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1. INTRODUCTION

In the United States, a patent application is examined to determine whether the invention claimed in the application is novel under 35 U.S.C. § 102 and not obvious under 35 U.S.C. § 103 before a patent is issued for the invention. Prior to an extensive examination of a patent application under these provisions, an invention must pass the threshold requirement of patent eligibility under 35 U.S.C. § 101. Section 101 states that if an invention is a "new and useful process, machine, manufacture, or composition of matter," the invention may be considered for patenting in light of the other provisions of the Patent Act. The categories of subject matter eligible for patenting are broad; however, the U.S. Supreme Court has established three exceptions to patent eligibility under § 101: "laws of nature, physical phenomena, and abstract ideas." The "abstract idea" exception has been used and analyzed by the Supreme Court several times, but the Court has never precisely established a definition or a reasoned foundation for the "abstract idea" exception.

Recently, the Supreme Court reexamined the patent eligibility inquiry of § 101, and the "abstract idea" exception, in Bilski v. Kappos. The Bilski Court held that the Federal Circuit's "machine-or-transformation" test is not the sole test for the patent eligibility of

1. Parker v. Flook, 437 U.S. 584, 593 (1978); In re Comiskey, 554 F.3d 967, 973 (Fed. Cir. 2009); In re Bilski, 545 F.3d 943, 950 (Fed. Cir. 2008).
2. In the text below, sections of 35 U.S.C. will be referred to by section number only.
7. 130 S. Ct. 3218.
processes, overruling the decision below. Nevertheless, the Supreme Court found that the invention in the patent application at issue was an unpatentable “abstract idea” by comparing it with the inventions in its previous decisions in Gottschalk v. Benson, Parker v. Flook, and Diamond v. Diehr. Unfortunately, the Court in Bilski leaves many questions unanswered, including: What is an abstract idea? Why is an abstract idea an exception to patentable subject matter? What is the basis for concluding that an invention is an abstract idea? How is a patent applicant to know if an invention is an abstract idea? What would a patentable process look like that fails the “machine-or-transformation” test?

The Supreme Court and other courts have never definitively explained what an “abstract idea” is or why it should be an exception to patent-eligible subject matter, although they often conclude that inventions are unpatentable because they constitute abstract ideas. Frequently, including in Bilski, courts confuse the subject matter eligibility analysis of 35 U.S.C. §101 with the novelty analysis of 35 U.S.C. §102. The Bilski analysis merely compares the invention at issue with other inventions in precedent, such as those in Benson, Flook, and Diehr. This analysis can easily be manipulated by patent applicants, examiners, and judges to conform to their preconceived notions of whether an invention is patentable. Thus, the resultant test for the patentability of subject matter, particularly where processes are involved, is no better than a “you know it when you see it” test.

To resolve at least some of these problems, courts and patent practitioners should not look at “abstract idea” as a judicially imposed exception to eligible subject matter under §101; rather, the concept of “abstract idea” should be seen as a tool the courts use to apply the statutory text to a process claim. In simple terms, “abstract idea” should not be considered an exception to the text of §101, but a result of the text of §101. Analyzing “abstract idea” as a tool

8. In re Bilski, 545 F.3d 943 (Fed. Cir. 2008). The “machine-or-transformation” test is restated infra in text accompanying note 138.
10. 437 U.S. 584.
11. 450 U.S. 175.
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for interpreting the text of § 101, rather than an exception to it, would answer questions left by years of precedent, add strength and understanding to the Court’s conclusory holdings that certain inventions are merely abstract ideas, provide clarity to a difficult legal analysis, and supply guidance to patent applicants who are considering the patentability of inventions.

This Comment analyzes the historical origins and modern interpretation of eligible subject matter under § 101 and the so-called “abstract idea” exception. Concerns with the current understanding of eligible subject matter and its exceptions are addressed. Because the Supreme Court has denied bright-line rules for patent eligibility, it may be impossible to answer all the questions in this realm with perfect clarity. However, a clearer method of judicial application of “abstract idea” is proposed in this Comment to resolve at least some of the concerns listed above.

II. A BRIEF INTRODUCTION TO UNITED STATES PATENT LAW

A. Constitutional Basis for Patents in the U.S.

The Constitution states that Congress has 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.” 15 The patent system “promote[s] the Progress of Science and useful Arts,” 16 or encourages innovation, by offering a monopoly for a limited period of time to an inventor who comes up with something new and useful. 17 In exchange for the monopoly, the inventor publicly discloses the invention so that others may freely build, improve, sell, or otherwise use the invention once the inventor’s period of exclusivity has expired. 18 Thus, the ultimate goal of the patent system is to encourage public disclosure of inventions and to stimulate innovation for society as a whole.

14. Sec, e.g., id. at 3226-27.
16. Id.
17. Currently, the time of exclusivity granted to the patentee for utility patents is generally twenty years from the time of filing a patent application, 35 U.S.C. § 154 (2006).
B. Introduction to Eligible Subject Matter

In order for an invention to qualify for patent protection, it must meet some basic requirements. First, and before other questions of patentability are examined, the invention must constitute subject matter that Congress intended to be eligible for patenting.19 This threshold requirement20 for patentable subject matter is codified in §101, reproduced here in its entirety: “Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.”21 In other words, if an invention or idea does not fall within one of the four enumerated categories of process, machine, manufacture, or composition of matter, a patent will not be granted to the inventor for the invention. If an invention does fall within one of these categories, which are defined by statutory and common law,22 then the invention is deemed to constitute eligible subject matter and must then be examined under other patentability standards, such as novelty and obviousness.23 The most difficult of the four categories to define, and the subject of much litigation, is “process.”24


20. Parker v. Flook, 437 U.S. 584, 593 (1978); In re Comiskey, 554 F.3d 967, 973 (Fed. Cir. 2009); In re Bilski, 545 F.3d 943, 950 (Fed. Cir. 2008).

21. 35 U.S.C. § 101 (2006). Judge Rich of the Federal Circuit’s predecessor court, the Court of Customs and Patent Appeals (C.C.P.A.), has noted that §101’s reference to “new” means nothing more than “novel” under §102 and “nonobvious” under §103, explaining that “[t]o provide the option of making such a rejection under either § 101 or § 102 is confusing and therefore bad law.... The word “new” in § 101 is defined and is to be construed in accordance with the provisions of § 102.” In re Bergr, 596 F.2d 952, 960-61 (C.C.P.A. 1979) (citing In re Bergstrom, 427 F.2d 1394, 1401 (C.C.P.A. 1970)).

22. The common law carves out several exceptions to this general statement, as will be discussed later.

23. “Eligible subject matter” is also referred to as “statutory subject matter” or “patentable subject matter.” See, e.g., Bilski v. Kappos, 130 S. Ct. 3218, 3248 (2010); In re Comiskey, 554 F.3d at 973.

24. See, e.g., Flook, 437 U.S. at 589 (“The line between a patentable ‘process’ and an unpatentable ‘principle’ is not always clear. Both are ‘conception[s] of the mind, seen only by [their] effects when being executed or performed.’” (citing Tilghman v. Proctor, 102 U.S. 707, 728 (1880)); See also Ex parte Bilski, No. 2002-2257, 2006 WL 5738364, at *2, *6 (B.P.A.I. Mar. 8, 2006) (“‘[N]on-machine-implemented’ methods, because of their abstract nature, present § 101 issues.” “A ‘process’ is the most difficult category of § 101 to define.”).
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A patentable “process” is defined in § 100(b) as “process, art or method, and includes a new use of a known process, machine, manufacture, composition of matter, or material.”\(^\text{25}\) As can be readily observed, the definition is circular, using the term “process” to define itself.\(^\text{26}\) Thus, when courts or other players in patent practice deal with process inventions, an appeal to the plain language of the statute is not particularly helpful in determining patent eligibility under § 101.

For a proper understanding of eligible subject matter and its exceptions, it is necessary to review case law dealing with the topic. Further insight into how courts have defined eligible subject matter will be described later as a major portion of this Comment.

