

COMMENTS

Bilski: A “Flipped” Vote and then a Damp Squib

Richard H. Stern

PLLC, Professorial Lecturer in Law, George Washington University Law School, Washington, D.C., Of Counsel, Kellögg, Huber, Hansen, Todd, Evans & Figel, Washington DC

☞ Business method; Patentability; Software; US

The Supreme Court’s long awaited Bilski decision on patent eligibility is much less informative than had been anticipated. The court divided closely (5-4) over whether business method patents were categorically proscribed. The court was unanimous that claims pre-empting abstract ideas were patent-ineligible, that it was insufficient that a claimed invention merely be “useful, concrete, and tangible” and that it was not an absolute requirement that claims be limited to physical transformations of substances or to being carried out with a particular apparatus (the so-called machine-or-transformation test)—the court deeming that test helpful, however, in an unspecified way. But how to

determine patent-eligibility for claimed inventions when they did not meet that test was unmentioned, much less explained.

The Supreme Court’s long-awaited *Bilski* opinion¹ has been a disappointment to most observers.² The first pronouncement of the court in three decades about what kinds of things can be patented, it tells us even less than its three predecessors did 30 to 40 years ago.³

Background

The principal issue for review before the court was whether the Federal Circuit, to which all appeals in patent cases go, had rightly decided the petitioner’s appeal from a patent office rejection of a patent application on a method of hedging commodity prices. The petitioner had claimed the method in terms of an algorithm for carrying out the hedging procedure in a programmed general purpose digital computer.⁴ The patent office had held that the application claimed patent-ineligible subject-matter, because the claim failed the machine-or-transformation test: that is, its scope was not limited by incorporation of a limitation to the method as practised with a particular machine nor did it claim a method in which one product was transformed into a different product.⁵

There are two fundamentally different ways to decide a case like *Bilski*’s against the applicant, not because of the prior art but because of the nature of what the applicant has claimed. One way is to conclude that the claimed process is categorically outside the scope of the patent system because the constitutional clause authorising Congress to enact patent laws, art.I s.8 cl.8, does not give Congress the power to protect such things (or that the statutory language must be interpreted in the light of that limitation, so that Congress could not have intended to exceed its power).⁶ The second way is to conclude that the applicant’s claim is patent-ineligible because it covers or pre-empts an abstract idea, principle of nature, or the like—a “principle” in short—or to an implementation of the principle that is so trivial a variation on it as to be indistinguishable from the principle itself.⁷ But when this approach is used there is likely to be a problem determining when the claimed process is too close to being a claim pre-emptively covering the

¹ *Bilski v Kappos*, 561 U.S. —, 130 S. Ct. 3218 (2010).

² Professor Chisum, for example, commented: “*Bilski* is a remarkably inconclusive contribution to the law on patent eligible subject matter.” Chisum Patent Law Reference Guide, available at <http://www.chisum.com/current-developments/bilski-watch/notes-on-bilski#more-298> [Accessed November 30, 2010].

³ The US Supreme Court had decided only three cases before *Bilski* involving whether claimed inventions directed to or involving computer algorithms or software were properly the subject of patents. In two, *Gottschalk v Benson* 409 U.S. 63 (1972), and *Parker v Flook* 437 U.S. 584 (1978), the court held the patent applications at issue to be patent-ineligible. In *Diamond v Diehr* 450 U.S. 175 (1981), the court held the patent application (on a computer-using machine process for curing rubber in accordance with an algorithm) patent-eligible. In a recent case involving a diagnostic method, the court dismissed certiorari as improvidently granted: *Laboratory Corp v Metabolite Labs Inc* 548 U.S. 124 (2006). In addition, *Dann v Johnstone* 425 U.S. 219 (1976) involved the patent-eligibility of a business method but the court decided the case on the alternative ground that the claimed subject matter was obvious and avoided deciding the patent-eligibility issue.

⁴ In claim 1, the only claim on appeal to the Federal Circuit, *Bilski* claimed a method for hedging commodity inputs for a firm, essentially comprising determining what dollar value (at current price levels) of the commodity would be needed during the period to be hedged, and then purchasing an equal dollar amount of futures contracts for the same period.

⁵ The name “machine-or-transformation test” is an oversimplification. The limitation preventing pre-emption of the underlying idea or principle need not be a machine; it can also be another product, such as an article of manufacture. cf. *Funk Bros Seed Co v Kalo Inoculant Co* 333 U.S. 127 (1948) (involving a product claim for a packaged composition embodying the idea); *Armour Pharmaceutical Co v Richardson Merrell Inc* 396 F. 2d 70 (3d Cir., 1968) (acid-resistant coating material for pill).

⁶ See Richard H. Stern, “Being Within the Useful Arts as a Further Constitutional Requirement for US Patent Eligibility” [2009] E.I.P.R. 6, 12. This concept has been applied to interpreting the meaning of “obvious” in s.103 of the Patent Code in *Graham v John Deere Co* 383 U.S. 1, 6 (1966); accord. *Bonito Boats Inc v Thunder Craft Boats Inc* 489 U.S. 141 (1989). For an application of this principle outside the patent field, see *Railway Labor Executives’ Ass’n v Gibbons* 455 U.S. 457 (1982) (invalidating bankruptcy law).

⁷ An example of this is *Funk Bros Seed Co v Kalo Inoculant Co* 333 U.S. 127 (1948).

principle. One test that can be extracted by analysing the Supreme Court case law is the so-called machine-or-transformation test—whether the claim is made non-preemptive by its containing a limitation to the use of the process (or idea) only with specific apparatus, or when it transforms one physical substance into another one.

