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A REALISTIC APPROACH TO THE OBVIOUSNESS OF INVENTIONS[†]

DARALYN J. DURIE* & MARK A. LEMLEY**

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INTRODUCTION

Obviousness is the ultimate condition of patentability.¹ The nonobviousness requirement—that inventions must, to qualify for a patent, be not simply new but sufficiently different that they would not have been obvious to the ordinarily skilled scientist—is in dispute in almost every case, and it is responsible for invalidating more patents than any other patent rule.² It is also perhaps the most vexing doctrine to apply, in significant part because the ultimate question of obviousness has an “I know it when I see it” quality that is hard to break down into objective elements. That hasn’t stopped the Federal Circuit from trying to find those objective elements. In the last quarter-century, the court has created a variety of rules designed to cabin the obviousness inquiry: an invention can’t be obvious unless there is a teaching, suggestion, or motivation to combine prior art elements or modify existing technology;³ an invention can’t be obvious merely because it is obvious to try;⁴ and so forth.

In its decision last year in *KSR International Co. v. Teleflex Inc.*,⁵ the Supreme Court rejected the use of “rigid” rules to decide obviousness cases.⁶ In its place, the Court offered not a new test, but a constellation of factors designed to discern whether the person having ordinary skill in the art (the PHOSITA)⁷ would likely think

1. See generally NON-OBVIOUSNESS: THE ULTIMATE CONDITION OF PATENTABILITY (John F. Witherspoon ed., 1980).

2. See John R. Allison & Mark A. Lemley, *Empirical Evidence on the Validity of Litigated Patents*, 26 AIPLA Q.J. 185, 209 tbl.2 (1998).

3. See, e.g., *In re Sang-Su Lee*, 277 F.3d 1338, 1343 (Fed. Cir. 2002); *In re Dembiczak*, 175 F.3d 994, 999 (Fed. Cir. 1999); *Lindemann Maschinenfabrik GmbH v. Am. Hoist & Derrick Co.*, 730 F.2d 1452, 1462 (Fed. Cir. 1984).

4. See, e.g., *In re Fine*, 837 F.2d 1071, 1075 (Fed. Cir. 1988).

5. 127 S. Ct. 1727 (2007).

6. *Id.* at 1739.

7. The statute refers to “a person having ordinary skill in the art” 35 U.S.C. § 103(a) (2000). On the PHOSITA abbreviation, see, for example, John O. Tresansky, *PHOSITA—The Ubiquitous and Enigmatic Person in Patent Law*, 73 J. PAT. & TRADEMARK OFF. SOC’Y 37 (1991); see also ROBERT L. HARMON, *PATENTS AND THE FEDERAL CIRCUIT* § 4.3 (5th ed. 2001); Joseph P. Meara, Note, *Just Who is the Person Having Ordinary Skill in the Art? Patent Law’s Mysterious Personage*, 77 WASH. L. REV. 267 (2002). The first known use of the term PHOSITA appears to be in Cyril A. Soans, *Some Absurd Presumptions in Patent Cases*, 10

to make the patented invention.⁸ In short, the Court sought to take a realistic approach to obviousness—to make the obviousness determination less of a legal construct and to put more weight on the factual determination of what scientists would actually think and do about a particular invention.

As a general principle, this realistic focus is a laudable one. The too-rigid application of rules designed to prevent hindsight bias had led to a number of results that defied common sense, including the outcome of *KSR* itself in the Federal Circuit. But the realistic approach has some (dare we say it) nonobvious implications for evidence and procedure, both in the Patent and Trademark Office (PTO) and in the courts. The greater focus on the characteristics of individual cases suggests a need for evidence and factual determinations, but the legal and structural framework under which obviousness is tested means that it is difficult to make and review those determinations. The realistic approach is also incomplete, because the obviousness inquiry depends critically on the counterfactual assumption that the PHOSITA, while ordinarily skilled, is perfectly informed about the prior art. If we are to take a realistic approach to obviousness, we should make it a consistent approach, so the ultimate obviousness determination reflects what scientists in the field would actually think. So far, despite *KSR*, it does not. The result of taking the realistic approach seriously may be—to the surprise of many—a law of obviousness that is in some respects *more*, not less, favorable to patentability than the standard it displaced.

In Part I, we review the law of obviousness and the likely substantive effects of the *KSR* decision. In Part II, we explore the less-noticed procedural effects of *KSR*, as both the PTO and the courts try to inject realism and evidence into a legal framework that is not designed to evaluate them. Finally, in Part III, we discuss the ways in which the obviousness inquiry still uses a legal construct rather than a realistic inquiry into what the PHOSITA would think of an invention. We argue there that obviousness should be reconceived as a truly realistic inquiry, one that focuses on what the

IDEA 433, 438 (1966).

8. *KSR*, 127 S. Ct. at 1734, 1739.

PHOSITA and the marketplace actually know and believe, not what they might believe in a hypothetical, counterfactual world.

I. OBVIOUSNESS, BEFORE AND AFTER *KSR*

In *Graham v. John Deere Co.*,⁹ the Supreme Court set out the framework pursuant to which courts should evaluate whether an invention is obvious. The Court determined that the ultimate question of patent validity is an issue of law that depends on certain underlying facts. It identified the factual inquiries pertinent to a determination of obviousness as: (1) the scope and content of the prior art; (2) the differences between the prior art and the claims at issue; and (3) the level of ordinary skill in the art.¹⁰ In addition, the Court noted the importance of secondary considerations of non-obviousness derived from the circumstances surrounding the putative invention.¹¹

A. *The Prior Art and the Role of the PHOSITA in Evaluating It*

Obviousness is determined with reference to whether a purported invention would have been obvious to a PHOSITA; a person who "thinks along the line of conventional wisdom in the art and is not one who undertakes to innovate, whether by patient, and often expensive, systematic research or by extraordinary insights"¹² In *Environmental Designs, Ltd. v. Union Oil Co. of California*,¹³ the Federal Circuit set forth the following factors for defining a PHOSITA: (1) the inventor's educational background; (2) the kinds of problems confronted in the art; (3) solutions found previously; (4) the speed of innovation in the art; (5) the level of sophistication of the technology; and (6) the educational level of workers in the field.¹⁴ The court cautioned that not all factors will be relevant in every case.¹⁵ And, although one of the listed factors is the inventor's

9. 383 U.S. 1, 17 (1966).

10. *Id.*

11. *Id.* at 17-18.

12. *Standard Oil Co. v. Am. Cyanamid Co.*, 774 F.2d 448, 454 (Fed. Cir. 1985).

13. 713 F.2d 693 (Fed. Cir. 1983).

14. *Id.* at 696.

15. *Id.*

educational background, the court has also recognized that the PHOSITA cannot be equated with the inventor, because the inventor is presumptively a person of extraordinary insight or skill.¹⁶

Although the PHOSITA is described as a “person,”¹⁷ the PHOSITA is a hypothetical construct in at least two respects. First, the PHOSITA is presumed to be familiar with all of the art in the area of his or her field, even if that art was secret and would not in fact have been known.¹⁸ Second, the PHOSITA need not be a single person; instead, the PHOSITA may be a group of people possessing skills not typically aggregated in any given human being.¹⁹ Of

16. *Kimberly-Clark Corp. v. Johnson & Johnson*, 745 F.2d 1437, 1454 (Fed. Cir. 1984). *But see Daiichi Sankyo v. Apotex*, 501 F.3d 1254, 1256 (Fed. Cir. 2007) (relying on educational level of the inventor in determining the level of skill in the art); *cf. Ruiz v. A.B. Chance Co.*, 234 F.3d 654, 666-67 (Fed. Cir. 2000) (listing factors, but omitting educational background of inventor). Using the inventor's own background to define a PHOSITA risks making the inquiry recursive by defining the PHOSITA as someone in possession of the skills or insights necessary to come up with the invention. Thus, for example, in *Sud-Chemie Inc. v. CSP Techs. Inc.*, No. 4:03-CV-003-SEB-WGH, 2006 WL 2246404, at *37 (S.D. Ind. Aug. 4, 2006), the court concluded that the PHOSITA was a Ph.D.-level scientist based in part on testimony that the technology described in the patents in suit had not been contained in the scientific literature prior to the patents' issuance and thus it would have required a Ph.D.-level scientist to address the concepts contained in the patents. Taking this reasoning to its logical extreme, if one defines the PHOSITA as someone who would already have grasped the contents of a patent, then many inventions would become obvious.

17. 35 U.S.C. § 103(a) (2000).

18. *In re Rouffet*, 149 F.3d 1350, 1357 (Fed. Cir. 1998) (“[The law] presumes that all prior art references in the field of the invention are available to this hypothetical skilled artisan.”); *Custom Accessories, Inc. v. Jeffrey-Allan Indus.*, 807 F.2d 955, 962 (Fed. Cir. 1986) (“The person of ordinary skill is a hypothetical person who is presumed to be aware of all the pertinent prior art.”).