C. Introduction to Major Provisions of the Patent Act

Because this Comment discusses the interplay between the threshold question of §101 and concepts of novelty and obviousness, a brief overview of these concepts is also necessary. A patentable invention must be novel, or, in other words, new.\(^\text{27}\) Claims in a patent application that define the scope of the invention for which an applicant wishes to receive a patent are most often rejected under § 102 if a single publication or embodiment that qualifies as “prior art”\(^\text{28}\) describes each and every element of the invention as set forth in the claim.\(^\text{29}\) Stated another way, § 102 seeks to bar a patent if the inventor was not the true first inventor, by comparing the invention to the prior art.\(^\text{30}\) If the invention is in the

26. Bilski, 130 S. Ct. at 3237 (Stevens, J., concurring) (“[T]his definition is not especially helpful, given that it also uses the term ‘process’ and is therefore somewhat circular.”).
27. 35 U.S.C. § 102 sets forth the standards by which the novelty of an invention is examined.
28. “Prior art” generally includes “the knowledge, usage, patents, and descriptions relating to an invention in existence before the invention.” 60 AM. JUR. 2D PATENTS § 93 (2010); see also Kimberly-Clark Corp. v. Johnson & Johnson, 745 F.2d 1437, 1453 (Fed. Cir. 1984) (defining prior art as the “knowledge that is available, including what would be obvious from it, at a given time, to a person of ordinary skill in an art”); Mohasco Indus., Inc. v. E. T. Barwick Mills, Inc., 221 F. Supp. 191 (N.D. Ga. 1963); 60 AM. JUR. 2D PATENTS § 178 (2010).
29. Verdegaal Bros., Inc. v. Union Oil Co. of Cal., 814 F.2d 628, 631 (Fed. Cir. 1987); see also M.P.E.P., supra note 19, § 2131.
30. The U.S. patent system is a hybrid “first to invent/first to file” system, whereas other countries take a “first to file” approach. See Alexander Poltorak, First-to-File vs. First-to-
prior art, then the applicant is not entitled to the exclusive rights of a patent because the applicant was not the first one to come up with the invention. Therefore, even if an invention qualifies as eligible subject matter under § 101, it will not be patentable under § 102 if it is not new.

An invention worthy of a patent also must not be obvious to “a person having ordinary skill in the art.” An invention that is not found exactly in the prior art may still be barred from patenting under § 103 if the invention would have been obvious to one of skill in the art at the time of the invention. Typically, claims are rejected under § 103 if there is a primary publication that describes a portion of the claimed invention and other publication(s) or the knowledge and capabilities of those working in the field provide the elements of the invention that are missing in the primary reference. A patent on the invention will not be allowed if one of ordinary skill in the art would have found it obvious to combine the elements found in the prior art in the way that is claimed in the patent application.

In sum, the novelty and obviousness inquiries of §§ 102 and 103 are further gatekeepers (beyond § 101) that preclude applicants from obtaining patents for inventions that were previously described or accomplished or are close enough to have been obvious. Therefore, an invention that is deemed to constitute eligible subject matter under § 101 still has to overcome other, often more difficult, hurdles before a patent can be obtained.

Another common bar to patentability in the Patent Act is § 112. Provisions of this section require clarity and exactness in the parts of the patent application that explain the invention (the “specification”) and in the claims themselves. For instance, the specification must include “a written description of the invention, and of the manner and process of making and using [the invention], in such full, clear, concise, and exact terms as to enable any person skilled in the art . . . to make and use the same.” These requirements are in place to


31. 35 U.S.C. § 103 sets forth the standards by which the nonobviousness of an invention is examined.
32. See M.P.E.P., supra note 19, § 706.02(j), (m).
34. See 35 U.S.C. § 112 (especially the first and second paragraphs).
35. Id.
induce the person receiving the patent to disclose the invention fully and enable those in the particular technological field to carry out the invention. Thus, the patent system’s purposes of disclosure and promoting innovation are served by the requirements of § 112.

III. A HISTORICAL UNDERSTANDING OF PATENT-ELIGIBLE SUBJECT MATTER

Courts have generally found three major categories of inventions that are not eligible for patents. The courts generally refer to these categories as “exceptions” to § 101. These exceptions are “laws of nature, physical phenomena, and abstract ideas.” Each exception is sometimes referred to by different terms, but the origin of these judicially created exceptions goes back over 150 years. For example, early cases that provide support for the “abstract idea” exception include Le Roy v. Tatham and O'Reilly v. Morse. The exceptions have been reaffirmed and relied upon by the U.S. Supreme Court many times in the years since the early cases.

37. A fourth, not discussed in this Comment, is printed matter. See, e.g., In re Miller, 418 F.2d 1392 (C.C.P.A. 1969); In re Jones, 373 F.2d 1007 (C.C.P.A. 1967); Ex parte Gwinn, 112 U.S.P.Q. 439, 1955 WL 5739 (B.P.A.I. 1955); see also M.P.E.P., supra note 19, § 706.03(a). This exception is usually left off the list by courts unless the invention at issue covers printed matter.
39. These categories are referred to here as “exceptions,” as the term is used in courts and as generally understood. Later, this Comment challenges the characterization of these categories as exceptions to 35 U.S.C. § 101, and suggests that the categories should be seen as merely a tool for interpreting the text of the statute rather than exceptions to the statutory text. See infra Part VI.
40. Bilski, 130 S. Ct. at 3225 (citing Chakrabarty, 447 U.S. at 309).
41. See, e.g., Gottschalk v. Benson, 409 U.S. 63, 67 (1972) (using the terms “[p]henomena of nature,” “mental processes,” and “abstract intellectual concepts” as examples of unpatentable inventions); Tilghman v. Proctor, 102 U.S. 707, 728 (1880) (stating that “principles” are unpatentable).
43. 55 U.S. (14 How.) 156.
44. 56 U.S. (15 How.) 62.
Many of these opinions, however, appear to confuse issues of eligibility under § 101 with concepts of novelty under § 102. Furthermore, no Supreme Court opinion appears to provide detailed justification for the existence of the "abstract idea" exception.

A. Early Supreme Court Cases

In Le Roy, the Court was presented with an invention covering a new method for manufacturing lead pipes using a certain combination of machinery parts. The lower court had instructed the jury that the invention "did not consist in the novelty of the machinery, but in bringing a newly discovered principle into practical application." On review, the Supreme Court noted that "[i]t is admitted that a principle is not patentable. 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." The opinion also stated that

[a] patent will be good, though the subject of the patent consists in the discovery of a great, general, and most comprehensive principle in science or law of nature, if that principle is by the specification applied to any special purpose, so as thereby to effectuate a practical result and benefit not previously attained.

Thus, Le Roy shows that a "principle" by itself is not patentable, although a practical application of a principle may be patentable.

In O'Reilly v. Morse, the Court upheld the patentability of

48. Id. at 156, 160, 174 (quoting).
49. Id. at 174–175.
50. Id. at 175 (quoting Househill Coal and Iron Co. v. Neilson [1843], 8 Eng. Rep. 616). At the time, the specification could be used to define the invention. Today, the claim defines the invention. In current practice, to be so limited, the claim itself would have to apply the principle to a specified purpose. It is not clear what "specific purpose" or what level of application qualifies a claim involving a principle for patent eligibility. In Bilski, the applicant argued that the method of hedging was patentable because it was applied to a particular industry to solve a practical problem; this did not persuade the Court that the claim covered eligible subject matter. Bilski, 130 S. Ct. at 3220–21.
Morse’s famous electro-magnetic telegraph. However, aside from the specific use of the telegraph contemplated by Morse’s specification, Morse also tried to claim “electro-magnetism, however developed for marking or printing intelligible characters, signs, or letters, at any distances, being a new application of that power of which I claim to be the first inventor or discoverer.” This claim was held to be unpatentable because it matters not by what process or machinery the result is accomplished. . . . New discoveries in physical science may enable him to combine [his invention] with new agents and new elements, and by that means attain the object in a manner superior to the present process and altogether different from it.

The Court further reasoned that allowing Morse to receive a patent on this claim would not be fair because Morse could “secure the exclusive use by his present patent [and] vary it with every new discovery and development of the science, and need place no description of the new manner, process, or machinery, upon the records of the patent office.” Consequently, Morse “claims an exclusive right to use a manner and process which he has not described and indeed had not invented, and therefore could not describe when he obtained his patent.” The Court reached this conclusion despite the fact that Morse had arguably limited his claim to a “special purpose,” i.e., “for marking or printing intelligible characters.”

