admit the Horse: Countering the Technologically-Based
\textsuperscript{144} \textit{Id.} at 840.
\textsuperscript{145} \textit{See supra} Part I.C.
\textsuperscript{146} \textit{In re: Caremark International Inc. Derivative Litigation}, 698 A.2d 959 (Del. Ch. 1996).
\textsuperscript{147} \textit{Id.} at 970.
holding in *Caremark* could equally be applied to public corporations whose employees engage in economic espionage to benefit a foreign power.

In order to ensure that public corporations are safeguarding trade secrets from foreign spies, courts should permit shareholders of public corporations to file derivative suits on behalf of those corporations that had trade secrets stolen by persons intending to benefit a foreign power. The potential of a lawsuit would give incentives to corporate directors and officers to make sure that they did proper background checks of all employees and that they had internal reporting mechanisms to properly identify potential espionage. Furthermore, allowing such derivative suits to go forward would cause shareholders of public corporations to be more aware of the threat of economic espionage and to apply pressure upon corporations to ensure that there are adequate internal safeguards for detecting espionage.

**B. Congress Properly Defined Economic Espionage**

When it enacted the EEA, Congress had to decide what would constitute “economic espionage”; it chose to define economic espionage in terms of the theft of trade secrets.\(^ {148}\) Congress chose an expansive definition, one that did not go unchallenged under the void-for-vagueness doctrine.\(^ {149}\) That said, federal prosecutors in California have been able to utilize the definitions of “economic espionage” and “trade secrets” to successfully inhibit the misappropriation of trade secrets, many of which had vital national security implications.\(^ {150}\)

Congress could have adopted Canadian intelligence’s definition of economic espionage as pertaining to a foreign government’s attempt “to gain unauthorized access to economic

\(^{148}\) *See supra*, Part I.A.

\(^{149}\) *Supra* notes 65-70 and accompanying text.

\(^{150}\) *See supra* Part II.B.
intelligence, such as proprietary information or technology, for economic advantage."\textsuperscript{151} Here, the Canadian intelligence service’s definition defines economic espionage, not without reason, as seeking \textit{economic} advantage. However, as the \textit{Chung} case, where the defendant stole Navy technology, demonstrates, economic advantage narrowly construed may not always be the motivating factor in “economic espionage” cases. Indeed, the economic advantage factor may be ancillary to a foreign power’s long-term military strategy.\textsuperscript{152} Furthermore, although Canadian intelligence’s definition referenced proprietary information, it does not reference “trade secrets.”

The definition of economic espionage in the EEA as the theft of trade secrets has made the EEA a successful tool for prosecuting trade secret theft intended to benefit a foreign power. The definition of trade secrets was broad enough to include such disparate technologies as night-vision technology, blueprints, and Navy weapons technology.\textsuperscript{153} Prosecutors, however, should be aware that the broad definition of trade secrets in the EEA does mean that a defendant with a savvy defense counsel could advance a constitutional vagueness challenge where the technology in question may not be completely unknown to the public.\textsuperscript{154}

The House Committee on the Judiciary report on the terminology of the EEA, for instance, noted that “[t]he term ‘trade secret’ is defined in the bill to include all types of financial, business, scientific, technical, economic, or engineering information, whether tangible or intangible, and regardless of the means by which the information is stored, compiled, or memorialized.”\textsuperscript{155} Notably absent from the Committee’s definition, however, is the adjective “military.” However, as the \textit{Chung} case demonstrates, prosecutors are willing to utilize the EEA

\textsuperscript{151} \textit{Supra} note 28.
\textsuperscript{152} \textit{Supra} Part II.A.
to prosecute persons who engage in the theft of trade secrets with direct military value. In *Chung*, the trade secrets were in the form of technical documents on computer disks, within the definition set forth by the Judiciary Committee report.

**C. Congress Should Enhance the Criminal Penalties for Economic Espionage**

Congress should enhance the statutory penalties for a specific subset of § 1831 EEA crimes, namely when a defendant steals a trade secret with the intent to benefit a foreign government’s military-industrial complex. Currently, the maximum statutory penalty for all completed § 1831 crimes, where a defendant steals a trade secret to benefit a foreign government, is fifteen years of imprisonment and a fine of $500,000. The statute does not distinguish between friendly and hostile foreign governments or between foreign governments, in general, and foreign militaries, more specifically. In light of the national security implications of trade secret theft when the trade secrets in question could confer a benefit on a military adversary, Congress should revise the statutory penalties for completed § 1831 crimes and enact a higher statutory term of imprisonment.

Congress has already distinguished between cases of trade secret theft when a foreign government is implicated and when it is not. In contrast to § 1831 crimes that have a statutory maximum of fifteen years of imprisonment, completed § 1832 crimes, when a foreign entity is not benefited, have a statutory maximum of ten years of imprisonment. The difference in the statutory mandatory maximum sentence reflects “the more serious nature of economic espionage

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156 See *supra*, notes 127-130 and accompanying text.
sponsored by a foreign government." Both § 1831 and § 1832 require criminal forfeiture. The forfeiture of proceeds is mandatory. However, the forfeiture of instrumentalities is discretionary. Under the U.S. Sentencing Guidelines, the base offense level for both completed § 1831 and § 1832 crimes is determined by U.S.S.G. § 2B1.1. Here, because the statutory maximum penalties for §§ 1831 and 1832, respectively, are fifteen and ten years, the base offense level is six years. An enhanced criminal penalty for § 1831 crimes should have an increased offense level. By enhancing the statutory penalty for § 1831 crimes, Congress would be signaling that it takes very seriously the increased threat that economic espionage poses to American national security.

Because the EEA covers the theft of trade secrets, § 1831 crimes are subject to the Mandatory Victims Restitution Act of 1996 ("MVRA"). The MVRA applies to convictions relating to crimes such as “an offense against property under this title . . . including any offense committed by fraud or deceit.” According to the Department of Justice, the theft of trade secrets meets the § 3663A definition of property. “The misappropriation of trade secrets is essentially the theft of property.” While the Justice Department is correct to characterize trade secrets as a form of property, its contention that the misappropriation of trade secrets is akin to the theft of property merits further analysis. However, in § 1831 crimes where the agent of a foreign government steals a trade secret from American Corporation C to benefit the military-

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164 Id.
166 18 U.S.C. § 3663A(c)(1)(A)(ii); see also, PROSECUTING IP CRIMES MANUAL at 172.
167 PROSECUTING IP CRIMES MANUAL, supra note 171, at 172.
industrial complex of the foreign government, what has occurred is not merely the theft of property; a national security crime has also occurred. Because of the potential threat to national security, such crimes should have enhanced criminal penalties as a way of deterring future conduct.

According to the Department of Justice manual, “[t]he defendant’s sentence is driven largely by the value of the misappropriated property.” In § 1832 cases of corporate trade secret theft, value, narrowly construed, can be determined in terms of the fair market value of the stolen trade secret or in terms of the potential value of the trade secret, such as a vaccine, to the corporation in the future. An independent appraisal could determine the latter value with relative accuracy and would focus primarily on economic indicators. However, as Marc Zwillinger and Christian Genetski have noted in their work on calculating loss under the EEA, “as various courts have recognized, determining the fair market value of the trade secret is not the ultimate goal in the sentencing process. The purpose of the Guidelines is to achieve sentences that accurately reflect the relative culpability of offenders in a consistent, uniform, and proportional manner.” In § 1831 cases in which there are direct national security implications for the misappropriated trade secrets, culpability is increased by the increased threat to national security and that value has more than a fair market value monetary component. Value must be determined not only by the fair market value of the trade secret and the resulting loss to the corporation, but also by the national security value. The national security value should be determined independent of the monetary value of the trade secret.

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168 PROSECUTING IP CRIMES MANUAL, supra note 171, at 266.
Quantifying a national security value of a trade secret would prove difficult, in comparison to determining the fair market value of a corporate trade secret such as a vaccine or software. However, given that a defendant’s sentence is driven largely by the value of the property, the concept of value in completed § 1831 crimes should be expanded to include not just monetary value as defined by loss to the corporation, but also the increased threat to national security. Here, *Halkins v. Helms* is instructive. In *Helms*, the court, in a Freedom of Information Act case, referred to the “national security value of information.” Here, national security value in determining the proper application of a statute. In terms of the EEA, I have argued that Congress should amend the statutory maximum penalty for § 1831 crimes so that it includes a heightened maximum term of imprisonment to recognize, national security value.

**IV. A New Frontier of Espionage: Hacking and Cyberwarfare**

*Hacking as the New Warfare*

China’s economic warfare against the United States and its allies is no longer limited to the theft of trade secrets. Computer hacking is the newest form of warfare employed by the Chinese government. In the 1980s, “hacking” was done by small groups of technologically sophisticated individuals as a means of learning more about computers. In the following decade, computers, email, and the Internet had become synonymous with modern business. Indeed, a March 2008 Pentagon report concluded that China’s development of ways to infiltrate and to manipulate worldwide computer networks was “a new and potentially dangerous military

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171 *Id.* at 996.
173 WINKLER, *supra* note 5, at 75.
capability." A report by the U.S. Commission on Cybersecurity urged then President-elect Obama to create a Center for Cybersecurity Operations and to have a White House advisor oversee this new quasi-agency. As of late December 2008, Mr. Obama was considering creating an office for cybersecurity as part of a general overhaul of U.S. intelligence agencies.

Britain’s MI5 intelligence service has stated that Chinese state organizations have conducted cyber espionage against British banks and financial services firms and that the Chinese Army was using the Internet to steal trade secrets from British companies doing business in China. China was also suspected of a cyber attack on the Oak Ridge National Laboratory. In November 2008, the Wall Street Journal reported that Chinese hackers had gained access to a “significant number of unclassified White House emails.” Just days later, Fox News reported that the International Monetary Fund (“IMF”) computer system had been attacked by hackers. Although authorities found no culprit, speculation centered on the Chinese. Even the Obama and McCain presidential campaigns were hacked; the Chinese were primary suspects. According to John Tkacik, a former intelligence analyst, President-elect Obama will be presented with a National Intelligence Estimate (NIE) report highlighting extensive Chinese cyber espionage.

177 WINKLER, supra note 5, 75.
181 Behar, supra note 180.
The term ‘cyber espionage’ merits close attention. One must remember that when Congress passed the EEA in 1996, the United States had yet to enter the dot.com boom of the late 1990s; computers were not yet fully part of everyday American life. Thus Congress chose to criminalize the theft of trade secrets in its definition of economic espionage. Today, economic espionage need not be conducted by individuals in a particular locale, clandestinely working for the Chinese government within the physical locale of an American corporation. The Chinese government and its agents may be hacking into American computer systems directly from China or from other locations in or outside the United States. According to Winkler, foreign intelligence agencies rely on the wider hacker community to hide many of their crimes. Thus, Chinese intelligence agencies may be able to misappropriate trade secrets from American corporations without ever having agents physically set foot in any corporate offices.

Cyber espionage refers to both the theft of trade secrets through hacking or hacking designed to disrupt fundamentally the cyber infrastructure of a state or vital components of its economy. The Pentagon has claimed that the Chinese military has viruses designed to attack enemy computer systems. Indeed, American officials are concerned that China is employing cyberspace not only for espionage, but also to prepare for a hot war over Taiwan. Hacking may also play a greater role in hot wars. During the 2008 Russian-Georgian War, Russian hackers successfully brought down Georgian governmental and media websites. Although these attacks played no determinative role in the conflict and may have come from Russian activists rather than from Moscow, they served as a wake-up call for governments.

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183 See supra, Part II.B.
184 For a discussion of the difficulty of tracing cyber attacks during the 2008 Russian-Georgian conflict, see Andrew Gray, REUTERS, Georgia Hacking Stirs Fears of Cyber Militias, Sept. 1, 2008.
185 WINKLER supra note 5.
186 Behar, supra note 184.
188 Grey, supra note 184.
According to Air Force Gen. Gene Renuart, of U.S. Northern Command, a looming problem is that no one has “defined what would constitute an act of war in cyberspace.”

Writing in the late 1990s, John J. Fialka argued for “a coherent, modern body of criminal law that deters economic espionage” and contended that the EEA was a good start. In light of the myriad challenges posed by Chinese hacking, Congress should consider passing comprehensive legislation aimed at both preventing and punishing those individuals who actively engage in, or aid those who engage in, cyber espionage against American governmental facilities or corporations. The EEA provides a model for such legislation.

The EEA Provides a Model for Comprehensive Cyber Espionage Legislation

In 1996, when Congress held hearings on the threat posed by economic espionage, the Internet was still in its infancy. Now, as American national security is imperiled by hacking and cyber espionage, Congress should conduct both public and closed hearings on the threat posed by hacking, particularly hacking sponsored or directed by foreign governments. Such hearings would follow up on the US-China Economic and Security Review commission’s 2008 annual report to Congress. That report concluded China is likely to take advantage of American cyber space because “the costs of cyber operations are low in comparison with traditional espionage or military activities [and because] determining the origin of cyber operations and attributing them to the Chinese government or any other operator is difficult.” Full Congressional hearings should include representatives from both American government and industry. Intelligence officials and think-tank analysts should also contribute to Congressional hearings that would both warn Americans of the threat posed by cyber espionage and send a signal to the Chinese

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189 Id.
190 FIALKA, supra note 6, at 206.
government that the United States is willing to devote significant resources into countering hacking directed against America’s critical economic and military infrastructure.\textsuperscript{192} Congress should use these hearings as an impetus to enact new, comprehensive legislation to counter cyber espionage.

