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Michael S. Fuller*

Introduction

In 1997, the Federal Circuit Court of Appeals held in OddzOn v. Just Toys¹ that research collaborations where no right of ownership existed between two collaborative institutions (usually academic and private industry researchers) could lead to situations where inventorship could be lost or contested.² This was the inevitable culmination of an ill-defined aspect of 35 U.S.C. § 103 that had existed unchanged for 24 years, regarding the scope of prior art with respect to inventors obligated to assign their inventions to their employer or other entity. Recognizing this as a potentially serious problem for research collaborations, in 2003 Congress proposed the Cooperative Research and Technology Enhancement (CREATE) Act, which would allow research collaborators to receive a patent on work resulting from a pre-defined research collaboration that describes, among other things, the scope of the collaborative research, and the researchers involved.³

This paper reviews the problems associated with patents and research collaborations, specifically where competitors have used the typical events associated with scientific collaborations to invalidate patented inventions resulting from those collaborations. This paper reviews the important cases and legislation involving research collaborations and inventorship that have shaped 35 U.S.C. § 103, culminating with the OddzOn case. In OddzOn, the Federal Circuit Court of Appeals held that communications between engineers who were designing a tailed football could be used by their competitors to invalidate the patent on that football. Finally, the CREATE Act will be discussed, with its hoped-for effect of promoting academic and industrial collaborations.

Scientific research collaborations, particularly between academia and private industry (because they are the most common type of large-scale scientific collaboration), must be allowed to continue. Not only do they comprise a significant part of the world economy, both directly and indirectly, they also help further scientific innovations that improve life. The CREATE Act will insure that these vital scientific efforts are allowed to continue and flourish unimpeded.

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¹ 122 F.3d 1396 (Fed. Cir. 1997).
³ See id.
I. Patentability and the relationship between 35 U.S.C. §§ 102(g) and 103 prior art

For an invention to be patentable, the invention must be patentable subject matter, novel, useful, and non-obvious to one skilled in the art, when compared to the “prior art.” Prior art constitutes those references which may be used to determine the novelty and nonobviousness of claimed subject matter in a patent application or patent. Prior art is not statutorily defined. It includes both documentary sources (patents and publications from anywhere in the world) and non-documentary sources (things known, used, or invented in the United States). A reference must be in the art pertinent to the invention in question or in an analogous art.4

Most prior art used for obviousness purposes is publicly known or available as described in 35 U.S.C. § 102(a), in the form of patents that have been issued, published research articles, web pages, or publicly displayed prototypes.5 Donald S. Chisum, author of the leading treatise on patents, states, however, “it is now clear that Section 102(e) (description in prior co-pending patent application that ripens into a patent), Section 102(g) (prior invention), and Section 102(f) (derivation from another) may also be relied upon to show obviousness.”6 In other words, there is a great deal of information of limited public availability that may also be used to invalidate a patent.

II. Secret prior art

Prior art that is not publicly available is commonly known as “secret prior art.” Though it is called “secret,” the “secret” is ultimately lost upon its public disclosure. The two most common examples of “secret prior art” are inventions described in prior, co-pending patent applications, and inventions made prior to the invention at issue.7 Despite the historical requirement that prior art be publicly available, there are two major policy reasons for the existence of “secret prior art”: to protect against multiple infringement suits or royalty payments on a single invention, and to limit the occurrence of “double patenting.”8 Double patenting occurs when the term of exclusive rights granted by a patent is extended through a subsequent patent that claims essentially the same invention as a previous patent.9

With respect to “secret prior art,” in 1984 Congress amended the patent laws in 35 U.S.C. to exclude material communicated between research collaborators that would normally be prior art, where the subject matter at issue and the claimed invention were either owned by the same person, or subject to an obligation to assign the invention to that person, at the time the invention

4 DONALD S. CHISUM, CHISUM ON PATENTS, Scope (2005).
5 See Kevin E. Flynn, Senate to consider the CREATE Act, TECH LAW J. (www.techlawjournal.com), March 10, 2004; see also CHISUM ON PATENTS, Section 5.03, part 3.
6 See CHISUM ON PATENTS, id.
7 See 35 U.S.C. §§102(e) and (g), respectively.
9 See id.
was made.\(^9\) Congress did this to address the case holdings of *In re Bass*\(^{11}\) and *In re Clemens*\(^{12}\) (and probably *Kimberly-Clark v. Johnson & Johnson*\(^{13}\) as well) and the possibly detrimental effects of these holdings on research collaborations.\(^{14}\) In all three of those cases, the Federal Circuit Court of Appeals held that collaborative efforts by research scientists on technologies as varied as a vacuum system for textile plants (*Bass*); a process for removing corrosion products from steam regenerating systems (*Clemens*); and sanitary napkins (*Kimberly-Clark*), could be used as “secret prior art” by competitors to invalidate patents arising from those collaborations. Ultimately, Congress felt these holdings were troublesome enough (because of the potential chilling effect on research collaborations) to enact the Patent Law Amendments of 1984.

35 U.S.C. § 102(f) provides that a person shall be entitled to a patent unless—“he did not himself invent the subject matter sought to be patented.”