The O’Reilly Court compared the claim at issue to one for which a patent was granted in England in Neilson v. Harford. The Neilson patent involved the principle that hot air was more efficient

52. Id. at 112.
53. Id. at 113.
54. Id.
57. O’Reilly, 56 U.S. (15 How.) at 86.
58. Id. at 114–15.
than cold air "in fires, forges, and furnaces, where a blowing apparatus is required." The English court found that the claim constituted eligible subject matter because it covered an application of the principle, rather than the principle itself. In discussing the English case, the O'Reilly Court stated:

[1]t seems that the court at first doubted, whether it was a patent for any thing more than the discovery that hot air would promote the ignition of fuel better than cold. And if this had been the construction, the court, it appears, would have held his patent to be void; because the discovery of a principle in natural philosophy or physical science, is not patentable.

But after much consideration, it was finally decided that this principle must be regarded as well known, and that the plaintiff had invented a mechanical mode of applying it to furnaces . . . .

The O'Reilly case is one of the first U.S. cases to establish the fact that a principle (or abstract idea) alone is not eligible subject matter for patenting under the later-enacted § 101. However, the O'Reilly Court did not explain why a principle "is not patentable."

A case often cited as standing for the proposition that abstract ideas are not patentable is Rubber-Tip Pencil Co. v. Howard. This case involved a patent claim for the idea of an eraser placed on the end of a pencil. Therefore, the claim was drawn to an article of

61. Id. at 115–16.
62. Id. at 116.
67. Id.
manufacture rather than a process. After discounting elements of the invention that were known, the Court held that the claim was ineligible for patenting.\textsuperscript{68} It rhetorically questioned, “What, therefore, is left for this patentee but the idea that if a pencil is inserted into a cavity in a piece of rubber smaller than itself the rubber will attach itself to the pencil, and when so attached become convenient for use as an eraser?”\textsuperscript{69} While the Court thought the idea was a good one, it concluded that “[a]n idea of itself is not patentable, but a new device by which it may be made practically useful is.”\textsuperscript{70} It is not clear how this holding properly relates to a process claim, but courts frequently cite \textit{Rubber-Tip Pencil Co.} for the general proposition that abstract ideas are not patentable, regardless of the statutory class.\textsuperscript{71}

\textbf{B. Modern Supreme Court Cases}

More recently, the Supreme Court has continued to endorse the exceptions to patentable subject matter. In 1948, the Court reviewed a patent on a group of bacteria used to help the growth of leguminous plants in \textit{Funk Bros. Seed Co. v. Kalo Inoculant Co.}\textsuperscript{72} The Court noted that “patents cannot issue for the discovery of the phenomena of nature.”\textsuperscript{73} Although \textit{Funk Bros.} involved a phenomenon of nature rather than an abstract idea, it is helpful to discuss all the so-called exceptions to eligible subject matter to gain a better understanding of why “abstract idea” is itself an exception. In its explanation for why natural phenomena are not patentable, the \textit{Funk Bros.} Court stated:

The qualities of these bacteria, like the heat of the sun, electricity, or the qualities of metals, are part of the storehouse of knowledge of all men. They are manifestations of laws of nature, free to all men and reserved exclusively to

\textsuperscript{68} \textit{Id.} at 507.
\textsuperscript{69} \textit{Id.} (emphasis added).
\textsuperscript{70} \textit{Id.}
\textsuperscript{71} See, e.g., \textit{Gottschalk v. Benson}, 409 U.S. 63, 64, 67 (1972) (involving a process claim); \textit{In re Comiskey}, 554 F.3d 967, 970, 978 (Fed. Cir. 2009) (involving a method or process claim).
\textsuperscript{72} 333 U.S. 127 (1948).
\textsuperscript{73} \textit{Id.} at 130 (citing \textit{Le Roy v. Tatham}, 55 U.S. (14 How.) 156, 175 (1852)).
none. He who discovers a hitherto unknown phenomenon of nature has no claim to a monopoly of it which the law recognizes. If there is to be invention from such a discovery, it must come from the application of the law of nature to a new and useful end.\textsuperscript{74}

Although the Court did not explain why these qualities “are part of the storehouse of knowledge of all men” and are “reserved exclusively to none,” it did assert that it would deny a patent for the person who discovers the qualities for the first time.

A different court’s analysis proffered almost sixty years later attempted to explain why natural phenomena and laws of nature constitute ineligible subject matter under \textsection{101}. In \textit{Ex parte Bilski}, the Board of Patent Appeals and Interferences (BPAI) opined that “[t]he terms ‘invents’ and ‘discovers’ in \textsection{101} are interpreted to require ‘invention,’ which is the conception and production of something that did not before exist, as opposed to ‘discovery,’ which is to bring to light that which existed before, but which was not known.”\textsuperscript{75} Under this reasoning, the ineligibility of natural phenomena and laws of nature is merely a result of interpreting the phrase “invents or discovers” from the text of \textsection{101}. However, this analysis appears to read “or discovers” out of the statute. Indeed, this analysis appears to alter the very definition of the term “invention” set forth in \textsection{100}: “invention means invention or discovery.”

One way to interpret \textsection{101} without reading the term “discovery” out of the text of the statute is to focus on the word “new.” The statute allows anyone who “invents or discovers any new and useful process, machine, manufacture, or composition of matter” to receive a patent.\textsuperscript{76} A natural phenomenon or a law of nature cannot be “new” because, by definition, it has always existed.

\textsuperscript{74} \textit{Id.} (citing Mackay Radio & Tel. Co. v. Radio Corp., 306 U.S. 86, 94 (1939); DeForest Radio Co. v. Gen. Elec. Co., 283 U.S. 664, 684–85 (1931); Tel. Cases, 126 U.S. 1, 532–33 (1888); Cameron Septic Tank Co. v. Vill. of Saratoga Springs, 159 F. 453, 462–63 (1908)).


Therefore, even if someone discovers the natural phenomenon or law of nature for the first time, the person did not discover something “new” and the discovery should not be eligible for patenting under § 101. However, an approach that denies a patent under § 101 because the subject matter is not “new” has been criticized by Judge Rich of the Federal Circuit’s predecessor court, the Court of Customs and Patent Appeals, in In re Bergy. In that case, Judge Rich opined that § 101’s use of the word “new” means nothing more than “novel” under § 102 and “nonobvious” under § 103. Therefore, in Judge Rich’s view, if something is not patent eligible because it is not “new,” it should be rejected under § 102, not categorically under § 101.

Presumably, under Judge Rich’s approach, it would be prudent to let claims covering any of the four statutory categories pass the § 101 bar, even those covering natural phenomena or laws of nature, but then preliminarily reject the claims under § 102. The best statutory candidate for denying these claims that cover these categories under § 102 is likely subsection (f). This provision recites: “A person shall be entitled to a patent unless . . . (f) he did not himself invent the subject matter sought to be patented . . . .” Again, determining what the terms of § 102(f) mean requires looking back to § 100, which states, “[I]nvention’ means invention or discovery.” Allowing natural phenomena or laws of nature past the § 101 bar and denying them under § 102(f) because they were not “invented” by the person who discovered them requires reading “discovers” out of the text of the Patent Act, just as the BPAI’s approach in In re Bilski docs.

Accordingly, to avoid reading “discovers” out of the statutory text, “new” must mean something more than merely “apply §§ 102 and 103.” Thus, natural phenomena and laws of nature can be

77. 596 F.2d 952, 960-61 (C.C.P.A. 1979) (citing In re Bergstrom, 427 F.2d 1394, 1401 (C.C.P.A. 1970)).
78. Id. (“To provide the option of making such a rejection under either § 101 or § 102 is confusing and therefore bad law. . . . The word ‘new’ in § 101 is defined and is to be construed in accordance with the provisions of § 102.” (quoting Bergstrom, 427 F.2d at 1401)).
79. Id.
80. 35 U.S.C. § 102 (2006); see also In re Sarkar, 588 F.2d 1330, 1333 (C.C.P.A. 1978) (“Sets of steps conducted entirely by nature are not subject to patenting; they are not invented by man.”).
excluded from patentability under § 101 because a person cannot “invent or discover” a “new” natural phenomenon or law of nature, each of which has always existed by definition. This approach reads the term “new” in § 101 to mean something more than just §§ 102 and 103.