In its opinion⁸ the Federal Circuit took that route,⁹ applied the machine-or-transformation test and stated that it was the exclusive legal test, at least at this time, for patent-eligibility of processes or methods,¹⁰ something from which the Supreme Court had earlier refrained from doing although strongly urged to do so.¹¹ This paved the way for the Supreme Court to hold that the Federal Circuit had gone too far, although it unanimously agreed that the patent should be denied.

The opinions

In essence, the Supreme Court's lead opinion, written by Justice Kennedy (in which three other justices joined entirely¹² and one partially¹³), tells the Federal Circuit, from which the appeal was taken, that it reached the right judgment for the wrong reasons; affirms the judgment on other, more general grounds (i.e. that the claim is directed to an abstract idea); but fails to provide any significant guidance on how to determine when a claim is too abstract or how to develop a legal methodology for determining that. It does hold, however, that business methods are *not* categorically excluded from the patent system.

The rationale of the Kennedy opinion was that *Bilski's* claim was directed to an idea in the abstract, such as the concept of hedging, rather than to a concrete implementation of the idea. But he studiously avoided explaining how one was to tell the difference between an abstract idea and a concrete implementation of the idea, or how to determine when a claim was too abstract. The Kennedy opinion agreed that the abstract idea exclusion was basic to patent law, and agreed that the machine-or-transformation test had utility in determining patent-eligibility, although not properly to be regarded as the exclusive test. But the Kennedy opinion completely omitted any discussion of how those two related to one another, or if they did. To the extent that any guidance can be gleaned from this opinion, it is by inference and also perhaps by analogical reasoning.

Another opinion written by Justice Stevens (in which three other justices joined¹⁴) concurred in the judgment of patent-ineligibility but on the ground that all business methods are excluded from patent-eligibility, because they are not the kinds of things for which the patent system was established. Accordingly, he argued that the court should “restore patent law to its historical and constitutional moorings” by declaring that “methods of doing business are not, in themselves, covered by the statute.”¹⁵ At the end of this opinion, Justice Stevens stated: “Accordingly, while I concur in the judgment [of patent-ineligibility], I strongly disagree with the Court's disposition of this case.”¹⁶

In a concurring third opinion, Justice Breyer in his Part I concurred entirely in the opinion of Justice Stevens (including the patent-ineligibility of business methods) and also, in his Part II (in which Justice Scalia joined), attempted to sum up what is common to both main opinions and what the court therefore decided. According to Justice Breyer, the common ground for determining when a claimed invention is patent-eligible, on which the court is unanimous is as follows:

- First, s.101 of the statute, which lists the categories of subject-matter that may be patented if novel, useful, and otherwise satisfying the formal requirements of the Patent Code, is “broad” but “not without limit.” Recognised exclusions from patent-eligibility are laws or phenomena of nature (even though newly discovered), mental processes and abstract intellectual ideas and principles—i.e. fundamental principles. Allowing patents on fundamental principles would “wholly pre-empt” what should be regarded as “part of the storehouse of knowledge of all men ... free to all men and reserved exclusively to none”¹⁷ as well as pre-empting the public's access to the “basic tools of scientific and technological work”.¹⁸ Thus there are limits and the statute does not cover “anything under the sun”.

⁸ *Bilski, Re 545 F. 3d 943* (Fed. Cir., 2008) (en banc). The Federal Circuit opinion is commented on in Richard A. Stern, “US Court of Appeals for Federal Circuit Clarifies Patent-Eligibility Guidelines: In re *Bilski*” [2009] E.I.P.R. 212.

⁹ Three Federal Circuit judges thought that the first route was preferable. One therefore dissented and the other two concurred in the judgment. The different Federal Circuit opinions are analysed in Stern, “US Court of Appeals for Federal Circuit Clarifies Patent-Eligibility Guidelines” [2009] E.I.P.R. 212, and the background is summarised in greater detail than here.

¹⁰ The terms “process” and “method” are synonymous in patent law. According to 35 USC §100(b), “[t]he term ‘process’ means process, art, or method ...”. See also, *Perricone v Medicis Pharmaceutical Corp* 432 F. 3d 1368, 1384 (Fed. Cir., 2005) (Bryson J. concurring), in which a Supreme Court decision is described as one in which the “Court held that the new *method* ‘was simply the application by the patentee of an old *process* to a new subject’” (emphasis added).

¹¹ *Gottschalk v Benson* 409 U.S. 63, 71 (1972).

¹² Chief Justice Roberts and Justices Thomas and Alito.

¹³ Justice Scalia, whose position is discussed below.

¹⁴ Justices Breyer, Ginsburg and Sotomayor.

¹⁵ *Bilski* 130 S. Ct. 3218, 3232 (2010).

¹⁶ *Bilski* 130 S. Ct. 3218, 3257 (2010).

¹⁷ This language, used in the Kennedy opinion, *Bilski* 130 S. Ct. 3218, 3225 (2010), is quoted from *Funk Bros Seed Co v Kalo Inoculant Co* 333 U.S. 127, 130 (1948).

¹⁸ This language first appeared in *Gottschalk v Benson*, 409 U.S. 63, 67 (1972). The Government's reply brief in that case had submitted that the prior cases could not be rationalised any other way. See text accompanying below fn.25, p.118.