35 U.S.C. § 102(g) provides that a person shall be entitled to a patent unless: “before such person's invention thereof, the invention was made in this country by another inventor who had not abandoned, suppressed, or concealed it.”\(^{15}\)

35 U.S.C. § 102(g) is the basis for the “date of invention” means of determining priority of invention that puts the United States at odds with the rest of the world. Part (2) of 102(g) is particularly relevant to this discussion because it describes the scenario by which researchers may attempt to invalidate a former research collaborator’s patent of an invention arising out of that collaboration. Because of this, 35 U.S.C. § 102(g)(2) could be used to invalidate a patent based on communications between collaborators that are not only commonplace, but vital to the inventive process.

### III. Research collaborations

Scientific innovations typically do not occur in a vacuum. Like any endeavor reliant on creativity, the cross-pollination that occurs between two or more researchers discussing ideas or experimental results can sometimes be the catalyst that leads to the most important technological advances. Alternately, anything that chills this communication and cooperation could have a powerful negative effect on the worldwide economy and progress in the sciences.

The National Research Council in 1999 noted, “partnerships among industry, academia, and governments have contributed significantly to recent technological successes in the United States,” and recommended “strengthening such partnerships in the future.”\(^{16}\) One prominent example of a fruitful research collaboration is the Human Genome Project, involving members of the private (Merck Pharmaceuticals, Celera Genomics, Human Genome Sciences, and others)

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\(^{11}\) 474 F.2d 1276 (CCPA 1973).

\(^{12}\) 622 F.2d 1029 (CCPA 1980).

\(^{13}\) 745 F.2d 1437 (Fed. Cir. 1984).


\(^{15}\) 35 U.S.C. § 102(g)(2).

and public (NIH, the Wellcome Trust, and others) sectors collaborating to decode the entire sequence of the human genome, in order to discern the genetic bases of illnesses.\(^\text{17}\)

Some of the advantages\(^\text{18}\) of research collaborations are that:

- they allow for “the ability to combine . . . strengths, expertise, technologies, and know-how of separate [firms] along with [the] sharing of investment costs and risks;”\(^\text{19}\)
- they allow for resource pooling so that the collaborators can do research that they couldn’t do separately;\(^\text{20}\)
- they minimize the likelihood of redundant research;\(^\text{21}\)
- they disperse investment costs and risks among the collaborators;\(^\text{22}\)
- they accelerate the entry of the product into the market;\(^\text{23}\) and
- they may ultimately lead to the invention of new products and technology, thus creating entire new industries.\(^\text{24}\)

Besides the unquestioned effect on science, the economic impact of research collaborations is profound. In 2000, non-profit institutions and universities spent $28.1 billion on research and development, the majority of which involved collaborations among public, private, and non-profit entities.\(^\text{25}\) A group examining the effectiveness of licensing at MIT conservatively estimated that the commercial sector had invested nearly a billion dollars toward the development and commercialization of licensed inventions at MIT alone, leading to the creation and/or sustenance of over 2,000 jobs.\(^\text{26}\) Sales in 2000 of products that were developed from inventions that were transferred from university research centers resulted in revenues of about $42 billion.\(^\text{27}\) Alternately, several studies have suggested that the American economic


\(^{19}\) See Dobkin, supra note 12, at 83.


\(^{22}\) See Morris, supra note 17.


\(^{24}\) See Harrigan, supra note 9, at 31.


\(^{27}\) See id.
slowdown of the 1980’s resulted at least in part from failing to incorporate new technologies into the existing production framework.\textsuperscript{28}

With these facts as background, the important question arose—how might prior art that arises from scientific collaborations affect the patentability of inventions that result from those collaborations? According to Sheldon Steinbach, the vice president and general counsel of the American Counsel on Education, the importance of this question is that, “[i]n 2004, companies conduct[ed] much of their research with external partners, very commonly universities. Anything that discourages open communication between these various organizations or causes a chilling effect among researchers can possibly prevent or delay vital research.”\textsuperscript{29} Thus, a court ruling that somehow chilled these types of collaborations could have a serious negative qualitative and financial impact on the types of research collaborations mentioned above.

IV. Historical cases defining the scope of 35 U.S.C. §§ 102(g) and 103 prior art

A. In re Bass

In 1973, the U.S. Court of Customs and Patent Appeals (CCPA; the Federal Circuit’s predecessor) heard the case of In re Bass,\textsuperscript{30} which Philip McGarrigle called “the seminal decision . . . [on] whether Section 102(g) prior art [may] be combined with other prior art to support a rejection under Section 103 . . .”\textsuperscript{31} The patent at issue was for a vacuum system for controlling and collecting waste from carding machines used in textile plants.\textsuperscript{32} The case was an appeal from an examiner’s decision rejecting a patent application filed by the three co-inventors, Bass, Horvat, and Jenkins.\textsuperscript{33} The examiner rejected their claims on the basis of several prior art patents, including one patent that issued to Bass and Horvat (but not Jenkins) and a second patent that issued only to Jenkins.\textsuperscript{34} Each of the Bass-Horvat and Jenkins patents had earlier filing dates than that of the application at issue.\textsuperscript{35} 36

The Patent Office held that the 37 CFR 1.131 affidavit filed by the inventors to establish an earlier date of invention removed the patents as prior art references under 35 U.S.C. § 102(e).\textsuperscript{37} It did not, however, remove the prior work of Bass-Horvat and Jenkins as prior art under 35 U.S.C. § 102(g).\textsuperscript{38} Based upon the previous “work” of Bass-Horvat and Jenkins, the

\textsuperscript{29} Sheldon E. Steinbach, Senate Approves CREATE Act, available at http://www.acenet.edu/hena/readArticle.cfm?articleID=866.
\textsuperscript{30} 474 F.2d 1276 (CCPA 1973).
\textsuperscript{32} See Bass, 474 F.2d at 1277.
\textsuperscript{33} See id.
\textsuperscript{34} See id.
\textsuperscript{35} See id. at 1281.
\textsuperscript{36} See id.
\textsuperscript{37} See id.
\textsuperscript{38} See id.
\textsuperscript{39} 35 U.S.C. § 102(g) (a patent will not issue if “before the applicant's invention thereof the invention was made in this country by another who had not abandoned, suppressed, or concealed it”).

