

**PATENT-ELIGIBLE SUBJECT MATTER...
STILL WIELDING THE WRONG WEAPON –
12 YEARS LATER**

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*I am delighted to have participated in the Second Annual Intellectual Property Redux Conference and to publish this essay. I rarely look back at my older articles, but in Fall 2018 I was asked to give a keynote address at a conference held by the Biotechnology Innovation Organization (BIO), where the organizers asked me to speak about 35 U.S.C. § 101 and patent-eligible subject matter. In preparing my remarks, I had the opportunity to refer back to one of my earliest scholarly pieces—a 2007 article entitled *Ants, Elephant Guns, and Statutory Subject Matter*, published in the *Arizona State Law Journal*.¹ It turns out, over the past twelve years, the only thing that has substantially changed in that time is how I refer to the issue, now preferring “patent-eligible subject matter” to “statutory subject matter.” However, there are some recent and coming changes to patent eligibility; in this essay, I will explain how some of these new changes finally move forward the proposals I made in 2007.*

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¹ Kristen Osenga, *Ants, Elephant Guns, and Statutory Subject Matter*, 39 ARIZ. ST. L.J. 1087 (2007).

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I. INTRODUCTION

When I wrote *Ants, Elephant Guns*, I described a trend I had noticed where, after years of quietly allowing software patent applications to issue, the U.S. Patent & Trademark Office (Patent Office) had begun rejecting applications directed towards this type of invention in greater numbers in the early 2000s.² In 2005, the Patent

² See *id.* at 1090.

Office even promulgated guidelines to address the “increasing numbers of applications . . . that raise subject-matter eligibility issues.”³ By promulgating the guidelines, I argued, the Patent Office had wrongly grafted other requirements of patentability onto the § 101 inquiry.⁴ I further contended that the Patent Office was using patent-eligible subject matter as a proxy to sidestep difficult policy questions or to avoid more complicated inquiries under other patentability requirements.⁵ As I saw it, the guidelines were the equivalent of the Patent Office aiming at ants (patent eligibility) with an elephant gun (an overblown process that exceeded the necessary inquiry for that issue).⁶

While I was writing and finalizing the article, the Patent Office decided a case called *In re Bilski*⁷ and the U.S. Court of Appeals for the Federal Circuit (Federal Circuit) decided *In re Comiskey*.⁸ I remarked in the article that “[t]his movement of limiting, or perhaps even eliminating, the patent eligibility of software-related inventions [was] not limited to the Patent Office” but was beginning to be seen in various court decisions.⁹ I ominously noted, “It seems merely a matter of time until the Supreme Court grants certiorari in a case that squarely addresses statutory subject matter in the computer-related

³ See U.S. Patent & Trademark Office, *Interim Guidelines for Examination of Patent Applications for Patent Subject Matter Eligibility*, OFF. GAZ. PAT. & TRADEMARK OFFICE (Nov. 22, 2005), <https://www.uspto.gov/news/og/2005/week47/patgupa.htm> [<https://perma.cc/J4WB-R775>].

⁴ See Osenga, *supra* note 1, at 1110–11.

⁵ See *id.* at 1115–21.

⁶ See *id.* at 1091.

⁷ Ex parte Bilski, No. 2002-2257, 2006 Pat. App. LEXIS 51 (B.P.A.I. Sept. 26, 2006).

⁸ *In re Comiskey*, 499 F.3d 1365 (Fed. Cir. 2007).

⁹ See Osenga, *supra* note 1, at 1090.

arts.”¹⁰ Apparently, “a matter of time” is just under three years, as the Supreme Court granted certiorari in the *Bilski* case (then titled *Bilski v. Kappos*) in 2009.¹¹

Little did I know that, in 2007, the Supreme Court would, in short order, decide not one case, but four cases, involving patent-eligible subject matter. Although I had no idea of the extent of the Court’s interest in the topic, I was (as it turns out, rightfully) concerned the Supreme Court would make the same errors I warned of in my first article.¹² The Supreme Court did not disappoint; in the four Supreme Court cases involving patent-eligible subject matter decided between 2010 and 2014, the Court, in my opinion, screwed it up most of those times.¹³ Between 2010 and today, guided by the Supreme Court’s mistaken precedent, the courts and the Patent Office have continually perpetuated this error of wielding an outsized elephant gun when assessing patent-eligible subject matter.¹⁴

There is, however, hope for change. In January 2019, the Patent Office published a set of guidelines for examining patent applications for patent-eligible subject matter.¹⁵ Not only do these guidelines attempt to fix some of the quagmires that resulted from the Supreme Court’s patent-eligible subject matter jurisprudence, but the guidelines also track with the inquiry I proposed in 2007. Additionally, Congress has taken an interest in fixing

¹⁰ *Id.*

¹¹ *See Bilski v. Kappos*, 556 U.S. 1268 (2009) (granting certiorari).

¹² *See Osenga, supra* note 1, at 1126.

¹³ *See Alice Corp. v. CLS Bank Int’l*, 573 U.S. 208 (2014); *Ass’n for Molecular Pathology v. Myriad Genetics, Inc.*, 569 U.S. 576 (2013); *Mayo Collaborative Servs. v. Prometheus Labs, Inc.*, 566 U.S. 66 (2012); *Bilski v. Kappos*, 561 U.S. 593 (2010).

¹⁴ *See infra* Section III.C.

¹⁵ *See* 2019 Revised Patent Subject Matter Eligibility Guidance, 84 Fed.Reg. 50 (Jan. 7, 2019).

patent-eligible subject matter, although the proposed legislation is not nearly as clear as the 2019 Guidelines. Perhaps, after twelve years, we will at long last approach the question of patent eligibility while wielding the proper weapon.

In this essay, I first discuss the problem I anticipated in 2007 and the solution I proposed at that time for better addressing the question of patent eligibility. Next, I describe how we arrived at what I call the Supreme Court’s modern “quadrilogy” on patent-eligible subject matter and how, through these four cases, the Court made the exact errors I was concerned about in *Ants*, *Elephant Guns*. I also discuss how the Court’s precedent then drove the Federal Circuit, district courts, and the Patent Office to propagate the same mistakes. I conclude by discussing the Patent Office’s 2019 Guidelines for determining patent-eligible subject matter and explain how these guidelines finally—that is, twelve years later—implement my suggestions from *Ants*, *Elephant Guns*. I also examine recently proposed legislation to improve patent-eligible subject matter and discuss how this reform effort also aligns with my perspective from 2007.