The primary federal statute that criminalizes hacking is 18 U.S.C. § 1030, which criminalizes fraud and related activity in connection with computers.\textsuperscript{193} The statute criminalizes the unauthorized access of a computer and the disclosure of information obtained by such access. Section 1030(a) specifically criminalizes acts where an individual illegally accesses a computer to obtain information that could be used to the advantage of a foreign government.\textsuperscript{194} This statute, by its plain language, could be used to prosecute those persons caught hacking into American government computers to access information intended to benefit a foreign government. In light of the massive wave of both government-sponsored and independent cyber attacks that have occurred in recent years, and because of the specific threat posed by alleged Chinese hacking, Congress should pass new legislation directly aimed at countering cyber espionage.

This new legislation should be known as the CEA or Cyber Espionage Act. It would specifically criminalize acts of hacking intended to disrupt American economic or military

\begin{footnotesize}
\begin{enumerate}
\item See http://www.usdoj.gov/criminal/cybercrime/1030NEW.htm.
\item 18 U.S.C. § 1030(a)(1) reads in full: “having knowingly accessed a computer without authorization or exceeding authorized access, and by means of such conduct having obtained information that has been determined by the United States Government pursuant to an Executive order or statute to require protection against unauthorized disclosure for reasons of national defense or foreign relations, or any restricted data, as defined in paragraph y. of section 11 of the Atomic Energy Act of 1954, with reason to believe that such information so obtained could be used to the injury of the United States, or to the advantage of any foreign nation willfully communicates, delivers, transmits, or causes to be communicated, delivered, or transmitted, or attempts to communicate, deliver, transmit or cause to be communicated, delivered, or transmitted the same to any person not entitled to receive it, or willfully retains the same and fails to deliver it to the officer or employee of the United States entitled to receive it.”
\end{enumerate}
\end{footnotesize}
computer infrastructure, military secrets, or trade secrets. The term ‘hacking’ should be broadly defined, much as “trade secrets” was in the EEA. This would allow prosecutors to investigate and to prosecute a broad array of crimes and would ensure that the CEA would apply to innovative computer crimes. Unlike the EEA, the CEA would be solely directed against acts intended to benefit a foreign government. The CEA should have separate provisions for hacking directed at American economic and corporate infrastructure, and against American defense and military computer infrastructure. The CEA would thus be the cyber espionage equivalent of § 1831 of the EEA.

Although the defense and intelligence communities should take the lead in combating cyber warfare, there are three reasons that a separate statute criminalizing hacking/cyber warfare is necessary. This would give federal prosecutors a tool that they could employ should American intelligence officials discover that persons within the United States are either engaging in hacking or aiding the Chinese or other foreign governments in hacking. Attacks emanating solely from outside the United States would be under the jurisdiction of the Pentagon or a related agency. Although it is difficult to trace the origin of hacking, it is not impossible. A teenage hacker in Massachusetts, for instance, recently pled guilty to acts including hacking into corporate computer systems. Similar to the enactment of § 1831 of the EEA, which allowed the Justice Department to play an active role in prosecuting the theft of trade secrets, the CEA would give federal prosecutors and the Department of Justice a significant role in investigating hacking attacks as they occur and in preparing evidence for potential criminal indictments. Any individuals who engage in hacking on behalf of a foreign government, even if not directly

sponsored by the government in question. This would include independent cyber attacks committed by persons who acted, albeit without authority, on behalf of a foreign government, and would be prosecuted under this statute rather than under § 1030(a)(1) or the EEA. The CEA, however, should be viewed as a tool that prosecutors could use in conjunction with the EEA in investigating and prosecuting new and more sophisticated forms of trade secret theft, hacking, and cyber espionage.

Second, a distinct cyber espionage-hacking statute would serve as a public warning to the Chinese government and others, that the United States is willing to devote significant resources into investigating and, if feasible, prosecuting foreign-sponsored hacking. Indeed, the very passage of the statute, and the concomitant press coverage that would follow, could serve as a very significant public acknowledgement by the Obama Administration that it is aware of ongoing Chinese hacking and that it intends to make this matter a national security priority. The enactment of the CEA would serve as a useful counterpart to military initiatives designed to disrupt and counter Chinese hacking and could serve as a basis for a series of frank U.S.-Chinese discussions over American concerns about China’s computer warfare technology.

Third, because hacking that intentionally disrupts or disables military computer infrastructure vital to the national defense is more akin to an act of war than a crime, the statutory maximum penalty for prison time under the proposed CEA should be of a significantly higher duration than the penalty for § 1030(a)(1) crimes. The statutory penalty for § 1030(a)(1) illegal access to a computer and obtaining of information “with reason to believe such information so obtained could be used to the injury of the United States, or to the advantage of any foreign nation” is defined in 18 U.S.C. § 1030(c)(1)(A) as either a maximum of ten or
twenty years depending on whether the defendant had committed or had attempted another § 1030(a)(1) crime.\textsuperscript{197} Rather than ten- and twenty-year maximum sentences, the CEA should allow for prosecutors to seek up to life imprisonment if it could be shown that the defendant’s hacking activities both (1) intentionally and significantly disrupted American military and/or defense computer infrastructure and that (2) such an act served as the proximate cause of death of any American government official or service member. This second factor would ensure that minor disruptive cyber attacks were treated differently than cyber attacks that seriously impaired American economic, military, or political, capabilities. For instance, a cyber attack that impaired military command-and-control systems that lead to the death of an American serviceman would be treated differently from a minor cyber attack that proved to be little more than a nuisance. That said, both Congress and the United States Sentencing Commission could be asked to outline the basic parameters of what would be fair and just terms of imprisonment under the proposed CEA.

\textbf{Conclusion}

In this paper, I have argued that the Economic Espionage Act of 1996 has been a necessary, but not sufficient, means of countering Chinese economic espionage in the United States. While Congress rightly defined economic espionage in terms of the theft of trade secrets and defined trade secrets broadly, countering economic espionage is not a job solely for law enforcement and the legal system. Indeed, private actors, the State Department, and the Defense Department, all must work together to counter Chinese espionage. However, in light of the new threat of cyber espionage from Beijing, the EEA provides a useful model for Congress, which should enact new, comprehensive anti-hacking legislation, and for the Obama Administration,\textsuperscript{197}

which should treat the threat of Chinese economic espionage and cyber warfare on a similar to that of terrorism.
A PATENT ENTIRELY AND EXCLUSIVELY FOCUSED ON AN ART-ADDITIVE HITS THE VALIDITY BULL’S EYE

Hal Milton

Introduction

As Abraham Lincoln, himself an inventor in a U.S. Patent, said, “The patent system . . . added the fuel of interest to the fire of genius.” Every country’s patent system is the incentive for the continuing creation of wealth, which inures to the benefit of that country. A reliable patent system provides an incentive for inventors to spend long hours in their garrets, laboratories, and workshops, and for companies to support and invest in such inventors. As the world becomes more global economically, there is a need, based upon the natural order of societies, to provide more specific guidance in preparing a patent application for universal acceptance and enforcement in all countries of the world. This paper is a synthesis of various U.S. and European patent cases, and will present guidelines in preparing a patent application that is not "obvious" in the United States and "involve[s] an inventive step" in Europe. The courts have relied upon facts to determine whether the inventor made an art-additive, which deserves the exclusive right of a patent. When the facts prove an art-additive, the court will then deem it to

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1 Manner of Bouying Vessels, U.S. Patent No. 6,469 (issued May 22, 1849).
2 Abraham Lincoln, Second Lecture on Discoveries and Inventions (Feb. 11, 1859).
be a non-obvious inventive step. However, the entire patent, from the introduction to the claims, must be focused on the art-additive to hit the validity bull’s eye. A patentee can ensure that a patent grant and enforcement are more reliable in all jurisdictions by focusing a patent application using the guidelines gleaned from the case law and presented in this paper.

I. An Art-Additive to Support the Non-Obvious Inventive Step

Although the courts use various expressions and phrases to define an invention, the courts generally evaluate a patent according to the policies expressed by Thomas Jefferson:

Inventions then cannot, in nature, be a subject of property. Society may give an exclusive right to the profits arising from them, as an encouragement to men to pursue ideas which may produce utility, but this may or may not be done, according to the will and convenience of the society, without claim or complaint from anybody.5

The courts are more likely to positively evaluate a patent for "ideas which may produce utility" and "profits arising from them," as suggested in Jefferson’s quote above. The U.S. Supreme Court reemphasized Jefferson's policy by stating:

The patent monopoly was not designed to secure to the inventor his natural right in his discoveries. Rather, it was a reward, an inducement, to bring forth new knowledge. The grant of an exclusive right to an invention was the creation of society—at odds with the inherent free nature of disclosed ideas—and was not to be freely given. Only inventions and discoveries which furthered human knowledge, and were new and useful, justified the special inducement of a limited private monopoly.6

This policy encompasses a useful and valuable art-additive to human knowledge. The term “art-additive” is collectively and generically used herein to encompass the meaning of well

known and elusive terms such as: "invention or discovery," "flash of genius," "new function," "advance in the art," "unexpected result," "new element," "increment," "contribution to the art," as well as all other expressions and phrases that courts have historically relied upon as deserving the exclusivity of a patent as envisioned by Thomas Jefferson and the U.S. Supreme Court. The common thread running through the use of all of these terms that define an art-additive is that the terms are derived from, or are dependent upon, the facts, and there is no universal terminology in the law to define such an art-additive deserving of a patent.

The legal definition used herein to justify a patent in exchange for an art-additive is a "non-obvious inventive step," and is derived from the word "obvious"7 in the U.S. and the phrase "involves an inventive step"8 in Europe. As the cases reviewed in this paper will illustrate, a patent claim will cover a non-obvious inventive step if the facts positively support an art-additive to justify an exclusive patent right.

II. The Futility of Using a "Non-Obvious Inventive Step" as a Guide in Patent Preparation

As all of the well known and elusive terms recited above illustrate, every patent jurisdiction in the western world has struggled to put into words a legal definition of a non-obvious inventive step that the patent jurisdiction could use repeatedly in preparing and judging patents. Legislators and courts have expended huge amounts of time, money and talent in pursuit of such a universal and useful legal definition, but without success. The U.S. Supreme Court in

8 European Patent Convention, art. 52(1) (2000).
Graham v. Deere, verifies this struggle in commenting upon the law prior to the 1952 statute introducing non-obviousness. The Court stated that the word "invention" could not "be defined in such a manner as to afford any substantial aid in determining whether a particular device involves an exercise of the inventive faculty or not."\(^9\) The Graham decision provides three well-known factual inquiries,\(^10\) but does not provide a guideline of facts that save "non-obviousness" from being but another elusive term.

A universal definition of a non-obvious inventive step necessary to justify a patent is not likely to be developed in the future if the efforts of the architects of patent systems, including a multitude of great jurists, legislators, and academics, have not established one such universal definition over the past one hundred and fifty years. This ongoing lack of such a workable definition makes it very difficult for a patent drafting novice to know where a patent application begins and ends. A mentor of patent preparation cannot simply instruct a novice to prepare a patent application that sets forth a "non-obvious inventive step." A reading of all the treatises on obviousness will not provide a mechanism or procedure for a novice to follow in drafting a patent application—the treatises will only suggest conceptual dos and don'ts.

### III. A Variety of Cases Suggest Guidelines to Hit the Validity Bull’s Eye

The cases reviewed herein will reveal that the courts look for an art-additive that brings a benefit to society to justify the grant of an exclusive patent right. As the cases will reveal, the courts read patents as if they were contracts, and expect all of the terms to focus on an art-

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\(^10\) *Id.* at 6 (the scope and content of the prior art, differences between claims and prior art, and the level of ordinary skill in the art).
additive. The cases evidence that, if the terms are not consistent with, or do not support, the art-
additive, odds of the patent being upheld are substantially decreased. The cases also reveal that
the courts look for facts that support and prove an art-additive and expect those facts to be
recited in the original patent application. This review of various litigated patents establishes a
framework under which patent applications can be prepared with the objective of making it more
difficult for courts to find facts negating validity. This framework includes guidelines for
focusing the patent’s claims, introductory section, and specification on a specific art-additive.

The guidelines for focusing the patent preparation within this framework suggested by
the cases are:

- **No Benefit:** A naked aggregation, catalog or combination of old elements from
  the prior art with no new function or unexpected result will not be enough to
  justify the exclusive right of a patent.

- **Art-Additive:** An art-additive resulting from a combination of elements, all
  independently old or at least one new element, to produce a new function and/or
  unexpected result justifies the exclusive right of a patent and will be deemed a
  non-obvious inventive step.

- **Art-Additive Claim:** The broadest claim should be directly attendant to the art-
  additive by reciting the combination of elements, all independently old or at least
  one new element, to produce a new function and/or unexpected result upon which
  the art-additive depends.

- **Art-Additive Facts:** The introductory section of the patent application should
  focus on facts proving the art-additive resulting from the combination of elements
  recited in the broadest claim. Conversely, the art-additive and supporting facts
  should not be withheld from the application for submission during prosecution or
  litigation where they will likely be regarded as advocacy instead of fact.

**IV. No Benefit to Society-Back to the Future from KSR to Hotchkiss**

Both of these Supreme Court cases, separated by over 150 years, verify the No Benefit
guideline that a naked aggregation, catalog, or combination of old elements from the prior art
will not be enough to justify the exclusive right of a patent.
A. **Hotchkiss v. Greenwood\(^1\)**

The plaintiffs argued for a jury instruction wherein the clay knob, the shank, and the spindle were admittedly independently old in the prior art, but that these elements had never been combined, and the combination resulted in "an article better and cheaper than the knobs made of metal or other materials."\(^2\) Basically, the patentee Hotchkiss argued that merely selecting independently old elements from various prior art references and combining them together with no new function or unpredictable result was sufficient to justify the exclusive rights in a patent just because it was "better and cheaper."

