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Rules, Standards, and the Reality of Obviousness

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Abstract

Obviousness, the great question of patent law, is a muddle. Attempts to clarify the doctrine face a significant obstacle—the goal of providing efficient and cost-effective prosecution limits the amount of time patent examiners can spend determining obviousness. As a result, examiners use the analogous arts test as a rough gauge of obviousness during prosecution. The hope was that the analogous arts test would provide an efficient, rules-based approach to obviousness. The Federal Circuit has not, however, provided much guidance on how to apply the analogous arts test, resulting in a soft rule, at best.

While this uncertainty may be tolerable during prosecution, where time-pressed examiners can be forgiven for relying on common sense among other things, courts should no longer rely on the outdated analogous arts test as a shortcut to find inventions obvious. During litigation, more time and resources can be spent on the obviousness assessment. At that time, decision makers should use a more appropriate standard, requiring assessment of common practices in the field of invention and whether the invention is obvious in light of these practices. This shift in the focus of the obviousness analysis during litigation should result in a more accurate determination of obviousness when it matters most.

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INTRODUCTION

Courts and patent examiners face several challenges in assessing whether an invention is too obvious to deserve patent protection.[1] One of the greatest obstacles is the need to balance the benefits of

1. To address these problems, commentators have set forth numerous proposals, such as altering the presumption of validity, providing more rigorous examination, and considering whether a patent would have been necessary ex ante to induce innovation. *See, e.g.*, Michael Abramowicz & John F. Duffy, *The Inducement Standard of Patentability*, 120 YALE L.J. 1590, 1596 (2011) (proposing a shift from the cognitive model of analyzing nonobviousness to one that relies on inducement theory); Doug Lichtman & Mark A. Lemley, *Rethinking Patent Law's Presumption of Validity*, 60 STAN. L. REV. 45, 59–61 (2007) (questioning the presumption of validity); Glynn S. Lunney Jr., *E-Obviousness*, 7 MICH. TELECOMM. & TECH. L. REV. 363, 412, 416 (2001) (discussing inducement in the context of e-commerce patents); Kristen Osenga, *Entrance Ramps, Tolls, and Express Lanes—Proposals for Decreasing Traffic Congestion in the Patent Office*, 33 FLA. ST. U. L. REV. 119, 121–22 (2005) (offering proposals to adjust the examination process in terms of speed and quality).

certainty with the goal of rewarding innovation, which often shifts paradigms and upsets predictability.[2] These countervailing interests often arise in the classic debate about rules and standards.[3] Rules provide ex ante certainty that supports investment, while standards afford the ability to recognize creativity and innovation.[4]

In the last two decades, the United States Supreme Court has rejected many of the attempts to bring greater certainty to patent law.[5] The Court has recognized that the use of standards, rather than rules, provides the flexibility necessary to assess patentability.[6] For example, in its 2007 decision on obviousness, the Court disavowed the Federal Circuit's rigid requirement that the prior art contain a teaching, suggestion, or motivation to be combined.[7] Instead, the Court advanced a flexible standard, deciding obviousness in light of "[t]he diversity of inventive pursuits and of modern technology."[8]

Attempts to reevaluate the doctrine of obviousness in light of the rules versus standards debate should recognize the realities of prosecution and litigation. During prosecution, examiners have limited time and resources to determine obviousness. Consequently, they have attempted to use the analogous arts test as a bright-line rule to truncate the process. The doctrine of analogous art provides that examiners can only use references found to be analogous in assessing

2. *See, e.g.*, John F. Duffy, *Rules and Standards on the Forefront of Patentability*, 51 WM. & MARY L. REV. 609, 611 (2009).

3. *See id.* at 611; *see generally* Pierre Schlag, *Rules and Standards*, 33 UCLA L. REV. 379 (1985) (explaining the tension between standards and rules in legal arguments). Schlag discusses the example of a driver approaching a railroad crossing: a rule would require the driver to stop and look, while a standard would state that the driver needs to act with reasonable caution. *Id.* at 379. The rule implements the basics of exercising care, while the standard allows for situations where it would not be safe for the driver to stop. *Id.*

4. Duffy, *supra* note 2, at 611.

5. *See* Bilski v. Kappos, 130 S. Ct. 3218, 3227 (2010); eBay Inc. v. MercExchange, L.L.C., 547 U.S. 388, 392–93 (2006); Festo Corp. v. Shoketsu Kinzoku Kogyo Kabushiki Co., 535 U.S. 722, 732 (2002); KSR Int'l Co. v. Teleflex Inc., 550 U.S. 398, 419 (2007).

6. *See* David Olson & Stefania Fusco, *Rules Versus Standards: Competing Notions of Inconsistency Robustness in Patent Law*, 64 ALA. L. REV. 647, 649, 664, 683 (2013) ("[T]he Federal Circuit regularly chooses rules while the Supreme Court regularly chooses standards in patent law . . . .").

7. *KSR Int'l Co.*, 550 U.S. at 419.

8. *Id.* at 418 ("[An obviousness] analysis need not seek out precise teachings directed to the specific subject matter of the challenged claim, for a court can take account of the inferences and creative steps that a [PHOSITA] would employ.").

nonobviousness; they cannot consider nonanalogous art.[9] The Federal Circuit has provided little guidance on how to apply the test; it has been criticized as unpredictable—a soft rule, at best.

Perhaps worse than its subjectivity, the analogous arts test has become dated, focusing the analysis on factors that are no longer important or relevant. In many fields, invention is often a collaborative, or at least simultaneous, phenomenon.[10] Further, increased access to searchable information and processing power provides additional time to consider a wider range of prior art.[11] In light of these changes, courts and examiners have expansively defined the scope of analogous arts.[12] This is problematic because once a decision maker classifies art as analogous and therefore allowed to be considered, an obviousness finding is often a given.[13] Like the teaching, suggestion, or motivation test, the analogous arts test has allowed courts to be "cognitive misers" in assessing obviousness, limiting "the burdens of processing technical information."[14]

While subjectivity during prosecution can be tolerated given the limitations under which examiners operate, courts should no longer use the dated and unpredictable analogous arts test as a pretext for approving "complex inventions difficult for judges to understand" while excluding "less mysterious inventions a judge can understand."[15] Unlike examiners, litigants generally have more time and resources to

9. The analogous arts test asks (1) whether the art is from the same field of endeavor and, if not, (2) "whether the reference still is reasonably pertinent to the particular problem" the invention seeks to solve. *In re* Clay, 966 F.2d 656, 658–59 (Fed. Cir. 1992); *In re* Klein, 647 F.3d 1343, 1348 (Fed. Cir. 2011); Innovention Toys, L.L.C., v. MGA Entm't, Inc., 637 F.3d 1314, 1321 (Fed. Cir. 2011).

10. Mark A. Lemley, *The Myth of the Sole Inventor*, 110 MICH. L. REV. 709, 750 (2012) ("Invention is a social phenomenon, not one driven by lone geniuses.").

11. Of course, the time associated with considering additional art is neither free nor without limits. *See* Brenda M. Simon, *The Implications of Technological Advancement for Obviousness*, 19 MICH. TELECOMM. & TECH. L. REV. 331, 333 (2013) (discussing the effects of increased access to information and processing power on invention and the ability to locate prior art).

12. Jacob S. Sherkow, *Negativing Invention*, 2011 BYU L. REV. 1091, 1094–95 (2011).

13. *Id.* at 1115.

14. *See* Peter Lee, *Patent Law and the Two Cultures*, 120 YALE L.J. 2, 20, 39 (2010) ("By eschewing additional context, the [teaching, suggestion, or motivation] test allows district court judges to operate as cognitive misers.").

15. Panduit Corp. v. Dennison Mfg. Co., 810 F.2d 1561, 1572 (Fed. Cir. 1987); Sherkow, *supra* note 12, at 1120.

establish obviousness during litigation.[16] Courts should make use of additional information that arises during litigation to engage in a more robust analysis of obviousness. Given that the ultimate determination of obviousness is a question of law based on underlying facts,[17] and examiners often have no formal legal training, courts are in a better position to engage in a more thorough analysis.[18]

This Article proposes that courts should ground the obviousness determination in reality, considering all prior art, regardless of whether it is analogous, and shifting the analysis to what actually happens in the innovative context. Courts will need to closely evaluate the differences between the prior art and the claimed invention in determining obviousness.[19] Rather than relying on the outmoded threshold categorization used in the analogous arts test as a shortcut to find inventions obvious, a more robust obviousness analysis will ensure the rich examination that the Supreme Court has mandated.[20] Essentially, courts should be wary of relying too heavily on the soft rule–based approach of the analogous arts test. Instead, they should engage in the contextually based analysis of nonobviousness set forth by the Court in *Graham v. John Deere Co.*[21] and *KSR International Co. v. Teleflex Inc.*,[22] which merely considers

16. *See, e.g.*, *In re* Portola Packaging, Inc., 110 F.3d 786, 789 (Fed. Cir. 1997) ("[N]ewly-discovered prior art often is identified only after a patent is issued because a potential infringer generally has greater resources and incentives to search for and find prior art than does the [USPTO]."); Michael Abramowicz, *Perfecting Patent Prizes*, 56 VAND. L. REV. 115, 178 (2003) ("[P]otential infringers have strong incentives to seek out evidence that might undermine a patent's validity, for example by 'scouring public and private sources around the world' for prior art . . . .") (citation omitted); Mark A. Lemley, *Rational Ignorance at the Patent Office*, 95 NW. U. L. REV. 1495, 1502 (2001) ("In contrast to the eighteen hours an examiner will spend on a patent from start to finish, lawyers and technical experts will spend hundreds and perhaps even thousands of hours searching for and reading prior art, poring over the specification and prosecution history, and preparing and defending invalidity arguments.").

17. Graham v. John Deere Co., 383 U.S. 1, 17–18 (1966) (explaining that obviousness is a question of law based on underlying factual determinations).

18. Indeed, the United Kingdom Patent Office did not require an examination of obviousness until 1977. INTELLECTUAL PROPERTY OFFICE, *Public Consultation on Level of the Inventive Step Required for Obtaining Patents—the Government's Response*, http://www.ipo.gov.uk/response-inventive.pdf (last visited May 30, 2014).

19. *See id.*

20. KSR Int'l Co. v. Teleflex Inc., 550 U.S. 398, 415 (2007).

21. 383 U.S. 1 (1966).

22. 550 U.S. 398 (2007).

the scope and content of the prior art as one factor in a rich standard. This shift will ensure that courts consider all of the relevant factors to determine obviousness more accurately.

The two key inquiries of the analogous arts test, defining the field of the invention and the scope of the problem solved by the invention, are at the heart of its unpredictability. Part I examines the development of the analogous arts test, focusing on how subjectivity entered into a test that was supposed to provide greater predictability in assessing obviousness. Part I also discusses how transformations in the process of innovation should inform the ways in which courts and examiners define two central components of the obviousness inquiry: (1) the person having ordinary skill in the art ("PHOSITA"), which is the hypothetical being from whose perspective the question of obviousness is evaluated, and (2) the scope and content of the prior art.