II. ANTS AND ELEPHANT GUNS 2007

All bad ideas start somewhere. Although I cannot point to the precise moment when the doctrine of patent-eligible subject matter started its descent, in *Ants*, *Elephant Guns*, I proffer an opinion of the Board of Patent Appeals and Interferences (BPAI) as the opening salvo in the Patent Office’s stand against patent-eligible subject matter of

software-related inventions.¹⁶ That fateful opinion is *Ex parte Lundgren*.¹⁷

Dr. Lundgren had submitted a patent application directed towards a method of compensating a manager, while preventing collusion, by reducing a variety of incentives.¹⁸ The examiner rejected all of the claims in Lundgren’s application as ineligible or non-statutory subject matter because the subject matter was “outside the technological arts” and was not a practical application of an abstract idea.¹⁹ A panel of the BPAI initially reversed the examiner’s rejection, the examiner sought reconsideration, and an expanded panel of the BPAI reheard the case.²⁰ Upon this rehearing, the majority reversed the examiner’s rejection in a short, and quite reasonable, opinion.²¹ If this had been the end of the matter, the *Lundgren* opinion would likely never have been spoken of again.

What is noteworthy about the *Lundgren* case is the partial, yet extensive, dissent by Judge Barrett.²² While Judge Barrett agreed with the majority’s rejection of the “technological arts test” for patent eligibility used by the examiner, he went on at length discussing the history of the doctrine and then proceeded to examine three possible tests for patent-eligible subject matter, each involving some notion of physicality or tangibility.²³ Judge Barrett concluded that under each of these tests, Dr. Lundgren’s

¹⁶ See Osenga, *supra* note 1, at 1103.

¹⁷ *Ex parte Lundgren*, No. 2003-2088, 76 U.S.P.Q.2d (BNA) 1385 (B.P.A.I. Sept. 28, 2005).

¹⁸ See *id.* at 1386.

¹⁹ See *id.*

²⁰ See *id.*

²¹ See *id.* at 1385–88.

²² See *Lundgren*. at 1389–432 (Barrett, J., dissenting in part).

²³ See *id.*

invention was ineligible for patenting because it lacked any sort of physical implementation or instantiation.²⁴

Although Judge Barrett’s dissent did not carry the day in the *Lundgren* case, it soon formed the basis of the Patent Office’s 2005 Interim Guidelines for Examination of Patent Applications for Patent Subject Matter Eligibility.²⁵ The guidelines began simply enough, rejecting the “technological arts” test in the same manner as did the *Lundgren* majority.²⁶ The guidelines then took a different turn and stated that “a practical application of a 35 U.S.C. §101 judicial exception is claimed if the claimed invention *physically* transforms an article or *physical* object to a different state or thing, or if the claimed invention otherwise produces a useful, concrete, and *tangible* result.”²⁷ In one fell swoop, the Patent Office entrenched the notion of physicality as the primary key to patent eligibility.

With the 2005 Guidelines as my backdrop for *Ants, Elephant Guns*, I explained why this approach to determining patent-eligible subject matter was all wrong. In a section titled “Why the Question of Subject-Matter Eligibility is an Ant (Tiny and Inconsequential),” I explained why putting too much importance on patent eligibility was inapt.²⁸ Specifically, I noted that § 101 was intended to serve as a threshold, or a first doorway, to pass before reaching inquiries that are more difficult.²⁹ After

²⁴ See *id.* at 1429–32.

²⁵ Interim Guidelines for Examination of Patent Applications for Patent Subject Matter Eligibility, *supra* note 3.

²⁶ See Osenga, *supra* note 1, at 1105.

²⁷ See *id.* at 1106 (emphasis added).

²⁸ See Osenga, *supra* note 1, at 1107.

²⁹ See *id.* (citing *In re Comiskey*, 499 F.3d at 1371; *In re Bergy*, 596 F.2d 952, 960 (C.C.P.A. 1979)).

all, the statutory language is broad and had been intended by Congress, and interpreted by the Supreme Court, to be widely inclusive.³⁰ Beyond that, the types of invention that were raising concerns, or failing under the guidelines, were the very types of inventions that were forming the basis of the modern economy—software.³¹ These inventions are precisely the ones that should benefit from the protection of patent law.³² For these reasons, determining whether an invention was eligible for patenting should be a small and simple question—an ant.

I then explained, in a section aptly titled “Why the Interim Guidelines are Like an Elephant Gun (Overkill, Anyone?),” how the Patent Office’s test laid out in the 2005 Guidelines was the wrong approach for dealing with such a simple question.³³ I argued that the Patent Office was over-complicating patent eligibility for two primary reasons. First, I contended that the guidelines were generally hostile to software-related inventions.³⁴ Using

³⁰ *See id.* at 1108. Congress had noted that § 101 encompassed “anything under the sun that is made by man,” S. Rep. No. 82-1979, at 5 (1952); H.R. Rep. No. 82-1923, at 6–7 (1952), and the Supreme Court observed that “[i]n choosing such expansive terms,” Congress expected the statute to “be given wide scope.” *Diamond v. Chakrabarty*, 447 U.S. 303, 308 (1980).

³¹ *See Osenga, supra* note 1, at 1109.

³² *See e.g.*, Kenneth L. Sokoloff & B. Zorina Khan, *Intellectual Property Institutions in the United States: Early Development & Comparative Perspective*, at 9 (2000) (noting that the framers of the patent system had created “property rights in new inventions” in a way that “was extremely effective at stimulating the growth of a market for technology and promoting technical change”) <http://www.dklevine.com/archive/sokoloff-kahn.pdf> [<https://perma.cc/3S23-Z93G>].

³³ *See Osenga, supra* note 1, at 1110.

³⁴ *See Osenga, supra* note 1, at 1114–15. I argued that this hostility could be a remnant from hostility that courts had long displayed towards software-related inventions or could be a response to the Patent

the threshold question of patent eligibility was a quick and handy way to dispense of patent applications on technology that raised concerns.³⁵ Second, I argued the Patent Office was using § 101 rejections as proxies to avoid more difficult questions of patentability and policy.³⁶ I demonstrated how much of the patent-eligibility inquiry had become entangled in questions that were better considered as novelty, under 35 U.S.C. § 102, or written description, under 35 U.S.C. § 112.³⁷ The 2005 Guidelines, as well as Judge Barrett’s analysis in *Ex parte Lundgren*, conflated other requirements of patentability with patent eligibility.³⁸ Using these overblown, convoluted tests to determine patent-eligible subject matter was akin to wielding a rather unnecessary elephant gun.