5 Chi.-Kent J. Intell. Prop. 110

On appeal, the CCPA affirmed the rejection, holding that, “[t]he use of the prior invention of another who had not abandoned, suppressed, or concealed it under the circumstances of this case, which include the disclosure of such invention in an issued patent, is available as ‘prior art’” under § 103 by virtue of § 102(g).\(^4\) The decision, while unanimous, was based on different rationales.\(^4\) For the majority, Judge Rich wrote that “prior art for one purpose is prior art for all purposes and in all courts and in the Patent Office.”\(^4\) In his concurring opinion, Judge Baldwin asserted that § 102(g) inventions were unavailable as § 103 prior art because Congress’s only purpose in enacting § 102(g) in 1952 was to codify the then-existing rules of law on priority of invention, and not to provide an alternate form of prior art.\(^4\)

B. In re Clemens

In 1980, seven years after Bass, the CCPA heard the case of In re Clemens.\(^4\) It concerned the appeal of a rejected patent application for a process of removing corrosion products from condensate waters in a steam regenerating system.\(^4\) The original patentee’s (Barrett’s) patent claims described a process of using resins that were derived from vinyl benzyl chloride (VBC resins) to remove "a component from a liquid."\(^4\) The patent applicant (Clemens) wanted to obtain a patent for using VBC resins in condensate polishing, the process of purifying boiler steam condensate.\(^4\) (Unlike Bass, in Clemens there was no issue of priority, nor did the second patentee know about the first patentee’s invention.\(^4\)) The examiner ultimately rejected claims 1-10 of Clemens’s patent application as obvious in light of Barrett’s patent.\(^4\)

The Clemens court affirmed the board’s decision on claims 1-7 and 9-10, but reversed the board’s decision on claim 8. The court held that, for a prior invention to qualify as prior art under § 102(g), there must be a communication of the invention from the inventor of the prior art and the patent holder.\(^5\) Interestingly, the Clemens court prophesied the need for the CREATE Act when it said that treating a previous invention as prior art although it was unknown to both the applicant and the prior art when the applicant made his invention "would be detrimental to the innovative spirit the patent laws are intended to kindle."\(^5\)

In both Bass and Clemens, the CCPA held that 35 U.S.C. § 103 could be construed to mean that earlier inventions by individual collaborative research team members could make a

\(^{40}\) See Bass at 1281.
\(^{41}\) See id. at 1286.
\(^{42}\) Judge Rich referred to the concurrence as “in reality a dissent,” id. at 1288.
\(^{43}\) Id. at 1289.
\(^{44}\) See id. at 1299.
\(^{45}\) 622 F.2d 1029 (CCPA 1980).
\(^{46}\) See id. at 1030.
\(^{47}\) See id. at 1032.
\(^{48}\) See id.
\(^{49}\) See id. at 1038.
\(^{50}\) See id. at 1033.
\(^{51}\) See id. at 1039-40.
\(^{52}\) Id. at 1040.
new invention by those same research team members obvious, and thus unpatentable.\textsuperscript{53} In fact, the public policy against using “secret prior art” in an obviousness determination (involving an analysis of whether a patent would be obvious based on the prior art, and thus invalid) was a common theme in the holdings of both cases.\textsuperscript{54}

C. Kimberly-Clark Corp. v. Johnson & Johnson

Finally, in 1984, with the CCPA having been abolished since \textit{In re Clemens}, the Federal Circuit Court of Appeals heard the case of \textit{Kimberly-Clark Corp. v. Johnson & Johnson}.\textsuperscript{55} In \textit{Kimberly-Clark}, the Federal Circuit broadened the scope of prior art to include as “secret prior art” the communications of scientists between each other during the inventive process.\textsuperscript{56}

Kimberly-Clark, the original patentee, owned the patent for a “sanitary napkin with improved fastening means.”\textsuperscript{57} It sued Johnson & Johnson for infringing on their patents with a similarly designed sanitary napkin with an adhesive strip for attachment to undergarments.\textsuperscript{58} There were three named inventors on the Kimberly-Clark patents at issue: Roeder, Champaigne, and Mobley, all of whom worked for Kimberly-Clark.\textsuperscript{59} The Roeder patent was filed May 8, 1970.\textsuperscript{60} While Mobley’s work was not patented, Champaigne applied for and received a patent on his work on February 5, 1970.\textsuperscript{61}

At trial, Johnson & Johnson relied on the undisclosed research that Mobley and Champaigne had done in the course of reducing their related inventions to practice as prior art in their defense in the infringement case.\textsuperscript{62} The District Court for the Northern District of Illinois held that the Roeder patent was obvious based on Mobley’s and Champaigne’s research, and thus invalid under 35 U.S.C. § 103, and unenforceable because of “fraud on the PTO” (because Kimberly-Clark failed to notify the PTO of its own research and of pre-existing patents by Tyrrell, Beery and Joa, who had previously patented a product very similar to that of Kimberly-Clark).\textsuperscript{63}