Decision makers should adjust the application of the analogous arts test during prosecution and litigation to account for different constraints. Part II discusses how the analogous arts test should be modified during prosecution—examiners need to reinvigorate the PHOSITA in applying the analogous arts test and focus on the claims to provide greater certainty. Part III suggests that, during litigation, courts should limit their use of the analogous arts test and instead return to the heart of the rich contextual *Graham* standard, examining the differences between the claimed invention and the prior art, consistent with the Supreme Court's approach to obviousness.[23] Part IV concludes by responding to objections to the proposal. Reducing reliance on the analogous arts test during litigation should result in a better assessment of obviousness where it matters most.

I. THE DEVELOPMENT OF THE ANALOGOUS ARTS TEST

Determining whether an invention is obvious is often the critical inquiry of patent law.[24] Section 103 of the Patent Act denies patents

23. *Id.* at 406.

24. The struggle with obviousness is not unique to the United States. Members of the World Trade Organization are required to grant patents for inventions that "are new, involve an inventive step and are capable of industrial application." Agreement on Trade-Related Aspects of Intellectual Property Rights, art. 27, Apr. 15, 1994, 33 I.L.M. 1197, 1208. "Inventive step" is defined as being synonymous with "non-obvious." *Id.* at 1208 n.5. *See* Amy Kapczynski, *Harmonization and Its Discontents: A Case Study of TRIPS Implementation in India's Pharmaceutical Sector*, 97 CALIF. L. REV. 1571, 1589 (2009) (commenting on India's decision to adopt "an exceptionally high threshold for inventive step"); Timo Minssen, *Meanwhile on the Other Side of the Pond: Why Biopharmaceutical Inventions That Were "Obvious to Try" Still Might Be Non-Obvious—Part I*, 9 CHI.-KENT J. INTELL. PROP. 60, 61 (2010) (comparing application of the inventive

to inventions 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."[25] In evaluating obviousness, courts and examiners apply a broad standard using the *Graham* framework, which considers (1) the scope and content of the prior art, (2) differences between the prior art and the claims at issue, (3) the level of ordinary skill in the art, and (4) secondary considerations of nonobviousness, such as commercial success and long-felt but unmet need.[26]

In assessing obviousness, prior art references can be combined to show that all of the elements of the claimed invention are present in the prior art. Such combination is permitted when there is a reason why a person having ordinary skill in the art would combine them. In hindsight, inventions often seem obvious, particularly where prior art references contain all the elements of the claimed invention and merely need to be combined.[27] Having a reason to combine helps prevent improper use of hindsight, which is particularly problematic given that nonobviousness is determined as of the time of filing, which may be many years before a decision maker assesses validity. The Federal Circuit previously attempted to avoid the hindsight bias problem by adopting a rigid rule, which had required that the prior art contain a teaching, suggestion, or motivation ("TSM") to combine the references. In *KSR*, the Supreme Court rejected the strict

step/obviousness analysis in Europe and the U.S., and suggesting that "[p]atent law . . . does not sufficiently relate to the economic and scientific reality of pharmaceutical R&D"); Amy Nelson, *Obviousness or Inventive Step as Applied to Nucleic Acid Molecules: A Global Perspective*, 6 N.C. J.L. & TECH. 1, 30 (2004) (discussing the main differences in obviousness in the United States, Australia, Europe, and Japan); Wei-Lin Wang & Jerry I-H Hsiao, *The Person Having Ordinary Skill in the Arts in Assessing Obviousness Standard in the United States and Taiwan After KSR—Implications for Taiwan Patent Law and Practice*, 38 RUTGERS L. REV. 18 (2010) (discussing uncertainty in the application of the PHOSITA standard in assessing inventive step in Taiwan).

25. 35 U.S.C. § 103(a) (2006). The recently enacted America Invents Act changes the timing for assessing obviousness to "before the effective filing date of the claimed invention." Leahy-Smith America Invents Act, Pub. L. No. 112-29, 125 Stat. 284, 286 (2011) (codified at 35 U.S.C. § 103).

26. Graham v. John Deere Co., 383 U.S. 1, 17 (1966).

27. *See* Gregory N. Mandel, *Another Missed Opportunity: The Supreme Court's Failure to Define Nonobviousness or Combat Hindsight Bias in* KSR v. Teleflex, 12 LEWIS & CLARK L. REV. 323, 324 (2008) (discussing the hindsight bias problem).

requirement;[28] however, the Federal Circuit still considers motivation to combine a helpful "clue" in determining obviousness.[29]

Despite the Supreme Court's broad standard for determining obviousness set forth in *KSR*, the Federal Circuit adopted the analogous arts test in an attempt to provide a bright-line rule addressing the requirements of the nonobviousness statute. To assess obviousness, the fact finder must first determine what may be considered as prior art, which often asks whether the art is "too remote to be treated as prior art."[30] In determining which subject matter is pertinent, courts and examiners have relied on the two-part analogous arts test, considering: "(1) whether the art is from the same field of endeavor, regardless of the problem addressed, and (2) if the reference is not within the field of the inventor's endeavor, whether the reference is still reasonably pertinent to the particular problem."[31] Consequently, the person having ordinary skill in the art is presumed to have knowledge of all prior art within the field of endeavor, as well as prior art reasonably pertinent to the problem solved by the invention.[32] The outcome of the analogous arts test is often dispositive in analyzing obviousness.

When Congress first enacted the obviousness statute in 1952, placing such limitations on the scope of allowable prior art seemed reasonable, given the limitations on finding and retrieving useful information at that time.[33] In view of the changing nature of innovation and increased access to information, these limitations on the scope of prior art now seem outmoded, at least during litigation where additional resources are available.

Decision makers have struggled with both parts of the analogous arts test, in determining whether a reference is from the same field as

28. KSR Int'l Co. v. Teleflex Inc., 550 U.S. 398, 419 (2007).

29. *See, e.g.*, Media Techs. Licensing, L.L.C. v. Upper Deck Co., 596 F.3d 1334, 1338 (Fed. Cir. 2010) (finding it would have been obvious to attach a piece of memorabilia to a sports-related item instead of attaching it to non-sports-related prior art); W. Union Co. v. MoneyGram Payment Sys., Inc., 626 F.3d 1361, 1368 (Fed. Cir. 2010) (analyzing motivation to combine and finding the improvement to the prior art to be obvious to a person of ordinary skill in the art); Ortho-McNeil Pharm., Inc. v. Mylan Labs., Inc., 520 F.3d 1358, 1364 (Fed. Cir. 2008) ("[A] flexible TSM test remains the primary guarantor against a non-statutory hindsight analysis such as occurred in this case.").

30. *In re* Clay, 966 F.2d 656, 658 (Fed. Cir. 1992) (citation omitted) (internal quotation marks omitted).

31. Wyers v. Master Lock Co., 616 F.3d 1231, 1237 (Fed. Cir. 2010) (citation omitted) (internal quotation marks omitted).

32. *In re* Clay, 966 F.2d at 659.

33. 35 U.S.C. § 103 (2006); Graham v. John Deere Co., 383 U.S. 1 (1966).

that of the invention or reasonably pertinent to the scope of the problem solved by the invention. Adding to its uncertainty, the analogous arts test has not kept up with the changing nature of innovation. Advances in technology have muddled the definition of the PHOSITA and the scope of the prior art—two central factors in the determination of obviousness.

A. Early Attempts to Provide a Bright-Line Rule

Initially, the analogous arts test attempted to provide a clear rule for determining obviousness. The long-standing debate about rules and standards highlights the trade-off between providing predictability and recognizing creativity.[34] Bright-line rules provide greater certainty; standards allow for a flexible, contextual determination.[35]

In formulating the rule for assessing obviousness in 1895, the Supreme Court first focused on the importance of the closeness of the field of the invention to that of the prior art.[36] In *Potts v. Creager*, the Court upheld a patent that transferred the use of a component from one industry into a new industry.[37] The Court focused on the proximity of the industry of the prior art to the new industry of the claimed invention, the modifications required to create the claimed invention, and the significance of the modifications to the new industry in finding the invention nonobvious.[38] This construction of the analogous arts test allowed decision makers to act as "cognitive misers," focusing on the proximity of the fields, rather than the underlying technology.[39]

A lack of guidance in the case law about how to define the field of invention and problem solved, however, has made the analogous arts test unpredictable and highly subjective.[40] The Supreme Court

34. *See, e.g.*, Duffy, *supra* note 2.

35. *Id.*

36. Potts v. Creager, 155 U.S. 597, 606 (1895).

37. *Id.* at 608–09 (finding the inventor's substitution of glass bars used in one industry for steel in the new industry of the invention was not merely for the "more perfect accomplishment of the same work" but "for a purpose wholly different from that for which they had been employed").

38. *Id.* at 606.

39. *See* Lee, *supra* note 14, at 39 (noting how the teaching, suggestion, or motivation "test allows district court judges to operate as cognitive misers").

40. *See* Margo A. Bagley, *Internet Business Model Patents: Obvious by Analogy*, 7 MICH. TELECOMM. & TECH. L. REV. 253, 270 (2001) ("[I]t is impossible to predict how narrowly or broadly a court will define the relevant field of the inventor's endeavor or the problem to be solved."); Jeffrey T. Burgess, *The Analogous Art Test*, 7 BUFF. INTELL. PROP.

complicated the analogous arts analysis in the 1966 case of *Calmar v. Cook Chemical*,[41] in which it looked beyond the field of the invention to the problem that the *inventor* was trying to solve.[42] Shifting the focus to the inventor contradicts the requirement that obviousness be determined objectively, from the perspective of the PHOSITA. Cook's patent was a pump sprayer for use with insecticide containers.[43] The Court rejected Cook's argument that a reference relating to pouring spouts for liquid containers was not in the pertinent prior art and thus could not be considered in finding its patent obvious.[44] Reasoning that the problems that Cook and the industry faced were mechanical closure problems and not related to insecticides, the Court found that closure devices in the liquid container art were pertinent references.[45]

The Court of Custom and Patent Appeals set forth the current two-part test for analogous arts in its 1979 decision, *In re Wood*.[46] For the analogous arts inquiry, a court or examiner must decide (1) whether the art is "within the field of the inventor's endeavor," and (2) if the reference is not within the same field, whether the reference is still reasonably pertinent to the particular problem "with which the inventor was involved."[47] While easily stated, the analogous arts test has become nearly impossible to apply objectively.