Although the Court did not attempt to provide any of the preceding clarification in the Funk Bros. opinion, the case can be seen as further solidifying the fact that natural phenomena and laws of nature are not patentable subject matter according to the Supreme Court. Furthermore, Funk Bros. can be interpreted as a preliminary application of the term “new” to natural phenomena and laws of nature under the text of § 101.

The Supreme Court again took up the question of patent eligibility in Gottschalk v. Benson. In Benson, the invention at issue was “a method for converting binary-coded decimal (BCD) numerals into pure binary numerals. . . . [which] purported to cover any use of the claimed method in a general-purpose digital computer of any type.” In determining “whether the method described and claimed is a ‘process’ within the meaning of the Patent Act,” the Court found the following:

It is conceded that one may not patent an idea. But in practical effect that would be the result if the formula for converting BCD numerals to pure binary numerals were patented in this case. The mathematical formula involved here has no substantial practical application except in connection with a digital computer, which means that if the judgment below [i.e., that the patent was valid] is affirmed, the patent would wholly pre-empt the mathematical formula and in practical effect would be a patent on the algorithm itself.

The Court also opined that “[p]henomena of nature, though just discovered, mental processes, and abstract intellectual concepts are not patentable, as they are the basic tools of scientific and

82. If, however, the inventor discovers and claims a new and nonobvious way to apply the natural phenomenon, the claim may be patentable, as the last sentence of the Funk Bros. quotation herein suggests. See infra text accompanying note 74.
83. 409 U.S. 63 (1972).
84. Id. at 64.
85. Id. (citing 35 U.S.C. § 100 (2006)).
86. Id. at 71–72.
technological work." Apparently this view is based on policy rather than on the text of § 101. The Court did not clearly explain how "abstract intellectual concepts" are "the basic tools of scientific and technological work" in the way that phenomena of nature are. Furthermore, it is unclear why the fact that the exceptions to § 101 constitute "the basic tools of scientific and technological work" should render them ineligible. Many, if not all, inventions that are afforded patents are also "tools of scientific and technological work," yet patents are not denied based on the same reasoning.

Although the Benson Court was concerned with policy considerations involving the patentability of computer programs, it opined that these considerations are best left to Congress to sort out. Based on this analysis, the Court held that the claim at issue was not directed to eligible subject matter under § 101.

The next major Supreme Court case on point was Parker v. Flook. In Flook, the claim at issue involved a "method of updating alarm limits," generally useful in a catalytic conversion process. The Court summarized the claim thus:

In essence, the method consists of three steps: the initial step which merely measures the present value of the process variable (e.g., the temperature); an intermediate step which uses an algorithm to calculate an updated alarm-limit value; and a final step in which the actual alarm limit is adjusted to the updated value.

After noting that the inquiry was a difficult one, the Court nonetheless concluded that "it is absolutely clear that respondent's

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87. Id. at 67.
88. Id. at 72–73. Note, however, that the Court's own reasons for why the exceptions are excluded from patentability under § 101 are based on policy. Thus, the Court contradicts its own reasoning by asserting that policy is a consideration best left to Congress.
89. Id. at 71–73.
90. 437 U.S. 584 (1978).
91. Id. at 585–87.
92. Id. at 585 (footnotes omitted).
93. Id. at 589 ("The line between a patentable 'process' and an unpatentable 'principle' is not always clear. Both are 'conception[s] of the mind, seen only by [their] effects when being executed or performed.'" (alteration in original) (citing Tilghman v. Proctor, 102 U.S. 707, 728 (1880))).
application contains no claim of patentable invention" because the only real point of novelty was the algorithm.95

The Court in Flook seems confused in attempting to determine whether eligible subject matter existed under §101. The analysis includes the premise that "the novelty of the mathematical algorithm is not a determining factor at all," yet the Court proceeds to state that the algorithm "is treated as though it were a familiar part of the prior art."96 The Flook Court based its analysis on this point on O'Reilly.97 However, the subject matter eligibility inquiry under §101 should not take into account prior art in the manner the Court did in Flook; rather, the prior art should be left to an analysis under §§102 and 103.98 The Court recognized this fact itself when it stated: "The obligation to determine what type of discovery is sought to be patented must precede the determination of whether that discovery is, in fact, new or obvious."99 Yet the Court does not follow its own advice. Instead, the Court appears to resolve the §101 issue by first assuming that each element of the claim was in the prior art, and then asking if the claim as a whole covered eligible subject matter.100 Assuming that elements are in the prior art and subsequently asking whether the combination is patentable is an inquiry that more appropriately falls within the purview of obviousness under §103.

The respondent in Flook noted the "importation into §101 the considerations of 'inventiveness' which are the proper concerns of §§102 and 103," and the Court responded that "[t]his argument

94. Id. at 594.
95. Id. at 595.
96. Id. at 591-92.
97. Id. at 592.
98. Rather than assume that the algorithm was a familiar part of the prior art, it is more logical to assume that the algorithm is novel and nonobvious, so as to analyze §101 issues independently of §§102 and 103 issues. See Diamond v. Diehr, 450 U.S. 175, 213 (1981) (Stevens, J., dissenting) ("In the §101 analysis, we must assume that the sequence of steps in this programming method is novel, unobvious, and useful. The threshold question of whether such a method is patentable subject matter remains.").
99. Flook, 437 U.S. at 593.
100. See id. at 594-95 (footnote omitted) ("The chemical processes involved in catalytic conversion of hydrocarbons are well known, as are the practice of monitoring the chemical process variables, the use of alarm limits to trigger alarms, the notion that alarm limit values must be recomputed and readjusted, and the use of computers for "automatic monitoring-alarming." Respondent's application simply provides a new and presumably better method for calculating alarm limit values.").
was based on two misconceptions.”\textsuperscript{101} First, the Court alleged that “respondent incorrectly assumes that if a process application implements a principle in some specific fashion, it automatically falls within the patentable subject matter of § 101 and the substantive patentability of the particular process can then be determined by the conditions of §§ 102 and 103.”\textsuperscript{102} Second, the Flook Court posited that the respondent was wrong in challenging the Court’s analysis because it violates “the view that a patent claim must be considered as a whole.”\textsuperscript{103} However, the Court’s analysis of the respondent’s two alleged misconceptions is itself misconceived because it fails to separate eligibility under § 101 and novelty and obviousness under §§ 102 and 103.

After alleging the first misconception, the Court in Flook explained that laws of nature are not patent eligible simply because “they are not the kind of ‘discoveries’ that the statute was enacted to protect.”\textsuperscript{104} In support of this conclusion, the Court noted that “[t]he underlying notion is that a scientific principle, such as that expressed in respondent’s algorithm, reveals a relationship that has always existed.”\textsuperscript{105} This series of statements in Flook denied that novelty is taken into account under § 101 but then contradictorily asserted that laws of nature are not patentable based on the fact that the principle “has always existed.”\textsuperscript{106} These statements demonstrate the Court’s confusion in sorting out eligibility under § 101 and novelty and obviousness under §§ 102 and 103.