19. This principle is relatively well established with respect to the definition of a PHOSITA for purposes of enablement under 35 U.S.C. § 112. *See Enzo Biochem, Inc. v. Calgene, Inc.*, 188 F.3d 1362, 1373-74 (Fed. Cir. 1999); *In re Brown*, 477 F.2d 946, 950 (C.C.P.A. 1973); *In re Naquin*, 398 F.2d 863, 866 (C.C.P.A. 1968); *Technicon Instruments Corp. v. Alpkem Corp.*, 664 F. Supp. 1558, 1578 (D. Or. 1986) (“If two distinct technologies are relevant to an invention, then the disclosure will be adequate if a person of ordinary skill in each of the two technologies could practice the invention from the disclosures.”). The leading treatise argues that “it would seem ... the ‘person skilled in the art’ within the meaning of Section 112 is the same as the ‘person having ordinary skill in the art’ within the meaning of Section 103 on non-obviousness,” 3 DONALD S. CHISUM, CHISUM ON PATENTS § 7.03[2][b] (2007), though one of the authors has argued otherwise. *See Dan L. Burk & Mark A. Lemley, Is Patent Law Technology-Specific?*, 17 BERKELEY TECH. L.J. 1155, 1189-90 (2002). Thus, although there is a dearth of case law on whether the PHOSITA may be a group of people for purposes of obviousness, it seems likely that the Federal Circuit would (at least pre-KSR) endorse that result.

course, no actual human being would ever meet this standard. So, under traditional obviousness jurisprudence, obviousness is to be measured not with respect to what actual skilled people in the field would know or be motivated to do based on the prior art actually known to them. Instead, obviousness is to be measured with reference to a hypothetical construct that virtually by definition could not exist. And even that construct is only sketchily defined. It is rare, for instance, that parties spend much time fighting about who the PHOSITA is, or do more than sketch out a resume with educational background and years of experience. The PHOSITA seems curiously disconnected from the inquiry he or she is supposed to perform.

B. The Problem of Combining References

Most inventions do not spring ab initio from the mind of the inventor. They build on, improve, or combine things already known in the world in new and unforeseen ways. Inventions that take the form of a combination of existing ideas present particular problems for obviousness analysis. All the elements of the invention are present in the prior art, but they are not present in the same place in the prior art. Would the PHOSITA have thought to combine these two different prior art ideas to make the patented invention? Or is judicial combination of prior art references selected for the court by the defendant an example of hindsight bias?²⁰

Before *KSR*, the Federal Circuit combated the risk of hindsight bias in these combination cases by requiring that a party challenging obviousness prove that the prior art disclosed some teaching, suggestion, or motivation to combine the references.²¹ Decisions split on the question of whether that suggestion had to be present in the prior art references themselves, or whether a motivation could be implicit in the knowledge or goals of the

20. See Gregory N. Mandel, *Patently Non-Obvious: Empirical Demonstration that the Hindsight Bias Renders Patent Decisions Irrational*, 67 OHIO ST. L.J. 1391 (2006) [hereinafter *Patently Non-Obvious I*]; Gregory N. Mandel, *Patently Non-Obvious II: Experimental Study on the Hindsight Issue Before the Supreme Court in KSR v. Teleflex*, 9 YALE J.L. & TECH. 1 (2007) [hereinafter *Patently Non-Obvious II*].

21. See *In re Dembiczak*, 175 F.3d 994, 999 (Fed. Cir. 1999).

PHOSITA.²² It was this teaching-suggestion-motivation, or TSM, test that led the Federal Circuit to conclude that the adjustable electronic sensor gasoline pedal at issue in *KSR* was nonobvious, even though both adjustable accelerator pedals and electronic sensors on (nonadjustable) accelerator pedals were known in the prior art.²³

C. Secondary Considerations

The use of a hypothetical person to decide what scientists in the real world could do is worrisome. In *Graham*, the Supreme Court noted that economic evidence of how the invention was actually treated in the real world “may have relevancy” to the obviousness inquiry.²⁴ The Court identified “commercial success, long felt but unsolved needs, failure of others, etc.” as relevant secondary indicia of the nonobviousness of an invention.²⁵ Other cases have elaborated upon the “etc.” as including the licensing of the patent,²⁶ initial skepticism by others in the field,²⁷ praise,²⁸ independent simultaneous invention by others,²⁹ and copying.³⁰ In order to rely on evidence of these secondary considerations, there must be a nexus between the factor and the patented invention.³¹ Thus, for example,

22. Compare *In re Sang-Su Lee*, 277 F.3d 1338, 1343 (Fed. Cir. 2002) with *In re Kahn*, 441 F.3d 977, 987-88 (Fed. Cir. 2006).

23. See *Teleflex, Inc. v. KSR Int'l Co.*, No. 04-1152, 2005 WL 23377 (Fed. Cir. Jan. 6, 2005).

24. *Graham v. John Deere Co.*, 383 U.S. 1, 18 (1966).

25. *Id.* at 17.

26. *Minn. Mining & Mfg. Co. v. Johnson & Johnson Orthopedics, Inc.*, 976 F.2d 1559, 1575 (Fed. Cir. 1992).

27. *Metabolite Labs., Inc. v. Lab. Corp. of Am. Holdings*, 370 F.3d 1354, 1368 (Fed. Cir. 2004) (finding evidence that “skilled artisans were initially skeptical about the invention” relevant to nonobviousness).

28. *Vulcan Eng'g Co. v. Fata Aluminium, Inc.*, 278 F.3d 1366, 1373 (Fed. Cir. 2002) (“Appreciation by contemporaries skilled in the field of the invention is a useful indicator of [nonobviousness].”).

29. *Ecolchem, Inc. v. S. Cal. Edison Co.*, 227 F.3d 1361, 1379 (Fed. Cir. 2000) (evidence of near-simultaneous invention tended to prove obviousness).

30. *Akamai Techs., Inc. v. Cable & Wireless Servs., Inc.*, 344 F.3d 1186, 1196 (Fed. Cir. 2003) (providing evidence that an accused infringer’s copying of the patentee’s invention is “relevant to an obviousness determination”).

31. See, e.g., *In re DBC*, No. 2008-1120, 2008 WL 4764340 (Fed. Cir. Nov. 3, 2008) (rejecting evidence of commercial success because it could have been attributable to superior

a defendant seeking to rely on evidence that an invention is commercially successful must show that its commercial success is a function of the patented feature, and not some other reason.³² At the simplest level, this nexus requirement can be satisfied if the scope of the claims and the patented product are coextensive, in which case the court will generally presume that the commercial success is a function of the patented invention.³³ The inquiry is more complex, however, if the claimed invention is only part of the product. In that case, the patentee must demonstrate that the commercial success of the product results from the patent rather than from nonpatented features.³⁴ This nexus can be established by evidence that the claimed feature is present in a number of commercially successful products³⁵ or even survey evidence that the claimed feature leads to a competitive advantage.³⁶

In some cases, the Federal Circuit has suggested that an evaluation of secondary considerations is an essential part of the obviousness inquiry.³⁷ Indeed, the Federal Circuit has often said that courts should consider this evidence as a mandatory part of the "totality of the evidence" used to reach a conclusion regarding obviousness.³⁸ Moreover, perhaps to emphasize the importance of these factors, the Federal Circuit has often referred to them as "objective" rather than "secondary" considerations.³⁹ But theory and

marketing rather than to the invention); *Brown & Williamson Tobacco Corp. v. Philip Morris Inc.*, 229 F.3d 1120, 1130 (Fed. Cir. 2000) ("A nexus between commercial success and the claimed features is required.").

32. *Id.* For detailed discussion of the problems in inferring nonobviousness from commercial success, see, for example, Edmund W. Kitch, *Graham v. John Deere Co.: New Standards for Patents*, 1966 SUP. CT. REV. 293; Robert P. Merges, *Commercial Success and Patent Standards: Economic Perspectives on Innovation*, 76 CAL. L. REV. 803 (1988).

33. *Brown & Williamson*, 229 F.3d at 1130.

34. *J.T. Eaton & Co. v. Atlantic Paste & Glue Co.*, 106 F.3d 1563, 1571 (Fed. Cir. 1997).

35. *Hughes Tool Co. v. Dresser Indus., Inc.*, 816 F.2d 1549, 1556 (Fed. Cir. 1987); *see also* *Asyst Techs., Inc. v. Emtrak Corp.*, No. 2007-1554, 2008 WL 4529500 (Fed. Cir. Oct. 10, 2008) (rejecting evidence of commercial success because it was not linked to the novel features of the invention).

36. *Winner Int'l Royalty Corp. v. Wang*, 202 F.3d 1340, 1350-51 (Fed. Cir. 2000).

37. *See, e.g., Ruiz v. A.B. Chance Co.*, 234 F.3d 654, 662-63 (Fed. Cir. 2000) ("In order to determine obviousness as a legal matter, four factual inquiries *must* be made ... [including] secondary considerations of nonobviousness") (emphasis added).

38. *See, e.g., Pfizer, Inc. v. Apotex, Inc.*, 480 F.3d 1348, 1360 (Fed. Cir. 2007); *Richardson-Vicks, Inc. v. Upjohn Co.*, 122 F.3d 1476, 1483 (Fed. Cir. 1997).

39. *See, e.g., Apple Computer, Inc. v. Articulate Sys., Inc.*, 234 F.3d 14, 26 (Fed. Cir. 2000).

practice are not always in accord. If the other *Graham* factors are sufficiently persuasive, the Federal Circuit has been willing to dismiss the potential impact of secondary considerations.⁴⁰ Federal Circuit jurisprudence likewise provides no clear hierarchy between secondary considerations, considered as a whole, and the other three *Graham* factors. In at least one case, the Federal Circuit has also implied that some of these secondary considerations are intrinsically more important than others. In *Ecolochem, Inc. v. Southern California Edison Co.*,⁴¹ for instance, the court explicitly gave the three named considerations more weight than those which collectively fall under the “etc.” label.⁴² In other cases, however, the courts have drawn no such distinction and treated each of them in the same fashion.⁴³

Each of these secondary considerations seems intended to help determine whether the invention was in fact obvious to those of ordinary skill in the art at the time of the invention. For example, one of the most commonly invoked secondary considerations of non-obviousness is commercial success, which requires a showing that a product met with actual success in the marketplace as a result of the claimed invention. There is an appealing straightforwardness to the commercial success argument. If something is both obvious and lucrative, one wouldn’t expect it to remain on the shelf for long: surely someone would be motivated to seize on an obvious, and obviously profitable, opportunity. Thus, the logic goes, the fact that

40. See, e.g., *Brown & Williamson Tobacco Corp. v. Philip Morris Inc.*, 229 F.3d 1120, 1131 (Fed. Cir. 2000) (documenting the district court’s failure to consider secondary indicia of non-obviousness harmless error because “these indicators of nonobviousness cannot overcome the strong evidence of obviousness”); *Riverwood Int’l Corp. v. Mead Corp.*, 212 F.3d 1365, 1367 (Fed. Cir. 2000) (“[T]he objective factors did not carry sufficient weight to override a conclusion of obviousness based on the primary considerations.”); cf. *Applied Materials, Inc. v. Advanced Semiconductor Materials Am., Inc.*, 98 F.3d 1563, 1570 (Fed. Cir. 1996) (“The objective evidence of unobviousness is not evaluated for its ‘separate knockdown ability’ against the ‘stonewall’ of the prima facie case” (quoting *In re Rinehart*, 531 F.2d 1048 (C.C.R.A. 1976))).