I concluded *Ants, Elephant Guns* by suggesting the appropriate process for determining patent-eligible subject matter.³⁹ The first inquiry is whether the invention fits into one of the four § 101 statutory categories—specifically, is it a process, machine, manufacture, or composition of matter?⁴⁰ The second inquiry is to determine if the invention is solely one of the three judicially created exceptions—that is, a law of nature, a natural phenomenon, or an abstract idea.⁴¹ The second question would not be met simply because the invention included one of the exceptions; rather, “the relevant question is whether the claimed invention would preempt all uses of the abstract

Office’s ability to adequately examine patent applications for this type of invention. *See id.*

³⁵ *See id.*

³⁶ *See* Osenga, *supra* note 1, at 1115–18.

³⁷ *See id.*

³⁸ *See id.* at 1118–22.

³⁹ *See id.* at 1124.

⁴⁰ *See id.*

⁴¹ *See id.*

idea, law of nature, or natural phenomenon.”⁴² “The correct process is simple,” I proclaimed.⁴³

III. THE SUPREME COURT QUADRILOGY 2010-2014

In 2007, I was hopeful as I looked to the Supreme Court to clarify patent eligibility. However, I was also cautious, stating that, “[w]hen the Supreme Court addresses this issue, and should it follow the same path of analysis, it too will be misguided, and the result will be harmful to software innovation.”⁴⁴ Little did I know that the Supreme Court would not only address this issue following the same misguided path of analysis, but that the Supreme Court would up the ante, essentially engaging in a patent law version of “hold my beer.” What came next were four decisions that would ultimately rock the foundations of patent-eligible subject matter jurisprudence. This section first describes the lead-up to the quadrilogy, followed by a brief discussion of each of the four cases. This section concludes with a description of how the Supreme Court’s jurisprudence has been used by the Federal Circuit and district courts, as well as the Patent Trial and Appeal Board (PTAB), to wreak havoc on patent eligibility.

A. *The Road to the Quadrilogy*

The four cases, those I am calling the modern quadrilogy of patent eligibility, were not the Supreme Court’s first foray into patent-eligible subject matter. In the late 1970s and early 1980s, the Court also took a handful of cases—the original trilogy of patent eligibility—that stood

⁴² *See id.*

⁴³ *See id.*

⁴⁴ Osenga, *supra* note 1, at 1126.

for decades as the definitive statement on the issue.⁴⁵ After deciding *Gottschalk v. Benson* and *Parker v. Flook* in the late 1970s,⁴⁶ the Court wrapped up the trilogy in 1981 in *Diamond v. Diehr*.⁴⁷ Through this set of cases, the Supreme Court clarified that a “process requires that certain things should be done with certain substances, and in a certain order; but the tools to be used in doing this may be of secondary consequence.”⁴⁸ In fact, the particular machine on which the process was done did not matter; instead, the key to patent eligibility was the “[t]ransformation and reduction of an article ‘to a different state or thing.’”⁴⁹ Algorithms, or “procedure[s] for solving a given type of mathematical problem,” were, on the other hand, like laws of nature and not eligible for patent protection.⁵⁰ If the invention included a mathematical formula or was directed to a software-related invention, patent eligibility would be found if the claim “implements or applies that formula [or algorithm] in a structure or process which, when considered as a whole, is performing a function which the patent laws were designed to protect.”⁵¹

⁴⁵ The early cluster of patent-eligible subject matter cases heard by the Supreme Court is also actually a quadrilogy if *Diamond v. Chakrabarty*, 447 U.S. 303 (1980) is included. However, since that case took a different tactic and was not concerned with whether the invention was an implementation or an instance of the judicially created exceptions, it is generally not listed in the same breath as *Benson*, *Flook*, and *Diehr*.

⁴⁶ *Parker v. Flook*, 437 U.S. 584 (1978); *Gottschalk v. Benson*, 409 U.S. 63 (1972).

⁴⁷ 450 U.S. 175 (1981).

⁴⁸ *See id.* at 183–84 (quoting *Cochrane v. Deener*, 94 U.S. 780, 787–88 (1877)).

⁴⁹ *See Diehr*, 450 U.S. at 184 (quoting *Gottschalk v. Benson*, 409 U.S. 63, 70 (1972)).

⁵⁰ *See id.* at 186 (citing *Gottschalk*, 409 U.S. 63; *Flook*, 437 U.S. 584).

⁵¹ *See id.* at 192.

After the Supreme Court’s rash of interest in patent eligibility with the original trilogy, the doctrine was relatively quiet until the late 1990s, when the Federal Circuit decided *State Street Bank & Trust Co. v. Signature Financial Group, Inc.*, holding that, so long as the invention “produces a useful, concrete, and tangible result,” it was eligible for patenting.⁵² Many commentators believe this case opened the door to patenting of software-related inventions and business methods and began the golden era of patent-eligible subject matter.⁵³ It was during this period that I was in law school and barely learned about patent eligibility; it was not a doctrine expected to have much impact on practice. After law school, I worked as a patent attorney, drafting patent applications on software-related inventions and business methods among other things, and then clerked at the Federal Circuit. Patent eligible subject matter still was not an issue that was given much thought. In 2004, I entered academia and there starts to be a shift surrounding patent eligibility.⁵⁴

As noted above, although the end of the golden era began in the early 2000s, it was in 2010 when the downward spiral really began. Whether emboldened by the Patent Office’s initial parry against software-related inventions in the 2005 Guidelines or persuaded by a growing swell of public opinion against “bad patents,”⁵⁵ the Supreme Court would spend four years, and four cases,

⁵² See *State St. Bank & Tr. Co. v. Signature Fin. Grp., Inc.*, 149 F.3d 1368 (Fed. Cir. 1998).

⁵³ See, e.g., William A. Drennan, *The Patent Office is Promoting Shocking New Tax Loopholes – Should the Empire Strike Back*, 60 OKLA. L. REV. 491, 502 n. 62 (2007).

⁵⁴ The timing is coincidental; I do not believe my entrance into academia caused the downfall of patent eligibility.