The Supreme Court held that, although the "mode of fastening the shank to the clay knob" resulted in a knob that "was made firm and strong, and more durable," the result was predictable and thus expected, because the same phenomenon was known in knobs made of other materials.\(^3\) Therefore, the Supreme Court found the facts did not evidence an art-additive, applied the No Benefit guideline, and held the patent invalid because one skilled in the art could use mere common sense to select and combine known elements with no new function or unpredictable result.

B. **KSR Int'l v. Teleflex, Inc.\(^4\)**

In addition to hearing the appeals of patent cases from all of the U.S. District Courts, a major function of the Circuit Court for the Federal Circuit (CAFC) is to hear appeals from

\(^1\) Hotchkiss v. Greenwood, 52 U.S. 248 (1850).
\(^2\) *Id.* at 252.
\(^3\) *Id.* at 267.
rejections of patent applications by the USPTO.\textsuperscript{15} As the Supreme Court noted, "[s]eeking to resolve the question of obviousness with more uniformity and consistency, the Court of Appeals for the Federal Circuit has employed an approach referred to by the parties as the 'teaching, suggestion, or motivation' test (TSM test)."\textsuperscript{16} The positive application of the TSM test remains valid at the USPTO.\textsuperscript{17} Therefore, it remains obvious to combine old elements if the prior art teaches, suggests, or motivates one skilled in the art to make the combination.

In the author's view, the negative application of the TSM test produced the unintended consequence of effectively lowering the standard of patentability in the USPTO. When the USPTO rejected claims, the reverse, or negative, application of the test was argued, i.e., if the prior art lacked a teaching, suggestion, or motivation, the claims were simply argued as non-obvious, and hence patentable. In other words, the applicant would simply argue that the claim was patentable because no one had previously combined the known elements. As a result, the USPTO granted patents wherein the claims merely recited elements selected from various pieces of the prior art, with each element performing the function for which it was selected and the overall combination producing nothing more than what was expected or predicted. In \textit{KSR}, the Supreme Court held that this reverse application "limits the obviousness inquiry" and rejected the reverse proposition that the lack of TSM ipso facto overcame a rejection based upon obviousness.\textsuperscript{18} The Supreme Court accepted the finding of the District Court that the patent

\textsuperscript{15} 28 USC § 1295 (a) (4) (A) (1982).
\textsuperscript{16} \textit{KSR}, 127 S.Ct. at 1734.
\textsuperscript{17} MPEP §  2141 III (2007).
\textsuperscript{18} \textit{KSR}, 127 S.Ct. at 1741.

8 Chi.-Kent J. Intell. Prop. 243
claim in *KSR* merely combined an old adjustable brake pedal with an old electronic sensor.\(^{19}\) Therefore, the court in *KSR* followed *Hotchkiss* and affirmed that it is merely a matter of common sense by one skilled in the art to select and combine known elements with no unexpected results, and there is no requirement of a teaching, suggestion or motivation of which elements to select.

**C. *KSR* also Affirms the Examiner's Duty to Reject a Mere Selection of Prior Art and Expands the Available Prior Art on Judge Rich's Wall**

In the opinion *In re Winslow*, Judge Rich\(^{20}\) stated that "the proper way to apply the 103 obviousness test . . . is to first picture the inventor as working in his shop with the prior art references—which he is presumed to know—hanging on the walls around him."\(^{21}\) The opinion continued, "[w]e see no 'hindsight reconstruction' here, but only selection and application by the examiner of very pertinent art. That is his duty."\(^{22}\) In other words, when the elements of the combination are selected to obtain an identified or expected result, there is no benefit to society.

The court in *KSR* affirmed Judge Rich's mere selection concept and expanded the inventor's wall by stating that "modern technology counsels against" a finding of non-obviousness based on a lack of "discussion" in the prior art literature.\(^{23}\) Logic dictates that the inventor's wall now includes all of the information available by searching the Internet, including technical databases as well as prior art patents. Therefore, one skilled in the art would not benefit

\(^{19}\) *Id.* at 1732
\(^{20}\) A member of the predecessor CCPA to the CAFC after being a primary architect in 1952 of 35 U.S.C. § 103 to include obviousness.
\(^{21}\) *In re Winslow*, 365 F.2d 1017, 1020 (C.C.P.A. 1966).
\(^{22}\) *Id.*
\(^{23}\) *KSR*, 127 S.Ct. at 1731-32.
society nor produce an Art-Additive by searching the Internet and selecting and combining known elements to produce a known or predictable result.

The Supreme Court in *KSR*, while eliminating the “lack of TSM” argument, effectively applied the No Benefit guideline and stated that the statutory language of 35 U.S.C. § 103 was based upon the logic of the *Hotchkiss* decision. Both decisions verify the long held proposition that a naked aggregation, catalog of parts, or combination of old elements from the prior art is not enough to justify the exclusive right of a patent. Both *Hotchkiss* and *KSR* presented a combination of independently old elements devoid of any art-additive beneficial to society.

V. Fact Finding to Satisfy the Art-Additive Guidelines

A. The Courts Look for an Art-Additive

The courts have suggested a framework that a successful patent application should employ. However, the implementation of the framework is not found in the law, but in the facts and their presentation. A common thread of fact finding for a non-obvious inventive step runs through most significant judicial decisions in the United States and Europe. The courts have sought facts to evaluate whether the inventor made an art-additive which deserves the exclusive right of a patent under the ideals of Jefferson and the principles of Rich. In other words, the courts rely upon facts set forth in the patent to prove that an art-additive is sufficient to justify a patent. When the art-additive is sufficient, it is deemed to be a non-obvious inventive step. More simply, if the facts support and prove an art-additive deserving of a patent, the art-additive will be judged a "non-obvious inventive step."

24 *Id.* at 1734.
The various tests and sub-tests used in evaluating a non-obvious inventive step by the courts are based upon, and commingled with, the facts in each case. As a result, it is very difficult for a new patent preparer to separate the various statements of the law from facts in order to develop objective guidelines within a framework for preparing a patent application. However, when court decisions are divided into fact finding and the subsequent application of one of various statements of the law, it becomes evident that the presence of an “art-additive” is a question of fact and drives the application of the law. As the decisions will evidence, the judges first decide, based upon all of the facts, and most heavily upon the facts set forth in the entire patent document, whether an art-additive is presented from a patent claim that deserves an exclusive patent. The judges subsequently select a rule of law to support their decisions. The patent claims define the inventive step, but frequently the facts proving an art-additive resulting exclusively from the claims impact the validity and enforceability of the patent. Consequently, the preparation of a patent application must be driven by finding and framing the art-additive in the patent application as filed.

B. The Patent Preparer Should Find the Art-Additive

A novice in patent preparation should be advised not to be intimidated by the law of "obviousness" or "inventive step," but instead to prepare a patent application with facts that prove an art-additive. The patent preparer should thoroughly question the inventor in an effort to ascertain facts that prove an art-additive resulting from a combination of elements, all independently old or at least one new element to produce a new function and/or an unpredictable result, thereby making the combination a non-obvious inventive step. The patent preparer should find facts supporting an art-additive resulting from the combination recited in a patent claim to avoid invalidating the claim under the No Benefit guideline. In the U.S., this means that the
claim will be held obvious to one skilled in the art. Finding a claim obvious is tantamount to finding that it already exists, and that there is no art-additive because one skilled in the art could apply mere common sense to combine that which is old. In Europe, the claim would be held to lack an inventive step.

On the other hand, when the fact finder does find an art-additive, it will fall under the instructive Art-Additive guideline, which states that a combination\textsuperscript{25} which produces the art-additive is presumed\textsuperscript{26} patentable. That presumption can be rebutted by facts leading to the combination and the art-additive based on cogent and logical reasoning that is unequivocally independent of hindsight.\textsuperscript{27} In other words, the facts should prove an art-additive resulting from a combination of elements, all independently old or at least one of which is new, to produce a new function and/or unexpected result in order to be deemed a non-obvious inventive step. The patent application should focus on the art-additive to prevent the connection of facts leading to the invention based on cogent reasoning that is unequivocally independent of hindsight, supposition, inferred intuitiveness, speculation, or random testing. The art-additive must be exclusive to the claimed combination, i.e., the art-additive cannot be achieved by the prior art, because the art-additive would then be viewed as providing no new benefit to society. A novice preparer of patent applications can be instructed to prepare claims meeting this Art-Additive guideline, to

\textsuperscript{25} Id. at 1741 ("[A] patent is not proved obvious merely by demonstrating that each of its elements was, independently, known in the prior art.").

\textsuperscript{26} The presumption of patentability can be reinforced by all of the recognized secondary tests, including the invention's commercial success, a long felt but unresolved need, the failure of others, and copying of the invention by competitors. (Allen Archery, Inc. v. Browning Mfg. Co., 819 F.2d 1087, at 1092 (CAFC 1987), quoting Graham, 383 U.S. at 1718.).

\textsuperscript{27} KSR, 127 S.Ct. at 1747 (the selection of elements cannot be distorted "by hindsight bias and must be cautious of arguments reliant upon ex post reasoning").
which the No Benefit guideline cannot be applied.

In most instances, when the patent preparer is finished with the patent application, the preparer will know the "invention" better than the inventor. The inventor knows what he did and its commercial advantages but does not understand how it will be compared and judged in relationship to the prior art. Invariably, an inventor attributes too much knowledge to the patent preparer and the patent preparer all too often merely accepts as gospel the initial presentation of the inventor. The patent preparer must mentally integrate with the inventor to thoroughly understand in minute detail all facets of the preferred embodiment and then understand that embodiment in relationship to the prior art. That prior art most often includes art which the inventor is not aware of, but which the patent office will use against the patent claims.

Many new patent preparers are frequently intimidated by, or do not have access to, the inventor and end up acting as a mere scribe of the initial disclosure from the inventor. However, it is critical for the patent preparer to dig deeply into the original disclosure from the inventor to find an art-additive. An invention that might appear to be but a mere combination of independently old elements is just that without further digging to find a new function or unpredictable result. A patent preparer that merely reacts to the disclosure of the inventor and speculates as to the scope of the claims in reality acts as a tech-writer or scribe and not as a patent attorney.

VI. Cases Suggesting the Art-Additive Guidelines

The following survey of well-known, historical, decisions will show how courts review the entire patent for facts in support of an art-additive, and then apply either the Art-Additive guideline when an art-additive is found or the No Benefit guideline when no art-additive is
found. More specifically, the courts frequently consider the introductory section and specification of the patent application for expression of an art-additive resulting from the combination recited in the broadest claim.

A. An Art-Additive-Webster Loom Co. v. Higgins

In contradistinction to Hotchkiss and KSR, a combination of independently old elements can be deemed a non-obvious inventive step when they result in an art-additive. The art-additive resulting from the claimed new combination should be focused upon in the introductory section of the patent application to avoid leaving the claims as a naked combination of elements.

In Webster Loom, the Supreme Court noted that the patent described a complex weaving loom that was made up of independently old elements from prior art assemblies, and that a known pusher was substituted for a latch riding on a wire-bar. The Court said,

It is further argued . . . that the combination set forth in the fifth claim is a mere aggregation of old devices, already well known; and therefore it is not patentable. . . . It may be laid down as a general rule, though perhaps not an invariable one, that if a new combination and arrangement of known elements produce a new and beneficial result, never attained before, it is evidence of invention. It was certainly a new and useful result to make a loom produce fifty yards a day when it never before had produced more than forty; and we think that the combination of elements by which this was effected, even if those elements were separately known before, was invention sufficient to form the basis of a patent.

As the above quote makes clear, the Court found that a combination of independently old elements was patentable because the combination produced an unpredictable result, i.e., a 25%

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29 Id. at 589.
30 Id. at 591-592 (emphasis added).
increase in weaving production from 40 to 50 yards per day. Evidently, an unpredictable result is proof of an art-additive sufficient to justify the exclusive right of a patent even when the combination is of independently old elements from the prior art. In summary, the Supreme Court found facts showing an art-additive, reversed the lower court, and held the patent valid.

The primary difference between the *Webster Loom* patent and the patents in *Hotchkiss* and *KSR* is that the introductory section of the *Webster Loom* patent precisely recited the combination the Supreme Court relied upon as the combination of independently old elements covered by the patent claim. In fact, the Supreme Court quoted this entire section of the patent in its opinion. Even though the 25% increase in weaving production was not specifically recited in the patent, the introductory section recited the operational advantages or differences of the combination, which in turn resulted in the unpredicted result. The introductory section of the patent did not broadly allude to inventing a new loom, but precisely recited the new combination and operation of independently old elements that provide the unpredicted result. However, as other cases suggest, the 25% increase in weaving production should have been presented in the introductory section and not left to advocacy during litigation.

The principle from *Webster Loom* is that when the entire patent is precisely focused on the art-additive in the introduction, as well as in the claims, it is more likely to be deemed a non-obvious inventive step.


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The patent in question in this A&P case was U.S. Patent No. 2,242,408, issued to E. D. Turnham on October 28, 1938, and the invention was an open, three-sided, U-shaped frame or rack on an elongated counter at a cashier’s checkout stand, used to pull groceries from a waiting customer to the cashier. The U-shaped frame is unloaded when it is pushed back to its original position for the next customer to fill, while leaving the groceries being checked out in front of the cashier. The prior art relied upon was a closed, three-sided or triangular, pool-ball frame or rack. The lower court upheld the patent by finding that the triangular pool-ball frames "are closed and not self-unloading, as is the U-shaped rack." The Supreme Court reversed the lower court and found that a three sided rack was found in the prior art.