After alleging the second misconception, the Court asserted that the “[r]espondent’s process is unpatentable under § 101, not because it contains a mathematical algorithm as one component, but because once that algorithm is assumed to be within the prior art, the application, considered as a whole, contains no patentable invention.”\textsuperscript{107} The Court reasoned further that “the discovery of such a phenomenon cannot support a patent unless there is some other inventive concept in its application.”\textsuperscript{108} However, this statement

\textsuperscript{101} Id. at 592 (footnote omitted).
\textsuperscript{102} Id. at 593. The Court apparently thinks that “specific fashion” is too broad.
\textsuperscript{103} Id. at 594.
\textsuperscript{104} Id.
\textsuperscript{105} Id. at n.15.
\textsuperscript{106} Id. at 594.
\textsuperscript{107} Id.
\textsuperscript{108} Id. (emphasis added).
appears to base eligibility under § 101 on "inventiveness," which more properly falls under §§ 102 and 103, just as the respondent argued in the case.\textsuperscript{109} 

Despite the shortcomings and contradictions in the \textit{Flook} decision, courts have relied on \textit{Flook}'s reasoning in later cases as a basis for rejecting patent claims for falling within the "abstract idea" category of ineligible subject matter.\textsuperscript{110} The \textit{Flook} decision also stands for the proposition that, even when a claim passes the "machine-or-transformation" test because a machine is involved, the use of the machine does not ensure the patentability of the claim if it constitutes merely insignificant "post-solution activity."\textsuperscript{111} 

In \textit{Diamond v. Diehr}, the Court looked at much of the precedent reviewed above, restated the principle that "[e]xcluded from such patent protection are laws of nature, natural phenomena, and abstract ideas," and concluded that "[t]he Court's recent holdings in \textit{Gottschalk v. Benson}, and \textit{Parker v. Flook}, both of which are computer-related, stand for no more than these long-established principles."\textsuperscript{112} The claim at issue in \textit{Diehr} involved a process that used an equation (Arrhenius' equation) to operate "a rubber-molding press for precision molded compounds with the aid of a digital computer."\textsuperscript{113} Although the claim involved an equation, the Court found the process patentable. The Court explained, "Arrhenius' equation is not patentable in isolation, but when a process for curing rubber is devised which incorporates in it a more efficient solution of the equation, that process is at the very least not barred at the threshold by § 101."\textsuperscript{114} 

In his dissent, Justice Stevens concluded that the majority "fail[s] to recognize the critical difference between the 'discovery' requirement in § 101 and the 'novelty' requirement in § 102."\textsuperscript{115} However, this is one decision that appears to keep the issues of

\textsuperscript{109} See id. at 592.


\textsuperscript{111} See \textit{Flook}, 437 U.S. at 590. Later cases refer to this as "extra-solution activity," which clarifies that the timing of the activity is not important in determining whether it adds a significant limitation to the claim. E.g., \textit{In re Bilski}, 545 F.3d 943, 963 (2008).

\textsuperscript{112} 450 U.S. 175, 185 (1981) (citations omitted).

\textsuperscript{113} Id. at 179 n.5.

\textsuperscript{114} Id. at 188.

\textsuperscript{115} Id. at 211 (Stevens, J., dissenting).
§ 101 eligibility and § 102 novelty straight; it spends several pages describing the differences between the two statutes, and then properly ignores novelty to determine eligibility. The basis for the Court’s holding of eligibility under § 101 appears to be something akin to a straightforward application of the “machine-or-transformation” test: because the claimed process transformed an article (rubber) to solve “a practical problem,” it was directed to eligible subject matter under § 101.

C. Summary of the Historical Cases

These historical cases and many others establish that “natural phenomena, laws of nature, and abstract ideas” are categories of ineligible subject matter, but none of the Supreme Court precedent appears to adequately justify the exclusion of an “abstract idea” from eligible subject matter. Natural phenomena and laws of nature are exempt from patenting under § 101 because they are “the basic tools of scientific and technological work” and because they cannot be a “new” thing invented or discovered. However, “abstract ideas” do not fit the same mold because they can be “new,” and thus are not as clearly excluded from the text of the Patent Act as the other two categories. Furthermore, the decisions discussed above each assume that “abstract idea” is an established exception to eligible subject matter without explaining whether the Court had authority to institute the exception in the first place and without establishing a clear basis for the exception. These shortcomings often cause the Court to base its opinions on confused and faulty reasoning.

IV. OVERVIEW OF THE BILSKI V. KAPPOS OPINION

The Bilski opinion does not add much clarity to an understanding of eligible subject matter and the limits of § 101. The Court in Bilski applied the same amorphous reasoning as previous cases to conclude that the invention at issue was an abstract idea and therefore not patentable. Much like the historical cases outlined

116. Id. at 189–91.
117. Id. at 181.
120. Ironically, the Court’s application of the abstract idea exception to patentability is abstract in itself.
above, the *Bilski* opinion never provides a reasoned explanation why an “abstract idea” constitutes ineligible subject matter, yet it concludes that the invention at issue is an abstract idea and therefore unpatentable. This flaw in the Court’s opinion essentially leaves the test for patentability as the unsatisfactory “you know it when you see it” test.121

A. The Patent Application in Bilski

Bernard L. Bilski and Rand A. Warsaw claimed a method of hedging risk in commodity trading in the energy market.122 The Court in *Bilski v. Kappos* found that claims 1 and 4 were “[t]he key claims.”123 Claim 1, in its entirety, recites:

A method for managing the consumption risk costs of a commodity sold by a commodity provider at a fixed price comprising the steps of:

(a) initiating a series of transactions between said commodity provider and consumers of said commodity wherein said consumers purchase said commodity at a fixed rate based upon historical averages, said fixed rate corresponding to a risk position of said consumer;

(b) identifying market participants for said commodity having a counter-risk position to said consumers; and

(c) initiating a series of transactions between said commodity provider and said market participants at a second fixed rate such that said series of market participant transactions balances the risk position of said series of consumer transactions.124

121. In the lower opinion at the BPAI, the Board noted that “[t]he USPTO is struggling to identify some way to objectively analyze the statutory subject matter issue instead of just saying ‘We know it when we see it.’” *Ex parte Bilski*, No. 2002-2257, 2006 WL 5738564, at *4 (B.P.A.I. Sept. 26, 2006). Unfortunately, as discussed below, the Supreme Court did little if anything to provide the increased objectivity for which the Board yearned.


123. *Id.* at 3223.

Claim 4, in its entirety, recites:

A method for managing weather-related energy price risk costs sold by an energy provider at a fixed price comprising the steps of:

(a) initiating a series of transactions between said energy provider and energy consumers wherein said energy consumers purchase energy at a fixed rate based upon historical averages, said fixed rate corresponding to a risk position of said consumers, wherein the fixed price for the consumer transaction is determined by the relationship:

\[
\text{Fixed Bill Price} = F_i + [(C_i + T_i + L.D_i) \times (\alpha + \beta E(W_i))] 
\]

Wherein,

- \(F_i\) = fixed costs in period \(i\);
- \(C_i\) = variable costs in period \(i\);
- \(T_i\) = variable long distance transportation costs in period \(i\);
- \(L.D_i\) = variable local delivery cost in period \(i\);
- \(E(W_i)\) = estimated location-specific weather indicator in period \(i\); and
- \(\alpha\) and \(\beta\) are constants;

(b) identifying other energy market participants having a counter-risk position to said consumers; and

(c) initiating a series of transactions between said energy provider and said other energy market participants at a second fixed rate such that said series of transactions balances the risk position of said series of consumer transactions.\(^{125}\)

Stated simply, claim 4 "is similar to claim 1 except that it specifies precisely how the fixed price for an energy consumer transaction is determined using a mathematical formula."\(^{126}\) In summary, the independent claims of the patent application cover "a procedure for instructing buyers and sellers how to protect against the risk of price fluctuations in a discrete section of the economy."\(^{127}\) The dependent claims "explain how claims 1 and 4 can be applied to allow energy

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125. Id. at 8.
126. Id. at 7.
127. Bilski, 130 S. Ct. at 3223.
suppliers and consumers to minimize the risks resulting from fluctuations in market demand for energy.\textsuperscript{128}  

\textit{B. Procedural History of Bilski}

The patent application was rejected by the patent examiner under § 101 because the claimed invention was “not implemented on a specific apparatus and merely manipulates [an] abstract idea and solves a purely mathematical problem without any limitation to a practical application, therefore, the invention is not directed to the technological arts.”\textsuperscript{129} The applicants appealed the examiner’s decision to the BPAI, which sustained the rejection of Bilski’s patent application because the claims included no transformation of an article, were directed to an abstract idea, and had no useful, concrete, and tangible result.\textsuperscript{130} The applicants next appealed to the Federal Circuit, where the majority rejected the application as failing the “machine-or-transformation” test, which it held was the sole test for subject matter eligibility under § 101.\textsuperscript{131}

Although nine out of the twelve judges that heard the case at the Federal Circuit agreed on the outcome, the court produced five separate opinions.\textsuperscript{132} Eight judges joined Chief Judge Michel in his opinion for the court.\textsuperscript{133} Two of those judges\textsuperscript{134} filed a concurring opinion “to respond to the claim in the two dissents that the majority’s opinion is not grounded in the statute, but rather ‘usurps the legislative role.’”\textsuperscript{135} Finally, three dissenting opinions were filed by Judge Newman, Judge Mayer, and Judge Rader, respectively. The array of opinions among judges who deal with questions of patentability on a regular basis highlights the difficulty in applying § 101.