L.J. 63, 70 (2009) ("Unfortunately, the case law appears erratic on this issue at times."); Hilary K. Dobies, *New Viability in the Doctrine of Analogous Art*, 34 IDEA 227, 229–30 (1994) ("Characterizing analogous art involves a fact specific determination that is by definition, somewhat subjective."); Sherkow, *supra* note 12, at 1111–12 ("Nor has the Federal Circuit been consistent on the proper approach to determining which art is analogous on the face of a patent application."); Toshiko Takenaka, *International and Comparative Law Perspectives on Internet Patents*, 7 MICH. TELECOMM. & TECH. L. REV. 423, 428 (2001) ("[A] serious flaw inherent to the doctrine of analogous art is its arbitrary nature of defining the applicable scope.").

41. 383 U.S. 1 (1966) (decided in conjunction with Graham v. John Deere Co., 383 U.S. 1 (1966)).

42. *Id.* at 35.

43. *Id.* at 26.

44. *Id.* at 35.

45. *Id.* ("The problems confronting Scoggin and the insecticide industry were not insecticide problems; they were mechanical closure problems.").

46. *In re* Wood, 599 F.2d 1032, 1036 (C.C.P.A. 1979) ("The rationale behind this rule precluding rejections based on combination of teachings of references from nonanalogous arts is the realization that an inventor could not possibly be aware of every teaching in every art.").

47. *Id.*

B. Subjectivity in Defining the Field and the Problem Solved Blurs the Test

By focusing the inquiry on the problem that the inventor or the industry was trying to solve in *Cook* and *Wood*, the courts introduced considerable uncertainty into the analysis. The subjectivity in defining the problem that the inventor was purportedly trying to solve is apparent in the 1992 decision of *In re Clay*.[48]

Prior to *In re Clay*, the analogous arts test generally failed to offer patent holders protection, rarely precluding a reference from being considered as prior art.[49] However, the Federal Circuit reinvigorated the use of the analogous arts test in *In re Clay*.[50] Clay filed a patent application claiming a process for extracting stored oil from the bottom of a tank in which the outlet port was above the bottom of the tank.[51] Clay's invention involved filling the gap between the tank bottom and the outlet port with a gel.[52] The closest prior art was the Sydansk reference, which taught injecting gel into rock formations to direct oil flow in the ideal direction.[53]

In deciding that Sydansk was not analogous art, the Federal Circuit used the two-part test, asking (1) whether the art is from the same field of endeavor and, if not, (2) "whether the reference still is reasonably pertinent to the particular problem with which the *inventor* is involved."[54] The court again focused improperly on the perspective of the inventor, rather than that of the PHOSITA. In *Clay*, the court stated the field of invention was the storage of liquid hydrocarbons, while the prior art involved the extraction of petroleum, so the first part of the test was not satisfied.[55] For the second part, the court defined the problem the inventor faced as preventing the loss of product while removing oil from man-made tanks, while Sydansk was directed to extracting oil from rock.[56] Because the Federal Circuit defined the problem narrowly, the court did not find Sydansk was analogous art.[57] In light of the differences in the conditions between extracting oil from underground as opposed to

48. 966 F.2d 656 (Fed. Cir. 1992).

49. *See* Bagley, *supra* note 40, at 267.

50. 966 F.2d 656 (Fed. Cir. 1992).

51. *Id.* at 657.

52. *Id.*

53. *Id.* at 659.

54. *Id.* (emphasis added).

55. *Id.*

56. *Id.*

57. *Id.* at 659–60.

storage tanks, the court reasoned that a PHOSITA trying to address Clay's problem would not consider oil extraction art.[58]

The Federal Circuit's analysis of both parts of the test highlights its subjectivity. For the first inquiry of the "same field," the court easily could have upheld the PTO's finding that Clay's invention and the Sydansk reference were in the same field of "maximizing withdrawal of petroleum stored in petroleum reservoirs."[59] For the second prong, the court could have defined the problem facing the inventor as maximizing petroleum recovery by filling dead volumes, a problem for which the Sydansk reference would have been reasonably pertinent. By analyzing both prongs of the test narrowly, the court found the reference not analogous, highlighting the substantial subjectivity in the analysis.

That same year, the Federal Circuit again narrowly defined the problem to be solved in *In re Oetiker*.[60] The court reversed the PTO's rejection of Oetiker's application, which concerned assembly line metal hose clamps. The examiner had found the metal hose clamp invention obvious in light of a reference discussing plastic fasteners used in clothing.[61] Even though both the invention and the prior art reference were clamps, the Federal Circuit reasoned that a PHOSITA, trying to solve the problem of fastening an assembly line hose clamp, could not have reasonably been expected to examine clothing fasteners.[62]

The definition of the field and of the problem to be solved predestines the obviousness outcome. Had the Federal Circuit defined the field broadly as "clamps," the first part of the analogous arts test would have been met; the reference would have come in as analogous art, and the application likely found obvious. If the court had defined the problem to be solved broadly as a "hooking problem," the clothing fasteners likely would have been reasonably pertinent, and the application likely found obvious. Unlike *Calamar*, in which the Court criticized the PTO's narrow definition of the problem solved as limited to "insecticides" and expanded it to "mechanical closure problems," the Federal Circuit in *Oetiker* narrowly defined the problem, excluding the prior art reference from consideration, and the obviousness rejection was reversed.[63]

Adding to the confusion of the doctrine, the Federal Circuit broadly defined the problem to be solved five years later in *In re*

58. *Id.* at 660.

59. *Id.* at 659.

60. 977 F.2d 1443 (Fed. Cir. 1992).

61. *Id.* at 1446.

62. *Id.* at 1447.

63. *See* Bagley, *supra* note 40, at 270.

Schreiber.[64] The whimsical invention at issue involved conical shaped tops for popcorn shakers.[65] The court found conical shaped ends for oil cans reasonably pertinent, although they are from different fields of endeavor.[66] The conical oil can top would be reasonably pertinent to the problem of dispensing kernels of popcorn "at the same time," while using the tapered top to "jam up the popped popcorn" and allow "only a few kernels" to pass through.[67] By defining the problem broadly, the obviousness analysis of an invention related to popcorn dispensers can encompass prior art oil can references.

Similarly, in 2004, the Federal Circuit broadly defined the field of invention in *In re Bigio*.[68] There, the PTO struck down the claim at issue covering a hairbrush in view of three references discussing toothbrushes.[69] The Federal Circuit agreed with the PTO's rejection, reasoning that the invention could cover brushes for any type of body hair, including facial hair.[70] It noted that the PTO had correctly set forth the structural similarities between toothbrushes and small hairbrushes, as well as the functional similarities between the two types of brushes, in that a toothbrush could be used for brushing facial hair.[71] Consequently, the Federal Circuit concluded that the references concerning toothbrushes were analogous to the claimed hairbrushes.[72] Judge Newman strongly dissented, stating that a "brush for hair has no more relation to a brush for teeth than does hair resemble teeth."[73]

64. 128 F.3d 1473 (Fed. Cir. 1997).

65. *Id.* at 1474.

66. *Id.* at 1478.

67. *Id. See also In re* Paulsen, 30 F.3d 1475, 1481 (Fed. Cir. 1994) (finding lids used in a cabinet, telephone directory, and piano to be reasonably pertinent to the "clamshell style" opening configuration used in a laptop computer).

68. 381 F.3d 1320 (Fed. Cir. 2004).

69. *Id.* at 1326. The claim at issue involved a hairbrush with a unique shape in which the bristles and the bristle substrate were in an hourglass arrangement.

70. *Id.* at 1325.

71. *Id.* at 1326 (noting that the prior art "toothbrush may easily be used for brushing hair (e.g., human facial hair) in view of the size of the bristle segment and arrangement of the bristle bundles described in the reference").

72. *Id.*

73. *Id.* at 1327 ("The mode and mechanics of brushing teeth cannot reasonably be viewed as analogous to the mode and mechanics of brushing hair.").

The ambiguity in application of the analogous arts test has been amplified with the expansive use of the test in light of recent case law, particularly because the definition of the field of the inventor's endeavor and the problem to be solved are often dispositive to the obviousness question.[74]

C. Technological Advancement Adds to the Uncertainty

Complicating an already fuzzy rule, transformations in the process of innovation have broadened the scope of art considered analogous. Even back in 1966, the Supreme Court in *Graham* realized that "the ambit of applicable art in given fields of science has widened by disciplines unheard of a half century ago. . . . [T]hose persons granted the benefit of a patent monopoly [must] be charged with an awareness of these changed conditions."[75]

In the 2007 decision of *KSR v. Teleflex*, the Supreme Court implicitly recognized that increased interdisciplinary research and access to searchable information should inform how courts and examiners define the person having ordinary skill in the art (PHOSITA), as well as the scope and content of prior art.[76] Almost fifty years after the Court's recognition in *Graham* of the implications technological advancement can have for obviousness, it is still not clear to what extent those having ordinary skill in the art can integrate "the ambit of applicable art."[77]

Access to searchable information and increased processing capabilities have changed the process of research, potentially implicating what it means to be obvious. Information can be obtained, and perhaps analyzed, more efficiently.[78] Technologies like idea

74. Bagley, *supra* note 40, at 270 ("How broadly or narrowly the field of the inventor's endeavor or the problem facing the inventor is defined largely determines what art is analogous, which in turn plays a significant role in the determination of whether an invention will be deemed obvious."); Sherkow, *supra* note 12, at 1115 ("[T]he broader the analogous art, the greater number of prior art references that can potentially be held against the inventor, and the more likely that the patent will be found invalid as obvious.").

75. Graham v. John Deere Co., 383 U.S. 1, 19 (1966).

76. KSR Int'l Co. v. Teleflex Inc., 550 U.S. 398, 418–22 (2007); Simon, *supra* note 11, at 333–34 (discussing technological advancement in the areas of information retrieval and processing capability).

77. *Graham*, 383 U.S. at 19.

78. *See* Matthew W.G. Dye et al., *Increasing Speed of Processing with Action Video Games*, 18 CURRENT DIRECTIONS IN PSYCHOL. SCI., 321, 321 (2009) ("Video gaming may therefore provide an efficient training regimen to induce a general speeding of perceptual reaction times without decreases in accuracy of performance."); C. Shawn Green & Daphne Bavelier, *Action Video Game Modifies Visual Selective Attention*, 423 NATURE 534 (2003) (demonstrating that habitual players

stimulation programs, computer-aided thinking software, and three-dimensional printing may all speed up the innovative process.[79] Mere access to information, however, does not necessarily mean the PHOSITA will have the time or inclination to appreciate its significance.[80] Despite this disconnect, courts often use the analogous arts test in a way that assumes access to information is the same thing as understanding it, finding inventions obvious as a natural consequence of concluding that the prior art reference at issue is analogous.

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of action video games, as well as non–video game players trained on action video games, show improved visual selective attention); Gary W. Small et al., *Your Brain on Google: Patterns of Cerebral Activation During Internet Searching*, 17 AM. J. GERIATRIC PSYCHIATRY 116 (2009) (demonstrating that Internet users showed increased neural activity); Matt Richtel, *Hooked on Gadgets, and Paying a Mental Price*, N.Y. TIMES, June 7, 2010, at A12 ("Technology use can benefit the brain in some ways . . . .").

