

Empirical Appendix¹ In the Shadow of Innovation

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I. The Quantitative Study

A. Case Selection Criteria

The study encompassed all state and federal cases between 1946 and 2005. The search was run on Lexis on the All Federal and State Cases, Combined file during June and July 2006. The search was designed to test two hypotheses: (i) Use of innovation rhetoric increased during the 1980s with the advent of the intellectual property wars; and (ii) Use of innovation rhetoric increased during the 1990s when the Internet reached mainstream adoption. Consequently, the search was confined to the five decades subsequent to World War II, a period of sufficient length to examine whether such trends have indeed occurred.²

Innovation rhetoric, admittedly, exists beyond the judicial arena. It is, in fact, more common in academia and in legislative debates. In legal cases, innovation rhetoric appears mainly in opinions that address policy. Generally, policy discussions appear in a small percentage of case law. Nevertheless, the availability of a comprehensive body of case law on Lexis made it the best-suited place to examine the timing and the nature of the transformation in use of innovation rhetoric.

B. Assessment Method

Since the body of intellectual property case law grew significantly over the period studied, basing the study on a count of references to innovation would have merely reflected the increase in intellectual property cases not in innovation rhetoric. The study, therefore, measured the increase in percentage of cases containing innovation rhetoric out of all intellectual property cases.

C. Queries

The following query was used to identify the total number of intellectual property cases: `atleast6(patent!) or atleast4(copyright!) or atleast4(trademark!) and CORE-TERMS (patent or copyright or trademark) and date(geq(1/1/1946) and leq(12/31/1955))`

¹ The empirical study and appendix are compliant with the best practices described in Mark A. Hall & Ronald F. Wright, *Systematic Content Analysis of Judicial Opinions*, 96 CAL. L. REV. 63, 100-120 (2008).

² The author is currently exploring the historical relationship between innovation and diffusion beyond 1946 in a separate paper. Gaia Bernstein, *Progress and the Dissemination of New Technologies* (Aug. 1, 2008) (unpublished manuscript, on file with author).

and not patently viol! or patently illeg! and not patent land! and not homestead and not patently unconstitutional.

This query was selected to ascertain that only intellectual property cases are included:

- *Atleast6(patent!)*. This limitation was used because patent is a common word and used in many other contexts. Looking for six iterations of the term gave the most reliable base query without forfeiting patent cases.
- *Atleast4(copyright) or atleast4(trademark)*. Trademark and copyright are not common words in other contexts. Looking for four iterations gave consistently relevant intellectual property cases.
- *and not patently viol! or patently illeg! and not patent land! and not homestead and not patently unconstitutional*. These were the most common recurring uses of patent in a non-intellectual property context.

The following query was used to identify cases, which included innovation rhetoric: (stimulat! or goal or promot! or polic! or encourag! or incentiv! or interest! or advance! or object! or foster! or reward!) /s (innovat!).

Although the policy justification for granting trademarks is not traditionally tied to innovation, these cases were included in the study because a closer review revealed that they contained innovation rhetoric. Trademark opinions usually referred to innovation rhetoric to distinguish the goals of copyright and patent rights from the objectives of the Lanham Act. For example, in *Dastar Corp. v. Twentieth Century Fox Film Corp.*, the Supreme Court stated that: “‘The Lanham Act,’ we have said, ‘does not exist to reward manufacturers for their innovation in creating a particular device; that is the purpose of the patent law and its period of exclusivity.’”⁵

II. The Qualitative Study

A. Case Selection and Scope

The purpose of the qualitative study was to examine whether the increase in innovation rhetoric went beyond a mere linguistic change to an actual transformation in the values embraced by the legal regime.

The qualitative study was performed on the cases that the quantitative study identified as containing innovation rhetoric. Yet, while the quantitative study focused on the linguistic shift, the qualitative study was designed to broaden the quantitative study’s inquiry. The study did not focus only on sentences in the opinions that contained the term innovation, but encompassed all references in the relevant opinions to notions of promoting progress, promoting innovation, promoting invention or promoting creativity. Thus, the opinions were read not for specific terminology but for paragraphs broadly discussing these themes. The rationale for this reading was that users of innovation rhetoric appear to use the terms interchangeably, failing to distinguish between the terms.⁴

³ *Dastar Corp. v. Twentieth Century Fox Film Corp.*, 539 U.S. 23, 34 (2003).

⁴ See Gaia Bernstein, *In the Shadow of Innovation* 17-19 (Aug. 15, 2008) (unpublished manuscript, on file with author) (discussing the scope of innovation rhetoric).

B. Coding

The hypothesis guiding the qualitative study was that courts did not merely increase their use of the term innovation, but engaged in more extensive discussions surrounding this theme.

A research assistant initially screened the cases and confirmed the hypothesis that the nature of innovation rhetoric has changed over the years, becoming more expansive from the mid-1980s. The initial screening resulted in a broad set of categories to classify uses of innovation rhetoric. Subsequently, the author read through all the cases, narrowing the number of categories and coding the cases to the different categories.