- Secondly, the machine-or-transformation test has repeatedly helped the court, for well over a century, to determine what is “a patentable process”. It is an important clue to patent-eligibility.
- Thirdly, although always useful, the machine-or-transformation test has never been the “sole test” for determining patent-eligibility. The court has refused so to hold. “The machine-or-transformation test is thus an *important example* of how a court can determine patentability under s.101, but the Federal Circuit erred in this case by treating it as the *exclusive test*.”¹⁹
- Fourthly, the Federal Circuit was right to reject its former test, set forth in the *State Street Bank* case, that “anything which produces a ‘useful, concrete, and tangible result’ may be patented”,²⁰ and the court’s decision in the *Bilski* case should not be taken as disapproving the Federal Circuit’s rejection of that test. The *State Street Bank* case led to the granting of patents that “ranged from the somewhat ridiculous to the truly absurd”, and therefore was properly discarded.

Justice Scalia, the ninth justice, wrote no opinion and gave no explanation of why he held his position. He joined in Justice Breyer’s four-item summary of the common ground. No one on the court questioned the correctness of the Breyer summary’s claim to describe the common ground. Part II of the Breyer opinion therefore states the views, not just of a majority of five of the justices, but that of all nine justices. Justice Scalia declined, however, to join in Justice Breyer’s Part I endorsing Justice Stevens’s complete rejection of all business-method claims. Justice Scalia also joined in parts of Justice Kennedy’s opinion. He expressly declined however, to join Parts II-B-2 and II-C-2, without explaining his reservations.

In his Part II-B-2, Justice Kennedy opined that the machine-or-transformation test might undesirably make software patent-ineligible, or exclude new technologies from the patent system. In Part II-C-2, Justice Kennedy opined that it is possible that “at least some processes that can be fairly described as business methods ... are within patentable subject matter under s.101”. It therefore seems that, while Justice Scalia objected to stating that all business methods are patent-ineligible, he also objected to stating in obiter dicta that some business methods were

patent-eligible, and favoured only saying that *Bilski*’s claim was directed to an abstract idea. Similarly, he may have objected to unnecessarily opining in still more obiter dicta on whether it was desirable to issue patents on software or unspecified (and as yet unknown) new technologies. Further, it would be consistent with Justice Scalia’s published views that he objected to the Kennedy opinion’s expansive interpretation of “process”, which Kennedy equates with “useful Art” as used in the Constitution, to accept changing circumstances that may be thought to justify a widened concept of “useful Art” relative to that prevailing in the eighteenth century.²¹

The respective internal structures of the two principal opinions strongly indicate the decisional process that occurred during the many months that the case remained pending after oral argument. The lead opinion of Justice Kennedy is rather cursory and looks hastily put together. The dissenting opinion of Justice Stevens, in contrast, has the earmarks of a majority opinion—for example, it contains a much more detailed statement of the facts and background of the case. The conclusion that those familiar with the inside workings of the court would probably draw is that Justice Stevens wrote a 5-4 majority opinion, but then lost one of his votes because one of his four other justices “flipped” his position, which made the Stevens opinion one for only four justices. It is likely that Justice Kennedy, who tends to stand on the fence or waffle on many issues,²² had originally been part of the Stevens majority, but was in some way persuaded at one point that the sky would fall if business methods were categorically excluded from the patent system, and therefore he flipped—he switched his vote, and at the same time got the nod from the Chief Justice (by court practice entitled to assign the opinion for the group in which he has joined) to write an opinion taking the thence prevailing view (i.e. that business methods are not categorically excluded and indeed can in principle be patented).²³ The other possibility is that Justice Scalia, the author of no opinion, but who joined different parts of the other opinions, switched his vote. But this is less likely. Scalia is no vacillator.

The issue left dangling

The Kennedy opinion, which mostly (except for Parts II-B-2 and II-C-2) represents the precedent, such as it is, that *Bilski* sets, does not remotely guide the Federal Circuit and other lower courts on how to determine whether the subject-matter of a claim is too abstract. In large part, this occurred because the opinion does not seem to have a clue about what is the relationship, if any,

¹⁹ *Bilski* 130 S. Ct. 3259 (2010).

²⁰ *State Street Bank & Trust Co v Signature Fin. Group Inc* 149 F. 3d 1368 (Fed. Cir., 1998).

²¹ See, e.g. A. Scalia, “The Methodology of Originalism”, Address before Harvard Law School (October 2, 2008), summarised at <http://www.law.harvard.edu/news/spotlight/constitutional-law/scalia-vaughan-lecture.html> [Accessed November 30, 2010]; Address before University of Virginia Law School (April 16, 2010), summarised at <http://www.cavalierdaily.com/2010/04/19/supreme-court-justice-scalia-visits-law-school/> [Accessed November 30, 2010] (“That is to say, the Constitution has a static meaning that does not change from generation to generation.”).

²² For example, in his concurring opinion in *eBay Inc v MercExchange LLC* 547 U.S. 388 (2006), Justice Kennedy spoke (at odds with his opinion in *Bilski*) of the “potential vagueness and suspect validity of some of” the “burgeoning number of patents over business methods”: *eBay* 547 U.S. 388, 397 (2006). Justice Kennedy has long enjoyed the status of “swing vote” between the “right” and “left” wings of the court and is an unpredictable voter.

²³ Assignment of the opinion to Justice Kennedy assured his remaining in the same camp with the Chief Justice and Justices Thomas and Alito (with whom Justice Scalia in large part joined)

between the abstract-ideas-are-not-patentable rule and the machine-or-transformation test. To be sure, the opinion expresses a concern over “preemption” of fundamental principles (for example, hedging in general), but it does not consider, much less describe, any methodology for determining when a claim is too pre-emptive to be allowed.