⁵⁵ See, e.g., Mark A. Lemley, Douglas Lichtman & Bhaven N. Sampat, *What to Do About Bad Patents?*, Winter 2005, https://papers.ssrn.com/sol3/papers.cfm?abstract_id=869826 [<https://perma.cc/2AFE-JHQM>].

turning patent-eligible subject matter into something altogether different and ushering in something quite the opposite of a golden era. By the end of the modern quadrilogy, composed of *Bilski*, *Mayo*, *Myriad*, and *Alice*,⁵⁶ the Supreme Court had crafted an utterly unworkable test for patent eligibility that has been called, at various times, a “real mess” and chaotic.⁵⁷ For just a small bit of evidence documenting the end of the golden era, consider the *Bilski* Blog, a website providing commentary as well as regular updates on patent invalidations based on patent-eligible subject matter grounds.⁵⁸

B. The Four Cases

Each of the cases of the modern quadrilogy has aspects that harken back to the 2005 Guidelines and the emphasis on physicality as the crux of patent eligibility. This section will briefly describe the four cases and how each of the cases includes one or more of the errors or concerns I raised in *Ants*, *Elephant Guns*.

⁵⁶ See *infra* Section III.B. for a discussion of these cases.

⁵⁷ Ryan Davis, *Kappos Calls for Abolition of Section 101 of Patent Act*, LAW360 (Apr. 12, 2016) (quoting David Kappos, former Director of the U.S. Patent & Trademark Office, saying that the doctrine is a “real mess”) <https://www.law360.com/articles/783604/kappos-calls-for-abolition-of-section-101-of-patent-act> [<https://perma.cc/XUS9-DPZF>]; see *The Impact of Bad Patents on American Businesses: Hearing Before the Subcomm. on Courts, Intell. Prop., & the Internet of the H. Comm. on the Judiciary*, 115th Cong. 3 (2017) (supplemental statement of Judge Paul R. Michel) (“Patent-eligibility law under § 101 has descended into chaos after a string of Supreme Court decisions.”) <http://www.ipwatchdog.com/wp-content/uploads/2017/09/Supplemental-Statement-of-Paul-R-Michel-Sept-12-2017.pdf> [<https://perma.cc/2GD6-AMW7>].

⁵⁸ For the regularly-updated statistics on invalidation, see the topic “#AliceStorm” on the *Bilski* Blog. BILSKI BLOG, #AliceStorm, <https://www.bilskiblog.com> [<https://perma.cc/H4FK-TGSU>].

1. *Bilski v. Kappos*⁵⁹

In the *Bilski* case, the patent application was directed toward a method of hedging risk when trading commodities. Instead of finding this to be patent-eligible subject matter, the Court stated it was an ineligible abstract idea.⁶⁰ The Court based its reasoning on the fact that the claims did not specify any particular structures for implementation, which was quite a shift from the Court's position in the original trilogy that the tools "may be of secondary consequence."⁶¹ This nod towards a physicality requirement and rather shorthand assessment of software as an abstract idea without a deeper inquiry, which was first implemented by the Patent Office and adopted by the Supreme Court in *Bilski*, raised great concern for this type of invention.

More problematic was the statement that the claims were ineligible because they were directed towards a "fundamental economic practice long prevalent in our system of commerce."⁶² To allow patents on inventions of this type would thus preempt the public from using that basic economic concept.⁶³ This also demonstrates a concern I raised in *Ants, Elephant Guns*, that courts were using patent-eligible subject matter as a proxy for more difficult inquiries related to patentability and policy. Specifically, the assertion that the claims in *Bilski* were directed toward "fundamental" practices, "long prevalent" smacks of a lack of novelty, or perhaps obviousness. Showing a patent application to be unpatentable under 35 U.S.C. § 102 or § 103, however, is much more

⁵⁹ 561 U.S. 593 (2010).

⁶⁰ *Id.* at 611.

⁶¹ *Id.* at 599 (noting that the patent examiner found the claims were not implemented on a specific apparatus).

⁶² *Id.*

⁶³ *Id.* at 611–12.

complicated. The Patent Office needs to find and assess the prior art for a novelty inquiry and provide a reason to combine multiple pieces of prior art for nonobviousness.⁶⁴ Patent-eligible subject matter, however, requires only a bare claim of preemption or lack of structure. The ease with which § 101 could be applied makes it a rather appealing proxy for sections of the Patent Act that call for more effort.

2. Mayo Collaborative Services v. Prometheus Laboratories, Inc.⁶⁵

Two years after *Bilski*, the Court decided the *Mayo* case, this time extending its shorthand assessment beyond the field of software-related inventions and into the realm of medical diagnostics. The claims in *Mayo* were related to a diagnostic method involving administering a drug, measuring the level of a metabolite associated with the drug, and then increasing or decreasing the drug’s dosage based on that measurement.⁶⁶ Rather than an abstract idea, the Court determined that this claim was directed to a law of nature, and again without an in-depth inquiry, held that the invention was ineligible for patenting.⁶⁷

Moreover, the Court noted that the claim steps, beyond that law of nature, were “well understood, routine,

⁶⁴ See, e.g., Sean B. Seymore, *The Null Patent*, 53 WM. & MARY L. REV. 2041, 2046 (2012) (explaining that both novelty and non-obviousness require a patent examiner to find relevant prior art); Christopher A. Cotropia, *Predictability and Nonobviousness in Patent Law after KSR*, 20 MICH. TELECOMM. TECH. L. REV. 391, 411 (2014) (describing how patent examiners are instructed to find a reason to combine prior art for nonobviousness rejections).

⁶⁵ *Mayo Collaborative Servs. v. Prometheus Labs., Inc.*, 566 U.S. 66 (2012).

⁶⁶ *Id.* at 74–75.

⁶⁷ See *id.* at 92.

and conventional activity.”⁶⁸ Similar to *Bilski*, the Court again used patent-eligible subject matter as a proxy for assessing the more difficult question of novelty. Rather than having to find and assert prior art under § 102, the Court relied on § 101 as a proxy to simply point out that the steps were routine and conventional. Whether steps of an invention are routine or conventional, however, should not be the deciding factor as to whether that invention passes the threshold of patent eligibility; instead, those issues should be considered under §§ 102, 103, and 112.

3. Association for Molecular Pathology v. Myriad Genetics, Inc.⁶⁹

The following year, the Court determined certain patent claims were directed to an ineligible “product of nature.”⁷⁰ In this case, Myriad had discovered the location and sequence of the BRCA1 and BRCA2 genes; mutations in these genes dramatically increase the risk of developing certain cancers.⁷¹ Myriad then filed patent applications directed toward the isolated DNA, as well as cDNA, which was created in a lab using sequencing technology.⁷² Although Myriad had done important work to isolate the gene, the Court determined the isolated gene sequences were not eligible for patenting because they were not inventions.⁷³ The cDNA, on the other hand, because it did not exist in nature, but had to be created in a lab, was patent eligible.⁷⁴

⁶⁸ *Id.* at 73–74.

⁶⁹ *Ass’n for Molecular Pathology v. Myriad Genetics, Inc.*, 569 U.S. 576 (2013).