A scholar who believes that this case was wrongly decided by the Supreme Court, Paul Cole, took the author herein to task for summarily citing this decision as standing for the No Benefit guideline. The apparent error stems from the fact that the U-shaped rack in A&P involved a significant art-additive in the cashier's checkout stand that could not be attained by a closed, triangular, pool-ball frame. Therefore, the No Benefit guideline was applied because of the presentation in the patent contract. Although an art-additive existed, the art-additive was not focused upon in the claims nor in the introductory section of the patent.

Notwithstanding the structural and functional differences between an open check-out frame and a closed, triangular-pool-ball frame, facts that a jury could appreciate, the Supreme

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32 A&P, 340 U.S. at 149.
33 Id.
Court reversed the lower court and found as a fact that the elements of the combination were found in the prior art, to wit, three sides forming a frame. The Court noted, "[n]either court below has made any finding that old elements which made up this device perform any additional or different function in the combination than they perform out of it."\textsuperscript{37} The Supreme Court held that the combination was obvious, and therefore not patentable, because a "patent for a combination which only unites old elements with no change in their respective functions . . . obviously withdraws what already is known into the field of its monopoly and diminishes the resources available to skillful men."\textsuperscript{38} The Court, in effect, applied the No Benefit guideline that is also supported by both \textit{Hotchkiss} and \textit{KSR}.

Contrary to the opinion, the open, U-shaped frame was not of the same arrangement of elements as the elements in a closed, triangular frame, and the open frame did produce a new function and an unpredictable result. The open, U-shaped frame was hugely successful at reducing the time customers spent at the checkout line, and it was widely accepted and adopted. The lower court found that the invention "handled 30% more customers, took in 30% more money than formerly, and thus generally improved their efficiency."\textsuperscript{39} These are facts supporting and proving an art-additive. As a matter of fact, an open frame includes a different combination of elements than a closed, triangular frame and the two frames function differently. Pool balls are packed into the triangular frame for tight-knit placement on a spot on the pool table. The U-shaped frame in \textit{A&P} scoops in and drags randomly placed groceries along a counter for selective one-by-one removal by the cashier. Yet the Supreme Court opinion delivered by Justice

\textsuperscript{37} \textit{A&P}, 340 U.S. at 152.
\textsuperscript{38} \textit{Id.} at 152-153.
\textsuperscript{39} \textit{A&P}, 179 F.2d at 637.
Jackson expressly disavowed any review of the facts by stating, "[w]e set aside no finding of fact" and the "defect...is...a standard of invention".

It is submitted that the defect was not in the law, but in the facts as presented in the patent contract. The application of the No Benefit guideline by the Supreme Court becomes rational when the patent is analyzed as a contract for an art-additive. As alluded to above, courts frequently read and rely upon the entire patent, often like a contract, and the court often appears to rely as much on the specification as on the claims of a patent. The A&P patent satisfies none of the Art-Additive guidelines. To begin with, the claims of the A&P patent recited the equivalent of "a bottomless three sided frame on said portion and within which the merchandise is deposited and arranged" and only one claim recited," said frame being open at the end adjacent the cashier's stand." All claims but one were met by merely placing the closed triangular pool-ball frame on a "portion" of a grocery checkout counter. In addition, the introduction of the A&P patent broadly recites that an "object of the invention is to provide a frame whereby the goods of a customer may be grouped together and moved along the counter as a unit." This is a result that can be achieved by the prior art pool ball frame. Accordingly, the patent contract can easily be interpreted to submit as the invention a bottomless frame to move groceries along a counter in the same fashion pool balls are moved on a pool table.

As the Supreme Court read the patent in A&P, it was for a combination of independently old elements each performing its intended function; to wit, a frame having three sides combined

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41 U.S. Patent No. 2,242,408 col. 4 l.65, col. 6 l.2 (issued May 20, 1941).
42 '408 Patent, col. 2, l. 7.
with a counter for moving articles over the counter. However, the A&P patent specification did support an art-additive by stating in "actual practice the arrangement . . . has substantially reduced the time per customer for checking the goods purchased and has resulted in a substantial reduction in the number of registers required and the number of cashiers" These unexpected results could not have been attained without the open, U-shaped frame, which is a new combination of elements and produced a new function, yet the application did not focus on this new combination of U-shaped elements, neither in the claims nor in the introduction. Had the patent drafter proactively applied the No Benefit guideline, the patent drafter might have realized that the application was focused on the mere combination of a three-sided rack on a counter. Using the No Benefit guideline, the application could have been more focused on the U-shaped rack or frame, with more embellishment of the function of the U-shape which allows the return of the rack or frame for unloading and a second loading of groceries as the first load is being checked out by the cashier. An art-additive sufficient to justify a patent existed in A&P, but it was not clearly presented.

The only difference between Webster Loom and A&P is in the presentation of the art-additive in the patent contract. Webster Loom was focused on, and conformed to, the art-additive guidelines, whereas the patent in A&P was totally unfocused and adhered to none of the art-additive guidelines. More specifically, the claims and introduction in Webster Loom were specific to the combination that resulted in the art-additive of increased output, whereas the claims in A&P did not recite the specific combination that resulted in the art-additive, nor did the introduction recite the specific combination or connect all of the benefits in checkout efficiency to that specific combination.
Clearly, a patent preparer should draft a patent application with the objective of proving an art-additive by reciting a combination that includes something new or produces a new function or unpredictable result so as to be presumed patentable, i.e., a non-obvious inventive step. The lesson reinforced by this decision is that the entire patent should focus on the art-additive and present facts that satisfy the Art-Additive guideline. A subtlety is that even if a scintilla of an art-additive is presented in the introduction, it will not render claims valid that can be interpreted to cover the prior art.

C. Where is the Benefit? - Graham v. Deere

U.S. Patent No. 2,627,798 was the second patent issued to W.T. Graham directed to a mechanism for dragging a tiller or plow shoe over the ground while allowing the shoe to move up and down in response to hitting rocks, etc. A shank supported the shoe and extended upwardly in a semi-circle and then forwardly to a hinge plate which was pivotally supported to allow the shank to move up and down. The shank was supported on the bottom surface of the hinge plate in the second ‘798 patent before the U.S. Supreme Court, whereas the shank was supported on the top surface of the hinge plate in the first ‘811 patent. In the purportedly new combination, the shank was bolted to the bottom surface of the lower hinge plate at the forward end of the hinge plate. The shank ran from the bolted forward end under the length of the hinge plate rearward through a stirrup attached to the bottom of the hinge plate and into several feet of curving down to the tiller shoe or plow. The presentation in the second ‘798 patent was not

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43 Graham, 383 U.S. 1.
44 Id. at 19-21.
focused on the structural differences over the inventor's own prior '811 patent.

The new combination was to move the shank to the bottom of the lower hinge plate, but the only two claims in the new '798 patent were very long and detailed, and required study to ferret out structural distinctions over the inventor's prior '811 patent. The claims of the '798 patent did not clearly set forth the distinguishing structure and used terminology not found in the description, e.g., the "lower hinge plate" referred to in the appeal was designated the "movable part" in the description and the "attaching member" in the claims. The clearest recitation in the claims of the new combination resides in "whereby the plate portion of the shank attaching member is between the shank and the fixed member," wherein the "attaching member" is the lower hinge plate and the "fixed member" is the upper hinge plate.

In addition to having deficient claims, the attributes set forth in the introductory section of the '798 patent provided by the new structure were sufficiently broad to also apply to the structure of the previous '811 patent. In fact, the introductory sections of the two Graham patents could be exchanged one for the other. The '798 patent did not present art-additive facts attributable only to the new structure. In an effort to correct this during the trial and on appeal, the patentee argued that the new structure permits the shank to flex under stress for its entire length. The Court commented:

Petitioners' argument basing validity on the free-flex theory raised for the first time on appeal is reminiscent of Lincoln Engineering Co. of Illinois v. Stewart-Warner Corp., 303 U.S. 545, 58 S.Ct. 662, 82 L.Ed. 1008 (1938), where the Court called such an effort 'an afterthought. No such function * * * is hinted at in the specifications of the patent. If this were so vital an element in the functioning of the apparatus, it is strange that all mention of it was omitted.' At p. 550, 58 S.Ct. at p. 665. No 'flexing' argument was raised in the Patent Office. Indeed, the trial judge specifically found that 'flexing is not a claim of the patent in suit * * *' and would not permit interrogation as to flexing in the accused devices.
Moreover, the clear testimony of petitioners' experts shows that the flexing advantages flowing from the '798 arrangement are not, in fact, a significant feature in the patent.\(^{45}\)

The Court regarded the "flexing" issue to be one of advocacy instead of fact, and inferred that if the flexing issue had been submitted in the original patent application, then the flexing issue could have been deemed a fact. Accordingly, the Court found all of the elements to be known in the prior art, which included a second reference not before the USPTO. The second reference showed a stirrup, and the only difference was the re-arrangement of the elements, i.e., repositioning the shank from the top surface of the lower hinge plate to the lower surface without a new function. The Supreme Court stated, "[a] person having ordinary skill in the prior art, given the fact that the flex in the shank could be utilized more effectively if allowed to run the entire length of the shank, would immediately see that the thing to do was what Graham did, i.e., invert the shank and hinge plate."\(^{46}\)

The second Graham '798 patent claimed a new combination of elements, but the patent provided absolutely no new art-additive beneficial to society. The presentation of an art-additive in the patent contract that was also achieved in the prior art allowed the Court to hold that it would be common sense to use a bolt to retain the shank to the lower surface hinge plate. One skilled in the art would merely have to apply common sense to select and combine known elements with no new function, i.e., a predictable result. The first sentence of the Art-Additive Facts guideline is verified by this decision, to wit: The introductory section of the patent application should focus on facts proving the specific art-additive resulting from the combination

\(^{45}\) Id. at 25 (emphasis added).

\(^{46}\) Id. at 25.
of elements recited in the broadest claim. The facts should not prove an art-additive that has already been attained in the prior art and should be devoid of extraneous material.

The author suggests that the second sentence of the Art-Additive Facts guideline is verified by the *Graham* decision and in Europe by Paul Cole. To repeat, that sentence from above is: “Conversely, the art-additive and supporting facts should not be withheld from the application for submission during prosecution or litigation, where they will likely be regarded as advocacy instead of fact.” Paul Cole makes these points, confirming the importance of the facts proving an art-additive in the patent application as distinguished from being withheld and presented later in litigation.\(^{47}\)

It is apparent that judges, and especially non-specialist judges such as those in the U.S. District Courts and the Supreme Court, are markedly unimpressed with features whose ingenuity is not mentioned in the patent specification.\(^{48}\)

and

A further source of unanimity between the US and the UK courts is a dislike of features given no prominence in the specification of the granted patent, but seized on during litigation as the key to inventive step. At the least, every feature from which an advantage flows should find its way into main or subsidiary claims. Very preferably the new functions, new results or other advantages should be highlighted and explained in the supporting description, because their credibility at the priority or filing date is many times greater than it is at [sic] if first identified post-grant. US courts have in recent years emphasized the public notice function of patents. Compliance with the public notice requirement, it is submitted, includes explaining what features contribute to the invention in its broadest and more specific aspects, and why they do so.\(^{49}\)


\(^{48}\) Cole, *supra* note 47, at 27.

\(^{49}\) Cole, *supra* note 47, at 37.
and the following quote referring to the “Windsurfer” patent, which will be discussed below,

The positive indications that we can derive from the Graham and the Windsurfer tests as applied in practice are that judges are much more impressed with the underlying technical facts than they are with the surrounding circumstances, that they are looking for real advantages of an unexpected character, and that alleged advantages unsupported in the patent application as filed and only identified by hindsight lack persuasive power.50

The emphasized portions of the quote acknowledge the art-additive, and the importance of finding the art-additive and focusing upon it in the original patent application. The case law is stacked against a patent resulting from an application sent to the patent office on a fishing expedition without being focused on an art-additive, which is first presented later in litigation. "To await litigation is-for all practical purposes-to debilitate the patent system."51

Clearly, not only must an art-additive be identified and distinctly claimed, but none of the facts supporting and proving the art-additive can safely be withheld from the originally prepared and filed patent application.

D. An Entire Patent Focused on an Art-Additive - In re Adams52

This Adams decision resulted from an appeal from a rejection by the USPTO that was reversed by the CCPA and resulted in U.S. Patent 3,286,477 to Harold W. Adams on November 22, 1966. Prior to Adams, round containers were moved in a helical path about an axis in a cooler while spraying liquid water radially onto the containers for cooling by evaporation of the water.53 The new combination of independently old elements substituted aerated cooling water

50 Cole, supra note 47, at 29 (emphasis added).
51 Graham, 383 U.S. at 18.
53 Id. at 999.
by introducing a gaseous medium into a cooling liquid to form a foam coolant to cover the surface of the cans without splashing. As distinguished from the totally liquid water of the prior art, the cans were cooled 26% more efficiently with aerated water. A first prior art reference disclosed an apparatus for cooling containers by directing a spray of totally liquid water radially onto the containers. The secondary prior art reference disclosed a water aerator to be connected to a faucet to prevent running water from splashing when it hits the user's hands, but says nothing about using aerated water for cooling. The USPTO argued that heat transfer is inherent in an aerated spray, making it obvious to substitute an aerated spray for a liquid spray. However, no references were found that showed aerated water being used in a heat transfer application.

Although all of the elements in the combination were found to be independently old in the prior art, the use of the aerated water produced a new and unpredicted result, i.e., a 26% increase in the cooling rate. In fact, the first prior art reference even taught that the splashing, which naturally occurs with totally liquid water, was desirable because it increased evaporation of the water, thereby increasing the heat transfer. Judge Rich effectively acknowledged that the combination including aerated water produced a new function or unpredictable result and was patentable because the USPTO rejection did not contain facts leading to the combination based on cogent reasoning unequivocally independent of hindsight.