This question first became a major issue at the time of the first computer software case that the Supreme Court entertained—*Gottschalk v Benson*.²⁴ That case involved an algorithm for converting binary-coded-decimal (BCD) numbers to pure binary numbers, in particular for telephone systems, in which users dial or otherwise input a series of decimal numbers. The telephone instrument (using essentially a set of on-off or 0-1 switches) receives these inputs as signals for BCD numbers, a set of four 0s or 1s for each digit of the telephone number dialled. The telephone system needs to convert the BCD inputs to signals representative of pure binary numbers, however, in order to process them by computer means. The claims, however, contained no limitation to telephone systems or any other special apparatus.

In the *Benson* case, the Patent Office rejected the claim as directed to an abstract idea—the algorithm substantially undiluted. That meant that the claim pre-empted the idea and thus prevented others from using it to create other new inventions. It would lock up the basic tools of scientific and technological progress. But then the question arose—what makes the claim too abstract? How do you tell a claim that is not too abstract from one that is? The answer that the Government proffered at the time to the Supreme Court was based on a comprehensive precis and review of all of the prior Supreme Court decisions on when a claim was a mere idea and when it was a concrete, patent-eligible implementation of an idea. The Government said, and this appears to be the first explicit articulation of the machine-or-transformation test in its present form:

“Though the *Morse* case and *The Telephone Cases* do not state the rule, in so many words, that patents on processes which do not involve the manipulation and transformation of physical materials from one physical or chemical state into another must contain limitations confining the monopoly grant to the

practice of the method by means of particular types of apparatus, we submit that the cases follow such a rule—implicitly or explicitly—and that they cannot be rationalized otherwise.”²⁵

The *Benson* court found the claim too abstract, and upheld the Patent Office’s claim rejection, but did not accept the Government’s proposed rule. It accepted the quoted statement as an accurate *précis* of the prior cases, and said that the machine-or-transformation test was the “clue” to patent-eligibility, yet next said: “We do not hold that no process patent could ever qualify if it did not meet the requirements of our prior precedents.”²⁶ However, *Benson*’s claim did not satisfy the test and apparently that was why the court held it patent-ineligible. The Federal Circuit took the next step in its *Bilski* opinion, however, and held the machine-or-transformation test the sole test for patent-eligibility.

In *Bilski*, neither the Federal Circuit nor the Supreme Court considered why the machine-or-transformation test was relevant to the more general rule that abstract ideas and principles are patent-ineligible. That abstract ideas and general principles must be patent-ineligible was long recognised, because patenting them would prevent the technological progress that would occur when others sought to apply those ideas and principles to the creation of further technology.²⁷ The reason why the machine-or-transformation test is relevant, as the Government said in its brief urging adoption of the rule, nearly 40 years ago, is that the presence of an apparatus limitation—that is, the claim covers the process/idea only when practiced with the particular apparatus set out in the claim, and does not extend to use of the process/idea when practised with other apparatus—prevents the claim from being so broad that it preempts all use of the idea.²⁸

The concept that a patent should not cover (“preempt”) all applications of the underlying idea that it implemented was based largely on the Supreme Court’s 1853 decision in *O’Reilly v Morse*,²⁹ which in turn drew from the 1841 decision of the Exchequer of Pleas, in *Neilson v Harford*.³⁰ These cases held that the insertion of a claim limitation to a particular apparatus prevented the claim from pre-empting the use of the underlying idea.³¹ In the *Morse* case, the limitation on the scope of the claimed communication process was to use with Morse’s so-called

²⁴ *Gottschalk v Benson* 409 U.S. 63 (1972).

²⁵ Petitioner’s Reply Br. 9, *Gottschalk v Benson* 409 U.S. 63 (1972). The cited cases are *O’Reilly v Morse* 56 U.S. (15 How.) 62 (1853), and *The Telephone Cases*, 126 U.S. 1 (1888).

²⁶ *Benson* 409 U.S. 63, 71 (1972). In *Flook*, the court said that an argument could be made for the proposition that the court had recognised processes as patent-eligible only when they satisfied the machine-or-transformation test, but “we assume that a valid process patent may issue even if it does not meet one of these qualifications of our earlier precedents”. *Flook* 437 U.S. 584, 588 n.9 (1978). In *Diehr*, the court quoted the “clue” passage from *Benson* but did not say whether it was the only legitimate test: 450 U.S. 175, 184 (1981). It did note, however, that “[a]nalysis of the eligibility of a claim of patent protection for a ‘process’ did not change with the addition of that term to s. 101”. *Diehr* 450 U.S. 175, 182 (1981). See also 450 U.S. 175, 182 (1981) (“As the Supreme Court has recognized, a process ‘was considered a form of ‘art’ as that term was used in the 1793 Act” (citing *Corning v Burden*, 56 U.S. (15 How.) 252, 267–268 (1852)). These statements about “process” make insupportable the Kennedy opinion’s attempt (see *Bilski* 130 S. Ct. 3218, 3228 (2010), to justify its conclusions on patent-eligibility on the basis of the 1952 addition of the word “process” to ss.100–101 (in place of the eighteenth-century term “art” used in the Constitution and in all pre-1951 patent laws) and its contemporaneous usage as shown in a 1950s dictionary.