On appeal, the Federal Circuit affirmed the District Court’s holding of non-infringement but reversed the holdings of obviousness and fraud.\textsuperscript{64} Kimberly-Clark, relying on the Federal

\begin{footnotesize}
\begin{itemize}
\item\textsuperscript{53} See \textit{H.R. Rep. No. 108-425} at 3.
\item\textsuperscript{54} 38 IDEA at 676; \textit{see also Clemens}, 622 F.2d at 1039-40 regarding the public policy against secret prior art (“...where this other invention is unknown to both the applicant and the art at the time the applicant makes his invention, treating it as 35 USC 103 prior art would establish a standard for patentability in which an applicant's contribution would be measured against secret prior art. Such a standard would be detrimental to the innovative spirit the patent laws are intended to kindle.”).
\item\textsuperscript{55} 745 F.2d 1437 (Fed. Cir. 1984).
\item\textsuperscript{56} \textit{See id.} at 1443-47.
\item\textsuperscript{57} \textit{See id.} at 1440.
\item\textsuperscript{58} \textit{See id.} at 1440-41.
\item\textsuperscript{60} \textit{See id.}
\item\textsuperscript{61} \textit{See id.}
\item\textsuperscript{62} \textit{See id.}
\item\textsuperscript{63} \textit{See Kimberly-Clark}, 745 F.2d at 1442-3.
\item\textsuperscript{64} \textit{See id.} at 1440.
\end{itemize}
\end{footnotesize}
Circuit’s holding in *Clemens*, asserted that Champaigne’s research was not prior art because Roeder and Champaigne had reduced their research to practice before Champaigne filed his patent application. A majority of the 3-judge panel, however, dismissed the requirement of prior knowledge of the invention from *Clemens* as dictum, holding that a prior invention under §102(g) is prior art where the prior invention is subsequently embodied in an issued patent. They held that, while Mobley’s research was not prior art to the Roeder patent because Mobley had never reduced it to practice, Champaigne’s research (but not his patent) was prior art to Roeder’s patent.

Thus, by its ruling, the *Kimberly-Clark* court, despite noting that this use of “secret prior art” as prior art for an obviousness determination is disfavored for reasons of public policy (in keeping with similar thoughts in *Bass* and *Clemens*, infra), broadened the scope of prior art within the meaning of 35 U.S.C. §103 through its inclusion of “secret prior art” as prior art.

IV. The Patent Law Amendments of 1984

In 1984, in response to the holdings in *Bass* and *Clemens* (and arguably *Kimberly-Clark*, since it was decided two days before the enactment of the amendments to §103), which could have “chill[ed] communication among team members, stifle[d] cooperative research, and inhibit[ed] innovation,” Congress enacted the Patent Law Amendments of 1984. These amended 35 U.S.C. §103, adding what would ultimately become part (c) of §103. In its original form, when *Bass, Clemens,* and *Kimberly-Clark* were decided, §103 read:

A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the manner was made.

The 1984 amendment to §103 (now §103(c)) added this paragraph:

Subject matter developed by another person, which qualifies as prior art only under subsection (f) or (g) of Section 102 of this title, shall not preclude patentability under this section where the subject matter and the claimed invention were, at the time the invention

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65 See id. at 1444.
66 See id. at 1445.
67 See id.
68 See id. at 1446; see n.49 infra for comment about the public policy against secret prior art.
69 See 1984 U.S.C.C.A.N. 5827, 5833-34 (“The practical consequence of these decisions was that research organizations were given an incentive to discourage information sharing and collaboration among their researchers, thus impeding research, because one inventor's unpublished work (if shared) might be prior art against another’s. Congress amended Section 103 to eliminate this problem and thereby to encourage team research.”).
was made, owned by the same person or subject to an obligation of assignment to the same person.\textsuperscript{71} (emphasis added).

This amendment extended the “safe harbor” typically afforded to prior art to researchers who assigned their rights in their invention to a single entity.\textsuperscript{72} While Congress’s intent was clear in the statute, the Patent Law Amendments of 1984 left unresolved the question of how to treat prior art created by researchers who do not have an obligation to assign their rights as an inventor to a single entity (i.e., an employer or financial benefactor) until the OddzOn case.

\textbf{V. The OddzOn case}

In 1997, the Federal Circuit Court of Appeals heard the case of \textit{OddzOn v. Just Toys},\textsuperscript{73} on appeal from the District Court of California.\textsuperscript{74} OddzOn, a California-based toy manufacturer, received a design patent (U.S. Patent D 346,001, issued April 12, 1994) for a football with a tail, called the Vortex (shown below).\textsuperscript{75}

\begin{center}
\textbf{Fig. 1}
\end{center}

The tail was added to help those learning how to throw a football for the first time, throw it correctly (i.e., with a tight spiral motion). The length of the tail could be adjusted to allow the football to be thrown greater distances.