79. *See* John Bohannon, *Searching for the Google Effect on People's Memory*, 333 SCI. 277 (2011) (discussing whether "[o]ur increasingly information-rich environment" could be a factor in "the gradual increase in IQ scores observed over the past century"); DAVID PRESSMAN, PATENT IT YOURSELF: YOUR STEP-BY-STEP GUIDE TO FILING AT THE U.S. PATENT OFFICE 39–42 (Richard Stim ed., 15th ed. 2011) ("[C]omputers can be used to enhance creativity, solve problems, bust through conceptual roadblocks, and get into the recesses of your memory."); *Print Me a Stradivarius*, ECONOMIST, Feb. 12, 2011, http://www.economist.com/node/18114327.

80. *See, e.g.*, David C. Blair & M. E. Maron, *An Evaluation of Retrieval Effectiveness for a Full-Text Document-Retrieval System*, 28 COMM. ACM 289, 295 (1985) (describing how users of full-text database believed they were retrieving 75% of the relevant documents when they were only retrieving 20%, highlighting the flawed "assumption that it is a simple matter for users to foresee the exact words and phrases that will be used in the documents they will find useful, and *only* in those documents"); Nicholas Carr, *Is Google Making Us Stupid?*, ATLANTIC, July/August 2008, at 56, http://www.theatlantic.com/magazine/archive/2008/07/is-google-making-us-stupid/6868/ (questioning whether access to technology will make innovation easier); Toru Ishikawa et al., *Wayfinding with a GPS-Based Mobile Navigation System: A Comparison with Maps and Direct Experience*, 28 J. ENVTL. PSYCHOL. 74, 80–81 (2008) (comparing wayfinding behavior and showing GPS users traveled more slowly, made more stops, and traveled longer distances than those who relied on maps or navigated based on direct experience); Simon, *supra* note 11, at 342–45 (discussing how advances in technology may impact innovation); Betsy Sparrow et al., *Google Effects on Memory: Cognitive Consequences of Having Information at Our Fingertips*, 333 SCI. 776, 776–78 (2011) (describing four experiments that suggest the "processes of human memory are adapting to the advent of new computing and communication technology").

1. The New and Improved Person of Ordinary Skill in the Art

Obviousness is determined not from the perspective of an examiner, jury, or judge, but rather from that of the PHOSITA, further complicating the analysis. To satisfy the requirements of Section 103, the invention must not be obvious to the PHOSITA at the time it was made.[81]

Traditionally, the PHOSITA was considered to be a "very boring . . . nerd": someone having the ability to access all pertinent information without any way to integrate it.[82] In 1966, the Court of Customs and Patent Appeals described the PHOSITA as "working in his shop with the prior art references—which he is presumed to know—hanging on the walls around him."[83] Given the increased access to searchable information made available through advances in technology, Winslow's prior art wallpaper has moved from theoretical to actual.

The Supreme Court in *KSR* recognized this expansion, redefining the PHOSITA as a person having not merely ordinary skill, but also creativity and common sense.[84] The invention claimed in *KSR* concerned an adjustable gas pedal connected to a fixed sensor for use in computer-controlled systems in cars.[85] The prior art discussed adjustable gas pedals as well as modular sensors, though nobody combined them before the inventor in *KSR*.[86] In deciding that it

81. 35 U.S.C § 103 (2006). The recently enacted America Invents Act changes the timing of the obviousness inquiry to "before the effective filing date of the claimed invention." Leahy-Smith America Invents Act, Pub. L. No. 112-29, 125 Stat. 284, 286 (codified as amended at 35 U.S.C. § 103 (2012)).

82. Sandoz GmbH v. Roche Diagnostics GmbH, [2004] EWHC (Ch) 1313. *See also* Panduit Corp. v. Dennison Mfg. Co., 810 F.2d 1561, 1566 (Fed. Cir. 1987) ("[T]he decisionmaker confronts a ghost, i.e., 'a person having ordinary skill in the art,' not unlike the 'reasonable man' and other ghosts in the law."); Jonathan J. Darrow, *The Neglected Dimension of Patent Law's PHOSITA Standard*, 23 HARV. J.L. & TECH. 227, 235 n.38 (2009) ("The PHOSITA standard has been likened to the reasonable person standard in tort law."); Rebecca S. Eisenberg, *Obvious to Whom? Evaluating Inventions from the Perspective of PHOSITA*, 19 BERKELEY TECH. L.J. 885, 888 (2004) (suggesting that courts refocus on "the statutory directive that judgments of nonobviousness be made from the perspective of PHOSITA"); Joseph P. Meara, *Just Who Is the Person Having Ordinary Skill in the Art? Patent Law's Mysterious Personage*, 77 WASH. L. REV. 267, 267 (2002) ("Patent law's 'person having ordinary skill in the art' (Phosita) has been likened to the reasonable person of tort law." (citation omitted)).

83. *In re* Winslow, 365 F.2d 1017, 1020 (C.C.P.A. 1966).

84. KSR Int'l Co. v. Teleflex Inc., 550 U.S. 398, 421 (2007).

85. *Id.* at 406.

86. *Id.* at 408–09.

would have been obvious for a PHOSITA to combine the prior art references, the Court rejected the Federal Circuit's rigid requirement that the prior art contain a teaching, suggestion, or motivation to combine the references. Instead, the Court advanced a "common sense" methodology of deciding obviousness in light "of the inferences and creative steps that a [PHOSITA] would employ."[87]

A PHOSITA blessed with creativity and common sense, having access to searchable information, could combine virtually all prior art references, even those from widely divergent fields. This runs the risk of raising the nonobviousness bar too high, as a PHOSITA is deemed to be aware of even hidden or extremely remote prior art.[88]

To accurately determine the common sense and creativity of the PHOSITA, this Article proposes that decision makers should shift the focus, not merely to analyze the information that the PHOSITA could access in the same field or as reasonably pertinent to the problem solved by the invention, but instead to assess whether the PHOSITA would recognize and understand interdisciplinary advances in different technological fields, given limitations on time and interest. A PHOSITA defined as a research entity, rather than an individual, may be more likely to consider a larger range of prior art. Even where advances in technology free up time for innovation, reduce the costs of obtaining information, and facilitate collaboration, these advances do not necessarily make an invention obvious.[89] The mere availability of information does not mean that those of ordinary skill in the art would have time or inclination to review a given reference. This analysis, long overlooked in the discussion of analogous arts, should take place in evaluating the obviousness of the invention, taking into account the differences between the prior art and the claimed invention, as *Graham* requires.

87. *Id.* at 418.

88. *In re* Rouffet, 149 F.3d 1350, 1357 (Fed. Cir. 1998) ("[A]ll prior art references in the field of the invention are available to this hypothetical skilled artisan."). *See also* Alan Devlin, *Revisiting the Presumption of Patent Validity*, 37 SW. U. L. REV. 323, 342 (2008) ("[T]here is little, if any, long-term social value associated with invalidating patents on the basis of prior art not within the realistic purview of the inventor . . . ."); Daralyn J. Durie & Mark A. Lemley, *A Realistic Approach to the Obviousness of Inventions*, 50 WM. & MARY L. REV. 989, 1016 (2008) ("Much of that art is obscure enough that, in the real world, the PHOSITA wouldn't have access to it and likely wouldn't know about it.").

89. Simon, *supra* note 11, at 366–67.

2. Technological Advancement and the Continued Viability of the Analogous Arts Test

In light of advances in information technology and the decision in *KSR*, the rationale for limiting consideration of references using the analogous arts test as a bright-line rule seemed questionable. After all, the Court had criticized strict tests of obviousness in *KSR*, concluding that "courts and patent examiners should [not] look only to the problem the patentee was trying to solve."[90] The viability of the analogous arts test became uncertain.

It remained so until the 2011 decision in *In re Klein*,[91] in which the Federal Circuit ensured the continued importance of the test as a way to limit the scope of prior art considered in determining obviousness. Klein claimed a nectar mixing device with a movable divider that allows users to prepare sugar water in varying ratios.[92] The Federal Circuit held on appeal that the references at issue could not be considered; they were not analogous art.[93] Three references did not show a container that could receive water or hold it long enough to make the mixture.[94] The remaining references did not have movable dividers and could not permit multiple ratios.[95]

The court also rejected the PTO's efforts to expand the definition of the problem solved from a "nectar mixing device" to a "compartment separation problem."[96] The PTO's attempt to redefine the problem solved highlights the subjectivity in the analogous arts test, as the obviousness outcome often depends on how expansively the problem is defined. Defining the problem as dealing with "compartment separation"[97] expands the scope of art that can be considered, and the invention will more likely be found invalid.

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90. KSR Int'l Co. v. Teleflex Inc., 550 U.S. 398, 420 (2007); *see also* Comaper Corp. v. Antec, Inc., 596 F.3d 1343, 1351 (Fed. Cir. 2010) (finding prior art involving the cooling of computer electronics using fans to draw cool ambient air was in the same field as claimed cooling devices for mounting in a computer drive bay); *In re* ICON Health & Fitness, Inc., 496 F.3d 1374, 1380 (Fed. Cir. 2007) (finding folding bed's spring mechanism analogous to claimed folding treadmill, as the folding mechanism of the claimed invention generally addressed a weight support problem).

91. 647 F.3d 1343 (Fed. Cir. 2011).

92. *Id.* at 1345.

93. *Id.*

94. *Id.* at 1348–50.

95. *Id.* at 1350–52.

96. *Id.* at 1352 n.2.

97. *Id.*

Much as it did in the years prior to *KSR*, the Federal Circuit continued to apply the analogous arts test without providing clear guidelines. In a second case from 2011 concerning the analogous arts test, *Innovention Toys, LLC v. MGA Entertainment, Inc.*,[98] the Federal Circuit went so far as to consider the teachings of the prior art in assessing "the problem [faced by] an inventor."[99] The claimed invention in *Innovention Toys* concerns a physical, light-reflecting board game.[100] It uses laser sources, and both mirrored and non-mirrored playing pieces.[101] The prior art included electronic computer games, rather than physical board games.[102] The Federal Circuit found that the district court erred when it failed to consider whether the prior art references were "reasonably pertinent to the problem *facing an inventor* of a new, *physical*, laser-based strategy game."[103] The focus should not be on the inventor; the obviousness determination should be made from the perspective of the PHOSITA.

The Federal Circuit further obscured the analogous arts determination in its 2012 decision in *K-Tec, Inc. v. Vita-Mix Corp.*[104] This case involved commercial blenders for making frozen drinks.[105] K-Tec received patents involving a blending jar geometry that would address the problem of a pocket of air created around a spinning blade, known as cavitation.[106] The claims at issue discussed "four side walls" and "a fifth truncated wall disposed between two of the four side walls."[107] Alleged infringer Vita-Mix argued that non-blender designs using five-sided containers should have been deemed

98. 637 F.3d 1314 (Fed. Cir. 2011).