²⁷ *O’Reilly v Morse* 56 U.S. (15 How.) 62 (1853); *Le Roy v Tatham* 55 U.S. (14 How.) 156 (1852) (“A principle, in the abstract, is a fundamental truth; an original cause; a motive; these cannot be patented, as no one can claim in either of them an exclusive right ... [Such a patent], by creating monopolies, would discourage arts and manufactures, against the avowed policy of the patent laws.”).

²⁸ Whether that is the only way to do so is now denied. But satisfactory alternative tests have not been proposed.

²⁹ *Morse* 56 U.S. (15 How.) 62 (1853). Similarly, in *The Telephone Cases*, 126 U.S. 1 (1888), the broad process claim was saved by its limitation to use of the process with Bell’s variable resistance and electromagnetic circuits.

³⁰ *Neilson v Harford* 151 E.R. 1266; (1841) 8 M. & W. 806; Web. Pat. Cases 295 (1841).

³¹ See generally, Joshua D. Sarnoff, “Shaking the Foundations of Patentable Subject Matter” (draft April 2, 2008), pp.22–28, 80–84, 90–93, available at <http://www.wcl.american.edu/pjip/go/research-and-advocacy/ip-policy-and-law-reform> [Accessed November 30, 2010].

“repeater” circuits. In *Neilson*, perhaps the trail blazer, the court found that “[i]t is very difficult to distinguish it [the nature of the invention] from the specification of a patent for a principle”, but after “much difficulty” the court concluded that, putting the underlying natural principle aside as if it were already well known, Neilson’s invention was the use of a *receptacle* for heating the forced air before it passed into the blast furnace.³²

Thus the machine-or-transformation test is just a way to distinguish an impermissible patent claim covering a principle, on the one hand, from a permissible patent claim covering a physical device that implements a principle, on the other hand. There *may* be other tests that accomplish the same task, although none has yet been put forward. Moreover, no opinion addresses how to determine the patent-eligibility of an invention that is not an implementation of an underlying general principle, which can occur if the state of technology is such that the inventor does not know what the principle is that underlies the invention.³³ (The author does not suggest that he has any idea how to answer that question.³⁴)

None of the opinions in *Bilski* recognises this relationship between the machine-or-transformation test and the rule against patenting principles and ideas, and therefore they talk past one another. The Stevens opinion does not address the issue because it concludes that *Bilski*’s process is patent-ineligible since it belongs to the business-method category. The Kennedy opinion talks all around the subject, offers no guidance, but invites the Federal Circuit to try nonetheless to devise other tests besides the no longer exclusive machine-or-transformation test for weeding out patent-ineligible claims—in a process

of playing blind man’s buff: “[W]e by no means foreclose the Federal Circuit’s development of other limiting criteria that further the purposes of the Patent Act and are not inconsistent with its text.”³⁵ Professor Chisum called all of this “palpably unsatisfying”.³⁶ But, as yet, he too proposes nothing to fill the doctrinal vacuum.

The Breyer opinion also does not make any effort to resolve this problem. He saw his task only as setting forth and clarifying the common ground. This led Professor Ghosh to observe: “Justice Breyer’s [four] principles imply that there are limitations on ‘dubious’ patents, such as those for ‘exercising a cat with a laser pointer’³⁷ that have nothing to do with machine or transformation. The problem is we have no sense of what those additional limitations are.”³⁸ But the limitation is in Part I of the Breyer concurrence and throughout the Stevens opinion: exercising a cat with a laser pointer is not the kind of thing for which the patent system was established. But the Stevens opinion does not make a highly persuasive legal doctrine case on what it is that makes exercising cats or *Bilski*’s hedging method not the kind of thing for which the patent system was established. He points out the errors and fallacies in the Kennedy opinion’s reasoning, including its thoroughly botched interpretation of the statutory word “process”. He appeals to history, but largely English post-eighteenth-century history, rather than American eighteenth-century history or English pre-1776 history. He appeals strongly to policy and even common sense. But he cannot rely on specific case law precedents, for there are few or none on why business methods are not the kind of thing for which the patent system was established.³⁹

³² The heated receptacle implements the “natural principle” that hot air more efficaciously oxidises the carbon present in molten iron (so that it escapes as carbon dioxide gas) than cold air does. This in turn is an application of the Arrhenius equation principle that the rate of reaction increases as temperature increases. Arrhenius published in 1889, many years after *Neilson* and *Morse*.

It has been suggested that the same concern over pre-emption reflected in *Neilson* and *Morse* caused the initial opposition to allowing any process claims at all. Sarnoff, “Shaking the Foundations of Patentable Subject Matter”, 2008, at <http://www.wcl.american.edu/pijip/go/research-and-advocacy/ip-policy-and-law-reform> [Accessed November 30, 2010].