At the same time, Just Toys began marketing its own football with a tail attached, called the Ultrapass (shown here).\textsuperscript{76}

\textsuperscript{71} In 1999, Congress amended the above sentence in Section 103 (now Section 103(c)), to add a reference to subsection (e). Section 103(c) now reads, “Subject matter developed by another person, which qualifies as prior art only under one or more of subsections (e), (f) or (g) of Section 102 of this title…” (emphasis added).
\textsuperscript{72} See H.R. REP. No. 108-425 at 3.
\textsuperscript{73} 122 F.3d 1396 (Fed. Cir. 1997).
\textsuperscript{74} No. 95-CV-1077 (N.D.Cal. July 29, 1996).
\textsuperscript{75} Oddzon, 122 F.3d at 1399.
\textsuperscript{76} See id.
Based on the extreme similarity between the two designs, OddzOn sued Just Toys for design patent infringement, trade dress infringement, and California state-law unfair competition, asserting a likelihood of confusion between the two products.\textsuperscript{77} In response, Just Toys attempted to invalidate OddzOn’s patent, claiming inequitable conduct based on the fact that certain confidential designs were disclosed to the inventors that “inspired” the development of the patented design.\textsuperscript{78}

At trial, on cross-motions for summary judgment, Judge Saundra Brown Armstrong of the District Court for the Northern District of California held that Just Toys had not shown that OddzOn’s patent was invalid, and thus not infringed; and that Just Toys had not infringed OddzOn’s trade dress.\textsuperscript{79} The court held that the confidential designs at issue in the case were prior art under 35 U.S.C. Sec. 102(f), (i.e., they were derivative of another invention) and could be combined with other prior art to challenge the patent’s validity.\textsuperscript{80} However, the court held that OddzOn’s design patent was valid in spite of the prior art cited by Just Toys because it was not obvious in light of the prior art to one skilled in the art (ostensibly, of tailed football design).\textsuperscript{81} The court ruled that the consumer survey evidence and expert testimony that OddzOn offered to show similarity did not help prove the alleged similarity between the two products; thus, no likelihood of confusion existed, and OddzOn’s trade dress infringement claims failed.\textsuperscript{82} Finally, since California state unfair competition law is “substantially congruent” to trademark infringement law, the absence of a likelihood of confusion also nullified OddzOn’s unfair competition claim.\textsuperscript{83}

OddzOn appealed (and Just Toys cross-appealed) the district court’s grant of their summary judgment motions to the Federal Circuit.\textsuperscript{84} OddzOn asserted that, while subject matter encompassed by 35 U.S.C. Sec. 102(f) could qualify as prior art for purposes of an obviousness inquiry under Sec. 103, it could not be combined with “real” prior art to defeat patentability under a combination of Sec. 102(f) and Sec. 103.\textsuperscript{85} OddzOn asserted that, since the disclosures were not publicly known, they did not provide actual or constructive public knowledge, a putative hallmark of obviousness.\textsuperscript{86}

The Federal Circuit, in an opinion written by Judge Paul Lourie, affirmed the District Court’s decision, holding that relevant subject matter under Sec. 102(f) for patentability purposes was prior art for purpose of an obviousness inquiry under Sec. 103.\textsuperscript{87} In a detailed and

\textsuperscript{77} See id. at 1399-1400.
\textsuperscript{78} See id. at 1400.
\textsuperscript{79} See id. at 1400-01.
\textsuperscript{80} See id.
\textsuperscript{81} See id.
\textsuperscript{82} See id.
\textsuperscript{83} See id. at 1401.
\textsuperscript{84} See id. at 1399.
\textsuperscript{85} See id. at 1400-01.
\textsuperscript{86} See id. at 1401.
\textsuperscript{87} See id. at 1403-04.
somewhat apologetic analysis, the court discussed the historical requirement that prior art be publicly available. The *OddzOn* court thus narrowly construed the 1984 changes to 35 U.S.C. § 103 to mean that, where inventive collaborations involve researchers from more than one organization, the sharing of confidential information by members of a research team could render an invention “obvious” within the meaning of § 103(c), and thus unpatentable, if the researchers did not have an obligation to assign their rights to the invention to a single entity in advance of making the invention. The court came to this conclusion primarily because of the Patent Law Amendment of 1984, even though the information being exchanged was neither publicly known nor publicly available.

To its credit, the *OddzOn* court recognized the chilling effect its holding could have on research collaborations and invited Congress to change the law: “It is sometimes more important that a close question be settled one way or another than which way it is settled. We settle the issue here (subject of course to any later intervention by Congress or review by the Supreme Court), and do so in a manner that best comports with the voice of Congress.” And in the court’s defense, it did interpret the statute correctly: § 103(c) only provides an exemption for prior art when the inventors work for the same company. Furthermore, the PTO has interpreted § 103(c) the same way in its regulations. Thus the Federal Circuit’s ruling in *OddzOn*, while not good law, was a correct interpretation of the then-existing law, was supported by statute and the PTO, and was probably inevitable.

What problems could the *OddzOn* ruling create for scientific collaborations? Parties who enter into a clearly defined and structured research relationship, but who do not (or cannot) elect to define a common ownership interest in, or a common assignment of, inventions jointly developed, can unwittingly create an obstacle to patent protection by simply exchanging secret information among themselves. This is due to the *OddzOn* court’s construction of 35 U.S.C. § 103(c) that such secret information would constitute prior art that could serve to invalidate a patent based on that information.