The significance of this case is that the patent application was entirely and exclusively focused on the art-additive. The claims were clearly and distinctly directed to cooling round

54 Id. at 1000.
55 Id. at 999.
56 Id. at 1000.
containers with a foam coolant generated by introducing a gas into water. The introductory section of the patent set forth the prior art of cooling by spraying round containers with water, specifically stating that "[i]t has been discovered that replacement of fan-type spray nozzles with aerating or foam nozzles greatly improves the cooling efficiency." Clearly, the introductory section acknowledged a substitution of one element for another, i.e., an aeration nozzle for a spray nozzle. In addition, the specification recites test data to support the improved cooling efficiency and specifically recites the 26% increase in the cooling rate.

The presumption of a non-obvious inventive step is very difficult to overcome when the art-additive is surprisingly spectacular and/or unexpected. When the factual evidence supports an art-additive that is sufficiently beneficial to deserve an exclusive patent, the odds are that the patent will be deemed to be directed to a non-obvious inventive step. Most persuasively, administrative instructions to USPTO examiners require facts, not speculation or personal views, by stating that "impermissible hindsight must be avoided and the legal conclusion must be reached on the basis of the facts gleaned from the prior art." 

The successful Adams patent masterfully framed all three art-additive guidelines. In fact, the patent preparer found a combination of independently old elements, which produced a new function and/or an unexpected result to provide an art-additive. The claims clearly and distinctly pointed out that specific combination of elements, and the supporting art-additive facts were specifically and exclusively presented in the introduction of the application. This opinion

58 477 Patent, col.3, l.3-37.
59 MPEP § 2142 (2007).
E. The Gamble of Getting the Right Court for an Unfocused Patent

The validity of a patent sent to the patent office on a fishing expedition, without being focused on an art-additive, may be dependent upon the expertise and patience of the court. If the ultimately allowed claims recite a combination that results in an art-additive but the art-additive is buried in extraneous and overbroad material, the court may not have the patience to isolate only the terms of the patent contract which support and prove the art-additive, but instead seize upon all of the extraneous material that diminishes the art-additive. Extraneous material in a patent that is outside the art-additive increases the odds against the patent being granted and successfully enforced.

A paper was delivered in October 2007 at the AIPLA Annual Meeting in Washington D.C. by Dr. Frank van Bouwelen of the European law firm of Hoffmann-Eitle of Munich and London. The paper analyzes the polymer/taxol-coated stent patent (EP 0706376) that was litigated post grant in 1997 by the EPO in both the UK and in the Netherlands, with opposite results, which can only be explained by the differences in the fact finding by the courts. The No Benefit guideline is applicable to the UK decision, in which the court picked facts out of the

Dr. Frank van Bouwelen, Comparison of Inventive Step Tests in Different European Countries, 1-21, (October 2007), http://www.aipla.org/Content/ContentGroups/Speaker_Papers/Annual_Meeting_Speaker_Papers/200717/VanBouwelen-paper.pdf

8 Chi.-Kent J. Intell. Prop. 262
unfocused and extraneous material in the patent specification that could be interpreted in a logical fashion to lead to the claimed combination. The claimed combination was found to be a mere use of common sense by one skilled in the art to select and combine and test known elements to obtain the desired or predictable result. On the other hand, the Art-Additive guideline is applicable to the Dutch decision, in which the court isolated facts out of the unfocused and extraneous material in the patent specification whereby the claimed combination produced unexpected results.

1. The EPO Patent Application

The broad claim originally filed in the application merely recited:

A composition comprising:
   a) an anti-angiogenic factor; and
   b) a polymeric carrier.  
61

This claim was narrowed because of prior art in the name of Wolff, which disclosed a vascular stent coated with a composition comprising any one of a few anti-angiogenic agents and a polymer, but did not specifically recite taxol. The EPO granted the patent based upon taxol being substituted into the known broad combination. The exemplary focused claim litigated in the UK and the Netherlands recited:

A vascular stent coated with a composition comprising taxol and a polymeric carrier for treating or preventing recurrent restenosis.  
62

The patent specification was over-broadly directed toward the use of any one of a group of known anti-angiogenic factors on known stents. The Technical Field recites:

61 van Bouwelen, supra note 60, at 4.
62 van Bouwelen, supra note 60, at 6.
The present invention relates generally to compositions and methods for treating cancer and other angiogenic-dependant diseases, and more specifically, to compositions comprising anti-angiogenic factors and polymeric carriers, stents, which have been coated with such compositions as well as methods for utilizing the stents and compositions.63

The specification is very voluminous, and as the U.K. court said, “the disclosure in respect of taxol-eluting vascular stents is slight.”64 As Dr. van Bouwelen's article summarizes, the application presents the coated stents in extensive unrelated matter, taxol as one of many anti-angiogenic agents (some that do not work), and no mention of a polymer/taxol-coated stent being effective against restenosis. The application was indecisive and eventually settled on claims specific to the vascular stent coated with taxol and a polymeric carrier, but the application made no specific case for this combination to produce the art-additive of restenosis prevention. The application contained no cogent or persuasive art-additive in terms of new function or unpredictable result from this specific combination. In contradistinction, the application sets up the polymer/taxol-coated stent as one of many combinations of old elements, which could, and should, be combined to treat cancer, including some that did not work.

2. The UK Opinion

The UK court was not impressed with the scattered approach to the patent application. The patent application paid no attention to specifying an art-additive commensurate with the specific polymer/taxol-coated stent. The UK court stated:

In my judgment, this question is to be answered by assessing the contribution to the art disclosed by the specification. For the reasons that I have given above, I am satisfied that the disclosure of the

63 European Patent No. 0706376, 2, 1.5 (February 2, 1995).
64 van Bouwelen, supra note 60, at 8.
specification is that taxol may be incorporated in a stent. It does not suggest that such a stent would be safe or that such a stent would work to prevent restenosis. I think it is fair to say that the sum of the disclosure of the specification is that taxol should be incorporated in a drug-eluting coating on a stent with a view to seeing whether it works to prevent restenosis and whether it is safe. If it is obvious to the skilled person that taxol should be incorporated in a drug-eluting coating on a stent with a view to seeing whether it prevents restenosis and is safe, then the claim is invalid, the specification having made no contribution to the art.\textsuperscript{65}

The UK court found facts in the patent that the polymer/taxol-coated stent resulted from a mere selection of elements from the prior art with no urgency of an art-additive based upon the unpredictable result of preventing restenosis. The pivotal fact between the No Benefit and Art-Additive guidelines is addressed in an important caveat by the UK court:

Things would be different of course, if Patentee had disclosed that in some way "taxol" was different, or better, or one of only a few anti-proliferative that would work. His contribution to human knowledge would then be of value. He would have made and disclosed a valuable selection from the range of possible antimitotics. As things stand, however, the skilled team would, having read the patent, really know no more than it would having read Wolff.\textsuperscript{66}

In short, the UK court would have sustained the patent if the application had presented a "contribution to human knowledge," i.e., the art-additive that the polymer/taxol-coated stent combination prevents restenosis. The problem, of course, was that the entire application was not focused on the specific polymer/taxol-coated stent eventually claimed, and that there was no mention of a polymer/taxol-coated stent being effective against restenosis.

3. The Dutch Opinion

On the other hand, the Dutch court sustained the patent because the court found a

\textsuperscript{65} van Bouwelen, supra note 60, at 10-11 (emphasis added).
\textsuperscript{66} van Bouwelen, supra note 60, at 11-12 (emphasis omitted).
"contribution to the state of the art,"\textsuperscript{67} i.e., an art-additive. The Dutch court commented upon the UK decision:

However, in the view of this court there is no speculation by the patentee, as assumed above by the English court. In fact the patentee sufficiently clearly indicates in the patent that it is advantageous to use taxol (inter alia but also specifically for restenosis) and states as reason for this that taxol scores well in the CAM assay to demonstrate its anti-angiogenic [sic] effect, bearing in mind that the patentee saw the solution for restenosis in the use of an anti-angiogenic [sic] factor. The circumstance that other anti-angiogenic factors are also suggested in the patent (and are [sic] also specifically claimed in the original documents) does not alter this. After all, this does not deprive the specific unambiguous choice to use the taxol-stent upon restenosis from its inventive character. It is sufficient that by applying the teaching of the patent the claimed advantage can be effected, and so use of a taxol-stent to prevent restenosis after an angioplasty intervention can be considered to be the \textit{contribution to the state of the art} ("technical contribution").\textsuperscript{68}

Instead of holding negative facts in the patent against the patent, the Dutch court found enough positive facts to support an art-additive attendant to the patent claim, and the claim was held to be valid. The Dutch court held that the elements were old, but that the new combination of old elements produced the unpredictable result of preventing restenosis:

\begin{quote}
It is legitimate to conclude that the selection of taxol from this large group did not produce an expectable optimal effect but rather a \textbf{precisely surprising effect}. Contrary to the other medicines proposed by Wolff... the taxol-stent precisely does have an effect on prevention of restenosis.\textsuperscript{69}
\end{quote}

The Dutch court relied heavily on the unexpected result, "a precisely surprising effect", to conclude that the prevention of restenosis by the taxol-stent was a sufficient art-additive to justify a patent even though the unexpected result was not specifically mentioned in the patent.

\begin{flushright}
\textsuperscript{67} van Bouwelen, \textit{supra} note 60, at 16.
\textsuperscript{68} van Bouwelen, \textit{supra} note 60, at 16 (emphasis added).
\textsuperscript{69} van Bouwelen, \textit{supra} note 60, at 15 (emphasis added).
\end{flushright}
4. The Appeal to the House of Lords in the UK

Long after the UK and Dutch opinions discussed above, the House of Lords overruled the lower UK court and upheld the patent in the UK\textsuperscript{70} Lord Hoffman wrote the opinion and basically held:

\begin{quote}
[T]he invention is the product specified in a claim and the patentee is entitled to have the question of obviousness determined by reference to his claim and not to some vague paraphrase based upon the extent of his disclosure in the description.\textsuperscript{71}
\end{quote}

The opinion went on to state "the correct question is 'whether it was obvious to use a taxol-coated stent to prevent restenosis.'" The opinion held that there was nothing in the prior art that indicated that a taxol-coated stent would prevent restenosis, i.e., nothing that rendered the claimed taxol-coated stent obvious. The House of Lords held the Obvious to Try test is only applicable in a case where there is a fair expectation of success and nothing in the patent or the prior art demonstrates that a taxol-coated stent actually works to prevent restenosis.

The effect of the decision of the House of Lords is that an art-additive justifies a patent so long as it is attendant to the claim and regardless of whether it is focused upon in the application. The danger in such an approach to patent preparation is that a court may view an art-additive urged after the patent is granted as mere advocacy, not fact. According to Lord Walker’s concurring opinion, this danger is a legitimate risk to the patentee:

So the patent has finally been upheld in your Lordships' House. I have to say that in my view the inventors and those who drafted the specification

\textsuperscript{70}Conor Medsystems Inc v Angiotech Pharmaceuticals Inc., [2008] All E.R. 621 (UKHL) (Approved judgment).
\textsuperscript{71}Id. at ¶19. EDNOTE: Please check this pin point.
have to some extent brought the tribulations of this litigation on themselves.

The inventors were carrying on research work with various substances which held out the prospect of exciting medical advances, not only in preventing restenosis but also in the treatment of cancer. They understandably wished to cover as much ground as possible in the specification. But in doing so they risked making it so unfocused as to end up with nothing capable of resisting a challenge to its validity.

The lower UK court found "that the sum of the disclosure of the specification is that taxol should be incorporated in a drug-eluting coating on a stent with a view to seeing whether it works to prevent restenosis." The UK court combined facts from the patent and the Wolff prior art which led along a logical path to the combination and the results, expected or not. On the other hand, the House of Lords and the Dutch courts were driven by the art-additive of preventing restenosis even though it was not mentioned in the patent. In upholding the patent, these courts focused on the combination and the attendant unexpected results. They were not deterred by the extraneous, divergent and overbroad recitations in the patent, none of which addressed the art-additive. Obviously, reasonable patent experts can differ over these decisions, but their differences would be resolved if the patent had focused on the art-additive of restenosis prevention as inferred by the lower court in the UK.

F. The Missed Art-Additive of the Windsurfer Patents

Paul Cole expertly analyzes in detail the history of the Windsurfer patents and suggests lessons to be learned in patent preparation, which are consistent with the art-additives suggested herein.

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72 Id. at ¶52. (emphasis added).ED.NOTE: Please check this pin point.
73 van Bouwelen, supra note 60, at 10.
74 Cole, supra note 47.
One inventor was an aeronautical engineer and recreational sailor, and the other was a computer analyst and recreational surfer. The unfocused patent was drafted too broadly; the introductory section stated that "the invention pertains" to "ships, particularly sailboats and iceboats, and . . . land vehicle with sail propulsion." In the description of the prior art in the patent, there was an admission that sail propulsion had been suggested for surfboards, which Paul Cole believes was unintentional. The claims, as filed, recited a "wind-propelled vehicle . . . ." Although the invention was only applicable to a watercraft, more particularly a surfboard, there was no description to distinguish the structure of a surfboard, upon which a user could stand, from the hull of an ordinary sailboat. Again the patent application was not focused from the claims to the introductory section. The independently old elements that the Windsurfer combined are a surfboard, a universally supported mast, a sail on the mast, a wishbone boom used to control the sail, and the shape and position of the sail. Each of these elements functioned as expected, but as will be clear, the combination produced unexpected results.

Since all of these elements were independently old and appeared to fall under the No Benefit guideline, it was incumbent upon the patent attorney to question the inventors to understand entirely, and in minute detail, how the invention functioned. During this critical stage in the preparation of a patent application, the attorney should understand the reason for every single element and the operational relationship between the elements. The identification and framing of the art-additive was not thorough enough in this case.