³³ That such inventions exist can be shown by thought experiments in which one imagines that one is sufficiently far backward in time that no one (or at least the inventor does not) know why a then-new invention works. Consider these examples: (1) A method for mining coal safely in a mine located in a region where noxious gases may exist, said method comprising bringing a canary into the mine, observing the canary frequently, and running away fast if the canary falls over dead. (See “1986: Coal mine canaries made redundant”, BBC News, December 30, 1986, available at http://news.bbc.co.uk/onthisday/hi/dates/stories/december/30/newsid_2547000/2547587.stm [Accessed November 30, 2010]). (2) A method of removing dirt from a soiled garment, comprising submerging the soiled garment in water, and either beating the garment for at least five minutes with a stick or shaking the garment vigorously for at least 10 minutes. (3) A (Neolithic times) method of decreasing loss of stored grain due to ravages by mice, comprising obtaining a tamed cat (this assumes that cats are then first being domesticated), and keeping the cat near the place where the grain is stored. Patent law does not require an inventor to understand and disclose why his invention works. *Diamond Rubber Co v Consolidated Rubber Tire Co* 220 U.S. 428, 435–436 (1911) (“A patentee may be baldly empirical, seeing nothing beyond his experiments and the result; yet if he has added a new and valuable article to the world’s utilities, he is entitled to the rank and protection of an inventor . . . It is certainly not necessary that he understand or be able to state the scientific principles underlying his invention”); accord *In re Cortright* 165 F. 3d 1353, 1359 (Fed. Cir., 1999) (PTO “erred in suggesting that [the inventor of a baldness cure] was required to prove the cause of the resultant hair growth”). *Neilson v Harford* 151 E.R. 1266, (1841) 8 M. & W. 806, (1841) Web. Pat. Cases 295, also seems to be such a case because the court does not indicate that it understands the underlying principle or why the invention works (which of course was not the point of the case—i.e. that the apparatus limitation limited the scope of the claimed invention sufficiently that it was not a claim to a principle, whatever principle it was). The US Supreme Court, discussing the case in *O’Reilly v Morse* 56 U.S. (15 How.) 62, 116 (1853), also indicates no understanding of what makes the invention work; it speaks of the invention as implementing “the discovery that hot air would promote the ignition of fuel better than cold”, which is *not* the invention. See above, fn.32.

³⁴ The problem may not be very serious. Where the principle is as yet unknown, the problem is that a claim might be so broad that it pre-empts the yet-to-be-discovered principle. Thus *Morse*’s claim to all methods of transmitting intelligible characters to a distant point by use of the electromagnetic force; *Morse* 56 U.S. (15 How.) 62 (1853) was considered unduly pre-emptive because it was so abstract and sweeping that it pre-empted future use of the *abstract idea* of transmitting intelligible characters to a distant point by use of the electromagnetic force. But it was also condemned for lack of *enablement* of the as yet unknown inventions it pre-emptively claimed, cf. 35 USC s.112 (requiring enablement), such as the facsimile machine, TV, the internet and the like. Thus a claim to any method of curing baldness, any method of detecting noxious gases in a coal mine, or any method of keeping mice from devouring grain would fall foul of the enablement requirement (prohibition of “overbreadth”, as it was called in the *Morse* case). Therefore the claim would be limited to the specific technique discovered since no other was enabled. It is thus seen that a satisfactory limiting principle already exists for such inventions—the requirement of enablement.

³⁵ *Bilski* 130 S. Ct. 3218, 3231 (2010).

³⁶ See Chisum Patent Law Reference Guide, available at <http://www.chisum.com/current-developments/bilski-watch/notes-on-bilski#more-298> [Accessed November 30, 2010].

³⁷ The cat exercise patent is illustrated in Stern, “Being Within the Useful Arts as a Further Constitutional Requirement for US Patent Eligibility” [2009] E.I.P.R. 6, 12.

³⁸ Shuba Ghosh, “Throwing Back the Gauntlet” (June 29, 2010), which is available at <http://www.patentlyo.com/patent/2010/06/guest-post-on-bilski-throwing-back-the-gauntlet.html> [Accessed November 30, 2010].

³⁹ A rare or unique possible exception, uncited in any of the *Bilski* opinions, is *Joseph E. Seagram & Sons v Marzall* 180 F. 2d 26 (D.C. Cir., 1950). In that case the court judicially reviewed and affirmed a Patent Office denial of a patent to a beverage manufacturer on a system of determining consumer beverage preferences by “blind testing” a user panel (focus group) to see which blends of whiskey the panellists liked best. The court thought that such a patent would be “a serious restraint upon the advance of

Why didn't Stevens J. engage in textual exegesis?

Worst of all, at least in the author's opinion, the Stevens opinion does not try to rest its conclusions on an authoritative legal interpretation of the statutory language or patent clause of the Constitution. Justice Stevens could have accomplished this by a textual analysis of the term "useful Arts" in art.I s.8 cl.8,⁴⁰ which is a limitation on the power of Congress to enact patent laws.⁴¹ Nor does it take issue with the implicit rejection in the Kennedy opinion of any constitutional limitation on what may be patented.⁴²

The term "useful Arts" is not self-explanatory, nor can it be understood, as the Kennedy opinion appears to assume, by looking up in a present-day dictionary the words "useful" and "process",⁴³ and then adding together the results.⁴⁴ The expression is a term of art and can be understood only by studying its use in context in eighteenth-century documents, such as books, letters, Dr Johnson's *Dictionary* and the like.

A strong argument can be made that the term "useful Arts" as used at the time of adoption of the Constitution included manufacturing and artisanal arts, but not fine arts or carrying on trade. Indeed, grants of the monopoly of engaging in certain businesses led to passage of the Statute of Monopolies, not to mention the Playing Card Monopoly case—*Darcy v Allen*.⁴⁵ The Supreme Court had held, prior to *Bilski*, that the grant to the East India Company of a monopoly of trade with the North American colonies was a substantial factor leading to the American Revolution, and thus part of the background of the adoption of art.I s.8 cl.8.⁴⁶ This kind of textual analysis would have provided a reasoned, legal doctrine basis for the conclusions Justice Stevens reached in his opinion—that business methods are not patent-eligible.