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88 See n. 82, infra.
89 Cf. Bass, 474 F.2d at 1290 (“...(Sec.) 102(f) ha(s) no relevancy to what is ‘prior art’ under Sec. 103”); Kimberly-Clark, 745 F.2d at 1453 (prior art is “technology already available to the public.”).
90 See *OddzOn*, 122 F.3d at 1403. A few of the court’s statements in its opinion strongly imply that it recognizes the problems it is creating with its ruling, but is unable to do otherwise, such as: “There was no clearly apparent purpose in Congress’s inclusion of Sec. 102(f) in the (1984 Patent Law) amendment other than an attempt to ameliorate the problems of patenting the results of team research. However, the language appears in the statute; it was enacted by Congress. We must give effect to it.” “[T]he language that states that Sec. 102(f) subject matter is not prior art under limited circumstances clearly implies that it is prior art otherwise. That is what Congress wrote into law in 1984 and that is the way we must read the statute”; “While there is a basis for an opposite conclusion, principally based on the fact that Sec. 102(f) does not refer to public activity, as do the other provisions that clearly define prior art, nonetheless we cannot escape the import of the 1984 amendment.” (emphases added).
91 See 35 U.S.C. § 103(c).
92 See *OddzOn*, 122 F.3d at 1403 (citing 37 C.F.R. Sec. 1.106(d): “Subject matter which is developed by another person which qualifies as prior art only under 35 U.S.C. Secs. 102(f) or (g) may be used as prior art under 35 U.S.C. Sec. 103.”).
VI. The Bayh-Dole Act

One logical question raised in the wake of OddzOn regarding the assignment of rights in research collaborations is: what researchers with any awareness of intellectual property would dare enter into a research collaboration of any kind without assigning the rights to an invention resulting from the collaboration beforehand? The answer: those researchers who are not allowed to assign rights.

Universities typically do not assign rights. The majority of universities in the United States and the NIH follow the policy that ownership must follow inventorship. This follows from university IP policies, which are codified in the Bayh-Dole Act, 35 U.S.C. § 200.

Congress enacted the Bayh-Dole Act in 1980 “to promote collaboration between commercial concerns and non-profit organizations, including universities.” It was the culmination of much study in the 1960’s and 1970’s regarding federal patent policies. In 1980, the federal government held approximately 28,000 patents, but less than 5% of these were licensed to private industry. This was due to the government’s unwillingness to relinquish ownership of federally funded inventions in the form of exclusive licenses. It would, however, offer non-exclusive licenses to any entity that wanted to develop the particular invention. As a result, “commercial concerns” were reluctant to acquire and develop new products from universities that their competitors could also acquire and develop.

To address the inherent problem that taxpayer monies were funding research from which they were unable to benefit, Congress enacted the Bayh-Dole Act to allow universities to offer exclusive licenses to private industry when the industry worked to diligently develop and market

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94 It is important to note that the Bayh-Dole Act does not explicitly state that ownership follows inventorship. However, the large majority of academia requires their faculty members (usually as a condition of employment) who are inventors (or “authors” as described in Bayh-Dole) to assign ownership of their inventions to the University (who is then the “owner”). The policy will usually state further that the University will retain ownership of all inventions created by sponsorship. These conditions did not exist generally before the Bayh-Dole Act. These and other facts in this section pertaining to the academic side of technology transfer and the Bayh-Dole Act were supplied by Alexandra McKeown in personal communications.

95 35 U.S.C. Section 200 states: “It is the policy and objective of the Congress to use the patent system to promote the utilization of inventions arising from federally supported research or development; to encourage maximum participation of small business firms in federally supported research and development efforts; to promote collaboration between commercial concerns and nonprofit organizations, including universities; to ensure that inventions made by nonprofit organizations and small business firms are used in a manner to promote free competition and enterprise without unduly encumbering future research and discovery; to promote the commercialization and public availability of inventions made in the United States by United States industry and labor; to ensure that the Government obtains sufficient rights in federally supported inventions to meet the needs of the Government and protect the public against nonuse or unreasonable use of inventions; and to minimize the costs of administering policies in this area.”

96 See id.


99 See The Bayh-Dole Act, supra note 88.

100 See id.

101 See id.
the resulting invention to the public.\textsuperscript{102} As a result, the Bayh-Dole Act “provides a strong incentive for university-industry research collaborations.”\textsuperscript{102} Some recent examples of inventions arising from university-industry research collaborations include: “advanced display technology”, which is a polymer film designed to make viewing computer monitors easier; a method for increasing the bandwidth of copper wire; plastic lumber as a stronger, cheaper alternative to treated lumber; and a diagnostic test for a new genetic disorder, creatine transporter deficiency.\textsuperscript{104}

Adhering to the IP policies in the Bayh-Dole Act is necessary not only to protect the academic researcher’s prior research, which may form the foundation of the patented invention, but also to insure that the researcher controls the invention in the future. It also allows researchers to avoid having “blocking technology” used against them by future licensees (this occurs when a researcher is forced to license from the licensee to which he licensed his technology in order to further his own research).\textsuperscript{105}

VII. Technology transfer after Bayh-Dole

The primary philosophy behind transferring technology from universities to the private sector (after Bayh-Dole) is:

- The University owns what it creates;
- University and industry jointly own what they jointly create;
- University will agree to grant an option to a non-exclusive license on the technology developed during the research project (Bayh-Dole does not permit universities to grant exclusive licenses to a company for technology developed using federal funds); and
- Royalties in the license will be based on commercially reasonable rates.