41. 227 F.3d 1361 (Fed. Cir. 2000).

42. *Id.* at 1380 (“The factors specifically mentioned in *Graham*, and those that we give the most weight to in the instant case, are the commercial success of the invention, long-felt but unsolved needs, and failure of others to invent.”); see also *Hybritech, Inc. v. Monoclonal Antibodies, Inc.*, 802 F.2d 1367, 1379-80 (Fed. Cir. 1986).

43. See, e.g., *Eli Lilly & Co. v. Goldline Pharms., Inc.*, 471 F.3d 1369, 1380 (Fed. Cir. 2006) (drawing no distinction between named and unnamed secondary considerations).

someone actually commercialized the invention and made a lot of money doing so, suggests that the invention wasn't obvious. Otherwise, someone else would have commercialized it already.

Patentees can likewise rely on a long-felt need that was addressed by the patented invention; the theory being, as above, that the need would have been addressed by others had the solution been obvious.⁴⁴ Similarly, "evidence of failed attempts by others could be determinative on the issue of obviousness" because the failed attempts by those others would seem to demonstrate that the invention was not obvious to them. Evidence of third-party licensing may also demonstrate that others have looked at the patent and deemed it sufficiently novel to be worth paying for, although the courts have recognized that the importance of this factor may be diminished where it is "cheaper to take licenses than to defend infringement suits."⁴⁵

All of these objective considerations are, on their face, grounded in real-world facts. Indeed, the Federal Circuit has noted that "such real-world considerations provide a colorful ... foundation on which to rest a nonobviousness determination."⁴⁶ But while the Federal Circuit lauds these "real-world considerations," it has declined to rely on evidence of secondary considerations where that objective evidence is at odds with the hypothetical nature of the obviousness construct.⁴⁷

D. KSR and the Standard of Review

In *KSR*, the Supreme Court ostensibly made the obviousness inquiry more "flexible" and pragmatic.⁴⁸ In rejecting the Federal Circuit's rigid application of the TSM test,⁴⁹ the Supreme Court ostensibly sought to create a test that would be more attuned to the

44. See, e.g., *id.*

45. *Iron Grip Barbell Co., Inc. v. USA Sports, Inc.*, 392 F.3d 1317, 1324 (Fed. Cir. 2004) (quoting *EW P Corp. v. Reliance Universal Inc.*, 755 F.2d 898, 908 (Fed. Cir. 1985)).

46. *Minn. Mining & Mfg. Co. v. Johnson & Johnson Orthopaedics, Inc.*, 976 F.2d 1559, 1575 (Fed. Cir. 1992).

47. See, e.g., *Pharmastem Therapeutics, Inc. v. Viacell, Inc.*, 491 F.3d 1342, 1365 (Fed. Cir. 2007) (discounting expert's testimony that he had been "surprise[d]" by the inventor's work because the expert was not aware of all the prior art).

48. *KSR Int'l Co. v. Teleflex Inc.*, 127 S. Ct. 1727, 1739 (2007).

49. *Id.*

realities of what would actually be obvious to a person of skill in the art. In purportedly doing so, however, the Court's opinion has also been read as suggesting that the objective considerations may be less important than the other *Graham* factors.

Although the ultimate question of obviousness is an issue of law, the courts have recognized that obviousness must be determined with reference to underlying facts, such as the level of ordinary skill in the art and the scope and content of the prior art, as laid out in *Graham*. At the same time that the Supreme Court purported to make the inquiry more flexible (and presumably fact-driven), however, it also reaffirmed that obviousness is an issue of law, and thus particularly appropriate for resolution at summary judgment.⁵⁰ Nonetheless, in light of the presumption of validity, any factual questions underlying that determination are to be resolved by clear and convincing evidence.⁵¹

II. PROCEDURAL EFFECTS OF KSR

A. *The Increasing Role of the PHOSITA*

KSR is a bit of a Rorschach test, offering language that can be twisted to support virtually any view of obviousness law. But the one consistent strand that runs through the opinion is a rejection of rigid rules, replaced with a case-by-case focus on what actual scientists in the field would know or could develop with ordinary inventive skill.⁵² The Court wants to know whether scientists in *this particular discipline* would believe *this particular invention* to be obvious. This is evident at a number of points in the opinion:

We begin by rejecting the rigid approach of the Court of Appeals. Throughout this Court's engagement with the question

50. *Id.* at 1745-46.

51. *Pharmastem Therapeutics*, 491 F.3d at 1360.

52. The Court was also motivated by a sense that the Federal Circuit got this particular case wrong—a sentiment with which we agree—and by a belief that the Federal Circuit erred too often on the side of upholding doubtful patents. For empirical scholarship calling that latter sense into question, see, for example, Christopher A. Cotropia, *Nonobviousness and the Federal Circuit: An Empirical Analysis of Recent Case Law*, 82 NOTRE DAME L. REV. 911 (2007); Lee Petherbridge & R. Polk Wagner, *The Federal Circuit and Patentability: An Empirical Assessment of the Law of Obviousness*, 85 TEX. L. REV. 2051 (2007).

of obviousness, our cases have set forth an expansive and flexible approach inconsistent with the way the Court of Appeals applied its TSM test here....

....

... The combination of familiar elements according to known methods is likely to be obvious when it does no more than yield predictable results....⁵³

....

Helpful insights, however, need not become rigid and mandatory formulas; and when it is so applied, the TSM test is incompatible with our precedents. The obviousness analysis cannot be confined by a formalistic conception of the words teaching, suggestion, and motivation, or by overemphasis on the importance of published articles and the explicit content of issued patents. The diversity of inventive pursuits and of modern technology counsels against limiting the analysis in this way....

... There is no necessary inconsistency between the idea underlying the TSM test and the *Graham* analysis. But when a court transforms the general principle into a rigid rule that limits the obviousness inquiry, as the Court of Appeals did here, it errs.⁵⁴

We expect two effects from this realistic,⁵⁵ case-by-case approach. First, courts will have to pay more attention than they have in the last quarter-century to who the PHOSITA is and what he or she thinks. Although *Graham* spoke of a requirement to determine “the level of ordinary skill in the pertinent art,”⁵⁶ in practice, explicit factual determinations of the PHOSITA’s skill have been rare.⁵⁷ Rather, the courts have looked for a suggestion in the art to make the claimed invention, and have paid less attention to whether those in the field would have figured out the claimed invention on their

53. *KSR*, 127 S. Ct. at 1739.

54. *Id.* at 1739-41.

55. See also Michael J. Meurer & Katherine J. Strandburg, *Patent Carrots and Sticks: A Model of Nonobviousness*, 12 LEWIS & CLARK L. REV. 547 (2008) (referring to *KSR* as a “more realistic approach”).

56. 383 U.S. 1, 17 (1966).

57. Becky Eisenberg says that the Federal Circuit “all but ignored” the perspective of the PHOSITA before *KSR*. Rebecca S. Eisenberg, *Obvious to Whom? Evaluating Inventions from the Perspective of PHOSITA*, 19 BERKELEY TECH. L.J. 885, 888 (2004).

own.⁵⁸ This must change in the wake of *KSR*. We expect to see greater reliance on expert testimony regarding what those of skill in the art would have known and been capable of developing.⁵⁹ And indeed we are starting to see greater Federal Circuit attention to the level of skill in the art.⁶⁰

Second, the role of the PHOSITA will expand beyond just combining existing references to include developing his or her own ideas. The PHOSITA has been treated in the Federal Circuit as a bit of a “dullard,”⁶¹ aware of the art but devoid of creativity or inventive skills.⁶² By contrast, in *KSR*, the Supreme Court spoke of the PHOSITA not simply as someone who combines preexisting work, but as someone who solves problems by applying a reasonable amount of ingenuity:

If a person of ordinary skill can implement a predictable variation, § 103 likely bars its patentability. For the same reason, if a technique has been used to improve one device, and a person of ordinary skill in the art would recognize that it would improve similar devices in the same way, using the

58. See, e.g., *SIBIA Neurosciences, Inc. v. Cadus Pharm. Corp.*, 225 F.3d 1349, 1356 (Fed. Cir. 2000) (stating that the suggestion test applies to all inventions, not merely those that combine existing references).

59. We acknowledge that there is language in the Court’s opinion suggesting that it might not be inconsistent with a broad, flexible application of the teaching-suggestion-motivation standard. See *KSR*, 127 S. Ct. at 1739. But that standard will satisfy the Court’s opinion only if it is closely tied to the actual knowledge and capabilities of the PHOSITA. *Id.* at 1740. For this reason, we agree with Joe Miller that the change in *KSR* is more than just one of “verbal formulae.” Joseph Scott Miller, *Remixing Obviousness*, 16 TEX. INTELL. PROP. L.J. 237, 239 (2008).

60. See, e.g., *Dystar Textilfarben GmbH v. C.H. Patrick Co.*, 464 F.3d 1356, 1361-63 (Fed. Cir. 2006) (overturning a district court’s fact-finding regarding the level of skill in the art); *Daiichi Sankyo Co. v. Apotex, Inc.*, 501 F.3d 1254 (Fed. Cir. 2007) (substituting the Federal Circuit’s assessment of the level of skill in the art for the district court’s).