Such an analysis might well have garnered Justice Scalia's support, for he has recognised that one cannot split up the components of a phrase and add up their separate meanings. In 1988, he said:

"The statute excludes only merchandise 'of foreign manufacture', which the majority says might mean 'manufactured by a foreigner' rather than 'manufactured in a foreign country'. I think not. Words ... acquire meaning not in isolation but within their context. While looking up the separate word 'foreign' in a dictionary might produce the reading the majority suggests, that approach would also interpret the phrase 'I have a foreign object in my eye' as referring, perhaps, to something from Italy. The phrase 'of foreign manufacture' is a common usage, well understood to mean manufactured abroad."⁴⁷

Moreover, Justice Scalia's core judicial philosophy is "Originalism"—opposition to construing constitutional language on the basis of present-day usage rather than eighteenth-century usage.⁴⁸ Justice Stevens, unlike Justice Kennedy (at least implicitly), avoided any expansive interpretation of the relevant language.

But Justice Stevens chose not to proffer any such historical-linguistic analysis. It could not have been that he was unaware of textual analysis. In my opinion he chose not to make a textual exegesis of "useful Arts" because he disapproved of the technique. Textual analysis is associated at times with a rigid refusal to expand the interpretation of governmental power to deal with emerging public problems or expansion of constitutional protection of personal rights in accordance with changing social and economic conditions. Thus Justice Jackson wrote in 1952 that he preferred to "give to the enumerated [constitutional] powers the scope and elasticity afforded by what seem to be reasonable, practical implications, instead of *the rigidity dictated by a doctrinaire textualism*".⁴⁹ On the other hand, Justice Scalia has been reluctant to go beyond the words of a statutory or constitutional text (as understood contemporaneously with enactment), and this has frequently put him at odds with Justice Stevens.⁵⁰ Justice Scalia is the justice on the present court most widely recognised as a proponent of this type of verbal analysis, often in order to deny a claimed personal liberty right. It may well be that Justice

science and industry", which is an argument that the Stevens opinion makes. Although the *Seagram* opinion's language evokes the constitutional limitation that Congress is authorised to establish a patent system only to advance science and industry, US Const. art.I s.8 cl.8 ("promote the Progress of Science and useful Arts"), the opinion fails to provide any detailed legal analysis of how to reach and support its judgment. Compare *Graham v John Deere Co*, 383 U.S. 1, 6 (1966), for an effort to make an analysis of how the language of the Constitution and history affect patent law and the interpretation of the patent statute.

⁴⁰ This was done in an amicus curiae brief in *Bilski* to which Professor Ghosh was a signatory. Amicus Curiae Brief of Center for Advanced Study and Research in Intellectual Property (CASRIP) of the University of Washington School of Law, and of CASRIP Research Affiliate Scholars, in Support of Affirmance of the Judgment in Favor of Respondent, pp.9–20. See also Stern, "Being Within the Useful Arts as a Further Constitutional Requirement for US Patent Eligibility [2009] E.I.P.R. 6, 12.

⁴¹ *Bonito Boats Inc v Thunder Craft Boats Inc* 489 U.S. 141 (1989); *Graham v John Deere Co* 383 U.S. 1 (1966); see also, Stern, "Being Within the Useful Arts as a Further Constitutional Requirement for US Patent Eligibility [2009] E.I.P.R. 6, 6–8.

⁴² This is implicit in the Kennedy opinion because it insists that some business methods are patent-eligible, if they are not pre-emptive of abstract ideas. At the same time, its statutory construction does not refer to the Constitution at all as limiting the possible scope of "process".

⁴³ "Process" is the word that Congress in 1952 substituted for the previously and originally used word "art". As the Court had once observed, the legislative history shows no indication that any congressional intention existed to make a substantive change. *Diehr* 450 U.S. 175 (1981). Nonetheless, the Kennedy opinion rests in large part on a misguided exercise in statutory construction based on the assumption that in 1952 Congress intended to broaden the scope of "process" relative to "art".

⁴⁴ The term "useful Arts" is a lexical atom. A lexical atom is a multiple-word phrase that has a non-compositional meaning, that is, the meaning of the phrase is not a direct composition of the literal meaning of the individual words that comprise the phrase. Examples are: "hot dog", "drug czar", "square root", "blue chip", "put out", "put up", "TV dinner" and "part of speech". See, e.g. Chengxiang Zhai, "Exploiting Context to Identify Lexical Atoms — A Statistical View of Linguistic Context", *passim*, available at <http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.9.5007&rep=rep1&type=ps>.

⁴⁵ *Darcy v Allen* (1603) 11 Co. Rep. 84b; 77 E.R. 1260 K.B.

⁴⁶ *Graham v John Deere Co* 383 U.S. 1, 4–6 (1966).

⁴⁷ *K-Mart v Cartier* 486 U.S. 281, 319 (1988) (Scalia J. concurring in part and dissenting in part).

⁴⁸ See above fn.21.

⁴⁹ *Youngstown Sheet & Tube Co v Sawyer* 343 U.S. 579, 640 (1952) (Jackson J. concurring) (emphasis added).

⁵⁰ See, e.g. *McDonald v City of Chicago* 130 S. Ct. 3020 (2010); *Baze v Reese* 553 U.S. 35 (2008).

Stevens preferred to forgo Justice Scalia's support rather than use Scalia's type of statutory and constitutional analysis.