⁷⁰ *Id.* at 580.

⁷¹ *Id.* at 582–83.

⁷² *Id.* at 583–84, 594–95.

⁷³ *Id.* at 591 (“To be sure, [Myriad] found an important and useful gene, but separating that gene from its surrounding genetic material is not an act of invention.”).

⁷⁴ *Id.* at 595.

Although the *Myriad* case is a bit of an outlier, not unlike *Chakrabarty* from the Court's spate of patent-eligible subject matter cases from the 1970s and 1980s in that at least part of the invention was found to be eligible for patenting, it still raises some of the same concerns as the other cases of the modern quadrilogy. Peter Lee has convincingly argued that the Court's use of patent eligibility in the *Myriad* case provided an easier route to invalidate gene patents because patent-eligible subject matter serves as a "blunt on-off switch."⁷⁵ He notes that other patentability doctrines, such as nonobviousness or written description, "may offer more nuanced, granular means for regulating patentability."⁷⁶ Again, the Court chose the simpler inquiry of patent-eligible subject matter to bypass the more apt, yet more difficult, inquiries of patentability.

4. *Alice Corp. v. CLS Bank Int'l*⁷⁷

In the *Alice* case, the Court again returned to the ineligibility of abstract ideas.⁷⁸ The patent at issue in this case covered a method and system for managing settlement risks when two parties conduct a financial transaction.⁷⁹ In addition to refusing to fully define "abstract idea,"⁸⁰ the Court set forth a two-part test for determining patent

⁷⁵ See Peter Lee, *The Supreme Court's Myriad Effects on Scientific Research: Definitional Fluidity and the Legal Construction of Nature*, 5 U.C. IRVINE L. REV. 1077, 1099 (2015).

⁷⁶ See *id.*

⁷⁷ *Alice Corp. Pty. Ltd. v. CLS Bank Int'l*, 573 U.S. 208 (2014).

⁷⁸ *Id.* at 227.

⁷⁹ *CLS Bank Int'l v. Alice Corp.*, 717 F.3d 1269, 1274 (Fed. Cir. 2013) (per curiam) (describing the technology and patent at issue in the case).

⁸⁰ See *Alice Corp.* 573 U.S. at 221 ("In any event, we need not labor to delimit the precise contours of the 'abstract ideas' category in this case. It is enough to recognize that there is no meaningful distinction between [the invention of *Bilski* and the invention in this case]. Both are squarely within the realm of 'abstract ideas' as we have used that term.").

eligibility it claimed was announced in *Mayo*.⁸¹ Specifically, the Court stated that the first step was to “determine whether the claims at issue are directed to one of [the] patent-ineligible concepts [such as law of nature, natural phenomenon, or abstract idea].”⁸² The second step asks, “what else is there in the claims,” an inquiry the Court has characterized as a “search for an ‘inventive concept.’”⁸³ Within this second step, the courts have asked whether the claim transforms an object into something more.⁸⁴ This inquiry is a direct callback to the 2005 Guidelines and the search for physicality in the invention.

The *Alice/Mayo* two-step again relies on the easy-to-apply § 101, rather than doing the difficult work of assessing novelty or nonobviousness. The very term “inventive concept” harkens back to the old test for obviousness—the “flash of genius” test.⁸⁵ However, when the Patent Act was revised in 1952, Congress specifically got rid of the search for a flash of genius,⁸⁶ only to have the Supreme Court breathe new life into the notion with its new patent eligibility test.

⁸¹ See *id.* at 217–18.

⁸² See *id.* at 217.

⁸³ See *id.*

⁸⁴ See, e.g., Jeffrey A. Lefstin, *The Three Faces of Prometheus: a Post-Alice Jurisprudence of Abstractions*, 16 N.C. J. L. & TECH. 647, 673, 677 (2015) (noting “a claim must represent something more than a generic instruction to apply a fundamental principle”); David O. Taylor, *Confusing Patent Eligibility*, 84 TENN. L. REV. 157, 184 (2016) (“What is important, according to the *Alice* Court, is to distinguish between basic ‘building blocks’ and inventions that integrate them into ‘something more.’”).

⁸⁵ See, e.g., *Cuno Engineering Corp. v. Automatic Devices Corp.*, 314 U.S. 84 (1941).

⁸⁶ See 35 U.S.C. § 103 (2019) (“Patentability shall not be negated by the manner in which the invention was made.”).

Moreover, through the modern quadrilogy, the Supreme Court has elevated patent-eligible subject matter to a rather useful proxy for a different type of difficult policy question—patent licensing firms. Patent licensing firms, or as they are known pejoratively, “patent trolls,” are firms that may not manufacture goods but instead earn revenue by licensing their patents to other firms that wish to use the patented technology.⁸⁷ Because patent eligibility has been recognized as a threshold issue, it can be decided at early stages of litigation.⁸⁸ Some commentators have suggested that patents on software-related inventions are particularly litigated by patent licensing firms.⁸⁹ For these two reasons, foes of patent licensing firms (not to mention judges) quickly embraced patent eligibility as a sword to slay “patent trolls.”⁹⁰ Rather than focusing on the merits of the invention or digging deeply into any actual issues underlying the purported concern about patent licensing

⁸⁷ See, e.g., Kristen Osenga, *Formerly Manufacturing Entities: Piercing the “Patent Troll” Rhetoric*, 47 CONN. L. REV. 435, 445 (2014).

⁸⁸ See, e.g., Scott W. Doyle et al., *A Trend Toward Earlier Resolution of Patent Eligibility in the Post-Alice World*, 88 PAT. TRADEMARK & COPYRIGHT J. 1348 (2014).

⁸⁹ See Colleen V. Chien & Aashish R. Karkhanis, *Functional Claiming and Software Patents* (Feb. 12, 2013) (asserting that eighty-two percent of defendants sued by patent trolls were sued based on a software patent), http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2215867 [<https://perma.cc/GMS4-Z6DP>].

⁹⁰ See, e.g., Guy Chambers, *Ultramercial v. Hulu: The Guillotine for Patent Trolls*, LAW360 (Dec. 8, 2014) (cheering the Federal Circuit’s use of patent-eligible subject matter to dismiss cases via Federal Rule of Civil Procedure 12(b)(6)); Klint Finley, *Supreme Court Deals Major Blow to Patent Trolls*, WIRED (June 19, 2014, 3:48 PM), <http://www.wired.com/2014/06/supreme-court-deals-major-blow-to-patent-trolls> [<https://perma.cc/ZB8Z-NBY8>]; Julie Samuels, *Patent Trolls are Mortally Wounded*, SLATE (June 20, 2014, 1:47 PM), <https://slate.com/technology/2014/06/alice-v-clb-supreme-court-gets-software-patent-ruling-right.html> [<https://perma.cc/B2TC-77B9>] (“So now we’re living in a world where fewer bad software patents will be granted, and the patent troll arsenal will be a little lighter.”).

firms, the Court opened the door to using patent-eligible subject matter as a proxy for this as well.