In a thorough interrogation, the inventors would have likely revealed that the very

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76 '317 Patent, 3, l.27.
unexpected and extraordinary speed and exhilaration of surfing without a wave was accomplished by standing on a surfboard-like hull to control a sail with a wishbone boom about a mast universally attached to the hull. The enthusiasm of the inventors would have conveyed the unimaginable or unexpected results of darting about on a relatively smooth body of water using wind power, combined with weight distribution and mast-sail manipulation via the boom. The shape and position of the sail would have been ferreted out in these discussions, along with the operational cooperation between the surfboard, the universally movable mast, the two-sided boom and the sail. The inventors would have pointed out that the skills necessary to dart about on the Windsurfer were completely different from those applied to any known craft. This art-additive should have been set forth in word-picture form in the patent application.

The Windsurfer invention illustrates a combination of independently old elements, but it produces a new function or unpredictable result that must be presumed to be a patentable non-obvious inventive step. However, the original application did not focus enough on the unexpected results produced by the specific combination. The art-additive of darting about on smooth water is analogous to the 26% increase in cooling of In re Adams.

As Paul Cole states, "[j]udges have the recurring characteristic that they treat ill-prepared documents dismissively and patent specifications are no exception, as the . . . U.S. Supreme Court . . . demonstrates."77 The presentation in the Windsurfer patents created hurdles to overcome for enforcing the patent in litigation in different countries with different outcomes and necessitating a re-issue patent, Re. 31,167, in the U.S. to re-focus the invention in the claims.

77 Cole, supra note 47, at 243.
SUMMARY

The courts read the entire patent as a contract, looking for an art-additive in exchange for the exclusivity of the claimed combination, which results in that art-additive.

In response, the task of the patent preparer is to 1) find the art-additive in relationship to the prior art,78 2) draft the broadest claim that produces the art-additive, and 3) focus the entire application around the art-additive, while making sure there are no facts which can be logically connected in a path from the prior art to the broadest claim.

A patent application hits the validity bull’s eye and provides the maximum number of validity points when it contains claims that recite a combination of elements producing a new function and/or an unexpected result, and when the art-additive is focused upon in the introduction of the patent to support and prove a non-obvious inventive step. The least number of validity points are provided in the outermost ring of the target, in which the patent application is overly broad in the claims and in the introduction, and is sent to the patent office on a fishing expedition in search of a claim defining a difference over the prior art.

An increasing number of validity points are provided in the centric rings of the validity target from the outermost ring to the bull’s eye. To score any validity points at all, the claims must meet the Art-Additive guideline and recite a new combination of elements, all independently old or least one new element. The validity points increase from the outermost ring to the bull’s eye, in proportion to the degree that a patent focuses on an art-additive that is based upon a new function and/or an unexpected result. The validity points also increase from larger to

78 Milton, supra note 36 (wherein the author suggests the U.S. case law requires a prior art search).
smaller target rings, proportionately to the exclusivity of the facts supporting the art-additive, i.e., exclusive of extraneous material including results that can be achieved by the prior art and/or which can be logically connected in a path to the broadest claim. On the other hand, some courts may save the patent from its own demise so long as there is a scintilla of an art-additive, even if it is first presented in litigation where it could be regarded as advocacy instead of fact. A prudent patentee should not risk drawing such a court.

When a patent application hits the validity bull’s eye, examiners and judges and/or juries have more difficulty finding facts in the prior art that can be logically connected with common sense in a path to unequivocally overcome the presumption of being a patentable non-obvious inventive step.
TRADEMARK ARBITRATION: A FIRST RATE CHANGE FOR A SECOND LIFE FUTURE
By Boris Shapiro

Introduction

Since the origins of recorded history, people have been using marks to indicate the source of their goods. In fact, the etching of a potter's mark in 3500 B.C., the blacksmith's branding of a sword in the Roman Empire, and the modern mass-branding of goods serve the same purpose: all three identify the source of the product on which they are found. In recognizing the importance of trademarks, Congress enacted the Lanham Act to protect an owner's trademark when it was used in commerce.\(^2\) Traditionally, parties who sought to enforce their rights against real world infringers have relied on litigation when self-help remedies were unavailing. In the 21\(^{st}\) century, however, a new type of business owner was born. His storefront window could not be seen in any mall or shopping area; his place of business could not be constrained by pesky laws of gravity; and his identity, although individualized, could easily be altered with a little imagination and a few left mouse-clicks. He was an inhabitant of Second Life, an online world at the forefront of virtual commerce, and his existence rendered litigation as dated as the 3500 B.C. mark on the potter's jar.

It is the thesis of this note that in the context of Second Life (and future user-generated worlds), litigation should not be used to settle matters dealing with the infringement of real-world marks by virtual-world inhabitants. Rather, Congress must amend the Lanham Act to require compulsory and binding arbitration in situations where a Terms of Service Agreement (TOS) does not provide the real world trademark holder with a remedy.

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1 J.D. Candidate, Rutgers School of Law-Camden class of 2009.

2 The Lanham Act is found in Title 15, Chapter 22 of the U.S. Code and contains the federal statutes governing trademark law in the United States.
Section I of this paper will bring the reader up to speed on the intricacies of trademark law under the Lanham Act. Section II will introduce the reader to a brave new world known as Second Life and explore the business opportunities that it offers. Section III will divulge the problem of trademark infringement within Second Life and explore how the Terms of Service Agreement can and does address the problem. Section IV explores Linden Lab’s option to remain neutral and presents a situation where the Terms of Service Agreement will not protect the real-world company from infringement within Second Life. Section V explores the weaknesses of litigation and details why it does not adequately address the needs of courts, the real-world companies and Second Life business owners. Section VI introduces the reader to Alternative Dispute Resolution (ADR) and explores the advantages offered by arbitration in situations where conflicts cannot be resolved by the Terms of Service Agreement. Finally, Section VII proposes that in light of the benefits provided by arbitration, Congress should amend the Lanham Act to require compulsory and binding arbitration.

As you read the following sections, ask yourself the following: Can traditional litigation adequately address the interests and concerns of courts, real-world companies (claimants), and Second Life business owners (defendants)?
I
Trademark Law

The underlying goal of trademark law is to prevent the unauthorized use of trademarks found in the course of commerce.\(^3\) Today, trademark law is thought to serve two primary purposes. First, it prevents the deception of consumers\(^4\); and second, it protects what is called the goodwill of the trademark owner.\(^5\) The contemporary Lanham Act, which sets forth federal trademark law in the United States, was enacted with these goals in mind and sets out to protect both registered and unregistered trademarks.\(^6\)

To raise a prima facie case for trademark infringement, a claimant must establish that not only was the infringing mark used in commerce\(^7\), but that such use would lead to a likelihood of confusion\(^8\) as to the source of the goods.\(^9\) A defendant, however, is not without remedies of his own.
own. Notwithstanding his ability to counter evidence of use in commerce and likelihood of confusion, the defendant may also present a handful of valid defenses, including fair use and abandonment.\(^{10}\)

Traditionally, litigation was the sword most often wielded by claimants seeking to enforce their trademark rights against infringing parties. However, with the recent growth of the Internet and its associated technologies, new and unforeseen challenges have surrounded trademark protection across the United States. At the forefront of this intellectual property revolution is Second Life, a virtual community that has brought trademark rights into the 21\(^{st}\) century.

\section*{II

Second Life}

Second Life, a creation of Linden Lab, is a user-generated world at the frontier of online gaming.\(^ {11}\) Second Life, however, is not a traditional online multi-player game with, winners, losers, points and levels. Rather, Second Life is a virtual landscape where people live their lives in a fashion quite similar to real life. Whether you wish to visit a friend’s house, shop for virtual

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\(^{9}\) Any person who shall, without the consent of the registrant... use in commerce any reproduction, counterfeit, copy, or colorable imitation of a registered mark in connection with the sale, offering for sale, distribution, or advertising of any goods or services on or in connection with which such use is likely to cause confusion...shall be subjected to the provisions of this Act. 15 U.S.C. \$ 1114 (2000).

\(^{10}\) 15 U.S.C \$ 1115 (2000).

\(^{11}\) “In user-generated virtual worlds, individual participants are afforded great freedom in defining the shape and purpose of the virtual environment. The world owner creates very little content. Instead, what is offered is a largely empty virtual space, a set of creative tools for authorship and the ability to view (and purchase) the objects, avatars, games and buildings created by others.” Candidus Dougherty & Greg Lastowka, Virtual Trademarks, 24 Santa Clara Computer & High Tech. L.J. 749, 768 (2008).
sneakers or even go to a dance club, your virtual experience awaits. Residents\textsuperscript{12} are not only afforded great freedom in their actions, but they are also vested with the power to bring figments of their imagination into reality.\textsuperscript{13} By taking advantage of the tools provided to the residents, the users of Second Life are able to create virtual products for their own entertainment and the entertainment of others. Whether those products are clothes, accessories, or even forms of transportation, the biggest obstacle in creating virtual products is the sophistication of the user and his mastery of Second Life’s three dimensional modeling tool and scripting language.\textsuperscript{14}

The amount of content generation that occurs regularly in Second Life is astonishing. Cory Ondredjka, the former CTO of Linden Lab, reported that “[a]s of June 2007, residents were adding over 300 gigabytes of data to the world every day, one million distinct items had been bought or sold in the preceding month, and tens of millions of scripts were running at all times within the Second Life grid.”\textsuperscript{15}

While Linden Lab technically retains ownership of everything on its servers (including user accounts and creations)\textsuperscript{16}, it grants its users the right to retain intellectual property rights with

\footnotesize
\begin{itemize}
  \item [14] See Betsy Book, *Virtual World Business Brands: Entrepreneurship and Identity in Massively Multiplayer Online Gaming Environments*, 12 (June 2005). In this note, the author focuses on *Preen* and Cubey Terra, two established brands within the world of Second Life. Through the creativity and mastery of the scripting language, the brand owners were successful in creating unique products of their own. The former focused on high quality clothing while the latter mastered virtual vehicles.
  \item [16] Second Life, Terms of Service, http://secondlife.com/corporate/tos.php.(last visited October 2008). § 3.3 of Second Life’s Terms of Service states, “You agree that even though you may retain certain copyright or other intellectual property rights with respect to Content you create while using the Service, you do not own the account you use to access the Service, nor do you own any data Linden Lab stores on Linden Lab servers (including without limitation any data representing or embodying any or all of your Content). Your intellectual property rights
\end{itemize}
respect to the content created. Linden Lab's Terms of Service Agreement (TOS) states that, "Linden Lab acknowledges and agrees that, subject to the terms and conditions of this Agreement, you will retain any and all applicable copyright and other intellectual property rights with respect to any Content you create using the Service, to the extent you have such rights under applicable law." ¹⁷ To date, Linden Lab is the only virtual world provider to expressly vest its users with a right to the intellectual property that they create while using the virtual world platform. ¹⁸

In addition to granting its users the right to retain intellectual property rights, Linden Lab has created a monetary exchange system that allows the unrestricted interchangeability of fictional currency, the Linden dollar, between in-game residents. ¹⁹ Residents use Linden dollars to facilitate in-game transactions for land and goods created by others. This, however, is merely the tip of the commercial iceberg envisioned by Linden Lab. In fact, Second Life’s system of currency interchangeability allows two-way conversions of real world and in-game currency. ²⁰ This means that not only can you exchange American dollars for in-game Linden dollars, but you can also exchange Linden dollars back to American dollars. “The real currency aspect of the Second Life economy means that product exchanges between Second Life users are made for

¹⁷ Id. at § 3.2.
¹⁸ Dougherty, supra note 12, at 769.
¹⁹ Second Life, supra note 17 at § 1.5.
²⁰ See Second Life ,Currency Exchange, http://secondlife.com/whatis/currency.php. (last visited October 2008). Over the past few years, the in-game currency has maintained a fairly stable rate of approximately 250 Linden dollars to the U.S. dollar. Id.
real consideration—a distinction that pushes Second Life business transactions into the legal definition of commerce.21

Supporting Second Life’s virtual economy is its quickly growing community of entrepreneurs and business-minded opportunists.22 As of October 2008, over 61,000 business owners (with positive monthly Linden dollar flow) were operating within Second Life and over 22 million commercial transactions took place therein. In October alone, over 400 thousand customers were spending money in-world.23 In fact, business is so good that people are turning to Second Life as either a secondary or a primary source of income.24 In 2006, the top 10 individual entrepreneurs within Second Life earned approximately $200,000 (U.S. dollars) per year.25 In the same year, Second Life welcomed its first millionaire by the name of Ailin Graef. In Second Life, Ms. Graef is a virtual land baroness by the name of Anshe Young. “[Her] achievement is all the more remarkable because the fortune was developed over a period of two and half years from an initial investment of $9.95 for a Second Life account.”26 This, however,

21 Dougherty, supra note 12, at 771. Thus, Second Life users risk actual loss and can potentially realize substantial gain through their virtual transactions. Id.


23 Id.


26 Rob Hof, Second Life’s First Millionaire, http://www.businessweek.com/the_thread/techbeat/archives/2006/11/second_lifes_fi.html (last visited October 2008). “[Anshe] achieved her fortune by beginning with small scale purchases of virtual real estate which she then subdivided and developed with landscaping and themed architectural builds for rental and resale. Her operations have since grown to include the development and sale of properties for large scale real world corporations, and have

8 Chi.-Kent J. Intell. Prop. 279
is merely the beginning of the virtual revolution. According to Mitch Kapor, Linden Lab’s Chairman of the Board, “it’ll take around 15 more years for virtual environments to move from the technology margins to the mainstream.”