The aftermath

In the wake of *Bilski* the Federal Circuit, the district courts, the patent office, the patent bar and the bar's business advisees are left in confusion and doubt over the patent-eligibility of business methods, computer software and gene technology. When are they and when aren't they abstract ideas? The proper measure of patent-eligibility and patent-ineligibility is not necessarily, but might be, that most useful tool (but not sole clue)—the machine-or-transformation test. To the extent that inventions may not be based on an underlying law of nature, abstract idea or mathematical principle (perhaps because it is unknown why or how they work⁵¹), the proper legal test is a complete mystery. The inconclusive *Bilski* opinion makes no suggestion. And if the invention implements one of the things, how besides the machine-or-transformation test can anyone determine patent-eligibility? Instead of bringing clarity to this field of law, as had been widely hoped on the basis of much wishful thinking, *Bilski* promises only a vast amount of further litigation. It is just a damp squib.

Would harmonisation have been possible?

Would it be possible to harmonise or synthesise the Jackson/Stevens and Scalia approaches, in the context of congressional power to enact patent laws? Or in the context, at least, of the patent-eligibility of *Bilski*'s hedging scheme? Perhaps, but it is difficult and problematic.

The view of Jackson and Stevens is that of the "Living Constitution". That is, the scope of the governmental powers and duties stated in the Constitution is elastic enough to expand to serve contemporaneous economic and social needs, where there is a strong public policy basis to make the stretch. Even a believer in the Living Constitution would not expand it, however, on weak or frivolous grounds or for unworthy reasons such as mere greed and cupidity of a "special interest" faction. Scalia, however, scoffs at the Living Constitution metaphor. He says:

"You would have to be an idiot to believe that. The Constitution is not a living organism; it is a legal document. It says something and doesn't say other things."⁵²

Turning to the *Bilski* case, perhaps it can be agreed that while, as an abstract principle, a limited expansion of "useful Arts" might be justifiable in some cases (this is contrary to Justice Scalia's view, however), no legitimate argument for expansion can be made for hedging and similar financial expedients. By no stretch of imagination can they be considered among or akin⁵³ to the manufacturing and artisanal arts considered as useful arts at the time of adoption of the Constitution and there is no compelling socio-economic reason to stretch art.I s.8 cl.8 to include them.

The Stevens opinion is full of arguments, albeit more generally directed against all business methods that support refusal to expand the patent system to include hedging. It is unnecessary to engage in obiter dicta in an opinion, particularly when holding a majority together for the opinion is problematic, but the one-way-ticket approach in which an opinion stands only for its own fact pattern and nothing else gives the flavour of an arbitrary, capricious, unprincipled and irrational determination. Accordingly, one would think that it is safe to conclude that hedging, among other financial expedients such as stock market strategies and tax avoidance schemes, are all in the same non-elect category, because they are so clearly neither the new manufacturing and artisanal arts that the constitutional founders contemplated protecting under art.I s.8 cl.8, nor akin to them. However, it would be prudent to opine at the same time that what is the case for hedging and its close kindred is not necessarily the case for all business methods—it is not necessary to decide that in this case. By the same token, it is possible to conclude that a case might be made for expanding the patent-eligibility scope of "useful Arts" to include new technologies unforeseen in the eighteenth century, for example when they have evolved from the originally contemplated useful arts, but that question is better left to future cases whose facts present the issue properly. It is sufficient to say now that hedging, like other clearly non-artisanal and non-manufacturing arts, is not among the "useful Arts", as art.I s.8 cl.8 uses that term. Therefore *Bilski*'s hedging claim is patent-ineligible.

Such a compromise might have sufficiently soothed those fearful lest the sky fall to have cobbled together a majority of at least five, while leaving everyone to feel that its side's views had prevailed or at least were not

⁵¹ Knowing how or why an invention works is not a requirement of patentability. *Diamond Rubber Co v Consolidated Rubber Tire Co* 220 U.S. 428, 435–436 (1911) ("A patentee may be baldly empirical, seeing nothing beyond his experiments and the result; yet if he has added a new and valuable article to the world's utilities, he is entitled to the rank and protection of an inventor ... It is certainly not necessary that he understand or be able to state the scientific principles underlying his invention"); accord *In re Corright*, 165 F. 3d 1353, 1359 (Fed. Cir., 1999) (PTO "erred in suggesting that [the inventor of a baldness cure] was required to prove the cause of the resultant hair growth"); *Fromson v Advance Offset Plate Inc* 720 F. 2d 1565, 1570 (Fed. Cir. 1983) ("[I]t is axiomatic that an inventor need not comprehend the scientific principles on which the practical effectiveness of his invention rests").

⁵² Justice Scalia has made this remark a number of times. One place where it can be found is in a debate between Justices Scalia and Breyer at the University of Arizona (October 26, 2009), at <http://www.jbs.org/us-constitution-blog/5618-constitutional-interpretation-scalia-vs-breyer> [Accessed November 30, 2010]. Compare "Stevens Hits Scalia Sentencing Opinion in Little-Noticed Speech", ABA J. Law News Now (October 21, 2010), available at http://www.abajournal.com/weekly/article/stevens_hits_scalia_sentencing_opinion_in_little-noticed_speech?utm_source=maestro&utm_medium=email&utm_campaign=weekly_email [Accessed November 30, 2010], full text available as "Address of Justice John Paul Stevens Before National Legal Aid & Defender Association Exemplar Award Dinner", Washington, D.C. (October 6, 2010), at http://www.supremecourt.gov/publicinfo/speeches/sp_10-07-10.pdf [Accessed November 30, 2010].

⁵³ By "akin" the author refers to the doctrine of *ejusdem generis*.

defeated. Such an opinion would generate its own problems, to be sure, but it would have produced a better result than the court's actual disposition of the *Bilski* case. It would have provided something to build on subsequently, as *Bilski* did not.