C. *What the Lower Courts and PTAB Did*

Not surprisingly, the Federal Circuit and district courts took the Supreme Court's patent eligibility jurisprudence and ran with it. Although the Court may have expected, or perhaps hoped, the lower courts would fill in the gaps and clarify any issues remaining after *Alice*, the general consensus is that is not what happened.⁹¹ Rather, the lower courts have amplified the use of patent-eligible subject matter as an easy way to dispose of cases and avoid difficult questions, invalidating patents and affirming rejections of patent applications issued by the Patent Office in short order.⁹² The Patent Office's response was also to increase the number of rejections of patent applications, often very early during the prosecution process.⁹³

Perhaps more interesting than the increase in patent-eligible subject matter invalidations and rejections, however, was the extension of § 101 to technologies

⁹¹ See, e.g., Jonathan Stroud & Derek M. Kim, *Debugging Software Patents After Alice*, 69 S.C. L. REV. 177, 191 (2017); Taylor, *supra* note 84, at 227 (describing the test's lack of administrability).

⁹² Taylor, *supra* note 84, at 236–40 (describing the effect of *Alice* on lower court opinions); see, e.g., Stroud & Kim, *supra* note 87, at 191–99 (detailing software patent invalidations in 2016).

⁹³ See Robert Sachs, *Two Years After Alice: A Survey of the Impact of a "Minor Case" (Part 1)*, BILSKI BLOG (June 16, 2016), <https://www.bilskiblog.com/2016/06/two-years-after-alice-a-survey-of-the-impact-of-a-minor-case> [https://perma.cc/8KUZ-4V3A] (summarizing § 101 rejections at the Patent Office following *Alice*); Robert Sachs, *Two Years After Alice: A Survey of the Impact of a "Minor Case" (Part 2)*, BILSKI BLOG (June 20, 2016), <https://www.bilskiblog.com/2016/06/two-years-after-alice-a-survey-of-the-impact-of-a-minor-case-part-2> [https://perma.cc/UL92-W3BK].

usually not associated with laws of nature or abstract ideas. Although the bulk of invalidations and rejections center around computers and software-related inventions (abstract ideas) or biotechnology (laws of nature),⁹⁴ patent eligibility has also been questioned in a wide range of non-computer, non-biotechnology fields. For example, in *American Axle & Manufacturing, Inc., v. Neapco Holdings LLC*, a district court judge invalidated patents on a technology to reduce vibrations being transmitted through the drivetrain of a car.⁹⁵ Despite the fact that the claims were specifically directed to making a part of a car’s driveline system,⁹⁶ the judge determined under the first step of the test that these claims were directed to laws of nature, specifically Hooke’s law and friction damping. The judge determined that the claims “are applications of Hooke’s law with the result of

⁹⁴ See Paul R. Gugliuzza & Mark A. Lemley, *Can the Court Change the Law By Saying Nothing?* (forthcoming); see also Chad Gilles, *Mayo and Alice Had Little Impact on Prosecution (Except for a Few Art Units)*, BIGPATENTDATA (Oct. 23, 2018), <https://bigpatentdata.com/2018/10/subject-matter-eligibility-is-not-that-big-of-a-deal-except-for-a-few-art-units> [<https://perma.cc/5E5J-5JMW>] (noting that some art units in the computer and information technology space, including units 3620, 3680, and 3690 “went absolutely bananas after *Alice*”).

⁹⁵ *American Axle & Manuf., Inc. v. Neapco Holdings LLC*, C.A. No. 15-116-LPS Memorandum Opinion (Feb. 27, 2018).

⁹⁶ For example, a representative claim (claim 22) follows:

A method for manufacturing a shaft assembly of a driveline system, the driveline system further including a first driveline system further including a first driveline component and a second driveline component, the shaft assembly being adapted to transmit torque between the first driveline component and the second driveline component, the method comprising:

Providing a hollow shaft member;

Tuning a mass and a stiffness of at least one liner; and

Inserting the at least one liner into the shaft member;

Wherein the at least one liner is a tuned resistive absorber for attenuating shell mode vibrations and wherein the at least one liner is a tuned reactive absorber for attenuating bending mode vibrations.

See *American Axle* at 3.

friction damping.”⁹⁷ However, the judge neglected to consider the claim as a whole, which is instead directed toward an industrial process for manufacturing car parts.⁹⁸ After the modern quadrilogy of patent-eligible subject matter opinions, it was unclear whether patent law or innovation would ever be the same again. However, there is still hope.

IV. PATENT OFFICE 2019 GUIDELINES – AND BEYOND

In this section, I explain how the doctrine of patent-eligible subject matter is getting at least somewhat better based on guidelines issued by the Patent Office in 2019, as well as proposed legislation, that may fix many of the concerns I described. As discussed above, in *Ants, Elephant Guns*, I described the appropriate inquiry for patent eligibility was simply to first ask whether the invention fits into one of the four categories enumerated in § 101,⁹⁹ and second to determine if the invention is directed wholly to a law of nature, natural phenomenon, or abstract idea, thereby preempting other uses of whatever is claimed.¹⁰⁰ I wrote then, as well as in other articles I have written since, that any other questions are better left for other statutory requirements of patentability.¹⁰¹ I concluded in *Ants, Elephant Guns* that “[a]ll other inquiries are irrelevant to an analysis of eligible subject matter under § 101. . . . This is the whole extent of the § 101 subject-

⁹⁷ See *id.* at 9–11.

⁹⁸ See *id.*

⁹⁹ See Osenga, *supra* note 1, at 1124.

¹⁰⁰ See *id.*

¹⁰¹ See *id.* at 1125; Kristen Osenga, *Debugging Software’s Schemas*, 82 GEO. WASH. L. REV. 1832 (2014); Kristen Osenga, *The Problem with PTAB’s Power over Section 101*, 17 CHI.-KENT J. INTELL. PROP. 405 (2018); Kristen Osenga, *Institutional Design for Innovation: A Radical Proposal for Addressing § 101 Patent-Eligible Subject Matter*, 68 AM. U. L. REV. (forthcoming 2019).

matter eligibility question, no more and no less.”¹⁰² In that article, I argued that patent-eligible subject matter should actually be viewed as a very narrow requirement—almost everything should be deemed eligible—and that the Patent Office and courts should focus instead on the other requirements of patentability—specifically novelty, nonobviousness, and written description.¹⁰³ In the sections that follow, I will explain how the 2019 Guidelines and proposed legislation track with my proposal from *Ants, Elephant Guns*.