61. See *supra* note 12.

62. See, e.g., *Standard Oil Co. v. Am. Cyanamid Co.*, 774 F.2d 448, 454 (Fed. Cir. 1985) (“A person of ordinary skill in the art is also presumed to be one who thinks along the line of conventional wisdom in the art and is not one who undertakes to innovate”); Burk & Lemley, *supra* note 19, at 1189; Eisenberg, *supra* note 57, at 891 (stating that the Federal Circuit has presumed “that PHOSITA is an uncreative plodder, incapable of making inventions of his own”); Cecil D. Quillen Jr., *Innovation and the U.S. Patent System*, 1 VA. L. & BUS. REV. 207, 213 (2006) (“The Federal Circuit’s ‘person of ordinary skill’ apparently is a literalist, without imagination or creativity, unaware of developments pertinent to his or her work.”).

technique is obvious unless its actual application is beyond his or her skill....⁶³

... [T]he 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 person of ordinary skill in the art would employ.⁶⁴

....

... Common sense teaches, however, that familiar items may have obvious uses beyond their primary purposes, and in many cases a person of ordinary skill will be able to fit the teachings of multiple patents together like pieces of a puzzle.... *A person of ordinary skill is also a person of ordinary creativity, not an automaton.*⁶⁵

If the PHOSITA is imbued with ordinary creativity in solving known problems, and need not rely on suggestions or motivations to combine existing references, the effect should be to make it easier to find patents obvious and therefore invalid.⁶⁶ Indeed, in *PharmaStem Therapeutics v. Viacell*,⁶⁷ the Federal Circuit reversed a jury finding of obviousness because the inventors' "routine research" may be a valuable contribution, but it does not give rise to a patentable invention.⁶⁸

This realism also extends to an evaluation of changed economic conditions. One of the reasons an invention might be made at a particular time and not before is not that it was hard or unforeseen, but that some sort of exogenous shock, such as the development of a new collateral technology, made it either desirable or feasible for

63. *KSR*, 127 S. Ct. at 1740.

64. *Id.* at 1741.

65. *Id.* at 1742 (emphasis added).

66. Scholars writing before *KSR* referred to the noncreative PHOSITA as "tantamount to having read the nonobviousness requirement out of the statute," Quillen, *supra* note 62, at 213; see also Glynn S. Lunney, Jr., *Patent Law, the Federal Circuit, and the Supreme Court: A Quiet Revolution*, 11 SUP. CT. ECON. REV. 1, 75-76 (2004).

There is some potential for circularity here, as Kevin Collins has pointed out to us. If PHOSITAs are innovative because they themselves hope to obtain patents—that is, if the person of ordinary skill in a field is himself a patentee—a rule that makes that innovation unpatentable if it just reflects ordinary innovation may end up discouraging the very PHOSITA innovation that is the basis for the standard.

67. 491 F.3d 1342 (Fed. Cir. 2007).

68. *Id.* at 1363-64.

the first time.⁶⁹ For example, the switch from analog to digital electronic components, or the growth of the Internet, might render desirable the translation of lots of existing technologies from the old format to the new.⁷⁰ Under *KSR*, these exogenous factors are also part of the realistic approach a PHOSITA would take to an invention.⁷¹ If everyone else is moving their business models online, doing so should not itself be nonobvious, even if there is no explicit suggestion to move this particular idea online too.⁷² Finally, it should logically extend to the way in which PHOSITAs work in the real world—not isolated in an office with prior art “hanging [on] the walls,”⁷³ but in collaborative teams with an open exchange of ideas.⁷⁴ As a general matter, we think the increased focus on a real-world, creative PHOSITA is a salutary development. As Becky Eisenberg has explained, “Active practitioners of a technology bring more to a problem than may be found in written prior art, including training, judgment, intuition, and tacit knowledge acquired through field experience.”⁷⁵ Applied properly, a PHOSITA-based approach to obviousness will point courts toward the “right” answer by investigating the likelihood that others would have developed the same invention had the patentee not done so.⁷⁶ And a focus on the PHOSITA may even lead the Federal Circuit to reject time-worn presumptions about obviousness in the biotechnology context.⁷⁷ Our

69. See John F. Duffy, *Rethinking the Prospect Theory of Patents*, 71 U. CHI. L. REV. 439, 505 (2004) (noting that an unexpected development “could trigger a flood of patent applications” for the new ideas that are suddenly valuable).

70. *Id.* at 504-05.

71. See Stephen P. Smith & Kurt R. Van Thomme, *Bridge Over Troubled Water: The Supreme Court’s New Patent Obviousness Standard in KSR Should Be Readily Apparent and Benefit the Public*, 17 ALB. L. J. SCI. & TECH. 127, 152-53 (2007) (giving examples of “exogenous factor[s]” such as the Internet or movies in color).

72. For arguments along these lines, see, for example, Duffy, *supra* note 69, at 504-05; Glynn S. Lunney, Jr., *E-Obviousness*, 7 MICH. TELECOMM. & TECH. L. REV. 363, 420-21 (2000-2001).

73. *Cf. In re Winslow*, 365 F.2d 1017, 1020 (C.C.P.A. 1966) (setting out the picture of a PHOSITA working in a lab with prior art taped to the walls around him).

74. See generally Meurer & Strandburg, *supra* note 55 (making this argument).

75. Eisenberg, *supra* note 57, at 897.

76. *Cf. Samson Vermont, Independent Invention as a Defense to Patent Infringement*, 105 MICH. L. REV. 475, 479, 499-500 (2006) (applying Bayesian analysis to design rules to grant patents only when the invention would not have been made without the patent).

77. See, e.g., Anna Bartow Laakmann, *Restoring the Genetic Commons: A “Common Sense” Approach to Biotechnology Patents in the Wake of KSR v. Teleflex*, 14 MICH. TELECOMM. & TECH. L. REV. 43, 47, 72-74 (2007) (making this argument). For criticism of the Federal

optimism is subject to some important caveats, however, which we explore in Part III.

B. Patentee Reliance on Secondary Considerations

Patentees won't sit still as the standard shifts to make it harder to show nonobviousness. They will look for whatever tools they have at hand that will persuade a court that an invention was in fact nonobvious. As the legal rules that fight hindsight bias, such as the TSM test, are trimmed back,⁷⁸ and as courts spend more time and energy to use real-world context and knowledge to invalidate patents, patentees will want to rely more on so-called secondary considerations of nonobviousness—factors that arise in the marketplace.

Secondary considerations represent patentees' best hope of demonstrating nonobviousness in the post-*KSR* world for several reasons. First, almost all the secondary considerations the courts have considered support rather than undermine patentability.⁷⁹ Courts have held that the commercial success of the invention,⁸⁰ a long-felt need for the invention,⁸¹ the failure of others to make the invention,⁸² prior art teaching away from the inventive approach, copying of the invention by others, and public recognition of the patentee as the inventor⁸³ are all evidence that can tend to prove nonobviousness.⁸⁴ Invoking these "objective" factors can only help

Circuit's obviousness cases involving DNA, see Burk & Lemley, *supra* note 19.

78. For criticism of *KSR* for ignoring the serious problem of hindsight bias, 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 (2008).

79. See John F. Duffy, *A Timing Approach to Patentability*, 12 LEWIS & CLARK L. REV. 343, 374 (2008) ("[S]econdary considerations are typically employed to rebut a 'prima facie' case of obviousness.").

80. See, e.g., *Arkie Lures, Inc. v. Gene Larew Tackle, Inc.*, 119 F.3d 953, 955 (Fed. Cir. 1997); *Hybritech Inc. v. Monoclonal Antibodies, Inc.*, 802 F.2d 1367, 1380 (Fed. Cir. 1997).

81. See, e.g., *Arkie Lures*, 119 F.3d at 955; *Hybritech*, 802 F.2d at 1380.

82. See *Hybritech*, 802 F.2d at 1380.

83. See Alan L. Durham, *Patent Symmetry*, 87 B.U. L. REV. 969, 981 (2007) (stating that industry recognition may prove nonobviousness).

84. See, e.g., *Arkie Lures*, 119 F.3d at 957-58 (discussing secondary considerations); *Hybritech*, 802 F.2d at 1380 n.4, 1382-84; ROBERT P. MERGES ET AL., *INTELLECTUAL PROPERTY IN THE NEW TECHNOLOGICAL AGE* 237-38 (4th ed. 2006); Rochelle Dreyfuss, *The Federal Circuit: A Case Study in Specialized Courts*, 64 N.Y.U. L. REV. 1, 9-10 (1989) (discussing

patentees, since the Federal Circuit has held that the absence of these secondary considerations is not proof of obviousness, but instead is “neutral.”⁸⁵ Only one secondary consideration—simultaneous invention by others—points in the opposite direction, and the Federal Circuit has been somewhat dismissive of that factor.⁸⁶ As a result, reliance on secondary considerations, where present, is close to a no-lose proposition for patentees.⁸⁷

The second advantage for patentees of reliance on secondary considerations is that they offer a compelling story for the finder of fact.⁸⁸ As the jury applies a more realistic view of obviousness, patentees can tell a story that focuses on the actual reception of the invention in the marketplace, of failure of others, or of dismissal of the patentee’s idea beforehand. Each makes a compelling jury story—if the world was skeptical, and the patentee’s invention overcame that skepticism, producing unexpected results, it is likely that the person of ordinary skill wouldn’t have taken the approach the patentee did.⁸⁹

secondary considerations).

85. See, e.g., *Custom Accessories, Inc. v. Jeffrey-Allan Indus.*, 807 F.2d 955, 960 (Fed. Cir. 1986); *Medtronic Inc. v. Intermedics, Inc.*, 799 F.2d 734, 739 n.13 (Fed. Cir. 1986).