The coding categories that crystallized after the author's reading of the cases were as follows:

Standard: References to innovation (or interchangeable terminology) as the standard required for receiving intellectual property rights.

Prototypical examples:

- *Graham v. John Deere*: stating that under Art I, §8, cl. 8 of the United States Constitution, the patent monopoly may not be enlarged without regard to innovation: “Innovation advancement and things which add to the sum of useful knowledge are inherent requisites in a patent system ... this is the standard expressed in the constitution.⁵”
- *Carlson & Sullivan v. Bigelow & Dowse Co.*: stating that the purpose of patent law is not to grant a monopoly for every “shadow of a shade of an idea;” it has to “amount to a substantial enough innovation to amount to an invention,⁶”

Reward: References stating that the goal of intellectual property law is to reward the inventor or creator for his innovation (or interchangeable terminology) in order to grant him his just desert.

References that were classified under the Reward Category often appeared in opinions that also contained references that were classified under the Tepid Utilitarian category (see below). Courts tended to tie these two types of innovation rhetoric together in their opinions and accord them equal weight as policy justifications.

Prototypical examples:

- *Chavart v. Commissioner of Patents*: “When an invention has so ‘substantially advanced the art,’ as we believe appellant’s wheel has done, then we must be

⁵ *Graham v. John Deere Co.*, 383 U.S. 1, 5-6 (1965).

⁶ *Carlson & Sullivan, Inc. v. Bigelow & Dowse Co.*, 202 F.2d 654, 657 (1st Cir. 1953).

‘liberal in [our] construction of the patent, to secure the inventor the reward he deserves.’”⁷

- *Stanfield v. Osborne Industries, Inc.*: stating that one of the goals of the patent system is “to foster and reward invention.”⁸

Tepid Utilitarian: References to the relationship between intellectual property and the need to encourage innovation (or interchangeable terminology). References classified under this category contained discussions limited to one to two sentences. Only references that went beyond the citation of the intellectual property constitutional provision (referring to the need to “To promote the Progress of Science and Useful Arts”) were included.⁹

Prototypical examples:

- *Farmland Irrigation Co. v. Dopplmaier*: “The purpose in granting a patent monopoly is to promote progress in science and the useful arts by stimulating invention and encouraging disclosure.”¹⁰
- *Eli Lilly & Co. v. Premo Pharmaceutical Laboratories, Inc.*: “Congress recognized that it is necessary to grant temporary monopolies on inventions in order to induce those skilled in the ‘useful arts’ to expend the time and money necessary to research and develop new products and to induce them ‘to bring forth new knowledge.’”¹¹

Important: Extensive discussions of the relationship between intellectual property rights and the need to encourage innovation (or interchangeable terminology). References included under this category contained discussions that were longer than two sentences. In many cases the opinions included were significantly longer.

Prototypical examples:

- *Lotus Dev., Inc. v. Paperback Software Int’l*: (the following are the main but not complete excerpts of innovation rhetoric included in the opinion):

“... Congress has broad though not unlimited authority to grant copyright monopolies as needed to promote progress. If Congress were to determine ... that copyright protection is unnecessary to “promote the Progress of” computer programming – because ... the financial incentives alone of developing new computer programs (without the added benefit of copyright) are enough to encourage innovation, or because incremental innovation might be stifled by expansive copyright protection -- then Congress could ... provide no copyright protection for computer programs. At the other extreme, were Congress to find

⁷ Charvat v. Commissioner of Patents, 503 F.2d 138, 147 (1974 D.C. Cir.).

⁸ Stanfield v. Osborne Industries, Inc., 643 P.2d 1115, 1122 (Kan. Ct. App. 1982).

⁹ See U.S. CONST. art. I, § 8, cl. 8 (“[Congress shall have the power] [t]o promote the Progress of Science and useful Arts, by securing for limited Times to Authors and Inventors the exclusive right to their respective Writings and Discoveries”).

¹⁰ Farmland Irrigation Co. v. Dopplmaier, 48 Cal. 2d 208, 220 (Cal. 1957).

¹¹ Eli Lilly & Co. v. Premo Pharmaceutical Laboratories Inc. 639 F.2d 120, 137 (3d Cir. 1980).

that strong copyright protection is necessary to promote the progress of computer programming, Congress could provide for expansive copyright protection.”¹²