The success of entrepreneurs like Ailin Graef, as well as statements similar to those provided by Mr. Kapor should and in fact have caught the attention of the corporate ear. Adidas, Coca-Cola, Dell, Disney, General Motors, and Reebok are only some of the names that have decided to plug into the Second Life experience. But just like in the real world, the allure of making money causes legal issues to arise. Vastly different from the real world, however, is that other than the TOS to which all Second Life users must assent to in order to set up an account, there is no virtual law in the virtual world.

While most believe Second Life to be the next frontier for commerce and intellectual property, others see it as little more than the wild-wild-west of the 21st century. In their eyes, “misappropriation of major corporations’ trademarks in Second Life is so ubiquitous, so safe, and so immensely profitable, that it has become a wholly transparent part of Second Life’s bustling commercial landscape.” While entirely ignoring Second Life’s legitimate value is too pessimistic, the underlying validity of their concerns cannot be dismissed. In fact, according to Benjamin Duranske of the website Virtually Blind, an estimated 1.4 million transactions a year led to a real life ‘spin off’ corporation called Anshe Chung Studios, which develops immersive 3D environments for applications ranging from education to business conferencing and product prototyping.”

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27 China Martens, WORLD BEAT: ID Malleability Creates Virtual-World Issues, http://www.itworld.com/070627id (last visited October 2008). Mr. Kapor added, “We’re not even at the DOS era, we’re still in the terminal emulation era.” Id.


involve unauthorized use of trademarks, for a projected total of over 2 million U.S. dollars.\textsuperscript{30} Further, as of May 2007, at least 16 stores advertised Ferrari cars, 40 stores advertised Rolex and Chanel watches, 50 stores carried Gucci and Oakley sunglasses, and over 150 stores sold Nike footwear.\textsuperscript{31} And while Nike, Inc. may have taken its name from the Greek goddess of victory\textsuperscript{32}, the free appropriation of their trademarks is more akin to admitting de-feet.

III
In-game infringement and the TOS

Should real world trademark owners care that residents are making a few bucks off their goodwill? While it may be argued that companies do care, but simply do not know about such activities; it is more likely that they believe they have bigger fish to fry than the Minnows in Second Life. So why should a company care right now? Two reasons; one is legal, and the other is practical. In light of the former, trademark law requires that companies holding trademarks actively enforce those trademarks in the event of infringement.\textsuperscript{33} “[F]ailure to do so can ultimately result in loss of registration for the marks.”\textsuperscript{34} The second concern, however, is more practical. Even though a company may have no present desire or intention to enter Second Life, it nevertheless should prudently protect the option.

\textsuperscript{30} Id.
\textsuperscript{31} Id.
\textsuperscript{34} Duranske, supra note 30. “A trademark owner’s failure to prosecute known infringers of a mark may result in a finding of abandonment of trademark rights. Moreover, the more trademark dilution is tolerated by a company, the harder is it to later argue that any particular infringer should be enjoined.” Id.
A number of companies have taken these concerns to heart and chosen to err on the side of caution. When high-end office furniture maker Herman Miller discovered that Second Life residents were selling virtual replicas of its famous ‘AERON’ chair, it opened its own in-game store and, for a limited time, offered to exchange knock offs for its own authentic version at no charge. Then it sent cease and desist demands to the infringers. Coca-Cola took a different approach to residents creating clothing and accessories bearing its trademark; it gave them limited ‘permission’ to carry on with their activities.

It is not, however, as if Linden Lab is oblivious to trademark infringement or simply does not care. Such a presumptuous statement cannot be further from the truth. When it comes down to it, policing Second Life simply exceeds the resources available to Linden Lab. This, however, does not mean that companies like Nike are without a remedy. Although real-world companies may not be parties to the TOS, they are nevertheless contemplated therein. Under section 4.1 entitled ‘Conduct by Users of Second Life’, the TOS states that residents agree not to “take any action or upload, post, e-mail or otherwise transmit Content that infringes or violates any third party rights.” In conjunction, the TOS states that “Linden Lab has the right at any time for any reason or no reason to suspend or terminate your Account, terminate this Agreement, and/or


36 Id. "[W]e've contacted those parties and informed them of our trade dress protections, copyrights and trademarks they are infringing, asking politely but firmly that they cease and desist[.]" Id.

37 Crittenden, supra note 25 at 244. “We contacted Coca-Cola to inquire and were told that they are allowing products with their trademark in SL, under certain conditions...They pointed out that they did not want anything overly sexual or violent in content ... Technically they haven’t ‘released’ their trademark, but they have given SL residents permission to use it”; Adam Reuters, Coca-Cola Gives Away its Trademark in SL?, http://secondlife.reuters.com/stories/2007/06/28/coca-cola-gives-away-its-trademark-in-sl (last visited October 2008).

38 Second Life, supra note 17 at § 4.1.

8 Chi.-Kent J. Intell. Prop. 282
refuse any and all current or future use of the Service without notice or liability to you.\textsuperscript{39} Perhaps most troubling to infringers, Linden Lab also reserves the right to “halt, suspend, discontinue, or reverse” any currency transaction at its sole discretion.\textsuperscript{40}

While the TOS theoretically protects third party trademark rights from in-game infringers, the only entity that can realistically pull the trigger is Linden Lab. After all, as far as the TOS is concerned, enforcing third party rights is entirely under its own discretion.\textsuperscript{41} While skeptics may doubt Linden Lab’s integrity, according to a website called Orient Lodge, Linden Lab has taken a surprisingly proactive role in protecting third party trademark rights.\textsuperscript{42}

Linden Lab, however, may not be equally proactive in all instances of alleged trademark infringement. While Linden Lab has demonstrated a willingness to cooperate with real-world companies in instances of blatant trademark infringement, it nevertheless may be hesitant to interfere with residents who have, in good faith, built their businesses from the prim\textsuperscript{43} up. ‘AIMEE WEBER STUDIO & Design’, ‘Erros LLC’ and ‘The Syndicate’ are only three of a myriad number of businesses that have legitimate infrastructures not created upon the notion of

\textsuperscript{39} \textit{Id.} at § 2.6.
\textsuperscript{40} \textit{Id.} at § 1.5.
\textsuperscript{41} \textit{Id.} at § 2.6.
\textsuperscript{42} Aldon Hynes, \textit{Trademark Issues in Second Life}, http://www.orient-lodge.com/node/2583 (last visited October 2008). As explained by the blogger, the head of a prominent company in Second Life received an email from Linden Lab notifying it that Linden Lab had received notification of in-game trademark infringement by third party counsel. In accordance with its policy to respect the rights of both Second Life residents and trademark owners, Linden Lab asked the in-game company to remove all trademark infringing content within 48 hours or it would proceed to terminate all accounts related to the infringing activity. \textit{Id.}
\textsuperscript{43} In Second Life, the term ‘prim’ designates a basic building block which is used in the creation of content. \textit{What are prims in Second Life?}, http://www.vtorealitv.com/what-are-prims-in-second-life/12/ (last visited April 2009).
\textsuperscript{44} See Crittenden, supra note 25 at 245. “Alissa Laroche (Second Life name “Aimee Weber”) has filed applications to register her logo and the design of her avatar for the services of “content creation for virtual worlds and 3-D platforms.” In November 2007 the PTO allowed registration of her logo, AIMEE WEBER STUDIO & Design, No. 77110295, and her avatar design, No. 77110299, upon proof of use of the marks.” \textit{Id.}
intentional trademark infringement.\textsuperscript{45} In fact, businesses such as these comprise the backbone of Second Life’s flourishing economy. It is in the context of such a conflict of interest that Linden Lab’s statement that it “has the right, but not the obligation to remove any content”\textsuperscript{46} makes most sense.

IV
No TOS for you!

Linden Lab certainly has the right to administer its own vigilante justice by the power it vests in itself under the TOS. But is it in the best interest of Linden Lab to get involved? The answer is both yes and no. In a case where trademark infringement is blatant and obvious, as in the case of an in-game vendor selling Rolex watches, Linden Lab should get involved. For one, the TOS expressly prohibits such behavior, and perhaps as importantly, Linden Lab has an interest in Rolex one day partaking in the Second Life experience.

But what should Linden Lab make of alleged infringement that does not appear to be intentional, blatant and obvious? For instance, let us imagine that a business owner creates a trademark in the name P.O.D. P.O.D. specializes in virtual electronics that not only look good, but also perform virtual functions. Over the years P.O.D. builds a favorable reputation for its goods and is seeing generous profits from residents’ investments in its products. One day, however, Apple Inc. learns about P.O.D. and is particularly troubled by the idea that P.O.D. is infringing on its IPOD trademark. In particular, Apple points to a virtual mobile music player that residents are purchasing from P.O.D. called a walk-POD. Apple’s counsel promptly contacts Linden Lab and asks it to remove all traces of the walk-POD, along with the business known as

\textsuperscript{45} Id.
\textsuperscript{46} Second Life, supra note 17 at § 5.3.
P.O.D. in general. In a situation such as this, it is in the best interest of Linden Lab to forego interfering with the in-game user’s rights and allow Apple Inc. to seek its own remedy.

For one, Linden Lab may not be familiar enough with the intricacies of trademark law to ascertain whether the complaining party has established a prima facie case for trademark infringement or dilution. An in-game user may feel duped by Linden Lab’s arbitrary decision to take matters into its own hands and deny the user the fruits of his labor. Second, Linden Lab would need to allocate a tremendous quantity of resources for it to effectively investigate all allegations against its users. Linden Lab does not, nor would it desire to hire personnel qualified to competently weigh the evidence as between the two parties. Third, it is in the interest of Linden Lab to maintain status as a neutral party in all but the most egregious cases of trademark infringement. Linden Lab, as a service provider, has placed itself in a sensitive position where it must balance the interests of the resident as well as third parties. While real world corporations have for the most part shied away from the opportunities Second Life offers, according to Linden Lab, it is only a matter of time before its reach extends into the mainstream. In light of this revelation, Linden Lab has a vested interest in earning the trust of real-world companies that may

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47 “Even if the product you make doesn’t look, smell, feel, or do anything remotely close to what an iPod does, and even if consumers can’t buy it on the shelves in a store, that apparently doesn’t mean Apple won’t release its legal dogs on you if the name of your product includes the letters P-O-D.” The allegedly infringing device was a digital device called a ‘PROFIT POD’ which had nothing to do with the ‘IPOD’, did not compete in the same market as the ‘IPOD’, and no reasonable person could or would have confused it for an ‘IPOD’. Nevertheless, Apple was concerned that the application for and use of the ‘PROFIT POD’ mark infringed its trademark rights and diluted Apple’s famous ‘IPOD’ brand. According to Apple, its policy is to “aggressively police [its] trademark rights in order to protect itself and its consumers.” David Berlind, Use “POD” in Your Trademark, Get Sued. Has Apple Gone Too Far? http://blogs.zdnet.com/BTL/?p=3482 (last visited October 2008).

48 If Linden Lab were to ever act arbitrarily in its ‘sole discretion’, it may be vulnerable to a claim that it did not comply with its general obligation of good faith and fair dealing. The Restatement Second of Contract states, “Every contract imposes upon each party a duty of good faith and fair dealing in its performance and its enforcement.” Restatement (Second) of Contracts, § 205 (1979).

one day invest in the Linden dollar and join the Second Life community. On the other hand, in-game entrepreneurs are the ones who currently fuel the tanks of the Second Life economy. By turning a blind eye to them, Linden Lab would be committing a virtual and financial hari-kari.

In situations where Linden Lab is unwilling to single-handedly enforce trademark protection under the TOS, the most logical recourse for a real-world company is to bring a trademark infringement claim under the Lanham Act. However, though litigation retains a certain nostalgic appeal, in reality it is counter-intuitive to the interests of the courts, real-world companies, and especially in-game business owners.

V
Litigation: A Path Not Wisely Traveled

As former Chief Justice Warren E. Burger said in 1984 to the American Bar Association, “For many claims, trial by adversarial contest must in time go the way of the ancient trial by battle of blood. Our system is too costly, too painful, too destructive, [and] too inefficient for a truly civilized people.” To put Justice Burger’s revelation in perspective, however, we must first come to grips with the three parties whose interests are at stake in traditional litigation. In no particular order, the parties are the courts, the real-world companies, and the in-game business owners. Although litigation may have adequately served the two former parties in the past, the introduction of the in-game business owner has added a third dimension that tips the scales in favor of arbitration. This section will explore the interest of all three parties in light of this change, and propose that litigation is no longer desirable in the context of inter-world trademark disputes.

50 Speech, Feb. 28, 1984 to the American Bar Association, reported at 52 U.S.L.W. 2471.
As previous sections have highlighted, Linden Lab has swept ashore a sea of business-minded individuals who view Second Life as a secondary if not a primary source of income. Unlike intentional infringers, however, these individuals have a legitimate vested interest in the success of their business and its accompanying trademarks. Indeed, some have gone as far as registering their trademarks on the federal register.\(^5\) If asked to cease and desist, these business owners are expected to stand their ground. And if sued, they are not expected to allow a default judgment to be entered against them. Or will they? While in-game users may have a legitimate belief that their business practices do not infringe real world trademarks, they must nevertheless factor the costs of litigation into the equation\(^5\)\(^2\). Furthermore, faced with uncertainties such as the length of a trial\(^5\)\(^3\), the amount of discovery required, the success of winning on the merits and the likelihood of appeal, the in-game business owner may feel defeated before stepping into the court-house. Notwithstanding the strength of his case, he will feel powerless in the face of an opponent with potentially unlimited time and resources. For the average in-game business owner, adequate representation of his claim lies in a quicker and more cost-effective alternative to litigation.