86. See, e.g., *Hybritech*, 802 F.2d at 1380 (“[S]imultaneous development may or may not be indicative of obviousness”; finding that it was irrelevant); *Lindemann Maschinenfabrik GMBH v. Am. Hoist & Derrick Co.*, 730 F.2d 1452, 1460-61 (Fed. Cir. 1984) (same); *Stewart-Warner Corp. v. City of Pontiac*, 767 F.2d 1563, 1570 (Fed. Cir. 1985) (suggesting that near-simultaneous invention should not be considered unless it occurred before the patentee’s invention). For an argument that simultaneous invention should get greater weight in the obviousness inquiry, see Mark A. Lemley, *Should Patent Infringement Require Proof of Copying?*, 105 MICH. L. REV. 1525, 1534-35 (2007) [hereinafter *Proof of Copying*]; Tun-Jen Chiang, *A Cost-Benefit Approach to Patent Obviousness*, 82 ST. JOHN’S L. REV. 39, 94-96 (2008). Courts in a prior era had given more credence to this evidence. See, e.g., *Concrete Appliances Co. v. Gomery*, 269 U.S. 177, 185 (1925) (independent inventions “within a comparatively short space of time ... are in themselves persuasive evidence that this use ... was the product only of mechanical or engineering skill”).

87. See Lunney, Jr., *supra* note 72, at 377-78.

88. See Gordon T. Arnold and Shannon Goldapp, “E-Commerce” and “Business Methods”—*What Type of Evidence Must a Challenger Use?*, 619 PLI/Pat 301 (Practising Law Institute Oct. 2000) (noting that secondary considerations have the most impact because “[t]hey require little technical understanding, and they are part of the ‘story’ of the invention that the fact-finder, judge or jury, finds interesting”).

89. See, e.g., *Ortho-McNeil Pharm. Inc. v. Mylan Labs Inc.*, 520 F.3d 1358 (Fed. Cir. 2008) (rejecting an obviousness claim in significant part because of unexpected results and other secondary considerations).

Finally, secondary considerations can, in some circumstances, serve as an antidote to the serious problem of hindsight bias.⁹⁰ Indeed, the Federal Circuit has referred to secondary considerations as being “used by the courts in an effort to compensate for hindsight.”⁹¹ In the wake of *KSR*, which undoes the teaching-suggestion-motivation test as a weapon against hindsight bias, it is reasonable to expect patentees to rely still more on secondary considerations for this purpose, particularly given the Federal Circuit’s regular reference to them as the “most probative and determinative” evidence available on obviousness.⁹²

Whether increased reliance by patentees on secondary considerations is good for society depends critically on what considerations the court employs and when. Some secondary considerations, notably commercial success, have been justly criticized as requiring unwarranted inferences, particularly where the patent is only one component of a much larger product.⁹³ One can also criticize evidence of copying and acquiescence as circular, because patent enforcement can cause the marketplace to fall into line, taking a license even to patents they believe should never have been issued.⁹⁴ By contrast, as Merges points out, failure of others constitutes much more direct evidence that coming up with the

90. On the seriousness of the hindsight bias problem in obviousness, see generally Mandel, *Patently Non-Obvious I*, *supra* note 20; Mandel, *Patently Non-Obvious II*, *supra* note 20. Interestingly, the latter study suggested that the teaching-suggestion-motivation test did little to solve the problem. *Id.* at 5.

91. *Ecolchem, Inc. v. S. Cal. Edison Co.*, 227 F.3d 1361, 1376 (Fed. Cir. 2000).

92. See, e.g., *Pro-Mold & Tool Co., Inc. v. Great Lakes Plastics, Inc.*, 75 F.3d 1568, 1573 (Fed. Cir. 1996); *3M Co. v. Johnson & Johnson Orthopaedics, Inc.*, 976 F.2d 1559, 1573 (Fed. Cir. 1992). Courts outside the United States use secondary considerations as well. See *Lockwood Sec. Prods. Pty. Ltd. v. Doric Prods. Pty. Ltd.* (No. 2) [2007] HCA 21 (Aust. High Ct. May 23, 2007).

93. See, e.g., *Kitch*, *supra* note 32, at 331-32; Merges, *supra* note 32, at 838-42. The Federal Circuit has imposed a nexus requirement on proof of commercial success, and has rejected commercial success evidence absent any reason to believe the patented invention caused the success. See, e.g., *Sandt Tech., Ltd. v. Resco Metal & Plastics Corp.*, 264 F.3d 1344, 1350 (Fed. Cir. 2001); *In re GPAC, Inc.*, 57 F.3d 1573, 1580 (Fed. Cir. 1995). For praise of long-felt need and failure of others in the context of *KSR*, see Joseph Scott Miller, *Level of Skill and Long-Felt Need: Notes on a Forgotten Future*, 12 LEWIS & CLARK L. REV. 579 (2008).

94. See, e.g., *Hydril Co. LP v. Grant Prideco LP*, 474 F.3d 1344 (2007) (discussing threat of patent enforcement and fraudulently obtained patents); Christopher R. Leslie, *Patents of Damocles*, 83 IND. L.J. 133 (2008) (arguing that unenforced patents can still threaten competitors).

invention wasn't as easy as the defendant now claims.⁹⁵ Evidence that scholars or businesses were "teaching away" from the invention also is strongly suggestive that PHOSITAs making or reading those statements would be disinclined to follow the path the inventor did.⁹⁶ Burk and Lemley suggest that courts also can take other considerations, such as the cost of innovation, into account in the obviousness determination.⁹⁷ Provided courts take these inference concerns seriously, secondary considerations can improve the obviousness inquiry by adding relevant evidence that is more capable of objective consideration than reliance on expert testimony about what people of skill in the art would have known a decade or more before.⁹⁸

C. Applying the New Rules: Procedural Problems

The previous two sections have suggested that the nature of the obviousness inquiry will change after *KSR* to focus on evidence from the real world, asking both about what scientists in that real world would have known or been capable of developing and about how the market actually reacted to the patentee's invention.

Applying this new legal standard will not be easy. Neither the PTO nor the courts are currently set up to effectively collect and analyze this information.

95. Merges, *supra* note 32, at 862, 866.

96. Simultaneous invention is also a potentially valuable piece of economic evidence, because if a number of scientists of (presumably) ordinary skill did in fact come up with the invention, it is likely that it wasn't that hard to do, and it is merely a change in market demand or outside circumstances that permitted the invention at that particular time. Further, as Vermont argues, the need for a patent may be smaller in cases of simultaneous invention, because even if the patentee would not have developed the invention without the benefit of a patent, it appears others would have. Vermont, *supra* note 76, at 497-500; Tun-Jen Chiang, *A Cost-Benefit Approach to Patent Obviousness*, 82 ST. JOHN'S L. REV. 39 (2008). Nonetheless, one must approach this analysis with at least some caution, because it may be that simultaneous invention resulted from a patent race that would not have occurred in the absence of the prospect of a patent reward. See Lemley, *Proof of Copying*, *supra* note 86, at 1528-29 (making this point).

97. Dan L. Burk & Mark A. Lemley, *Policy Levers in Patent Law*, 89 VA. L. REV. 1575, 1660-62 (2003).

98. The average time between the filing of a patent application and the final resolution of validity litigation on the resulting patent is 12.3 years, though expert testimony may occur somewhat before that time if the case ends up being appealed. See Allison & Lemley, *supra* note 2, at 236 tbl.11. And, of course, the invention was made even earlier than the filing date.

1. *The PTO*

The PTO is inundated with patent applications. It receives about 450,000 applications per year,⁹⁹ and has roughly a million unexamined applications pending in the office. It can process as many applications as quickly as it does—obviously not quickly enough—because it devotes very little time to the evaluation of each application.¹⁰⁰ Patent examiners spend on average only sixteen to eighteen hours per application,¹⁰¹ spread over as much as seven years.¹⁰² And those eighteen hours are spread among a variety of tasks, only some of which involve the evaluation of the invention in light of the prior art.¹⁰³

These serious time constraints lead examiners to cabin their search for prior art to particular categories of art, such as prior U.S. patents, that are easier to find.¹⁰⁴ Their analysis of obviousness has traditionally been correspondingly limited, comparing the

99. Doug Lichtman & Mark A. Lemley, *Rethinking Patent Law's Presumption of Validity*, 60 STAN. L. REV. 45, 46 (2007) ("The PTO expects more than 450,000 new patent applications to be filed in 2007.").

100. Cheryl Lee Johnson, *The Continuing Inability of Judges to Pass Their Markman Tests: Why the Broken System Leaves Judges Behind, Confused and Demoralized*, 941 PLI/Pat 65 (Practising Law Institute July 2008) (stating that the patent office pays less attention to U.S. patents than Americans do to their televisions each week).

101. John R. Thomas, *Collusion and Collective Action in the Patent System: A Proposal for Patent Bounties*, 2001 U. ILL. L. REV. 305, 314 (2001).

102. Mark A. Lemley & Bhaven N. Sampat, *Is the Patent Office a Rubber Stamp?*, 58 EMORY L.J. (forthcoming 2009) (tracking patent applications filed in January 2001, some of which were still pending more than seven years later).

103. The examiner, then, has the burden of reading the application, searching for and identifying the relevant prior art, reading the relevant prior art, deciding whether the application should be allowed by comparing the claims to the prior art, and writing an "Office Action" explaining the reasons why any claims are rejected. After the applicant writes a response to the examiner's evaluation, this process will normally happen again, and may happen several more times. The examiner may also conduct an "interview" with the applicant to discuss allowance in person or over the phone. Finally, there are technical matters that the examiner must identify and attend to before the patent application is in condition for allowance. The total average time the examiner spends on all these tasks over the two- to three-year prosecution of the patent is eighteen hours. Mark A. Lemley, *Rational Ignorance at the Patent Office*, 95 NW. U. L. REV. 1495, 1500 (2001).