The majority of the Federal Circuit asked “whether [the] Applicants’ claim recites a fundamental principle and, if so, whether

\begin{itemize}
  \item \textsuperscript{128} Id. at 3224.
  \item \textsuperscript{129} Id. (citations omitted).
  \item \textsuperscript{130} \textit{Ex parte Bilski}, 2006 Wl. 5738364, at *18-*22 (B.P.A.I. Mar. 8, 2006).
  \item \textsuperscript{131} \textit{In re Bilski}, 545 F.3d 943, 966 (Fed. Cir. 2008).
  \item \textsuperscript{132} The Supreme Court stated that “[s]tudents of patent law would be well advised to study these scholarly opinions.” \textit{Bilski}, 130 S. Ct. at 3224.
  \item \textsuperscript{133} In \textit{re Bilski}, 545 F.3d at 949. The judges for the majority opinion were: Michel, Lourie, Schall, Bryson, Gajarsa, Linn, Dyk, Prost, and Moore.
  \item \textsuperscript{134} Id. Judge Dyk was joined by Judge Linn in his concurring opinion.
  \item \textsuperscript{135} Id. at 966.
\end{itemize}
it would preempt substantially all uses of that fundamental principle if allowed." 136 Although the question was stated simply, the court noted that "this inquiry is hardly straightforward." 137 The court then analyzed Supreme Court precedent and concluded that the "machine-or-transformation" test was the sole test for the patentability of processes under § 101. 138 The court restated the "machine-or-transformation" test as follows: "A claimed process is surely patent-eligible under § 101 if: (1) it is tied to a particular machine or apparatus, or (2) it transforms a particular article into a different state or thing." 139 Because Bilski's claims failed the "machine-or-transformation" test, the court held that they constituted ineligible subject matter under § 101.

Among the non-majority opinions, Judge Rader's dissent is notable because the Supreme Court later arrived at the same conclusion and even quoted Judge Rader in its opinion. 140 Judge Rader's dissent points out flaws in the majority's analysis and concludes simply that "Bilski attempts to patent an abstract idea." 141 However, Judge Rader's opinion focused mostly on why the majority applied the wrong standard; the opinion did not attempt to establish a reasoned basis for the "abstract idea" exception or to clarify why Bilski's claims should fall within that category.

C. The U.S. Supreme Court's Opinion in Bilski

The Supreme Court unanimously agreed that the "machine-or-transformation" test "is not the sole test for deciding whether an invention is a patent-eligible process." 142 The Court explained that the "machine-or-transformation" test violates the statutory construction rule that "words will be interpreted as taking their ordinary, contemporary, common meaning." 143 Any deviation from following the ordinary meaning of terms in the Court's precedent "has only been . . . for the exceptions for laws of nature, physical
phenomena, and abstract ideas." Based on this premise, the Court was "unaware of any 'ordinary, contemporary, common meaning' of the definitional terms 'process, art or method' that would require these terms to be tied to a machine or to transform an article." Although the Court discounted the exclusivity of the "machine-or-transformation" test, it did note that the test "is a useful and important clue, an investigative tool, for determining whether some claimed inventions are processes under § 101." At least four justices were uncomfortable with a result that would likely prohibit patents in software and other "Information Age" industries. However, these four justices stated that the "machine-or-transformation" test "may well provide a sufficient basis for evaluating processes similar to those in the Industrial Age—for example, inventions grounded in a physical or other tangible form."

After disposing of the exclusivity of the "machine-or-transformation" test, the Court discounted the categorical exclusion of business method patents. Finally, the Court "resolve[d] this case narrowly on the basis of [the] Court's decisions in Benson, Flook, and Diehr, which show that petitioners' claims are not patentable processes because they are attempts to patent abstract ideas." After a brief review of these cases, the Court found summarily that "it is clear that [the] petitioners' application is not a patentable 'process.' Claims 1 and 4 . . . explain the basic concept of hedging, or protecting against risk: 'Hedging is a fundamental economic practice long prevalent in our system of commerce and taught in any introductory finance class.' In further support of its finding, the Court stated that "[t]hese claims attempt to patent the use of the abstract idea of hedging risk in the energy market and then instruct

144. Id.
145. Id. (citations omitted) (internal quotation marks omitted).
146. Id. at 3227.
147. Justices Kennedy, Roberts, Thomas, and Alito joined this part (II) of the opinion. Justice Scalia, who joined other parts of the opinion of the Court, joined the concurrence of Justice Breyer as to this part (II). Id. at 3223.
148. See id. at 3227–28.
149. Id. at 3228.
150. Id. at 3228–29.
151. Id. at 3229–30.
152. Id. at 3231 (quoting In re Bilski, 545 F.3d 943, 1013 (Fed. Cir. 2008) (Rader, J., dissenting)).
the use of well-known random analysis techniques to help establish some of the inputs into the equation.” 153 Although it held that the claims at issue were “abstract ideas,” the Court expressly declined to add any clarifying definitions to the analysis. 154

The opinions of the justices were split on several issues, including the subject matter eligibility of business methods, but the Court unanimously agreed that the “machine-or-transformation” test was not the sole test for eligibility under § 101 and that the Bilski claims were directed to ineligible, abstract ideas. 155

Although Justice Stevens agreed that the Bilski claims should not be patented because they cover abstract ideas, he concurred because he was interested in precluding the eligibility of “business methods,” as well. 156 In his analysis, Justice Stevens points out flaws in the Court’s opinion, 157 including “the fact that hedging is ‘long prevalent in our system of commerce’ cannot justify the Court’s conclusion, as ‘the proper construction of § 101 . . . does not involve the familiar issu[c] of novelty’ that arises under § 102.” 158 He also notes that “[t]he Court . . . never provides a satisfying account of what constitutes an unpatentable abstract idea.” 159 However, once he tears down the majority’s reasoning, he does little or nothing to supplant it. Although he agrees that Bilski’s claims were directed to abstract ideas, he offers no definition, clarification, or justification for the categorical exception of “abstract ideas.”

V. THE AFTERMATH

In sum, it appears that the Supreme Court has left the door open enough to allow for patents in the Information Age, yet closed enough to exclude subject matter for ideas that are too “abstract,”

153. Id. at 3231.

154. Id. (“The patent application here can be rejected under our precedents on the unpatentability of abstract ideas. The Court, therefore, need not define further what constitutes a patentable ‘process,’ beyond pointing to the definition of that term provided in § 101(b) and looking to the guideposts in Benson, Flook, and Diehr.”).

155. Id. at 3223.

156. Id. at 3232 (“The wiser course would have been to hold that petitioners’ method is not a ‘process’ because it describes only a general method of engaging in business transactions—and business methods are not patentable.”).

157. See, e.g., id. at 3234–36.

158. Id. at 3236 (citations omitted) (internal quotation marks omitted).

159. Id.
whatever that term means. The line between the two remains very fuzzy and subject to manipulation by the courts. If a court thinks that a particular process should be patentable, then it can simply say that it is more like Diehr than Benson or Flook. If a court does not think a process should be patented, then it can likewise say that the process is more like that of Benson or Flook than Diehr, and summarily hold that the claim merely covers an ineligible abstract idea. Thus, we are left with a “you-know-it-when-you-see-it” analysis that is subject to the whims and preconceived notions of the judiciary.¹⁶⁰

A. The Industry’s Response to Bilski

Many players in the technological industry are displeased with the lack of clarity in the Supreme Court’s Bilski decision. For example, the Computer and Communications Industry Association¹⁶¹ issued a statement criticizing the opinion.¹⁶² The CCIA stated, in part: “The majority’s decision exacerbates the uncertainty that characterizes the IP system today. It will give no notice to the public about when ordinary business practices can lead to ruinous liability. Businesses will be forced to navigate an increasing abstract patent minefield, raising business uncertainty and legal costs.”¹⁶³ The CCIA also observed:

By concluding that the hedging technique was no more than an abstract idea, the court breathes new life into the abstract idea exclusion, but does not offer new guidance on just what that is. The opinion is fairly clear about what it isn’t doing. It is not clear about what it is doing.