This philosophy offers the advantage that the university can carve out a “field of interest” which it can then choose to exploit or develop, or license to other companies with different interests.\textsuperscript{106} While Bayh-Dole accomplished its intent with respect to deciding inventorship, those who wish to collaborate with academic researchers will frequently grumble about the IP problems it tends to cause for non-academics.

VIII. The CREATE Act

In 2003, six years after the OddzOn case, Congress proposed the Smith-Hatch Act, also known as the CREATE (Cooperative Research and Technology Enhancement) Act of 2004.\textsuperscript{107}

\begin{thebibliography}{100}
\bibitem{102} See id.
\bibitem{103} See id.
\bibitem{104} This information and more can be found at the Association of University Technology Managers website, \textit{at www.autm.net/aboutTT/aboutTT_prodStory.cfm} (last checked March 22, 2005).
\bibitem{106} All the facts in this section regarding the philosophy of universities with respect to technology transfer came from personal communications with Alexandra McKeown, Assistant Vice President of Research Administration and Advancement, Office of Research Administration and Advancement, University of Maryland, College Park.
\bibitem{107} 35 U.S.C. §103(c) (2000).
\end{thebibliography}
President Bush signed the CREATE Act into law on December 10, 2004, the last day it could be passed before its death. The Act applies only to patents issued on or after the date of the Act’s enactment; it will not be applied retroactively except for patent applications already on file, assuming of course that they meet the statutory requirements listed below.

The CREATE Act amends 35 U.S.C. § 103(c) to read:

Section 2:
(c)(1) Subject matter developed by another person, which qualifies as prior art only under one or more of subsections (e), (f), and (g) of Section 102 of this title, shall not preclude patentability under this section where the subject matter and the claimed invention were, at the time the claimed invention was made, owned by the same person or subject to an obligation of assignment to the same person, if --
(A) the claimed invention was made by or on behalf of parties to a joint research agreement that was in effect on or before the date the claimed invention was made;
(B) the claimed invention was made as a result of activities undertaken within the scope of the joint research agreement; and
(C) the application for patent for the claimed invention discloses or is amended to disclose the names of the parties to the joint research agreement. Joint research agreement means a written contract, grant, or cooperative agreement entered into by two or more persons or entities for the performance of experimental, developmental, or research work in the field of the claimed invention.

Section 3:
(a) Effective date: The amendments made by this Act shall apply to any patent granted on or after the date of the enactment of this Act.
(b) Special rule: The amendments made by this Act shall not affect any final decision of a court or the United States Patent and Trademark Office rendered before the date of the enactment of this Act, and shall not affect the right of any party in any action pending before the United States Patent and Trademark office or a court on the date of the enactment of this Act to have that party’s rights determined on the basis of the provisions of title 35, United States Code, in effect on the day before the date of the enactment of this Act.

In effect, the CREATE Act states that, if confidential information is exchanged pursuant to a written joint research agreement that was entered into on or before the date that the claimed invention was made, the invention arises out of research conducted pursuant to the joint research agreement, and the parties to the joint research agreement are disclosed in the patent application, then such confidential information cannot be used in an obviousness challenge to invalidate a patent, because all the inventors will be treated as one inventor. In other words, the CREATE Act would exclude from the prior art (for the purpose of an obviousness challenge) any “secret”

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prior art resulting from the collaborative efforts of different research organizations if there was a pre-existing agreement for research collaboration (and assuming other conditions are met).\textsuperscript{111}

\textbf{A. Congress’ intent with the CREATE Act}

Congress’ intent with the CREATE Act was to address and rectify the "significant problem for many public-private research and development projects" that the OddzOn ruling created.\textsuperscript{112} Specifically, Congress’ intent was to "enhance the effectiveness and security of patent protection for inventions that arise from collaborative agreements between multiple organizations" by providing a "safe harbor" for information communicated between collaborators that might otherwise be used in an obviousness challenge.\textsuperscript{113} Tangentially, this "safe harbor" may also serve to discourage abuse of discovery as a way of interfering with collaborators and their efforts to communicate ideas to each other.

\textbf{B. The future of the CREATE Act}

While the CREATE Act appears to have that rarest of traits of pending legislation—universal support—\textsuperscript{114} it still has potential problem areas. What types of cases could be the next \textit{In re Clemens}, \textit{In re Bass}, Kimberly-Clark, or OddzOn that could further the evolution of 35 U.S.C. § 103 that the CREATE Act has continued? What factual elements would they possess that would highlight the gray areas of the CREATE Act as it currently stands?

\textbf{1. A patentable invention arising from collaborative research activities NOT defined within a written contract.}

Section 103(c)(1)(B) states that, in order for a particular invention to be eligible to receive the CREATE Act exemption, "the claimed invention [must have been] made as a result of activities undertaken within the scope of the joint research agreement."\textsuperscript{115} Section 103(c)(1)(C) defines a "joint research agreement" as "a written contract, grant, or cooperative agreement entered into by two or more persons or entities." (Emphasis added).\textsuperscript{116}

Very often in the research community, scientists will share thumbnail sketches of their current research with other researchers as an enticement to collaborate, without the benefit of a written contract, grant, or cooperative agreement. In such a situation, if no formal (i.e. written) collaborative agreement resulted, neither side could claim the CREATE Act exemption because of the requirement of a written agreement between the two parties as defined in § 103(c)(1)(C) of the CREATE Act. Thus, scientists in this position need to carefully consider what they tell (or don’t tell) a potential collaborator so as not to lose their patent rights in the future.