104. Allison and Lemley find that U.S. patents disproportionately cite prior U.S. patents as prior art, rather than the harder-to-find foreign patents and nonpatent prior art. John R. Allison & Mark A. Lemley, *Who's Patenting What? An Empirical Exploration of Patent Prosecution*, 53 VAND. L. REV. 2099, 2120, 2137 (2000).

application to the elements of prior patents and whatever nonpatent prior art has been submitted.

KSR will put enormous pressure on this assembly-line approach. If the most important questions in an obviousness inquiry are real-world ones—what does the PHOSITA know, what can he or she accomplish, and how was the invention treated in the marketplace before and after the patentee came up with it—examiners will need to collect and evaluate evidence on these facts if they are to do a decent job of evaluating obviousness.¹⁰⁵ But it is far from clear how examiners can acquire this evidence, and even if they do, whether they will have the time to evaluate it.¹⁰⁶ Examiners are certainly not equipped, as courts are, to take testimony from expert witnesses employed by different parties. Indeed, there aren't even two parties before the PTO.¹⁰⁷

Further, secondary considerations tend to be after-the-fact economic evidence that may not be available at all when the examiner (as opposed to a later court) must decide obviousness.¹⁰⁸ Some have celebrated this as a virtue—time may tell whether an invention is widely imitated, for instance, or simultaneously developed by others.¹⁰⁹ But it is a virtue of which patent examiners cannot take advantage.

There is no good way for patent examiners to rely on secondary considerations unless the evidence is available at the time of examination. Under current PTO practice, there are two basic ways examiners can try to draw on the knowledge of the PHOSITA.¹¹⁰

105. John M. White, *Prior Art and Obviousness 2008: The PTO and CAFC Perspective on Patent Law Sections 102 and 103*, 937 PLI/Pat 13 (Practising Law Institute June/July 2008).

106. To be sure, it is possible that the higher standard of patentability under *KSR* will cause fewer applications to be filed, easing the burden on the PTO and allowing examiners to spend more time on each application. But even if this happens—and we are skeptical that it will be a significant change, at least in the short run—the fact that the PTO is funded by application and issue fees means that as applications decline, so will the PTO budget, making it unlikely that a drop in applications will result in more intensive examination rather than merely fewer examiners. See, e.g., Chris J. Katopis, *Perfect Happiness?: Game Theory as a Tool for Enhancing Patent Quality*, 10 YALE J.L. & TECH. 360, 374-75 (2008).

107. Rules of Practice Before the Board of Patent Appeals and Interferences in *Ex Parte* Appeals, 37 C.F.R. § 41 (2008).

108. Cf. *In re Papesch*, 315 F.2d 381, 386-87 (C.C.P.A. 1963) (Rich, J.) (celebrating the hindsight nature of secondary considerations as a benefit: "evidence prevails over surmise").

109. See John F. Duffy, *A Timing Approach to Patentability*, 12 LEWIS & CLARK L. REV. 343 (2008).

110. A third way is to try to bring neutral outside experts into the PTO process. See

First, they can simply rely uncritically on factual affidavits filed by the applicant. Applicants already file affidavits to provide factual support for a number of issues, including enablement.¹¹¹ They might respond to *KSR* by submitting affidavits from experts describing the knowledge and ability of one of skill in the art and suggesting that the PHOSITA would not in fact have thought the invention obvious. Under the time and evidentiary constraints the PTO faces, examiners may have no choice but to accept these affidavits uncritically.¹¹² This is unfortunate. Because these affidavits will not be subject to cross-examination or to rebuttal by an expert proffered by an opponent,¹¹³ they will frequently prove to be unreliable evidence, and if they are unrebuttable they will make it fairly easy for applicants to establish nonobviousness.

The alternative approach is for examiners to rely on their own knowledge or common sense to deem a patent obvious.¹¹⁴ Examiners are, after all, generally trained in the technical field in which they review applications.¹¹⁵ Perhaps they are themselves PHOSITAs, or at least experts who can be expected to know what the level of skill in the art was at the time of the invention.¹¹⁶ Accordingly, we could

Eisenberg, *supra* note 57, at 899-905 (making this suggestion). The "peer-to-patent" pilot project harnesses outside experts to identify relevant prior art, though it doesn't have outsiders evaluating the ultimate question of obviousness. See Beth Noveck, "Peer to Patent": *Collective Intelligence, Open Review, and Patent Reform*, 20 HARV. J.L. & TECH. 123, 143-51 (2006).

We are doubtful that the PTO can improve ultimate decisionmaking by consulting technical experts not trained in patent law. The legal definition of obviousness is not the same as an engineer's understanding of that term, even after *KSR*, and delegating that ultimate question to those not trained in patents should be done, if at all, only in a structured adversarial context like litigation. And while we support the peer-to-patent project as a collector of prior art that can be an input into that determination, we are far from sure that it could scale enough to communicate outside information to the PTO on all or most patents.

111. MANUAL OF PATENT EXAMINING PROCEDURE § 2164.05 (8th ed. 2007).

112. See *In re Sullivan*, 498 F.3d 1345, 1351-53 (Fed. Cir. 2007) (reversing a Board finding of obviousness because the applicant submitted affidavits on teaching away and unexpected results, and requiring the Board to give the affidavits weight).

113. MANUAL OF PATENT EXAMINING PROCEDURE, *supra* note 111, § 2164.05.

114. Eisenberg makes this suggestion. See Eisenberg, *supra* note 57, at 898-99.

115. Shannon M. Casey, *The Patent Reexamination Reform Act of 1994: A New Era of Third Party Participation*, 2 J. INTELL. PROP. L. 559, 568 (1995).

116. See *In re Berg*, 320 F.3d 1310, 1315 (Fed. Cir. 2003):

As persons of scientific competence in the fields in which they work, examiners ... are responsible for making findings, informed by their scientific knowledge, as to the meaning of prior art references to persons of ordinary skill in the art and the motivation those references would provide to such persons. Absent legal

simply trust the knowledge or common sense of the examiner. The PTO has recognized the need for fact-finding on the subsidiary *Graham* factors in its post-*KSR* guidelines, and has instructed that “[o]ffice personnel fulfill the critical role of factfinder when resolving the *Graham* inquiries.”¹¹⁷ The Office suggests that “it may also be important to include explicit [factual] findings as to how a person of ordinary skill would have understood prior art teachings, or what a person of ordinary skill would have known or could have done.”¹¹⁸ This sounds awfully close to a factual conclusion on the ultimate question of obviousness, although it might be done by technology group rather than anew for each invention. The problem with this approach is the mirror image of uncritical reliance on applicant affidavits. Applicants have little recourse if the examiner simply announces that he or she knows the invention is obvious.¹¹⁹ It may also violate existing PTO rules.¹²⁰

This is a serious problem, one that is likely to come up often in the realistic obviousness test, and one for which there is not a great solution. We think the best approach is a hybrid of these two approaches: the examiner must offer reasons, and not merely a conclusion, for thinking that the PHOSITA would be able to come up with the invention.¹²¹ If the examiner does so, the applicant then has the burden of rebutting those reasons, either by persuading the examiner that he or she is wrong through argument or, more likely,

error or contrary factual evidence, those findings can establish a prima facie case of obviousness.

117. Examination Guidelines for Determining Obviousness Under 35 U.S.C. § 103 in View of the Supreme Court Decision in *KSR Int'l Co. v. Teleflex Inc.*, 72 Fed. Reg. 57,526-27 (Oct. 10, 2007).

118. *Id.*

119. See Joshua McGuire, *Nonobviousness: Limitations on Evidentiary Support*, 18 BERKELEY TECH. L.J. 175, 182-83 (2003).

120. See *Ex parte Judd*, (Bd. Pat. App. & Int. 1997) (placing burden of establishing skill in the art on the examiner). But see Stuart Minor Benjamin & Arti K. Rai, *Who's Afraid of the APA? What the Patent System Can Learn from Administrative Law*, 95 GEO. L.J. 269, 291 (2007) (suggesting that examiners can use their common sense by taking “official notice” under the APA).

121. Chris Cotropia argues persuasively that this was effectively the standard applied by the Federal Circuit before *KSR*, under the rubric of the teaching-suggestion-motivation test. Christopher A. Cotropia, *Patent Law Viewed Through an Evidentiary Lens: The “Suggestion Test” as a Rule of Evidence*, 2006 B.Y.U. L. REV. 1517, 1521, 1528, 1535-39. And it is consistent with the Benjamin-Rai suggestion that examiners can use “official notice” under the APA. Benjamin & Rai, *supra* note 120, at 291.

by submitting an affidavit explaining the knowledge or ability of those of skill in the art.¹²² That affidavit should not be determinative, however. The examiner should be entitled to reject the claims in an affidavit if (1) he or she can provide specific reasons for doing so, and (2) the examiner enlists a second examiner to independently evaluate the dispute, and that second examiner agrees with the first.¹²³ This approach is not ideal, but it does provide a way for the PTO to consider what the Supreme Court has told us is the most important evidence of patentability.¹²⁴

Three implications of this kludge are worth considering. First, the increased importance that will be placed on affidavits in the PTO after *KSR*, coupled with the inability of the examiner to cross-examine the affiant or seek independent confirmation, raises the risk of applicants filing misleading affidavits. It may therefore justify keeping the inequitable conduct doctrine as a deterrent to such misuse. Second, the risk that an examiner's opinion will be given controlling weight may be a justification for the otherwise inexplicable rule requiring the examiner to disprove obviousness,¹²⁵ rather than requiring the applicant to bear the initial burden of justifying its entitlement to a patent. If the examiner can act as a

122. See Joshua D. Sarnoff, Bicare, *KSR, Presumptions of Validity, Preliminary Relief, and Obviousness in Patent Law* 25 CARDOZO ARTS & ENT. L.J. 995, 1030-31 (2008) (suggesting that *KSR* mandates a set of burden-shifting presumptions). We are not convinced that *KSR* mandates a burden-shifting approach, but as a practical matter it may be the only way for the PTO to implement a realistic approach to obviousness.