99. *Id.* at 1321–22.

100. *Id.* at 1316.

101. *Id.*

102. *Id.* at 1321–22.

103. *Id.* (emphasis added). The Federal Circuit reasoned that because the prior art mentioned potentially carrying out the game in both electronic and physical form, the references would be from analogous arts. Specifically, the prior art references and the patent related to the same objective—"game design, and game elements" in strategy games—"whether molded in plastic by a mechanical engineer or coded in software by a computer scientist." Consequently, the Federal Circuit held that the creators of the patented board games should have considered the teachings of the video game references in addressing the problem of constructing a board game using lasers. *Id.* at 1322–23.

104. 696 F.3d 1364 (Fed. Cir. 2012).

105. *Id.* at 1368.

106. *Id.* at 1368–69.

107. *Id.* at 1368.

analogous art and therefore considered by the jury in determining obviousness.[108]

The Federal Circuit affirmed the lower court's grant of summary judgment that the prior art references were not analogous, again focusing on the second prong of the test examining reasonable pertinence.[109] Vita-Mix's expert failed to "explain any rational underpinning for [the inventor] to have consulted non-blending containers or food mixers in order to solve the problems he encountered in designing a new blending container."[110] Here, as in *Innovention Toys*, the Federal Circuit gave undue weight to the problems of the inventor in deciding reasonable pertinence, asking whether the reference "logically would have commended itself to an *inventor's attention* in considering his problem."[111] Instead, the court should have focused on the PHOSITA, as required by the Supreme Court in *Graham* and *KSR*.

Some have suggested that by limiting the ability to rely on the teaching, suggestion, or motivation test, *KSR* reinvigorated use of the analogous arts test as a way to avoid hindsight bias.[112] Yet, the analogous arts test permits courts too much subjectivity in its application, in defining both the field of invention and whether a reference is reasonably pertinent to the problem solved, short-circuiting the fact-intensive analysis advanced by the Supreme Court. The analogous arts test, at best, provides a soft rule focusing on outdated considerations.

II. OBVIOUSNESS DURING PROSECUTION: THE ANALOGOUS ARTS TEST AS A COST-EFFECTIVE TOOL

Even imperfect rules have benefits. During prosecution, the analogous arts test provides a cost-effective way for examiners to determine obviousness. Examiners often operate under significant time and resource constraints.[113] These limitations are acutely felt, given

108. *Id.* at 1374.

109. *Id.* at 1375.

110. *Id.* (quoting K-TEC, Inc. v. Vita-Mix Corp., 729 F. Supp. 2d 1312, 1324 (D. Utah 2010)).

111. K-Tec, Inc. v. Vita-Mix Corp., 696 F.3d at 1375 (emphasis added) (quoting Innovention Toys, L.L.C. v. MGA Entm't, Inc., 637 F.3d 1314, 1321 (Fed. Cir. 2011)).

112. *See, e.g.*, Theresa Stadheim, *How* KSR v. Teleflex *Will Affect Patent Prosecution in the Electrical and Mechanical Arts*, 91 J. PAT. & TRADEMARK OFF. SOC'Y 142, 151 (2009) ("After *KSR*, the test for analogous art is much broader.").

113. *See, e.g.*, Lichtman & Lemley, *supra* note 1, at 53 (noting that examiners generally spend about sixteen to seventeen hours over three

the highly contextual nature of the obviousness determination mandated post-*KSR*.[114] Initially, the analogous arts test served as a way to guard against hindsight combinations of references that decision makers would not expect a PHOSITA to consider. Accounting for the hindsight bias problem is all the more important in view of technological advancement, as access to information and increased processing capability broadens the scope of materials available to inventors.[115] The question then becomes whether the analogous arts test is still useful to address hindsight bias and, if so, under what circumstances.

Although flawed, the analogous arts test provides a simple way for examiners to cabin the scope of prior art. Examiners are assigned applications, in part, based on the relationship between the technological area of the patent application and their technological backgrounds.[116] They are "presumed to 'have some expertise in interpreting the [prior art] references and to be familiar from their work with the level of skill in the art.'"[117] Given their backgrounds, examiners are similar to the PHOSITA, having some understanding of how to define the field of the invention and whether a reference is reasonably pertinent to the problem addressed by the patent.[118]

The analogous arts test, with all its shortcomings, enables examiners to simulate the perspective of the PHOSITA without having to provide the intensive evidence that might otherwise be required if they had to prove actual practices in the field.[119] Of course, requiring examiners to prove what actually happens in a given field would result in a more accurate assessment of the scope and content

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to four years searching for, assessing, and applying the prior art to the claimed invention).

114. *See* Lee, *supra* note 14, at 46 ("[T]he Supreme Court's new standards compel decisionmakers to engage in multifactored examinations of inventions and their technological context.").

115. *See* Simon, *supra* note 11.

116. *E.g.*, Lichtman & Lemley, *supra* note 1, at 53 ("Patent examiners who are assigned to evaluate those applications are chosen, in part, because they have backgrounds roughly related to the technology at hand, but examiners are rarely experts on the precise details of the relevant invention.").

117. Markman v. Westview Instruments, Inc., 52 F.3d 967, 986 (Fed. Cir. 1995) (citations omitted).

118. *See* Dan L. Burk & Mark A. Lemley, *Is Patent Law Technology-Specific?*, 17 Berkeley Tech. L.J. 1155, 1187–88 (2002) ("But courts walk a fine line between taking the skill of an examiner or other artisan as probative evidence of the level of skill in the art and equating the skill of such persons with the characteristics of the hypothetical PHOSITA.").

119. *Id.* at 1188.

of the prior art. Doing so, however, would be costly and time consuming, hindering the already resource-strapped endeavor that is prosecution. Requiring detailed support from examiners applying the analogous arts test seems all the more wasteful, as many patents are never asserted or licensed, perhaps because the technologies they cover never emerge or are not that valuable,[120] or because the market evolves in an unanticipated way.[121]

A. Clarifying Whose Problem It Is

Even though the analogous arts test may have a place in prosecution, a major flaw with its second prong should be corrected before both the PTO and courts. As the Federal Circuit stated in *Bigio*, "the majority of the case law precedent for analogous arts hinges on the second test,"[122] which asks whether a reference "is reasonably pertinent to the particular problem with which the inventor is involved."[123] In defining the problem at issue, decision makers have been all over the map, discussing problems of the inventor,[124] the industry with which the inventor is involved,[125] and the prior art references in question.[126] The PTO currently instructs examiners to "consider the problem faced by the inventor, as reflected—either explicitly or implicitly—in the specification."[127] Yet, the obviousness analysis, consistent with the Supreme Court's guidance in *Graham* and *KSR*, should be assessed from the objective perspective of the PHOSITA.

Unless the standard for obviousness is changed so that it is ascertained from the perspective of a reasonable inventor, rather than the PHOSITA, focusing on the problem that the *inventor* was trying to solve makes the inquiry too subjective and misguided. The courts

120. Many patents only cover inventions of minimal value or would not withstand a validity challenge during litigation. *See* John R. Allison & Mark A. Lemley, *Empirical Evidence on the Validity of Litigated Patents*, 26 AIPLA Q.J. 185, 205 (1998) (concluding that almost 50% of litigated patents are found invalid).

121. Lichtman & Lemley, *supra* note 1, at 48; *see* Lemley, *supra* note 16.

122. *In re* Bigio, 381 F.3d 1320, 1326 (Fed. Cir. 2004).

123. *Id.* at 1325.

124. Calmar Inc. v. Cook Chem. Co., 383 U.S. 1 (1966) (*decided with* Graham v. John Deere Co., 383 U.S. 1 (1966)).

125. *Id.*

126. *In re* Clay, 966 F.2d 656, 659 (Fed. Cir. 1992) (asking whether a prior art reference "*logically* would have commended itself to an inventor's attention in considering his problem") (emphasis added).

127. USPTO, *Memorandum: Analogous Arts for Obviousness Rejections* (July 26, 2011), http://www.uspto.gov/patents/law/exam/analogous_art.pdf.

have carefully distinguished the inventor from the PHOSITA. The PHOSITA possesses ordinary skill, whereas the inventor has extraordinary abilities.[128] Courts should not "conflate [highly skilled] scientists with those of ordinary skill in the art."[129]

B. Discounting Difficult-to-Access Art During Patent Prosecution to Increase Predictability

In light of the distinction between the PHOSITA and the inventor, it seems odd for examiners to include hidden or secret prior art that neither the inventor nor those of ordinary skill would have been able to access as part of the scope of relevant prior art in assessing obviousness.[130] The classic example, an obscure publication that has been indexed by subject, even if not widely disseminated, can be considered in assessing obviousness.[131] Additionally, prior art that the PHOSITA could not have discovered, such as pending patent applications that were not yet published at the time of invention, may also be included as analogous art.[132] Allowing consideration of difficult-to-access prior art seems to transform the PHOSITA into a vastly more knowledgeable being than even the inventor.

One reason for allowing consideration of such difficult-to-discover art, however, may be that the reference reflects the state of the art. That is, even if the publication or the application itself were not practicably available for the PHOSITA to access, these obscure documents may represent understanding in the field, even if that knowledge is not documented in a widely distributed way. Although inventors may not have been able to learn about the innovation of

128. Standard Oil Co. v. Am. Cyanamid Co., 774 F.2d 448, 454 (Fed. Cir. 1985) ("Inventors . . . possess something—call it what you will—which sets them apart from the workers of ordinary skill . . . ."); Kimberly-Clark Corp. v. Johnson & Johnson, 745 F.2d 1437, 1454 (Fed. Cir. 1984) ("[C]ourts never have judged patentability by what the real inventor/applicant/patentee could or would do."); Durie & Lemley, *supra* note 88, at 993 ("[T]he inventor is presumptively a person of extraordinary insight or skill.").

129. Eli Lilly & Co. v. Teva Pharm. USA, Inc., 619 F.3d 1329, 1340 (Fed. Cir. 2010).

130. *In re* Rouffet, 149 F.3d 1350, 1357 (Fed. Cir. 1998); Devlin, *supra* note 88, at 342–44; Durie & Lemley, *supra* note 88, at 1016–18. *See also* Nelson, *supra* note 24, at 30 (noting that neither Europe nor Japan allows for consideration of secret prior art in evaluating obviousness).

131. *See In re* Hall, 781 F.2d 897, 899 (Fed. Cir. 1986) (discussing public accessibility requirement). *See also* Constant v. Advanced Micro-Devices, Inc., 848 F.2d 1560, 1568 (Fed. Cir. 1988) ("[D]issemination and public accessibility are the keys to the legal determination whether a prior art reference was published.") (internal quotation marks omitted).