“Defendants’ general contention – that ‘progress of science and useful arts’ cannot occur unless authors and inventors are privileged to build upon earlier progress and earlier innovation – has long been a virtually unchallenged premise in all branches of the law of intellectual property... [yet the application of this contention to the field of computer programming] was [not] embraced by Congress ... in such a way as to override the public interest in conferring upon an author a right to a limited monopoly in the author’s ‘work.’ The metaphorical “shoulders of giants” on which successors may legally stand are not as broad as defendants contend. The legally relevant shoulders of programming giants are their ideas -- and do not extend to all of their expressions. The encouragement of innovation requires no more. It is sufficient that programmers are privileged to borrow and improve upon previous ideas -- such as the ideas for an electronic spreadsheet and a two-line moving cursor menu. Adequate room for innovation remains even though successors are barred from copying earlier authors’ particular expressions -- such as the particular structure, sequence, and organization of a menu command system. ... Where ... the idea is capable of countless ways of being expressed, only inexpensive cloning, and not innovation, would be advanced by allowing programmers to copy the particular way the ideas have been expressed by others.”¹³

The Court rejected defendant’s standardization argument explaining that: “one object of copyright law is to protect expression in order to encourage innovation. It follows, then, that the more innovative the expression of an idea is, the more important is copyright protection for that expression. By arguing that 1-2-3 was so innovative that it occupied the field and set a de facto industry standard, and that, therefore, defendants were free to copy plaintiff’s expression, defendants have flipped copyright on its head. Copyright protection would be perverse if it only protected mundane increments while leaving unprotected as part of the public domain those advancements that are more strikingly innovative.”¹⁴

- *Hilton Davis Che. Co. v. Warner Jenkinson:*

“Our decision, like every decision of patent principle, affects the national interest in technologic innovation. Technologic innovation has driven the American economy, over the past century, to the exclusion of virtually all other growth factors. Many students of technologic change have explained that innovative activity is fundamental to industrial vigor, developing new markets while enhancing productivity and competitiveness, thereby strengthening and enriching the nation... The technology-user community has always had a practical comprehension of the value of various innovation incentives in particular commercial contexts... However, the patent system is of ever-increasing importance, due to the dependence of industry on technology, the reduced opportunity to rely on trade secrecy because of today’s enlarged analytical capability, the ease and speed of imitation and modification once the innovator

¹² Lotus Dev. Corp. v. Paperback Software Int’l, 740 F. Supp. 37, 46 (D. Mass. 1990).

¹³ *Id.* at 76-7.

¹⁴ *Id.* at 78.

has shown the way, the harshness of modern competition, and the ever-present need for industrial incentives. These factors weigh on the side of the innovator, and thus favor a rule that tempers the rigor of literalness... However, there is also the major consideration of the progress of technology. How does the existence of a "doctrine" that transcends the statutory purpose of legal notice of the patent's scope affect that progress? Does the doctrine of equivalents affect the research, development, investment, and commercialization decisions of today's technologic industry, in a way that concerns the national interest? And if not, what's all the fuss about?... Despite our national dependence on technologic advance, there is a sparseness of practical study of whether and how the doctrine of equivalents affects modern industrial progress and the public welfare... The principle is today of international force, as the United States seeks to enhance its national strength and international trade with the aid of intellectual property. Indeed, recent economic history illustrates the stagnation of the economy coinciding with periods of diminished industrial investment in technologic advance... The analytic complexity with respect to the doctrine of equivalents arises because technologic growth benefits not only from the activities of the originators, but also from those who improve, enlarge, and challenge. The larger public interest requires setting the optimum balance between the purpose of supporting the innovator, in the national interest, and the purpose of supporting improvement and competition, also in the national interest. The question that I have sought to explore is how the policy and law of the doctrine of equivalents affects this balance... The patent law is directed to the public purposes of fostering technological progress, investment in research and development, capital formation, entrepreneurship, innovation, national strength, and international competitiveness. Our review of the doctrine of equivalents takes place in this context, not as an abstraction insulated from commercial reality....¹⁵

While some cases were easily categorized into one of the categories, a few were more ambiguous because they contained references that fit into two categories. In most instances, when an opinion contained references that could be classified into two categories, it was for Tepid Utilitarian and Reward. In these cases the opinion was coded for both categories.

A prototypical example is:

- *Pederson v. Stewart-Warner Corp.*: stating that the country “has chosen to allow such monopolies only as a reward and inducement for ‘innovation,’ advancement, or social benefits.”¹⁶

C. Calculation of Qualitative Study Results

Since some opinions contained references to innovation that fit into two categories, the results of the qualitative study are based on types of references to innovation and not on opinions.

For example, if a decade contained six opinions, which included innovation rhetoric. Four opinions contained references that were coded as Tepid Utilitarian, one contained

¹⁵ *Hilton Davis Che. Co. v. Warner Jenkinson*, 62 F.3d 1529, 1529–32, 1558 (Fed. Cir. 1995).

¹⁶ *Pederson v. Stewart-Warner Corp.*, 400 F. Supp. 1262, 1269 (N.D. Ill. 1975).

references that were coded as Standard, and one contained references that were coded as both Trepid Utilitarian and Reward. The last opinion was counted as two innovation references. Thus, to calculate percentages there were seven innovation references in the denominator, while in the numerator there were five innovation references to tepid, one to standard, and one to reward.