The *little guy*, however, is not the only one who has much to lose from the pursuit of traditional litigation. First and foremost, the number of potential infringers in a virtual world is arguably infinite. Startup costs for virtual businesses are nominal, and creating virtual sneakers


\(^5\)\(^3\) According to court documents, Federal court cases take an average of 23.2 months from filing to disposition, http://www.uscourts.gov/library/statisticalreports.html (last visited April 2009).
requires far fewer resources and expertise than creating actual sneakers. For this very reason, anyone who owns a computer with an Internet connection has the tools to infringe upon a trademark. By pursuing these potential infringers through traditional channels, real-world companies are opening themselves up to negative public opinion. In our politically correct times, the last thing a real-world company needs is a reputation as a corporate bully. Further, though only a minority of cases may go to trial\textsuperscript{54}, the constant filing of complaints is costly and will nevertheless attract the attention of media and public alike.

Perhaps most troubling for real-world companies is that the outcome of the litigation is essentially out of their hands. They have little say in which judge will preside over their case and have limited say in jury selection. While the company may present evidence in its favor, how the evidence is weighed and understood is entirely in the hands of the judge and jury. Where issues in intellectual property cases are technically confusing and require expertise, in the hands of a non-technical judge or jury, disaster is a possibility.\textsuperscript{55} “This realization is driven home when you are waiting for the jury to return a verdict or a judge to announce a decision. At that moment, it is crystal clear the outcome can go either way and you might lose.”\textsuperscript{56}

\textsuperscript{54} Lickson, supra note 52 at § 70. “It has been reported that only 3 to 4 percent of the 18 million civil cases filed in state courts each year go to trial.” \textit{Id.}

\textsuperscript{55} See Lickson, supra note 52 at § 65.

As a side note, it is important to acknowledge that real-world companies are not all limitless in time and resources. As technology like Second Life enters the mainstream, more localized businesses may be affected and seek remedies through the legal system. For these types of real-world companies, a quicker and more cost-effective alternative to litigation is desirable as well.

Finally, we come to the interests of the courts themselves. Undeniably, today’s court calendars are already congested with cases.57 Allowing litigation of inter-world trademark-infringement disputes would add further insult to injury. Not only is the quantity of virtual infringers potentially unlimited, but they are also easier to track down than their real world counterparts. One must simply type Nike into the Second Life classifieds to uncover all stores that sell Nike apparel.58 Combined, these factors will increase the amount of complaints filed and further burden an already backlogged court docket. Finally, even if only a small percentage of these cases go to trial, the courts may wish to abstain from entertaining cases requiring technology-oriented decisions. A judge who is unfamiliar with an underlying technology may feel unqualified to render a decision, even after reviewing all the evidence. In such instances, the courts will prefer to err on the side of caution and leave such decisions in the hands of professionals more qualified to render a fair and knowledgeable decision.

57 See Lickson, supra note 52 at § 1.

58 Durankse, supra note 30.
VI

No need to fear, arbitration is here

To sue or not to sue, that is the question. Whether 'tis nobler in mind to ignore the troubles of litigation, or to amend the Lanham Act at once and by requiring arbitration end them?

Among legal practitioners alternative dispute resolution (ADR) is a term that describes a variety of practices designed to resolve legal disputes without the need to pursue traditional avenues of litigation. The importance of ADR was recognized on the federal level as early as 1925 when the Federal Arbitration Act was originally enacted, and since then other statutes have dealt with parties’ rights to final and private resolution of civil disputes. Today, ADR is receiving ever-increasing interest in the legal community because of congested court calendars as well as the perception that it is a quicker, more cost-effective, less risky and far less traumatic alternative to litigation. In fact, in the business world, more companies are using ADR as a matter of corporate policy.

While ADR encompasses a wide array of mechanisms, this paper will focus exclusively on arbitration, the most widely used form of ADR. “In fact, it has been said that arbitration ‘has now been placed on an equal footing with litigation’” If broken down to its most basic elements, arbitration is a private trial. Unlike a trial, however, arbitration is not impeded by rules

59 Lickson, supra note 53 at § 1.
60 9 U.S.C.,§ 1 et seq., http://www.adr.org/sp.asp?id=29568. Further, it is the author’s proposal that the Lanham Act is precisely the type of statute that will benefit from the incorporation of ADR into one or more provisions.
61 See Lickson, supra note 52 at § 1.
62 Id. at § 4. Mr. Lickson surveyed various law firms and learned that a number of them had used ADR in cases involving intellectual property disputes. Among them was trademark infringement as well as other trademark, service mark and trade dress issues. The majority responded that they were pleased with the results. Id. at § 7.
63 Id. at § 16.
64 Id. (Citing American Bar Association, Commercial Arbitration for the 1990's (1991)).
of evidence. Nevertheless, in arbitration a neutral third party (the arbitrator) reviews presentations from both sides and makes a decision based on the evidence presented.\textsuperscript{65} Such presentations may include documents related to the dispute as well as witness testimony. The arbitrator’s decision may or may not be binding.\textsuperscript{66} If the decision is binding, however, it generally is final and cannot be appealed.\textsuperscript{67}

This, in turn, brings us to the first advantage of arbitration: control of the outcome. By choosing the provider\textsuperscript{68} and ultimately the arbitrator as well, the parties retain far greater control of the outcome than they would retain by surrendering their fate to a judge or jury. By selecting a neutral arbitrator who is technology-oriented, is well versed in trademark law\textsuperscript{69}, and has a thorough understanding of Second Life, the parties will not feel as if they are about to roll the dice in Vegas. To the contrary, the parties will be confident that the decision to be rendered will be based on coherent fact analysis by a qualified third party. Further, in trademark infringement litigation, parties often submit consumer surveys as proof of actual confusion. Some surveys, however, while convincing to judge and jury, are nothing more than a facade.\textsuperscript{70} Although such surveys are given much weight, they are liable to be biased, misleading and are as light as a

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\textsuperscript{65} See Lickson, \textit{supra} note 52 at § 16.
\textsuperscript{66} \textit{Id.}
\textsuperscript{67} \textit{Id.}
\textsuperscript{68} Alternative dispute resolution is available from a variety of sources. Among them, the American Arbitration Association (AAA) is the major referral source for arbitration in the U.S. \textit{Id.} at § 56.
\textsuperscript{69} The arbitrator could be an intellectual property attorney with a specialty in trademark law. An understanding of economics and market factors may also come in handy.
\textsuperscript{70} See Mutual of Omaha Insurance Co. v. Novak, 836 F.2d 397, 403-06 (8th Cir. 1987) (Heaney, J., dissenting) (Survey should have been given little if any evidentiary weight due to its fundamentally flawed and blatantly suggestive nature).
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According to a survey conducted by the American Intellectual Property Law Association in 2001, the average cost of a trademark infringement suit through trial was over $500,000.\footnote{Kevin M. Lemley, \textit{I'll Make Him an Offer He Can't Refuse: A Proposed Model for Alternative Dispute Resolution in Intellectual Property Disputes}, 37 Akron L. Rev. 287, 311 (2004) (citing Fetzer-Kraus, Inc., AIPLA Report of Economic Survey 84-90 (2001)).} While arbitration is not cheap per se, it is nevertheless a cheaper and more cost-effective alternative to litigation.\footnote{See Lickson, supra note 52 at § 68, “One well-known national ADR provider estimates that between 1990 and 1993, panelists resolved disputes involving $6.7 billion, with legal costs savings in excess of $187 million, for an average of $425,000 per company.” \textit{Id.}} Cost savings occur in a number of ways. First, the time during which the dispute is pending can be shortened. As a result, costs associated with prolonged litigation can be minimized and business down time can be shortened.\footnote{Michael H. Diamant & Elizabeth M. Zoller, \textit{Strategies for Mediation, Arbitration, and Other Forms of Alternative Dispute Resolution}, SJ055 ALI-ABR 131, 134 (2004). ADR also saves time by allowing parties to commence arbitration immediately without having to wait months or years to appear on a court docket.} Second, trademark litigation is often plagued by extensive discovery. An arbitrator can save both time and money by limiting the scope of discovery, as agreed to by parties looking to minimize financial costs.\footnote{Lickson, supra note 52 at § 68.} Third, a trial is procedurally restrained and governed by the rules of evidence. The result is a painstaking process surrounded by opportunities for delay.\footnote{Lemley, supra note 72 at 311.} Such delay not only affects a business’ down time, but also hikes up costs associated with prolonged trials such as the costs of retaining legal counsel.\footnote{\textit{Id.}} Finally, trademark litigation is frequently more complicated and difficult to
comprehend than other types of litigation. It requires an understanding of complicated legal rules in addition to consumer perception, surveys and market data. As a result, parties spend an inordinate amount of resources teaching the judge and jury. Most if not all of these expenses can be avoided by relying on a qualified arbitrator already privy to the intricacies of trademark infringement. In sum, arbitration cuts the fat associated with traditional litigation and allows the parties to focus their time and resources in a more cost-effective fashion.

Finally, arbitration is a confidential process. And in this regard, arbitration is analogous to Vegas. After all, what happens in Vegas stays in Vegas. This means that real-world companies can avoid a reputation of being a corporate bully while protecting their trademark rights as aggressively as they see fit. If a company wishes to turn a blind eye to Second Life infringement, it may do so. However, if it wishes to relentlessly pursue all potential infringers, it may do so without the fear of a public backlash.

While the advantages of arbitration are certainly profound, to dismiss its potential disadvantages would be a disservice to the reader. For one, in the case of binding arbitration, there is no general appellate review. While this may seem daunting at first, it is but a minor inconvenience. In fact, the lack of an appellate review is a built-in cost-saving mechanism.

Another important factor to consider is that, depending upon governing law, an arbitrator may not be able to third parties, such as witnesses or experts, to participate in arbitration. However, where there is a will there is a way. If a witness is essential to a party’s claim, the

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78 Blackmand, supra note 71.
79 Lickson, supra note 52 at §71.
80 Lemley, supra note 72 at 311. With the unforgiving costs and consequences of a trademark infringement suit, the losing party often appeals, which further adds to the costs and duration of the dispute. Id.
party can provide the witness with incentives to participate. Further, although expert witnesses may be important in a trial setting, the selection of a qualified arbitrator will deem most expert witnesses superfluous in the context of arbitration.

Critics may also point to the fact that arbitration does not allow for the claimant to seek a preliminary injunction while the case is pending. While this is certainly important in the greater scheme of trademark infringement, in the case of Second Life, any potential damage to the claimant’s trademark is confined to a narrow and isolated market. Furthermore, taking into consideration that arbitration is more expedient than litigation, the potential for substantial damages is dubious.

Finally, and perhaps most importantly, the confidential nature of an arbitration process may undermine the claimant’s intentions to send a deterring message to future infringers. While it is difficult to dismiss this factor entirely, it is likely that favorable arbitration decisions will persuade Linden Lab to exercise greater discretion in punishing potential infringers under the TOS. This is especially true if the particular infringed trademark has been successfully arbitrated in the past. Further, nothing impedes Linden Lab from announcing in Second Life that an infringer has been punished. As such, if the third party cannot deliver the deterring message itself, Linden Lab will.

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82 These incentives can, but do not necessarily have to be monetary.
83 Diamant, supra note 74 at 134.
85 If a third party decides to join Second Life, nothing is stopping it from notifying users of its prior victories. While it will not be in the interest of the company to ‘spam’ Second Life, announcements on its land will do the job adequately.
In light of the benefits which arbitration offers, Congress should amend the Lanham Act to provide for binding and compulsory arbitration in situations where real-world companies allege trademark infringement against inhabitants of Second Life (and future user-generated worlds). While some may see such an amendment as a bit drastic, this is the only way to ensure that the needs of all parties, especially the in-game business owner, are met. First and foremost, arbitration clauses in the TOS will not be effective because they do not bind third parties. Further, while some corporate policies encourage the use of arbitration, uncertainty lies as to what extent it will be followed. Companies may still file complaints with the court even if they have no intentions on pursuing litigation. Such an action may simply be a strong-hand tactic to intimidate the business owner into complying with their demands. Others with more money may simply wish to drag the business owner through the grinder and effectively cripple his finances. Where reliability and uniformity of application is paramount, amending the Lanham Act is the only sure way to guarantee the benefits that arbitration has to offer.

While the details and intricacies of such an amendment are outside the scope of this paper, a brief overlook is nevertheless warranted. First and foremost, Congress should limit arbitration to one arbitrator unless otherwise agreed upon by both parties. If cost savings is paramount, a panel of one arbitrator will suffice. However, if both parties agree that there is too much at stake, an option to reserve a panel of three arbitrators should be available. The provision may

86 Since Linden Lab is at the frontier of this revolution, the provision as it currently stands is limited in scope to the residents of Second Life. Notwithstanding, it is foreseeable that in the near future this provision will extend to other virtual worlds that follow in Second Life’s footsteps.

87 It is also foreseeable that the provision could allow the parties to opt out of arbitration altogether in favor of litigation or another form of alternative dispute resolution. Where both parties agree on litigation, it is arguable that their interests outweigh the interest of the courts.
also address the question of where the arbitration should take place. At the very least, a party should have the option to hold the arbitration through video chat if it is unable to accommodate for travel time and expenses. Finally, the provision could allow otherwise absentee parties to provide the arbitrator with evidence through channels such as fax, email, or regular mail. Parties with a larger interest in the outcome, however, will likely forego such options in lieu of in-person delivery and presentation of the evidence.

Conclusion

The world of trademark law calls for a dispute resolution mechanism as fast-paced and efficient as the evolution of the underlying technology and ideas that are the subject of the disputes. In situations where a TOS is insufficient, arbitration is far better suited to address the needs of the courts, the real-world companies and especially the in-game business owners. By opening our eyes to the present, we can prepare for our Second Life future; and by accepting our arbitrated future, we can stop living in our litigated past.