132. *See, e.g.*, 35 U.S.C. §§ 102(e), (g) (2011).

others through a patent application that has not been published,[133] for example, the existence of a patent may permit dissemination through other mechanisms that inventors do access.[134]

While such an argument about the state of the art resonates with regard to novelty, where the patent system seeks to reward only new invention, the reasoning does not translate directly to nonobviousness. In many circumstances, the invention builds on what came before it. Consequently, denying patents for distinct variations on knowledge that is not truly public seems to raise the nonobviousness bar too high. The examiner becomes akin to an exceptional PHOSITA, one that has access to information that even those of ordinary skill in the art cannot find in common practice.

By focusing the obviousness analysis on practicably accessible prior art during prosecution and viewing any hidden art with skepticism, the examiner's determination is more grounded in reality. Specifically, the examiner does not have the time or resources during prosecution to assess whether a hidden reference reflects understanding in the art at the time of invention. Additionally, examiners lack formal legal training. Because the ultimate conclusion

133. Additionally, inventors may be reluctant to review accessible patents out of fear of becoming willful infringers. *See In re* Seagate Tech., L.L.C., 497 F.3d 1360, 1368 (Fed. Cir. 2007) (en banc) (discussing willful infringement); Alan Devlin, *The Misunderstood Function of Disclosure in Patent Law*, 23 Harv. J.L. & Tech. 401, 404 (2010) (discussing how the possibility of enhanced damages "creates perverse incentives to remain ignorant of patented technology"); Timothy R. Holbrook, *Possession in Patent Law*, 59 SMU L. Rev. 123, 142 (2006) ("Given the risk of enhanced damages, a competitor has a significant incentive *not* to review patents at all."); Benjamin Roin, Note, *The Disclosure Function of the Patent System (or Lack Thereof)*, 118 Harv. L. Rev. 2007, 2017 (2005) ("[M]any innovators now avoid reading patents to protect themselves from treble damage awards in infringement suits.").

134. *See* Lemley, *supra* note 10, at 747 ("[T]he patent . . . induce[s] the communication of that information by other means."); Lisa Larrimore Ouellette, *Do Patents Disclose Useful Information?*, 25 Harv. J.L. & Tech. 545, 559 (2012) ("[M]any companies . . . advise researchers to avoid reading patents and to look elsewhere for technical information."). *But see* Robert P. Merges, *Commercial Success and Patent Standards: Economic Perspectives on Innovation*, 76 Calif. L. Rev. 803, 808 n.9 (1988) ("There is a significant amount of evidence showing that inventors in many fields rely on published patents for technical information.").

about obviousness is a question of law based on underlying facts,[135] courts are in a better position to engage in a more robust analysis.[136]

III. OBVIOUSNESS DURING LITIGATION: USING A STANDARDS-BASED APPROACH WHEN IT MATTERS

Courts have used the analogous arts test as a shortcut for finding inventions obvious. Instead of engaging in the rich, contextual analysis that the obviousness evaluation requires, courts have used the analogous arts test as a way to approve complex inventions and exclude those that are more straightforward, even if the inventions are not obvious.[137] Consequently, the analogous arts test provides a way for courts to consider the difficulty of the work of invention, despite the statutory requirement that "[p]atentability shall not be negated by the manner in which the invention was made."[138] The shortcomings of the analogous arts test might be overlooked during the time-crunched determination of obviousness during prosecution, particularly since examiners are often matched with patent applications in light of their technological expertise; however, courts should be held to higher standards.

Perhaps worse than its subjectivity, the analogous arts test is outdated. The nature of innovation has changed. Inventors often work in teams, across multiple disciplines, and consider a broad range of references given increased access to searchable information.[139] In light

135. Graham v. John Deere Co., 383 U.S. 1, 17–18 (1966) (defining obviousness as a legal question based on underlying factual determinations).

136. *See infra* Part III.B. Historically, other international jurisdictions have taken a similar approach to limiting the obviousness determination during prosecution. For example, the United Kingdom Patent Office did not require an examination of obviousness until 1977. INTELLECTUAL PROPERTY OFFICE, *supra* note 18.

137. Panduit Corp. v. Dennison Mfg. Co., 810 F.2d 1561, 1572 (Fed. Cir. 1987).

138. Leahy-Smith America Invents Act, Pub. L. No. 112-29, 125 Stat. 284 (2011) (codified at 35 U.S.C. § 103 (2012)); Sherkow, *supra* note 12, at 1120–21 (noting that the "byproduct of increased analogization has contained an inherent method-of-invention bias").

139. *See* Lemley, *supra* note 10, at 750 ("Invention is a social phenomenon, not one driven by lone geniuses."); *see also* Janet Davidson & Nicole Greenberg, *Psychologists' Views on Nonobviousness: Are They Obvious?*, 12 LEWIS & CLARK L. REV. 527, 538 (2008) ("Even though innovations can and do occur when people are alone, the preparation, evaluation, and elaboration stages surrounding them typically depend upon interaction with, and input from, one's colleagues."); Gregory N. Mandel, *Left-Brain Versus Right-Brain: Competing Conceptions of Creativity in Intellectual Property Law*, 44 U.C. DAVIS L. REV. 283, 349 (2010) ("Collaboration has become both more common and more

of these changes, courts have expansively defined the scope of analogous arts, yet it is not clear that the included references would have been appreciated by those of ordinary skill at the time of invention.[140] Once art is defined as analogous, the decision maker usually finds an invention obvious in light of it.[141]

To address the deficiencies in the analogous arts test, courts should consider all prior art, regardless of whether it satisfies the analogous arts test, in assessing obviousness. Instead of placing too much weight on the highly subjective conclusion that a reference is from the "same field" as that of the invention, or that a reference is "reasonably pertinent" to the problem the inventor was trying to solve, this Article proposes that courts should shift the focus to evaluating the differences between the prior art and the claimed invention in assessing obviousness. Rather than using the analogous arts test as a heuristic for finding inventions obvious, courts should evaluate whether the PHOSITA would consider the invention as claimed in the patent obvious in light of all of the references. By examining the differences between the claimed invention and the prior art in a more complete manner, courts will better implement the Supreme Court's guidance in *KSR* about assessing obviousness.[142]

During litigation, when more time and resources can be spent on the obviousness assessment, courts will be in a better position to determine whether common practices support consideration of the prior art in question. Judges, unlike examiners, often lack the technological background that would help them understand the PHOSITA's perspective. In light of this difference, judges should not be relying on common sense or using the analogous arts test as a quick way to resolve obviousness. Instead, courts should return to a standards-based analysis and take evidence from those in the field,

necessary across numerous technological and artistic fields."); R. Keith Sawyer, *Creativity, Innovation, and Obviousness*, 12 LEWIS & CLARK L. REV. 461, 482 (2008) ("[I]nnovation has become more and more dependent on collaborative webs, and on networks of many ideas.").

140. *See* Sherkow, *supra* note 12.

141. *Id.* at 1115.

142. In the longstanding debate of rules versus standards, one of the arguments for choosing rules is less persuasive in this context. In particular, sometimes rules are preferable because of concerns that decision makers will use their discretion inconsistently with the principles of the rule-making body. Tun-Jen Chiang, *The Rules and Standards of Patentable Subject Matter*, 2010 WISC. L. REV. 1353, 1400 n.240 (citing Duncan Kennedy, *Form and Substance in Private Law Adjudication*, 89 HARV. L. REV. 1685, 1688 (1976)). In patent law, however, the normative values of utilitarianism generally direct the analysis of the decision maker. *Id.* (citing Yochai Benkler, *Siren Songs and Amish Children: Autonomy, Information, and Law*, 76 N.Y.U. L. REV. 23, 59 (2001)).

including reviewing contemporaneous prior art, declarations, testimony, and other information about common practices in assessing obviousness.

A. Solving the Problem to Be Solved

The question of obviousness should not be focused on the inventor or the industry but rather on the differences between the prior art and the invention, as claimed in the patent, from the perspective of the PHOSITA. The claims of the patent set forth the scope of the right to exclude;[143] they should be the focus in assessing obviousness during litigation.

Unlike determining the problem the industry or the inventor was trying to solve at the time of filing, which raises evidentiary challenges, the claims are generally fixed at the time of issuance. By focusing on the claims, rather than the problem that the inventor or industry was attempting to solve in the past, the analysis of the prior art will become more objective and predictable. To address the subjectivity inherent in defining the problem to be solved, the focus instead should be on common practices—whether PHOSITAs would have had the time and inclination to review the references, considering the invention as defined by the claims of the patent, and whether the invention is obvious in light of them.

As an example, consider an inventor who files a patent application for a stent used to prevent a blood vessel from re-narrowing.[144] A third party submits a reference that discusses the use of scaffolding to prevent collapse of highway tunnels. Under the proposal, the examiner can use the analogous arts test in assessing obviousness, though he or she should focus on the claims and emulate the perspective of the PHOSITA. The examiner would likely conclude that the PHOSITA would not have found the highway scaffolding reference *reasonably* pertinent to the problem of preventing re-narrowing of a blood vessel, and the invention likely would not be held obvious.

Under the existing analogous arts doctrine, a court might conclude that a similar scaffolding reference presented during litigation was reasonably pertinent to the support problem, using the court's "common sense." Although the scaffolding reference is clearly not from the same field as the stent, the court might conclude that the scaffolding reference is reasonably pertinent to the problem

143. 35 U.S.C. § 112 (2012).

144. "A stent is a small mesh tube," usually made of metal or fabric, "used to treat narrow or weak arteries." Nat'l Heart, Lung, & Blood Inst., *What Is a Stent*, http://www.nhlbi.nih.gov/health/health-topics/topics/stents/ (last visited Sept. 16, 2014).

solved, namely preventing narrowing of an exterior structure through the use of inner support.

If the proposal set forth in this Article were followed, instead of focusing on the analogous arts test, the court would consider the differences between the prior art and the claims, which would limit the use of the stent to blood vessels. Moreover, after hearing testimony from experts and reviewing references contemporaneous with the patent application, the court would likely conclude that the PHOSITA, consistent with common practices, would not have appreciated the significance of the scaffolding reference. That is, the scaffolding reference is simply too different from the claimed stent invention to render it obvious.

Or, consider how this proposal would have been applied in one of the recent cases discussed previously, the Federal Circuit's 2012 decision in *K-Tec v. Vita-Mix*.[145] Recall that the patent at issue concerned blenders for making frozen drinks, claiming a blending jar shape that would prevent the creation of a pocket of air around a spinning blade.[146] The prior art references in question disclosed non-blender designs.[147] The Federal Circuit incorrectly focused on the inventor, criticizing the alleged infringer for failing to show why the inventor would "have consulted nonblending containers or food mixers in order to solve the problems he encountered in designing a new blending container."[148] Instead, the court should have focused on what the PHOSITA would have considered.

Under the proposal, during prosecution the examiner could conclude that the references were not pertinent using the analogous arts test, and the invention would likely be found nonobvious. During litigation, however, the court should consider the differences between the claimed invention and all of the references in evaluating obviousness. The claims at issue in this case require a "blender jar."[149] Consequently, the court would assess whether the PHOSITA, consistent with ordinary practices in the art evidenced by expert testimony, declarations, and contemporaneous publications, would have considered the claimed blender jar obvious in light of the references dealing with non-blending containers or mixers.