A. 2019 Guidelines

In January 2019, the U.S. Patent and Trademark Office published a set of guidelines for examining patent applications for patent-eligible subject matter,¹⁰⁴ and these 2019 Guidelines are very much in line with what I proposed in 2007. With the Patent Office seemingly adopting my decade-old exhortation from *Ants, Elephant Guns*, I am now delighted to revisit my thoughts on patent-eligible subject matter.

The biggest change imposed by the 2019 Guidelines is the revision to the first step of the *Alice/Mayo* two-step and how patent examiners determine whether a claim is “directed to” a law of nature, natural phenomenon, or abstract idea.¹⁰⁵ Examiners must determine whether the claim recites one of these judicially-created exceptions; if it

¹⁰² See Osenga, *supra* note 1, at 1124.

¹⁰³ See *id.* at 1091–92.

¹⁰⁴ See 2019 Revised Patent Subject Matter Eligibility Guidance, 84 Fed.Reg. 50 (Jan. 7, 2019).

¹⁰⁵ See *id.* at 53. The guidelines also clarified that “abstract ideas” included (a) mathematical concepts; (b) certain methods of organizing human activity; and (c) mental processes. See *id.* at 52. This, too, represents a big improvement, but is not central to the concept of this essay.

does not, the claim is eligible for patenting without further analysis.¹⁰⁶ If it does recite a judicially created-exception, then the patent examiner is to evaluate whether that exception is integrated into a practical application.¹⁰⁷ In comments, the 2019 Guidelines note: “Only when a claim recites a judicial exception and fails to integrate the exception into a practical application, is the claim ‘directed to’ a judicial exception, thereby triggering the need for further analysis pursuant to the second step of the *Alice/Mayo* test.”¹⁰⁸ Additionally, to determine patent-eligible subject matter, the examiner is to consider the claim as a whole.¹⁰⁹ However, the examiner is *not* to evaluate whether additional claim elements are well-understood, routine, or conventional.¹¹⁰

Throughout fall 2018, Andrei Iancu, Director of the U.S. Patent and Trademark Office, made numerous public statements previewing the ideas that eventually became the 2019 Guidelines. For example, in September 2018, in a speech before the Intellectual Property Owners Association (IPO), Director Iancu called for a simpler approach in determining patent-eligible subject matter, explaining that “eligibility rejections are to be applied only to claims that recite subject matter within the defined categories of judicial exceptions” and only “if the claim does not integrate the recited exception into a practical application.”¹¹¹ In describing this simpler approach,

¹⁰⁶ See Guidelines, *supra*, note 104.

¹⁰⁷ See *id.*

¹⁰⁸ See *id.* at 51.

¹⁰⁹ See *id.* at 55.

¹¹⁰ See *id.*

¹¹¹ See Andrei Iancu, Dir. of the USPTO, Remarks delivered at the Intellectual Property Owners Association 46th Annual Meeting (Sept. 24, 2018) (transcript), *available at* <https://www.uspto.gov/about-us/news-updates/remarks-director-iancu-intellectual-property-owners-46th-annual-meeting> [<https://perma.cc/6Q2H-SU6F>].

Director Iancu cautioned against the approaches of the Supreme Court and other courts that commingle patent eligibility with other requirements of patentability.¹¹² The primary benefits, as Director Iancu explained, are that the new approach would “categorize the exceptions based on a synthesis of case law to date” and “would instruct examiners to decide if it is ‘directed to’ that exception by determining whether such exception is integrated into a practical application.”¹¹³ Director Iancu’s remarks explained an important difference between the present approach and the approach he proposed. “It is important to note that the first step of our analysis does not include questions about ‘conventionality’” and “[t]his helps to ensure there is a meaningful dividing line between 101 and 102/103 analysis.”¹¹⁴ Additionally, Director Iancu noted that other problems that have currently been addressed with patent-eligible subject matter doctrines have to do with “certain types of broad, functionally defined claims,” but that these are better addressed under Section 112 analysis and stated that patent examiners would receive further guidance and training to better apply Section 112 principles.¹¹⁵

I am delighted because the process outlined in the 2019 Guidelines is pretty much what I argued for in 2007. I noted in *Ants, Elephant Guns* that the correct process is simple and should consist of two questions: (1) does it fit within at least one of the enumerated, statutory categories and (2) does it fit within one of the judicially created exceptions (meaning the invention is solely an exception, not just inclusive of an exception)? The 2019 Guidelines also suggest a simpler approach, consisting of three

¹¹² *See id.*

¹¹³ *See id.*

¹¹⁴ *See id.*

¹¹⁵ *See id.*

questions that align nicely with my proposal: (1) determine if the claims are within one of four statutory categories; (2) check to see if the claim recites matter within one of the judicially-created exceptions; and (3) determine if the claim is “directed to” the exception, meaning that the claim refers only to the exception and not to a practical application of the exception. The 2019 Guidelines also address what I referred to as proxy-type issues, like the *Alice/Mayo* test’s reliance on whether steps were “conventional” or “routine,” noting that the determination of whether a claim is directed towards a judicially created exception “specifically excludes consideration of whether the additional elements represent well-understood, routine, conventional activity.”¹¹⁶ Rather, those questions are only relevant if the claim is not a practical application of a law of nature, natural phenomenon, or abstract idea.¹¹⁷ Additionally, the 2019 Guidelines fix some of the hostility towards software-related inventions that I described in *Ants, Elephant Guns* by specifically defining “abstract idea” in such a way that software-related inventions are not automatically deemed abstract; instead “abstract ideas” are those directed towards mathematical concepts, certain methods of organizing human activity, and mental processes.¹¹⁸

¹¹⁶ See Guidelines, *supra* note 104, at 55.

¹¹⁷ See *id.* at 56.