123. Although there is no procedure in the PTO now for such a second opinion, the PTO does have a pilot "second pair of eyes review" (SPER) for certain classes of applications. For some evidence suggesting that SPER works in areas where it is used, see Lemley & Sampat, *supra* note 102 (documenting extremely low grant rate where two examiners must agree before granting a patent). *But cf.* John R. Allison & Starling Hunter, *On the Feasibility of Improving Patent Quality One Technology At a Time: The Case of Business Methods*, 21 BERKELEY TECH. L.J. 729, 759-63 (2006) (noting that many applicants avoided SPER by changing their applications to avoid being put in class 705). The SPER as currently used heightens the burden on the applicant; we would use it here to heighten the burden on the first examiner to reject a claim. But we think it can be effective in that context as well.

124. See *Graham v. John Deere Co.*, 383 U.S. 1, 14 (1966).

125. See, e.g., *In re Spada*, 911 F.2d 705, 709 (Fed. Cir. 1990); *In re King*, 801 F.2d 1324, 1327 (Fed. Cir. 1986) (discussing the PTO's burden to come forward with a prima facie case of invalidity). The Federal Circuit has referred to this as "but a procedural mechanism ... allocat[ing] ... the burdens of going forward and ... persuasion," not a substantive standard for breaking ties. *In re Piasecki*, 745 F.2d 1468, 1472 (Fed. Cir. 1984); Philippe Signore, *There is Something Fishy About a Presumption of Obviousness*, 84 J. PAT. & TRADEMARK OFF. SOC'Y 148, 153-56 (2002) (discussing the history of and justification for this presumption).

PHOSITA substitute, requiring her to justify her instincts may make sense as a counterweight. Finally, the highly imperfect nature of this process in the PTO is reason enough not to put too much reliance on the determination made by the PTO in subsequent litigation. Only if we have an opportunity to vet these issues more thoroughly, either in court or in some form of post-grant opposition, can we be relatively confident of reaching the right outcome.¹²⁶

2. The Courts

The increasingly factual nature of the dispute suggests that obviousness ought to be an issue for the jury. After all, it is the province of the jury to decide contested issues of fact. Notwithstanding the intensely factual nature of the obviousness inquiry, however, the Court has made it clear that it is a question of law, and that even disputes in expert testimony will not prevent summary judgment.¹²⁷

If we take seriously the idea that obviousness is a question of law, juries shouldn't determine obviousness at all, but instead merely resolve special verdict questions on the subsidiary facts. Indeed, this approach has been adopted as one of two alternatives by the Northern District of California, which has promulgated model patent jury instructions,¹²⁸ and hinted at by the Federal Circuit.¹²⁹ The Northern District offers one set of instructions in which the district court gives only the underlying factual determinations to the jury,¹³⁰ and a second set of instructions in which the district court also puts the ultimate question of obviousness to the jury¹³¹—

126. For more general arguments along these lines, see generally Lichtman & Lemley, *supra* note 99; Lemley, *supra* note 103.

127. This has actually been the Federal Circuit rule since *Aktiebolaget Karlstads Mekaniska Werkstad v. I.T.C.*, 705 F.2d 1565, 1575 (Fed. Cir. 1983). Curiously, the Supreme Court had questioned the issue in *Dennison Mfg. Co. v. Panduit Corp.*, 475 U.S. 809 (1986), suggesting that district court obviousness decisions might require deference. But in the wake of *KSR* it appears they don't.

128. Model Patent Jury Instructions for the Northern District of California, available at www.cand.uscourts.gov (Nov. 29, 2007).

129. *Agrizap, Inc. v. Woodstream Corp.*, 520 F.3d 1337, 1343 n.3 (Fed. Cir. 2008) (suggesting that special verdict forms that ask specific subsidiary factual questions are preferable to those that just ask the jury its view of obviousness).

130. Model Patent Jury Instruction 4.3b, *supra* note 128 (Obviousness Alternative 1).

131. Model Patent Jury Instruction 4.3b, *supra* note 128 (Obviousness Alternative 2).

although the instructions caution that such a verdict is merely advisory, and that the ultimate determination of obviousness remains within the province of the court. It is worth noting that as a logical matter, under this regime, there should be no appellate deference to jury verdicts of obviousness. Instead, there should only be deference to the predicate factual findings on the prior art, level of skill in the art, and secondary considerations.¹³² Similarly—and to the surprise of most patent owners—it is only these subsidiary factual findings that would be subject to the clear and convincing evidence standard, because an evidentiary burden of proof has no applicability to a question of law.¹³³

To give only the *Graham* fact questions to a jury while not allowing the jury to determine the more subjective question of whether an invention was in fact obvious seems to us perverse. It makes little sense to review these more objective determinations with deference, and yet to review the mushier ultimate conclusion of obviousness de novo.¹³⁴ After all, the PTO is making an ultimate conclusion of obviousness; if the patent is presumed valid, then that determination is presumed to be correct.¹³⁵ Why would we not give the same deference to the district court's evaluation of the evidence and what would, in fact, have been obvious to a person skilled in the art?¹³⁶ An obviousness inquiry that focuses on the real world should be a question of fact.¹³⁷ This is not to say that summary judgment is never appropriate; sometimes there really isn't a good faith dispute

132. See *Dennison Mfg. Co. v. Panduit Corp.*, 475 U.S. 809, 810-11 (1986) (holding that underlying factual findings are subject to deferential review).

133. For discussion of this point, see Sarnoff, *supra* note 122, at 1001-02.

134. That is the consequence of treating it as a question of law. See *Muniauction, Inc. v. Thomson Corp.*, 532 F.3d 1318 (Fed. Cir. 2008).

135. See, e.g., *Westvaco Corp. v. Int'l Paper Co.*, 23 U.S.P.Q. 2d 1401, 1411 (E.D. Va. 1991) (citing *Avia Group Int'l, Inc. v. L.A. Gear Cal., Inc.*, 853 F.2d 1557, 1563 (Fed. Cir. 1988)).

136. Meurer and Strandburg suggest that while obviousness seems to depend on technological facts, it makes sense to treat it as a question of law so that courts can bring policy considerations to bear on the ultimate decision. See Michael J. Meurer & Katherine J. Strandburg, *Patent Carrots and Sticks: A Model of Nonobviousness*, 12 LEWIS & CLARK L. REV. 547 (2008). We agree that policy should be relevant to obviousness, but we are skeptical that treating the question as one of law accomplishes that goal. Certainly it has not led the Federal Circuit to consider policy explicitly. In any event, a better approach would be for patent policy to inform the choice of considerations that fact-finders must evaluate.

137. This argument has been raised before. See, e.g., Comment, *Nonobviousness in Patent Law: A Question of Law or Fact?*, 18 WM. & MARY L. REV. 612, 622-23 (1977) (arguing that obviousness should be treated as a pure question of fact).

as to whether an invention is obvious. But a realistic approach would limit the number of cases in which summary judgment is appropriate, giving the jury substantially more leeway in evaluating the obviousness of an invention. After all, the factual issues laid out in *Graham* frequently are not really the subject of dispute. In many (if not most) patent cases, the prior art says what it says. As a result, the issue is not the content of the prior art, but what conclusions may be drawn from it—whether, in light of the prior art, a person of skill would be motivated to come up with the purported invention. Once the facts are in, the weighing of those facts to make an ultimate determination of obviousness is supposed to be done from the perspective of the PHOSITA—and thus should itself be a factual question. It seems to us that the clear and convincing evidence standard should apply to the ultimate question of obviousness, rather than the scope and content of the prior art or the definition of a PHOSITA. And, in turn, the standard of review should give deference to the ultimate conclusion of obviousness, rather than simply what is contained within a particular prior art reference or the other *Graham* factors.

III. TAKING REALISM SERIOUSLY

As we have noted, we think the new focus on the real world in determining obviousness is a good thing, but it is worth noting that the Court did not go all the way toward a realistic approach. The inquiry into real-world considerations is significantly biased by the decidedly counterfactual assumption that the real-world PHOSITA has possession of all the § 102 prior art, no matter how obscure or secret.¹³⁸ As the court in *Winslow* put it, the obviousness analysis still imagines the PHOSITA sitting in his lab with the prior art references hanging on the walls all around him.¹³⁹ But PHOSITAs in the real world don't work that way. Even if they actually do go out and read other people's patents—and we are skeptical that this

138. See, e.g., *In re Rouffet*, 149 F.3d 1350, 1357 (Fed. Cir. 1998) (stating that the law “presumes that all prior art references in the field of the invention are available to this hypothetical skilled artisan”); *Custom Accessories, Inc. v. Jeffrey-Allan Indus.*, 807 F.2d 955, 962 (Fed. Cir. 1986) (“The person of ordinary skill is a hypothetical person who is presumed to be aware of all the pertinent prior art.”).