145. K-Tec, Inc. v. Vita-Mix Corp., 696 F.3d 1364 (Fed. Cir. 2012).

146. *Id.* at 1368.

147. *Id.* at 1375.

148. *Id.* (emphasis added).

149. *Id.* at 1368; U.S. Patent No. 7,281,842 (filed Dec. 26, 2005). Given that each patent provides protection for one invention, however, perhaps courts and examiners should look to the broadest claim in determining the problem solved.

B. Considering Difficult-to-Locate Prior Art

As discussed, the proposal instructs examiners to discount hidden or secret prior art in assessing obviousness during prosecution, as such art is not practicably available to the PHOSITA. This skepticism of difficult-to-access art recognizes the constraints of prosecution, as examiners generally lack the expertise, time, and resources to assess whether a difficult-to-access reference reflects understanding in the art at the time of invention.

During litigation, however, courts and litigants have the time and resources to conduct the in-depth analysis that examiners may not.[150] Although hidden or secret prior art may not be easily accessible to the PHOSITA, it may represent the state of the art from which the obviousness determination should be made. Even if a reference would not be accessible to the PHOSITA, it may reflect common practices, even if that knowledge has not been documented in a widely disseminated form. Distribution of information can happen through various forums that the PHOSITA reviews, even if the PHOSITA does not specifically access the reference in question.[151] The difficult-to-locate publication indexed by subject may reflect understanding in the field. While examiners lack the resources to make that evaluation, courts generally have the time to delve into the difficult question of whether hidden references should be considered in assessing obviousness.

Under the proposal set forth, courts should consider all prior art, regardless of whether it satisfies the analogous arts test, in assessing the obviousness of the claimed invention. In light of technological advancement, particularly increases in search technology and processing capabilities, the PHOSITA has access to "a virtually unlimited universe of prior art."[152] So, the question should not be whether the references are from the same field or reasonably pertinent to a subjective problem to be solved. That outdated analysis should be replaced by a bright-line rule allowing in all prior art, regardless of whether it is analogous. Courts can then return to the core of the obviousness assessment: the standards-based analysis set forth in *Graham*[153] and reinforced in *KSR*.[154] Specifically, from the perspective

150. *See, e.g.*, Burk & Lemley, *supra* note 118, at 1170 ("[P]arties in litigation have far more time and money to spend than do patent examiners, and they are much more likely than the PTO to find the best prior art.").

151. *See* Lemley, *supra* note 10, at 745–48 (stating how patents "induce the communication of that information by other means").

152. Simon, *supra* note 11, at 335.

153. Graham v. John Deere Co., 383 U.S. 1, 17 (1966).

154. KSR Int'l Co. v. Teleflex Inc., 550 U.S. 398, 399 (2007).

of the PHOSITA, the analysis should hinge on the differences between the prior art and the claimed invention, and whether the claimed invention is obvious in light of those differences. Given the importance of context in getting the obviousness determination right, a rich standards-based analysis is necessary.

C. Weakening the Presumption of Validity

The proposal has important ramifications for the deference accorded to patent validity during litigation. Scholars have widely criticized the presumption of validity as unsupported.[155] Despite the significant limitations of prosecution mentioned previously,[156] patents are afforded a presumption of validity.[157] An alleged infringer has the burden of establishing invalidity by clear and convincing evidence.[158] This is true even for references that were not considered by the examiner during litigation.[159]

The presumption of validity is particularly problematic under this proposal, which suggests that examiners discount difficult-to-locate prior art, stepping into the shoes of the PHOSITA to make a rough determination of obviousness using the analogous arts test during prosecution. Considering all of the flaws of the analogous arts test detailed previously, courts should reduce the presumption of validity during litigation, or at least allow for it to be overcome with proof by a preponderance of the evidence, rather than by clear and convincing evidence.[160] Courts could interpret section 282 of the statute to lessen the burden of proof in this way, maintaining the presumption of validity while weakening the burden on challengers to overcome it.[161] For the proposal set forth here, adjusting the burden is necessary for difficult-to-locate prior art, given that examiners would only consider such art with skepticism.[162]

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155. *See, e.g.*, Devlin, *supra* note 88, at 342; Lemley, *supra* note 16, at 1528–30; Lichtman & Lemley, *supra* note 1.

156. In addition, one study suggests that examiners fail to consider art unless they find it themselves. Christopher A. Cotropia et al., *Do Applicant Patent Citations Matter?*, 42 RES. POL'Y 844, 851 (2013) (suggesting that examiners essentially ignore applicant-submitted art, focusing instead on art they find themselves).

157. 35 U.S.C. § 282 (2012).

158. Microsoft Corp. v. i4i Ltd., 131 S. Ct. 2238, 2242 (2011).

159. *Id.* at 2244.

160. *See* Lichtman & Lemley, *supra* note 1, at 49.

161. Lemley, *supra* note 16, at 1531.

162. An exception to the skepticism of difficult-to-locate prior art might be made for patent applications that have been through in-depth post-grant review.

IV. OBJECTIONS TO THE PROPOSED CHANGES

Some might question the proposed changes on a few grounds. Inconsistency with regard to applying the analogous arts test during prosecution and litigation might create confusion and greater uncertainty. Also, deferring a robust validity determination until litigation imposes costs, potentially injuring innovation and resulting in injustice.

A. The Hobgoblin of Consistency

One objection to the proposal is that the use of different standards in determining nonobviousness during prosecution and litigation could result in confusion and a lack of predictability. Many fundamental doctrines of patent law, however, are applied differently at different times. Three examples include (1) determining the meaning of the claims during proceedings before the PTO and courts, (2) defining the PHOSITA in divergent ways depending on the policies underlying the analysis, and (3) considering the scope of prior art differently for anticipation and disclosure purposes.

Different standards apply for deciphering claim meaning during PTO proceedings and litigation.[163] At the PTO, examiners interpret claims when assessing whether an invention is patentable. Examiners are required to give pending claims their "broadest reasonable interpretation . . . consistent with the specification," though that standard is not present in other proceedings that are not before the PTO.[164] By giving claims their broadest reasonable interpretation, the examiner can allow for the most expansive application of the prior art.[165] The standards are different before the PTO because the circumstances are different from what they are in litigation.[166]

163. John F. Duffy, *On Improving the Legal Process of Claim Interpretation: Administrative Alternatives*, 2 WASH. U. J.L. & POL'Y 109, 127 (2000) (suggesting that the standards are not tribunal dependent, and drawing a distinction between the treatment of issued and non-issued claims; "Both institutions apply the 'broadest reasonable interpretation' method to construe claims not yet issued.").

164. *In re* Graves, 69 F.3d 1147, 1152 (Fed. Cir. 1995) (quoting DeGeorge v. Bernier, 768 F.2d 1318 (Fed. Cir. 1985)); USPTO, U.S. DEP'T OF COMMERCE, MANUAL OF PATENT EXAMINING PROCEDURE § 2111 (8th ed., 9th rev. 2012) (quoting *In re* Hyatt, 211 F.3d 1367, 1372 (Fed. Cir. 2000)) ("[P]ending claims must be 'given their broadest reasonable interpretation consistent with the specification.'"). *See* Dawn-Marie Bey & Christopher A. Cotropia, *The Unreasonableness of the Patent Office's "Broadest Reasonable Interpretation" Standard*, 37 AIPLA Q.J. 285, 295–96 (2009) (criticizing the use of the standard as unclear).

165. *In re Graves*, 69 F.3d at 1152.

166. *In re* Etter, 756 F.2d 852, 862 (Fed. Cir. 1985) ("Thus, claims may be valid and infringed in court but invalid in the PTO [during post-grant

Applicants in proceedings before the PTO can amend their claims to avoid the prior art; they can "correct errors in claim language and adjust the scope of claim protection as needed."[167]

As another example of inconsistency in application, the PHOSITA is defined differently depending on the circumstances. Decision makers emphasize different characteristics of the PHOSITA for purposes of obviousness, enablement, definiteness, written description, and equivalence.[168] Indeed, "[b]ecause she is a legal construct designated to embody certain legal standards, the PHOSITA could well change depending on the purpose she is serving at the time."[169] For example, for obviousness purposes, decision makers view the PHOSITA as a problem solver.[170] At that time, the PHOSITA exercising common sense and creativity can "fit the teachings of multiple patents together like pieces of a puzzle."[171] In the enablement context, however, the PHOSITA does not show "innovative tendency"; she is merely "a user of the technology." [172] At most, the PHOSITA can fill in missing pieces in the disclosure during the analysis of enablement.[173]

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proceedings] and, *a fortiori*, not infringed."); *see* Duffy, *supra* note 163, at 126.

167. *In re Etter*, 756 F.2d at 858.

168. *See* Burk & Lemley, *supra* note 118, at 1189–90 ("[The PHOSITA] might well display different and even inconsistent characteristics as between the different sections."); *see also* Mark A. Lemley, *The Changing Meaning of Patent Claim Terms*, 104 MICH. L. REV. 101, 105 (2005) ("There is a natural and understandable tendency to define the PHOSITA for claim construction purposes as the same person with the same knowledge as the PHOSITA for validity and infringement purposes, though that may in fact be an error."); Timothy R. Holbrook, *Equivalency and Patent Law's Possession Paradox*, 23 HARV. J.L. & TECH. 1, 37–41 (2009) ("[C]ourts and the USPTO [should] assess enablement for validity purposes at the time of the application [and] . . . assess enablement for purposes of infringement under the doctrine of equivalents at the time of infringement."); Kristen Osenga, *Linguistics and Patent Claim Construction*, 38 RUTGERS L.J. 61, 103–04 (2006) (suggesting that the courts should spend more time defining "who the PHOSITA is and what the PHOSITA knows" during claim construction).

169. Dan L. Burk & Mark A. Lemley, *Biotechnology's Uncertainty Principle*, 54 CASE W. RES. L. REV. 691, 712 (2004).

170. KSR Int'l Co. v. Teleflex Inc., 550 U.S. 398, 420–21 (2007) (redefining the PHOSITA as "a person of ordinary creativity, not an automaton").

171. Wyers v. Master Lock Co., 616 F.3d 1231, 1238 (Fed. Cir. 2010).

172. Burk & Lemley, *supra* note 118, at 1190.

173. *Id.*

Adding to the inconsistency in defining the PHOSITA, the knowledge of the PHOSITA in a given field can change over time. Decision makers determine the knowledge of the PHOSITA for obviousness under section 103 and the adequacy of disclosure under section 112 at the time of filing.[174] For equivalents, however, the time of infringement is the focal point.[175] Additionally, the characterization of the PHOSITA can vary depending on the technological field.[176]

As another example of inconsistency, the universe of prior art available to the PHOSITA also varies depending on whether the decision maker is analyzing obviousness or the adequacy of disclosure. In particular, while difficult-to-locate prior art is considered in determining whether the invention is obvious to the PHOSITA, an inventor may not rely upon art that is not readily accessible to the public to show that a patent adequately discloses the invention.[177] In refusing to allow consideration of obscure art in satisfying the requirements of section 112, patent law strives to meet the goal of ensuring that the inventor provides sufficient disclosure in the patent application. Because the public does not have sufficient access to difficult-to-locate prior art, inventors cannot rely on such art to cover for any deficiencies in their patent applications.[178]

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174. *See* 35 U.S.C. § 103 (2012) (noting that under the pre-AIA law, obviousness is determined as of the date of invention).