¹¹⁸ See *id.* at 52. To clarify the analysis of “abstract ideas” and improve consistency and predictability, the 2019 Guidelines note that “the abstract idea exception includes the following groupings of subject matter, when recited as such in a claim limitation(s) . . . (a) Mathematical concepts – mathematical relationships, mathematical formulas or equations, mathematical calculations; (b) Certain methods of organizing human activity – fundamental economic principles or practices . . . ; commercial or legal interactions . . . ; managing personal behavior or relationships or interactions between people . . . ; and (c) mental processes – concepts performed in the human mind.” (examples omitted). See *id.*

My reaction to the 2019 Guidelines has been joy; however, others have had a more mixed review. Groups like Licensing Executives Society (LES), Intellectual Property Owners Association (IPO), and Pharmaceutical Research and Manufacturers of America (PhRMA) have cheered the Guidelines.¹¹⁹ Other groups, like Electronic Frontier Foundation (EFF), the Software and Information Industry Association (SIIA), and the Internet Association are less than enthused.¹²⁰ The PTAB has already shown a willingness to reverse examiners that are not conforming to the new Guidelines and are finding more inventions to be directed to patent-eligible subject matter.¹²¹ The biggest complaint being lodged against the 2019 Guidelines is that they do not look like the *Alice/Mayo* test, which is in my opinion probably one of the guidelines’ biggest strengths.¹²² The Federal Circuit likely does not agree with me and instead has stated that although the court respects “the PTO’s expertise on all matters relating to patentability, including patent eligibility,” the court will not be “bound by its guidance.”¹²³

¹¹⁹ See Stuart P. Meyer, *No Shortage of Viewpoints on New USPTO Patent Eligibility Guidelines*, BILSKI BLOG (Mar. 26, 2019), <https://www.bilskiblog.com/2019/03/no-shortage-of-viewpoints-on-new-uspto-patent-eligibility-guidelines> [<https://perma.cc/CC2M-MAP3>].

¹²⁰ See *id.*

¹²¹ See, e.g., Aseet Patel & Craig Kronenthal, *First PTAB Reversals Under New Subject Matter Eligibility Guidance*, IP WATCHDOG (Feb. 14, 2019), <https://www.ipwatchdog.com/2019/02/14/first-ptab-reversal-s-new-subject-matter-eligibility-guidance> [<https://perma.cc/U8N5-94NG>].

¹²² See Meyer, *supra* note 119.

¹²³ See *Cleveland Clinic Foundation v. True Health Diagnostics LLC*, No. 2018-1218, slip op. at 13 (Fed. Cir. Apr. 1, 2019).

B. 2019 Proposed Legislative Fix

In Spring 2019, a number of Senators and Representatives took up the task of trying to fix patent-eligible subject matter, which seems especially welcome after the Federal Circuit essentially spurned the Patent Office’s 2019 Guidelines. After first releasing a draft framework, Senators Tillis and Coons and Representatives Collins, Johnson, and Stivers published draft text aimed at reforming patent-eligible subject matter.¹²⁴ The Senate Judiciary Subcommittee on Intellectual Property will hold hearings in June 2019 to obtain feedback and data regarding patent-eligible subject matter.¹²⁵ Although this reform is a long way from passage, it seems to have much more momentum than previous efforts at reforming patent eligibility.¹²⁶

The proposed reform language offered by the Congressmen includes adding a definition to § 100 that defines the term “useful” to mean “any invention or discovery that provides specific and practical utility in any field of technology through human intervention” and then amending § 101 as follows:

¹²⁴ See, e.g., Press Release, Sens. Tillis and Coons and Reps. Collins, Johnson, and Stivers Release Draft Bill Text to Reform Section 101 of the Patent Act (May 22, 2019), <https://www.tillis.senate.gov/2019/5/sens-tillis-and-coons-and-reps-collins-johnson-and-stivers-release-draft-bill-text-to-reform-section-101-of-the-patent-act> [<https://perma.cc/3ESU-GVLP>].

¹²⁵ See *id.*

¹²⁶ See, e.g., Eileen McDermott, *Draft Text of Proposed New Section 101 Reflects Patent Owner Input*, IP WATCHDOG (May 22, 2019), <https://www.ipwatchdog.com/2019/05/22/draft-text-proposed-new-section-101-reflects-patent-owner-input> [<https://perma.cc/A3ML-EFSZ>] (reporting reactions to the proposed reform).

(a) Whoever invents or discovers any useful process, machine, manufacture, or composition of matter, or any useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

(b) Eligibility under this section shall be determined only while considering the claimed invention as a whole, without discounting or disregarding any claim limitation.¹²⁷

This combination of removing the phrase “new” from § 101 and focusing on “useful” as being based on human intervention goes a long way to removing patent eligibility as a proxy for other patentability requirements.

The Congressman then go a few steps further, making it absolutely clear that patent eligibility is a threshold issue and leaving no room for confusion. The draft text circulated by the Congressman also includes the following “Additional Legislative Provisions.” First, § 101 is to be construed in favor of eligibility.¹²⁸ Second, the judicially-created exceptions are gone and “all cases establishing or interpreting those exceptions to eligibility are hereby abrogated.”¹²⁹ Third, eligibility shall be determined without regard to how the invention was made, whether individual claim limitations are well-known or routine, or “any other considerations relating to sections 102, 103, or 112 of this title.”¹³⁰

¹²⁷ See Press Release, *supra* note 120.

¹²⁸ See *id.*

¹²⁹ See *id.*

¹³⁰ See *id.*

I applaud the Congressmen for taking this bold step to fix patent-eligible subject matter—after all, I have been pushing for this kind of reform for over twelve years now. It remains to be seen whether there is traction for this wide-sweeping level of reform or if the proposal ends up trimmed down into something more palatable, yet less effective. Unfortunately, to fix the concerns that I raised in *Ants*, *Elephant Guns*, I am not convinced that anything less than this level of reform will overcome the problems.

V. CONCLUSION

I enjoyed this opportunity to look back on my older scholarship in *Ants*, *Elephant Guns* and view the last twelve years of patent-eligible subject matter with mixed feelings. On one hand, it is heartening to be able to say, “I was right.” On the flipside, twelve years later, the doctrine of patent-eligible subject matter is possibly even worse than I imagined. On one hand, recent efforts by the Patent Office and certain Congressmen track very nicely with what I proposed as a solution in 2007. On the other hand... it took them twelve years!

While writing about § 101 has been a mainstay of my scholarship since I entered academia, I would welcome a chance to not talk about how bad patent-eligible subject matter is. I hope that the courts focus on fixing patent eligibility and, ideally, look to the 2019 Guidelines as inspiration, if not more. I am less hopeful, but would be thrilled, if the legislative reform proposed fixed § 101 and took the issue away from the courts. I am certain, no matter what, that if I look back in another twelve years, there will probably still be something to say about patent-eligible subject matter.