\textsuperscript{111}See Wegner, p. 4.
\textsuperscript{112} 108 H.R. REP. NO. 425.
\textsuperscript{113} See id.
\textsuperscript{114} “The CREATE Act is a rare legislative achievement: It is a truly noncontroversial patent bill...because it is the product of exhaustive discussion, negotiation, and redrafting.... It has the support of the university community, the patent bar, the biotech industry, patent holders, and all other interested parties of which I am aware....” Representative Berman, 150 CONG. REC. H944, H945 (daily ed. March 10, 2004).
2. A patentable invention NOT created within the scope of a joint research agreement.

Again, § 103(c)(2)(B) states that, in order for a particular invention to be eligible for the CREATE Act exemption, “the claimed invention [must have been] made as a result of activities undertaken within the scope of the joint research agreement.” What will happen if an unanticipated breakthrough occurs (as often happens) in the course of the collaboration that leads to a tangentially related invention, i.e., one outside the scope of the joint research agreement?

While Congress may have purposefully left this section vague in order to allow for a case-by-case analysis, the joint research agreement needs to be thoroughly detailed and carefully worded with respect to the scope of the research collaborative activities it covers.

3. The “field of the claimed invention” is NOT within the scope of the joint research agreement.

Section 103(c)(3) states that the joint research agreement must be “in the field of the claimed invention.” Therefore, the field of the claimed invention must be carefully defined so that it falls within the scope of the joint research agreement. It might also be a good idea to amend existing joint research agreements with the addition of a “simplified parallel statement” so that the field of the claimed invention is better defined.

4. The owner of a reissued patent requests a CREATE Act exemption.

Patentees may file reissue applications within two years of the initial grant when the patentee unintentionally fails to claim disclosed subject matter. This allows the patentee to broaden the scope of the patent by the addition or amendment of claims to include disclosed (and unclaimed) subject matter. However, no new subject matter may be introduced through reissue.

There is no mention in the language of the CREATE Act of whether patents already granted before the enactment of the CREATE Act are eligible for this exemption via the filing of a

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119 Harold Wegner uses the discovery of aspartame as a sweetener as an example of how “inventions are constantly yielding surprises to their creators with the result that research will go in new and unanticipated directions.” If the chemist who tasted aspartame and discovered it tasted sweet was not working on food products or additives, his discovery would have probably fallen outside the “field of the claimed invention” and thus been ineligible for the CREATE Act exemption. See Wegner at 8-9. The same may also be said for Viagra and Rogaine, two products that did not begin their lives with the same indications that they currently have.
120 Harold Wegner’s definition of a “simplified parallel statement” is “a new amendment to any existing research agreement that spells out the critical areas of the ‘field of the invention’ and other aspects pertinent to statutory requirements of 35 U.S.C. Section 103(c)(2).” See Wegner at 13.
121 35 U.S.C. Section 251.
122 See id.
reissue patent. However, Congress’s stated intent with respect to reissued patents is that the CREATE Act “will apply to any reissue patent granted on or after the date of enactment . . . .”

5. A patent owner whose patent does NOT contain a terminal disclaimer requests a CREATE Act exemption.

While the language of the CREATE Act does not specifically call for this, its legislative history suggests that anyone requesting a CREATE Act exemption must claim the exemption. Claiming the exemption requires either identification of the parties to the joint research agreement, which may be included in the original patent application; an amendment to the application; or an amendment to the patent. Doing so with a pre-existing patent would result in a double patenting situation, where a patentee unjustifiably attempts to extend the life of her patent term by the inclusion of patentably indistinct claims in a second patent.

The threshold issue to resolve in a putative case of double patenting is whether there is common ownership of the patents at issue. Double patenting can come about in either of two ways. One is statutory-type double patenting (so named because it is based on 35 U.S.C. § 101), where a claim in one patent is identical in scope to a claim in another patent. The other way is obviousness-type double patenting, where a claim in one patent describes an obvious variation of an invention claimed in another patent. Congress intended that the doctrine of obviousness-type double patenting would apply to patents obtained through the CREATE Act exemption.

One way to prevent an obviousness-type double patenting situation would be through the use of a terminal disclaimer pursuant to 37 C.F.R. § 1.321(c). A terminal disclaimer would disclaim the end of a second patent’s term so that it does not extend the term of a first patent.

Conclusion

The purpose of this paper was to show where 35 U.S.C. § 103 has been, where it is now, where it may go, and the case law forces that have shaped it. After the OddzOn ruling, which ultimately was a product of the cases preceding it, patents arising from the predominant type of research collaborations (i.e. between industrial and academic collaborators) were in danger of being weakened or invalidated. Now, after passage of the CREATE Act, this danger can be prevented through the use of a terminal disclaimer.
mitigated through a few simple precautionary measures. However, a clever patent attorney could still attack the validity of a patent arising from a research collaboration using some of the loopholes discussed herein.

The passage of the CREATE Act will rectify the problem regarding the inclusion of communications between collaborating researchers as “secret prior art” post-OddzOn. Scientific collaborators can now more freely engage in cooperative research, provided they adhere to the guidelines in § 103. This will be an enormous boon to society, both economically and in terms of the speed of technological progress. However, the wording of the CREATE Act may necessitate further changes by Congress in the future to deal with the generally informal nature of academic research.