175. *See* Warner-Jenkinson Co., Inc. v. Hilton Davis Chem. Co., 520 U.S. 17, 37 (1997) ("[T]he proper time for evaluating equivalency . . . is at the time of infringement . . . ."); *see also* Burk & Lemley, *supra* note 118, at 1190 ("[T]he doctrine of equivalents PHOSITA . . . knows of all developments up to the date of infringement.").

176. *See, e.g.*, DAN L. BURK & MARK A. LEMLEY, THE PATENT CRISIS AND HOW THE COURTS CAN SOLVE IT 114–16 (2009) ("A PHOSITA-based patent law *must* be industry-specific."); Dan L. Burk & Mark A. Lemley, *Policy Levers in Patent Law*, 89 VA. L. REV. 1575, 1650 (2003) ("Overwhelming evidence indicates that the application of the PHOSITA standard varies by industry . . . . "); Lemley, *supra* note 168, at 102 ("Both the knowledge of the PHOSITA in a particular field and the meaning of particular terms to that PHOSITA will frequently change over time.").

177. Atmel Corp. v. Info. Storage Devices, Inc., 198 F.3d 1374, 1385 (Fed. Cir. 1999) ("If an incorporated reference, which is the sole support for a corresponding structure, is publicly unavailable, then the claim is not understandable."); *In re* Rouffet, 149 F.3d 1350, 1357 (Fed. Cir. 1998) ("[A]ll prior art references in the field of the invention are available to this [PHOSITA]."); Burk & Lemley, *supra* note 118 at 1190 ("But conversely, hidden or nonpublic references which may serve as prior art under section 103 are not necessarily imputed to the knowledge of the PHOSITAs who make or use the invention under section 112, as such references are not readily available to the public.").

178. *See* Burk & Lemley, *supra* note 118, at 1190.

With assessing the meaning of the claims, defining the PHOSITA, and considering prior art, furthering the policies underlying the inquiry at hand has trumped consistency. That is, the context surrounding the determination of these issues allows for some divergence in the application of doctrine. Given the difficulty of applying the contextually intense determination of obviousness during the timeframe of prosecution, as compared with litigation, the application of the analogous arts test should similarly vary depending on the circumstances under which examiners and courts address obviousness.[179]

B. The Costs of Deferring a Robust Evaluation of Obviousness

Delaying a more in-depth analysis of obviousness until litigation is not without costs. Accused infringers will likely need to invalidate "bad" patents that might not have been issued had a more robust examination of obviousness taken place.

1. The "Troll" Problem

Patents that never should have been granted may be asserted by patent assertion entities (sometimes referred to as "patent trolls") or other companies not typically defined as "trolls," potentially impeding innovation.[180] In 2012, one study found that corporate patent assertion entities brought 2,921 of 4,701 patent lawsuits, amounting to 62 percent of all patent litigation.[181] Adding to the "troll" problem, judges have not regularly imposed fee-shifting in patent cases, other

179. In addition, the ultimate determination of obviousness is a question of law, based on underlying factual determinations. *See* Graham v. John Deere Co., 383 U.S. 1, 17–19 (1966) (noting that examiners lack formal legal training, suggesting another reason for divergent standards in assessing obviousness during prosecution and litigation).

180. *See* Michael Risch, *Patent Troll Myths*, 42 SETON HALL L. REV. 457, 460–61 (2012) ("[T]he available information implies that NPE patent quality is not drastically lower than other litigated patents'.").

181. Colleen V. Chien, *Startups and Patent Trolls*, (Santa Clara Univ. Legal Studies Research Paper No. 09-12 17, 2000), *available at* http://ssrn.com/abstract=2146251 (noting that "patent assertion entities" are defined as businesses that assert patents as their primary business model); *see also* PRICEWATERHOUSECOOPERS LLP, 2013 PATENT LITIGATION STUDY 6 (2013), *available at* http://www.pwc.com/en_US/us/forensic-services/publications/assets/2013-patent-litigation-study.pdf ("The number of patent actions filed reached 5,189 in 2012 . . . ."); Robin Feldman, Tom Ewing, & Sara Jeruss, *The AIA 500 Expanded: The Effects of Patent Monetization Entities*, (UC Hastings Research Paper No. 45 9, 22, 2013), *available at* http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2247195 ("[P]atent monetization entities filed 58.7% of the patent lawsuits in 2012 . . . . We define a monetizer as one whose primary focus is licensing and litigating patents, as opposed to making products.").

than in "exceptional" circumstances.[182] From 2005 to 2011, courts awarded fees in only fifty-six cases per year on average, although there were approximately three thousand patent cases filed per year on average during that time period.[183]

Recent discussion suggests that there may be more effective ways to deal with concerns about the assertion of weak patents, instead of making prosecution more complicated. Several proposals have suggested requiring greater disclosure of interests, making increased use of fee-shifting, and tightening the standards used in granting injunctive relief.[184] These seem to be more tailored approaches to address the problem of the assertion of weak patents than requiring a more in-depth and costly analysis of obviousness during prosecution.[185]

2. Companies Reluctant to Enter the Market

Another concern with the proposal is that some companies may be reluctant to enter the market in view of patents that perhaps never should have issued.[186] One assumption underlying the concern is that the reluctant companies are actually aware of the patents in the space that they seek to enter. In many instances, however, companies are discouraged from searching for patents by the threat of enhanced damages for willful infringement.[187]

182. 35 U.S.C. § 285 (2012). *But see* Randall R. Rader et al., Op-Ed., *Make Patent Trolls Pay in Court*, N.Y. TIMES, June 5, 2013, at A25, *available at* http://www.nytimes.com/2013/06/05/opinion/make-patent-trolls-pay-in-court.html?_r=0 (arguing that courts should "make trolls pay for abusive litigation").

183. Colleen V. Chien, *Reforming Software Patents*, 50 HOUS. L. REV. 325, 377 (2013).

184. *See* Saving High-Tech Innovators from Egregious Legal Disputes Act of 2013, H.R. 845, 113th Cong. (2013); The White House, Office of the Press Secretary, *Fact Sheet: White House Task Force on High-Tech Patent Issues* (June 4, 2013), http://www.whitehouse.gov/the-press-office/2013/06/04/fact-sheet-white-house-task-force-high-tech-patent-issues; Rader et al., *supra* note 182, at A25.

185. *See* Risch, *supra* note 180, at 481 ("NPE patents look a lot like other litigated patents . . . . They certainly do not appear to be worse than other patents.").

186. *See* Christopher R. Leslie, *Patents of Damocles*, 83 IND. L.J. 133, 133 (2008) ("[P]atents can be used as weapons against competitive rivals even without actually enforcing one's patent rights in court. . . . [T]hese patents hang over the head of any potential entrant into the market.").

187. *See* Devlin, *supra* note 133, at 404 ("[T]he . . . danger of treble damages resulting from . . . willful infringement creates perverse incentives to remain ignorant of patented technology."); Holbrook, *supra* note 133, at 142 ("Given the risk of enhanced damages, a competitor has a significant incentive *not* to review patents at all."); Roin, *supra* note 133, at 2017 ("[M]any innovators now avoid reading patents to protect themselves from treble damage awards in infringement suits.").

In situations where the reluctant company learns about a potentially problematic patent, the company may be more inclined to take a license from the patent holder than to refrain from entering the space.[188] Where a patent is invalid, however, licensing causes an inefficient allocation of resources.[189] Additionally, the patent holder might refuse to license the technology to its competitor, which would harm innovation if the patent were later found invalid.[190] Although these are valid concerns, they may not come to fruition frequently or be significantly ameliorated by more robust prosecution than currently available.[191]

3. Uncertainty About Validity

The proposal, which allows examiners to make a "rough cut" of obviousness during prosecution but requires courts to spend more time on it during litigation, leaves the question of validity uncertain for a longer time. The question is when to impose the costs of determining obviousness. Obviousness is regularly challenged during litigation, as the PTO is not the final arbiter of validity.[192] As such, regardless of whether examiners conduct a more robust examination of obviousness, litigants will continue to challenge validity in court.[193]

While requiring greater scrutiny of obviousness during prosecution might limit the number of patents litigated, it would also impose costs during prosecution. Detailed examination requirements slow down patent prosecution, increase the backlog, and impose greater upfront costs on many patents that may never be asserted or licensed. A more in-depth analysis of obviousness during prosecution also increases the risk that some "good" patents will be found invalid, potentially undercutting innovation incentives and harming other worthwhile uses for patents, such as their signaling function for investment.[194] Moreover, if the goal is to accurately determine

188. *See* Lemley, *supra* note 16, at 1518.

189. *See id.*

190. *See id.*

191. *See id.* at 1518–19 (concluding that some of the concerns about holdup licensing are "overstated" because approximately "338 patents [are] involved in holdups" each year, and "most patents are licensed either as part of a group of related patents, or [bundled with] patents with trade secrets and know-how," making it "difficult to separate out a licensee's motivation").

192. *Id.* at 1520.

193. *Id.*

194. *Id.* at 1522; Ted Sichelman & Stuart J.H. Graham, *Patenting by Entrepreneurs: An Empirical Study*, 17 MICH. TELECOMM. & TECH. L. REV. 111, 153, 161 (2010) (describing the use of patents as "signaling" mechanisms to investors).

obviousness, litigants may be in a better position for this resolution than examiners. Unlike disinterested examiners, parties to litigation have a stake in the outcome and will generally make every effort to find the best evidence to support their arguments.[195] Greater uncertainty about validity is the trade-off for more efficient prosecution.

Conclusion

The assessment of obviousness needs clarification. The goal of providing more predictability through the use of the analogous arts test has fallen short, given its focus on outdated factors. While the weaknesses of the analogous arts test can be overlooked during prosecution, given the constraints under which examiners operate, courts need to shift the focus to a standards-based approach, carefully considering the differences between the prior art and the claimed invention in evaluating obviousness. The focal point of the analysis during litigation should be on common practices in the innovative process, evaluating whether those practicing in the area actually would have had the time and inclination to appreciate the prior art and whether they would consider the invention obvious in light of it. Rather than using the analogous arts test as a shortcut, courts should engage in a rich assessment of the differences between the claimed invention and the prior art in determining obviousness.

195. Lemley, *supra* note 16, at 1522.