By declining to give fixed meaning to terms like ‘process’ and ‘business method,’ the Court has recreated at a systemic level

¹⁶⁰. The Board of Patent Appeals and Interferences has mirrored this conclusion in cases since Bilski; the opinions seem to follow a form consisting of the following steps: (1) apply the “machine-or-transformation” test; (2) continue the analysis by comparing the invention to Benson, Flook, and/or Diehr; and (3) hold that the claim is eligible under §101 or not, as the case may be. See, e.g., Ex parte Caccavale, 2010 WL 2901727 (B.P.A.I. 2010); Ex parte Heuer, 2010 WL 3072973 (B.P.A.I. 2010); Ex parte Ull, 2010 WL 3611779 (B.P.A.I. 2010); Ex parte Volcani, 2010 WL 4112612 (B.P.A.I. 2010).
¹⁶¹. Hereinafter “the CCIA.”
¹⁶³. Id.
the problem of fuzzy and uncertain boundaries that have plagued patents in abstract areas and made it both risky and costly to assert, avoid, or defend against patents.\textsuperscript{164}

Similarly, an author of the popular patent law blog, Patently-O, observed: "In general, the opinion offers no clarity or aid for those tasked with determining whether a particular invention falls within Section 101... It is unclear to me how patent office examiners will be able to apply the test for abstract ideas in any meaningful way."\textsuperscript{165}

Other commentators have concluded that, although the Supreme Court was not very clear as to the standard to be applied, the decision was beneficial to the economy in that it did not bar business method patents in general.\textsuperscript{166} In essence, comments like these could be summed up as "it could have been worse."

The party that will likely be most affected by the Bilski decision is the United States Patent and Trademark Office (USPTO). After the Bilski opinion issued, the Patent Office published Interim Guidance in the Federal Register that outlines how subject matter eligibility is to be examined in view of Bilski.\textsuperscript{167} The Interim Guidance reestablishes the importance of the "machine-or-transformation" test, yet adds that it is not the end-all in the analysis of §101 in light of Bilski.\textsuperscript{168} The Interim Guidance "presents [non-exclusive] factors that are to be considered when evaluating patent-eligibility of method claims. The factors include inquiries from the machine-or-transformation test... and inquiries gleaned from Supreme Court precedent."\textsuperscript{169} The factors include:

\textsuperscript{164} Id.
\textsuperscript{166} See, e.g., Kim Leonard, Supreme Court Ruling May Strengthen Innovation in U.S., PITTSBURGH TRIBUNE-REVIEW (June 29, 2010), http://www.pittsburghlive.com/x/pittsburghtrib/business/s_688101.html; but see Michael Barclay, Bilski v. Kappos: The Supreme Court Declines to Prohibit Business Method Patents, ELECTRONIC FRONTIER FOUND. (Jun. 29, 2010), http://www.eff.org/deeplinks/2010/06/bilski-v-kappos-supreme-court-declines-prohibit ("[T]he U.S. Supreme Court finally issued a ruling in Bilski v. Kappos, a business method patent case that, many hoped, would give the Court an opportunity to sharply limit these much maligned patents, or at least offer clear guidance on how business method patents are to be judged in the future. Unfortunately, the Court did neither one.").
\textsuperscript{168} Id. at 43,924.
\textsuperscript{169} Id.
[1] Whether the method involves or is executed by a particular machine or apparatus;

[2] Whether performance of the claimed method results in or otherwise involves a transformation of a particular article;


[4] Whether a general concept . . . is involved in executing the steps of the method. 170

Each of these general factors is broken down into more specific inquiries to assist the examiner in the analysis. 171 It is unclear as of yet how much the Interim Guidelines have helped or hindered in the eligible subject matter inquiry of § 101.

B. Case Law Applying the Bilski Decision

Since the Bilski v. Kappos opinion issued, some lower courts have already issued opinions that show the courts are just as confused as ever when analyzing claims under § 101. For example, the United States Central District Court of California in Ultramercial v. Hulu applied the analysis of Bilski to a patent involving “an invention for distributing copyrighted products over the Internet (or other networks),” 172 while recognizing that the Bilski decision left unanswered questions. 173 After the court in Ultramercial found that the claim at issue failed the “machine-or-transformation” test, 174 it moved on to decide whether the claim constituted an “abstract idea” in light of Bilski. 175 In so doing, the district court held:

This core principle, similar to the core of the Bilski patent, is an abstract idea. Indeed, public television channels have used the same basic idea for years to provide free (or offset the

170. Id. at 43,925.
171. Id.
173. Id. at *3 ("Yet the Supreme Court did not offer an example of an invention that would not be tied to a machine or transform an article and still pass the subject matter test.").
174. Id. at *5.
175. Id. at *6.

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cost of) media to their viewers. At its heart, therefore, the patent does no more than disclose an abstract idea.\textsuperscript{176}

Although the court recognized in a footnote that there is a difference between novelty and subject matter eligibility,\textsuperscript{177} it fell victim to the same pitfalls of the Supreme Court in \textit{Bilski}. The \textit{Ultramercial} holding is simply this: because the idea of media advertising has been in use for years, it must be an abstract idea. This reasoning is flawed because it bases the abstractness of the claims on notions of novelty. \textit{Ultramercial} demonstrates that the \textit{Bilski} opinion did not give much guidance to lower courts applying § 101.

In December 2010, the Federal Circuit issued an opinion regarding the patent eligibility of another process in Research Corp. \textit{v. Microsoft}, reestablishing the wide breadth of § 101.\textsuperscript{178} The lower court found that two of the six patents covering “digital image halftoning” were invalid under § 101.\textsuperscript{179} In Research Corp., the Federal Circuit observed that “[t]he Supreme Court recently reemphasized [in \textit{Bilski}] the significance of [§ 101’s] broad statutory categories” by noting § 101’s double use of the word “any” preceding the listing of categories.\textsuperscript{180} The Federal Circuit also recited language from precedent, noting that “the Supreme Court has ‘more than once cautioned that courts should not read into the patent laws limitations and conditions which the legislature has not expressed.’”\textsuperscript{181} The Federal Circuit attempted to explain the basis for the three “exceptions” to eligible subject matter, stating that

laws of nature and natural phenomena fall outside the statutory categories because those categories embrace the “basic tools of scientific and technological work.”

Abstractness, also a disclosure problem addressed in the

\begin{flushleft}
176. \textit{Id.}
177. \textit{Id.} at *6 n.6.
179. \textit{Id.} at 862. Note that the district court’s ruling came before the Supreme Court’s \textit{Bilski} decision. The district court’s analysis relied on the Federal Circuit’s opinion in \textit{In re Bilski} that the “machine-or-transformation” test was dispositive for process claims. The district court found that the claims of the two patents failed the “machine-or-transformation” test. See Research Corp. Techs. \textit{v. Microsoft Corp.}, 2009 WL 2413623, at *6–10 (D. Ariz. July 28, 2009).
180. Research Corp., 627 F.3d at 867.
\end{flushleft}
Patent Act in section 112, also places subject matter outside the statutory categories.  

Here, the court offers no explanation (other than historical) as to why “abstract ideas” are not eligible for patenting under § 101, although it does note that some abstract ideas could be rejected under § 112 in addition to § 101. The court again cautioned that the inquiries involved in §§ 102, 103, and 112 should not come into play in deciding whether a claim constitutes eligible subject matter under § 101, and asserted that “section 101 does not permit a court to reject subject matter categorically because it finds that a claim is not worthy of a patent.”

The court found that the subject matter of the claim at issue was clearly a “process,” then moved on to analyze whether it was an “abstract idea.” The court expressly declined to define “abstract,” yet it recognized that “this disqualifying characteristic [abstractness] should exhibit itself so manifestly as to override the broad statutory categories of eligible subject matter and the statutory context that directs primary attention on the patentability criteria of the rest of the Patent Act.” The court further clarified that “inventions with specific applications or improvements to technologies in the marketplace are not likely to be so abstract that they override the statutory language and framework of the Patent Act.”

The court also noted (apparently in dicta) that abstract ideas could create a potential § 112 problem, as well, because the abstract ideas “might also be so conceptual that the written description does not enable a person of ordinary skill in the art to replicate the process.”