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

happens in most industries¹⁴⁰—they certainly don't have access to every piece of prior art. 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. And some of it is art the PHOSITA cannot have access to because it is secret at the time of invention.¹⁴¹

The assumption that the PHOSITA is ordinarily skilled, ordinarily creative, but perfectly informed fundamentally alters the nature of the post-*KSR* inquiry, making it unrealistic in an important way—and in a way that systematically disadvantages patentees.¹⁴² This is most evident in the application of prior art in the common case of combination inventions. The fight over the invention in *KSR*, like most obviousness fights in the last two decades, started with two pieces of prior art and asked whether a combination of those two ideas was a patentable invention.¹⁴³ In *KSR*, the prior art elements being combined were well-known, and it makes sense in that circumstance to inquire whether the PHOSITA would have some reason to combine them.¹⁴⁴ But acts or documents that qualify as prior art will not always be reasonably accessible to the PHOSITA. When the PHOSITA wouldn't have access to prior art, even after a diligent search, it makes little sense under a nominally realistic approach to pretend that they did.¹⁴⁵

140. Empirical research suggests that scientists don't in fact gain much of their knowledge from patents, instead turning to other sources. See, e.g., Wesley M. Cohen et al., *R&D Spillovers, Patents and the Incentives to Innovate in Japan and the United States*, 31 RES. POL'Y 1349, 1362-64 (2002). And lawyers often advise their clients not to read patents to avoid being deemed willful infringers, see Mark A. Lemley & Ragesh K. Tangri, *Ending Patent Law's Willfulness Game*, 18 BERKELEY TECH. L.J. 1085, 1100-02 (2003), although recent changes in the law will hopefully reduce this problem.

141. 35 U.S.C. § 102(e)-(g) (2006).

142. See Michael Ebert, *Superperson and the Prior Art*, 67 J. PAT. & TRADEMARK OFF. SOC'Y 657 (1985) (discussing the problems that patentees encounter due to the ordinarily skilled standard).

143. *KSR Int'l Co. v. Teleflex Inc.*, 127 S. Ct. 1727, 1734-37 (2007).

144. *Id.*

145. One doctrine that has in the past been used to limit the art the PHOSITA is assumed to know is the doctrine of "analogous arts." Under that rule, the PHOSITA is assumed to be aware of all the art, no matter how obscure, in her discipline or the closest analogue, but not of art from other disciplines. See *In re Clay*, 966 F.2d 656 (Fed. Cir. 1992); George J. Meyer Mfg. Co. v. San Marino Elec. Corp., 422 F.2d 1285 (9th Cir. 1970). That doctrine fell into desuetude in the heyday of the TSM test, because if prior art had to contain an explicit suggestion that it be combined with another reference it was usually superfluous to ask whether the second reference was from an entirely different field. But in the wake of *KSR* we expect the analogous arts limitation to make a comeback.

Doing so means that inventions the PHOSITA would not, in fact, consider obvious in the real world will be treated as obvious in the courts. The result is that *KSR* overshoots the mark, ending up with an unfairly anti-patent result in an effort to counteract an unfairly pro-patent Federal Circuit rule. What the Court wanted—and what we want—is something in between: an obviousness analysis based in the real world.

A review of the cases that created the perfectly-informed-PHOSITA rule offer little support for it. In *Hazeltine Research v. Brenner*,¹⁴⁶ the Court held that previously-filed but still secret patent applications under § 102(e) could be used for obviousness purposes, but it largely relied on the fact that they were prior art under § 102, and offered no reason to justify extending their reach to obviousness under § 103.¹⁴⁷ The Court did say that refusing to extend secret prior art into § 103 “would create an area where patents are awarded for unpatentable advances in the art,”¹⁴⁸ but this is mere question-begging: the patentee’s advance is “unpatentable” only if one departs from the otherwise-realistic structure of the obviousness inquiry and deems the PHOSITA aware of information that in fact he or she could not possibly have known. It is true that under the realistic approach two people could ultimately obtain patents on things that were obvious variants of each other, but that would occur only where the PHOSITA, acting at the time the second invention was made, could not have known or suspected the existence of the first invention.¹⁴⁹

In theory, secondary considerations could offer a counterweight here, bringing back a dose of realism to an obviousness inquiry

146. 382 U.S. 252, 254-55 (1965); see also *In re Bass*, 474 F.2d 1276, 1286-87 (C.C.P.A. 1973) (Rich, J., plurality opinion) (reaching the same conclusion for prior art under § 102(g)).

147. The language of § 103(a) requires an inquiry into obviousness in view of “the prior art,” but as Judge Baldwin’s concurrence in *Bass* points out, that term is never defined in the statute, and does not necessarily suggest that everything in § 102 must constitute “prior art” under § 103. *Bass*, 474 F.2d at 1295-96 (Baldwin, J., concurring). Indeed, Congress has subsequently limited the term by excluding from the reach of § 103 secret prior art that was developed by the same person, owned by the same company, or even developed by different companies working together in a joint research agreement. 35 U.S.C. § 103(c) (2006).

148. *Hazeltine*, 382 U.S. at 256.

149. Deployed as a standard, this approach would ask what art the PHOSITA would reasonably have been aware of and limit the obviousness inquiry to that art. An alternative, rule-based approach would categorically define some categories of art—at the very least, so-called “secret prior art”—as outside the scope of the PHOSITA’s knowledge.

derailed by a focus on secret or obscure art. But it turns out that the counterfactual assumption of the perfectly informed PHOSITA infects the secondary considerations analysis as well. A close reading of the secondary considerations case law reveals that the Federal Circuit is not, in fact, inquiring into how the real world reacted to the invention. Instead, it is asking a hypothetical question: would the invention have achieved commercial success *had the world been aware of all the prior art, including secret or obscure art?*¹⁵⁰ In *Pharmastem*, for example, the court rejected the testimony of a witness on secondary considerations in the real world because the witness did not take into account prior art that would not have been available to the PHOSITA.¹⁵¹

This is a mistake. Turning secondary considerations into hypothetical questions defeats the purpose of having them, which is to look at what actually happened in the world as evidence bearing on the obviousness of the invention. Commercial success, for example, teaches us not what would have been obvious to a PHOSITA who actually knew about all the prior art, but instead what was in fact obvious to real people in the real world who may well not have known about arcane developments or printed publications circulated to small audiences. An invention may be commercially successful not because it was “known in the prior art” as an abstract and hypothetical matter, but because it was not in fact known to those persons working in the field. If the point of the secondary considerations analysis is to get objective market evidence, it makes

150. See, e.g., *Merck & Co. v. Teva Pharms. USA*, 395 F.3d 1364, 1377 (Fed. Cir. 2005) (“Although commercial success might generally support a conclusion that ... [t]he claimed invention was non-obvious in relation to what came before in the marketplace, the question at bar is narrower. It is whether the claimed invention is non-obvious in relation to the ideas set forth in the ... [prior art] ... articles.”); *Syntex LLC v. Apotex, Inc.*, 407 F.3d 1371, 1383 (Fed. Cir. 2005) (rejecting conclusion that commercial success supported obviousness where the success “may heavily derive from subject matter that does not on the whole contribute to the patentable distinctiveness of the ... claims”); *J.T. Eaton & Co. v. Atlantic Paste & Glue Co.*, 106 F.3d 1563, 1571 (Fed. Cir. 1997) (explaining that commercial success must have been caused by differences between patented invention and the prior art); *Richdel, Inc. v. Sunspool Corp.*, 714 F.2d 1573, 1578, 1580 (Fed. Cir. 1983) (same); *In re Winslow*, 365 F.2d 1017, 1020 (C.C.P.A. 1966); *Burk & Lemley*, *supra* note 19, at 1188 (“The PHOSITA is generally portrayed as having comprehensive knowledge of the references in the particular art.”).

151. *Pharmastem Therapeutics, Inc. v. Viacell, Inc.*, 491 F.3d 1342, 1365 (Fed. Cir. 2007); see also *Asyst Techs., Inc. v. Emtrak Corp.*, 554 F.3d 1310 (Fed. Cir. 2008) (rejecting evidence of commercial success because it was not linked to the novel features of the invention not present in the prior art).

little sense to undermine that evidence by turning it into a hypothetical question in a counterfactual world in which the ordinary scientists know about the obscure art. Indeed, doing so makes even less sense here than in the primary obviousness analysis. We can imagine courts evaluating the hypothetical question of what a PHOSITA would have thought if given additional knowledge. It is hard even to envision what evidence would bear on the question of whether there would have been a long-felt need for the invention if the marketplace had been aware of secret prior art, or whether third parties would have copied the invention in that circumstance.

We think that obviousness in the wake of *KSR* should truly be a realistic test. That means not only that we should inquire into what the PHOSITA knows, could learn, and would create, but also into what limits there are on that PHOSITA's knowledge.¹⁵² This doesn't mean that we can dispense with a nexus between the invention and the commercial success or other objective evidence, but it does mean that that nexus must focus on the information actually available to the PHOSITA, not obscure prior art that could not, as a practical matter, have affected the question of whether the invention caused the patentee's commercial success or whether the PHOSITA would have found the results of the invention unexpected.¹⁵³

CONCLUSION

The immediate effect of *KSR*'s realistic approach was to benefit accused infringers by eliminating rigid rules that ignored knowledge and common sense. But the longer-term effect remains to be seen. If courts keep the remaining rigid rule that ignores knowledge—the counterfactual assumption that PHOSITAs are perfectly informed—the result will be to make it harder still to obtain and enforce patents, even in circumstances when those in the

152. Cf. Alan Devlin, *Revisiting the Presumption of Patent Validity*, 37 SW. U. L. REV. 323, 329 (2008) (arguing for a gold-plated patent proposal in which those patents would be exempt from invalidation by obscure prior art not reasonably accessible to the PHOSITA).

153. One additional implication of our approach is that in rare circumstances an invention might be anticipated by obscure art but not obvious in view of that art. Cf. *Cohesive Techs., Inc. v. Waters Corp.*, 543 F.3d 1351 (Fed. Cir. 2008) (affirming a finding of obviousness but remanding for consideration of anticipation).

real world would not have found the invention obvious. Similarly, if courts take seriously the idea that obviousness is a question of law, the inquiry is likely to be further removed from the healthy—and fact-based—realism the PHOSITA approach can provide. On the other hand, if, as we suggest, courts take the new realistic approach to obviousness seriously, the effect of *KSR* may actually be to benefit rather than hurt patent owners. It will also benefit innovation by ensuring that patents will be valid if, but only if, those of skill in the art would be unlikely as a practical matter to have developed the invention.