With such a broad interpretation of eligible subject matter, the Federal Circuit Court held that the two patents at issue pass the “coarse eligibility filter” of § 101. The Research Corp. case attempts to keep the subject matter eligibility bar low and the door

183. Id. at 868.
184. Id.
185. Id.
186. Id. at 869. One wonders if, in future practice, the “machine-or-transformation” test will simply be replaced by the “Specific Applications or Improvements to Technologies in the Marketplace” test. Only time will tell.
187. Id.
188. Id.
wide open to all sorts of processes as long as the processes do not “override the broad statutory categories . . . and the statutory context that directs primary attention on the patentability criteria of the rest of the Patent Act.”\textsuperscript{189} Such strong language has likely “place[d] a high hurdle in front of challengers who seek to invalidate process patents on the [abstract idea] ground.”\textsuperscript{190} Perhaps the Federal Circuit has also noted the problems associated with the category of “abstract idea” and wishes to minimize the application of this so-called “exception” to eligible subject matter.

VI. A SUGGESTED APPROACH TO THE ANALYSIS OF “ABSTRACT IDEAS”: THE “EXCLUSION” VIEW

The analysis under § 101 would be somewhat clearer if the Supreme Court or Congress would adopt a uniform understanding of why “abstract ideas” are not eligible for patenting under § 101. This Comment offers a perspective on “abstract idea” that would help courts and practitioners apply the view that abstract ideas are ineligible subject matter under § 101. Specifically, this Comment suggests that the “exclusion” view rejected by the BPAI in \textit{Ex parte Lundgren} should be adopted.\textsuperscript{191}

This Comment has already shown that the exceptions of “natural phenomena” and “laws of nature” can be viewed as exclusions based on a proper interpretation of the term “new” in § 101.\textsuperscript{192} Therefore, they may be seen as \textit{categorical tools} the courts use to decide if subject matter falls within the text of the statute rather than narrowing \textit{exceptions} to the text of the statute. However, the reasons that “natural phenomena” and “laws of nature” are not eligible subject matter do not apply as cleanly to an “abstract idea.” An abstract idea \textit{can} be “new,” or conceived and produced independently from what previously existed, unlike a natural phenomenon or a law of nature. Therefore, an “abstract idea” is

\textsuperscript{189} Id. at 868.


\textsuperscript{192} See, \textit{e.g.}, discussion regarding \textit{Funk Bros., Ex parte Bilski}, and \textit{In re Bergy}, \textit{supra} Part III.B.
fundamentally different from the other two categories of “exceptions” to eligible subject matter.

Interpreted narrowly, “abstract idea” does not fall within any definition of “process, machine, manufacture, or composition of matter,” and is therefore not an exception at all, but is merely a preclusion that results from the statutory language. In Ex parte Lundgren, the BPAI discussed whether the three “exceptions,” as the Supreme Court calls them, should be thought of as “exceptions” or “exclusions.”193 If the three categories of ineligible subject matter are “exclusions,” they “represent subject matter that is excluded by the terms of § 101.”194 In contrast, subject matter that is an “exception” includes subject matter that may fall within one of the statutory classes195 but is nonetheless unpatentable because of “some exceptional condition, i.e., [the courts] take out subject matter that would otherwise be included.”196 The Board concluded that the three categories are best understood as exceptions.197 Under this view, the three categories of ineligible subject matter are court-imposed limitations to the text of § 101. In contrast, if the three categories are viewed as “exclusions,” then the analysis of the categories is a tool to determine whether subject matter is eligible according to the statutory text alone. Under the latter (i.e., “exclusion”) view, even an abstract idea would be patent eligible under § 101, as long as it is a new and useful process.198

The petitioners in Bilski argued in their brief before the Supreme Court that a “practical application” rule should be applied to determine the patent eligibility of a claim involving an abstract idea, law of nature, or natural phenomenon.199 The petitioners summarized the proposed rule for abstract ideas in this manner: “abstract ideas are not eligible... because they are not ‘useful’ and they must be applied to a practical use before they can be

194. Id. at *31.
195. I.e., process, machine, manufacture, or composition of matter.
197. Id. at *31 (stating that the ineligible categories “refer to subject matter that would otherwise be within one of the categories of § 101”).
198. Of course, the claim and patent application would still be examined substantively under other provisions of the statute, including 35 U.S.C. §§ 102, 103, and 112.
In short, the petitioners argue that only ideas that are not "useful," as the term is used in § 101, should be ineligible abstract ideas. The "practical application" standard argued for by the Bilski petitioners appears to be more in line with the text of § 101 than is the "exception" view.

The Federal Circuit adopted a similar standard in Research Corp., stating that a process will likely pass the "coarse filter" of § 101 if the process involves "specific applications or improvements to technologies in the marketplace." This standard also narrows the applicability of the "abstract idea" exception only to cases where the abstract idea would "override the broad statutory categories . . . and the statutory context that directs primary attention on the patentability criteria of the rest of the Patent Act." Under Research Corp., it appears that the Federal Circuit agrees with the "exclusion" view, because the limits the court imposes on the eligibility of abstract ideas are based on the "statutory context," not on a sweeping, categorical "exception" to the statute.

As argued by the Bilski petitioner and as supported by the Research Corp. decision, the "abstract idea" preclusion should not be seen as a judicially-imposed "exception" to eligibility under § 101; rather, it should be seen as a tool the courts use to interpret the text of the statute, or, in other words, as an "exclusion." The "exception" view assumes that Congress meant for a broad category of processes to be patent-eligible and that the Court has legislated from the bench to add limitations to Congress's intended breadth. The "exclusion" view, on the other hand, assumes that the Court may use the "abstract idea" concept as a tool to interpret the text of the statute without imposing extra-statutory limitations to the text.

While the "exception" view is based on the premise that the Court may add to or limit the statute, the "exclusion" view is based

200. Id. at 14; see also id. at 43–44.
202. Id. at 868.
203. The terms "exception" and "exclusion" are used in this paragraph as the Board uses the terms in Landgren, discussed supra note 180.
204. This is precisely what the Supreme Court prescribed in Bilski v. Kappos, stating: "This Court has 'more than once cautioned that courts should not read into the patent laws limitations and conditions which the legislature has not expressed.'" 130 S. Ct. 3218, 3226 (quoting Diamond v. Diehr, 450 U.S. 175, 182 (1981)) (internal quotation marks omitted).
on the premise that the Court’s role is to merely interpret and apply the text of the statute. Therefore, the three categories of patent ineligibility are best viewed merely as results of interpreting the text of the statute (i.e., the “exclusion” view is correct), and not as adding any more limitation than the statute inherently contains (as the “exception” view would). Furthermore, the “exclusion” view fits with precedent stating that inventive practical applications of abstract ideas constitute eligible subject matter.205

In summary, if an inventive process covers an abstract idea, then that invention should be analyzed under the text of the Patent Act, rather than be categorically denied under § 101, even if it is purely an idea. This would be more in line with the Supreme Court’s vision of not “read[ing] into the patent laws limitations and conditions which the legislature has not expressed.”206 Some “idea” claims may still be denied under § 101 if they do not fall under one of the four categories of eligible subject matter, i.e., if they are not put to practical use. A greater portion of patent claims may pass this “coarse filter” than currently do, but some of these claims may still be rejected under other provisions of the Patent Act, particularly for violating § 112’s disclosure requirements. Using this analysis and understanding of “abstract ideas,” courts, examiners, and patent applicants can apply § 101 to process claims in a more constitutionally sound manner amid the growth of the Information Age.

VII. CONCLUSION

Over 150 years of Supreme Court precedent has established that “abstract ideas” are not eligible subject matter for patents. Despite this long history, patent applicants, examiners, and the courts themselves appear to be just as confused as ever in applying the standards for subject matter eligibility to borderline process claims. The courts have never provided a clear justification for the categorical prohibition of patents for “abstract ideas.”

To better understand the eligibility of process claims under § 101, the “abstract idea” category of ineligible subject matter should be seen as an “exclusion” based on the text of the statute


rather than as a judicially-imposed "exception" to the statute. If courts and practitioners adopt the "exclusion" view of "abstract ideas," as proposed, they will have a better understanding of the subject matter eligibility of process claims under § 101.

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