A Realist Approach to the Obviousness of Inventions

by

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Obviousness is the ultimate condition of patentability. 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. 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; an invention can’t be obvious merely because it is obvious to try; and so forth.

In its decision last year in KSR v. Teleflex, the Supreme Court rejected the use of “rigid”

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6 See, e.g., In re Lee, 277 F.3d 1338 (Fed. Cir. 2002); In re Dembiczak, 175 F.3d 994 (Fed. Cir. 1999); Lindeman Maschinenfabrik GmbH v. American Hoist & Derrick Co., 730 F.2d 1452, 1462 (Fed. Cir. 1984).
7 See, e.g., In re Fine, 837 F.2d 1071, 1075 (Fed. Cir. 1988).
8 127 S.Ct. 1727 (2007).
rules to decide obviousness cases. 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)\(^9\) would likely think to make the patented invention. In short, the Court sought to
take a realist 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 realist 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 realist 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 realist 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 realist approach to obviousness, we
should make it a consistent approach, so the ultimate obviousness determination actually reflects
what scientists in the field would actually think. So far, despite \(KSR\), it does not. The result of
taking the realist approach seriously may be – to the surprise of many – a law of obviousness that

\(\)\(^9\) The statute refers to “a person having ordinary skill in the art.” 35 U.S.C. § 103(a). On the
PHOSITA abbreviation, see, e.g., 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.
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 realist inquiry into what the PHOSITA would think of an invention. We argue there that obviousness should be reconceived as a truly realist inquiry, one that focuses on what the 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.*, 10 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. 11 In addition, the Court noted the importance of secondary considerations of non-obviousness derived from the circumstances surrounding the putative invention. 12

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

11 *Id.*
12 *Id.*
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.” In *Environmental Designs v. Union Oil*, 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 level of sophistication of the technology; (5) the speed of innovation in the art; and (6) the educational level of workers in the field. The court cautioned that not all factors will be relevant in every case. And, although one of the listed factors is the inventor’s 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.

Although the PHOSITA is described as a “person,” 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

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13 *Id.*


15 *Id.*

16 *Kimberly-Clark Corp. v. Johnson & Johnson*, 745 F.2d 1437, 1454 (Fed. Cir. 1984). *Cf. Ruiz v. A.B. Chance Co.*, 234 F.3d 654, 666-667 (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.*, 2006 U.S. Dist. LEXIS 54837 (S.D. Ind. 2006), the court concluded that the PHOSITA was a PhD 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 PhD level scientist to address the concepts contained in the patents. Of course, taking this reasoning to its logical extreme, if one defines the PHOSITA as someone would already have grasped the contents of a patent, then many inventions would become obvious.
known.\(^{17}\) 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.\(^{18}\)

Of 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 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?¹⁹

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. 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 PHOSITA.²⁰ 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 non-obvious, even though both adjustable
accelerator pedals and electronic sensors on (non-adjustable) accelerator pedals were known in
the prior art.

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


²⁰ Compare In re Lee, 272 F.3d 1338 (Fed. Cir. 2002) with In re Kahn, 441 F.3d 977 (Fed. Cir. 2006).
was actually treated in the real world “may have relevancy” to the obviousness inquiry.\textsuperscript{21} The Court identified “commercial success, long felt but unsolved needs, failure of others, etc.” as relevant secondary indicia of the non-obviousness of an invention.\textsuperscript{22} Other cases have elaborated upon the “etc” as including the licensing of the patent,\textsuperscript{23} initial skepticism by others in the field,\textsuperscript{24} praise,\textsuperscript{25} independent simultaneous invention by others,\textsuperscript{26} and copying.\textsuperscript{27} In order to rely on evidence of these secondary considerations, there must be a nexus between the factor and the patented invention.\textsuperscript{28} Thus, for example, 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.\textsuperscript{29} At the simplest level, this nexus requirement can be satisfied if the scope of the claims and the patented product are co-extensive, in which case the court will generally presume that the commercial success is a function of the patented

\begin{itemize}
  \item \textsuperscript{21} Graham v. John Deere Co., 383 U.S. 1, 17 (1966).
  \item \textsuperscript{22} Id.
  \item \textsuperscript{23} Minnesota Mining & Manufacturing Co. v. Johnson & Johnson Orthopaedics, Inc., 976 F.2d 1559, 1575 (Fed. Cir. 1992).
  \item \textsuperscript{24} Metabolite Labs, Inc. v. Lab. Corp. of Am. Holdings, 370 F.3d 1354, 1368 (Fed. Cir. 2004) (evidence that “skilled artisans were initially skeptical about the invention” relevant to nonobviousness).
  \item \textsuperscript{25} Vulcan Eng’g Co. v. Fata Aluminum, 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].”)
  \item \textsuperscript{26} Ecolochem, Inc. v. S. Cal. Edison Co., 227 F.3d 1361, 1379 (Fed. Cir. 2000) (evidence of near-simultaneous invention tended to prove obviousness).
  \item \textsuperscript{27} Akamai Techs., Inc. v. Cable & Wireless Servs, Inc., 344 F.3d 1186, 1196 (Fed. Cir. 2003) (evidence that accused infringer copied patentee’s invention “relevant to an obviousness determination”).
  \item \textsuperscript{28} See, e.g., Brown & Williamson Tobacco Corp. v. Philip Morris Inc., 229 F.3d 1120, 1130 (Fed. Cir. 2001) (“A nexus between commercial success and the claimed features is required.”).
  \item \textsuperscript{29} Id. For detailed discussion of the problems in inferring nonobviousness from commercial success, see, e.g., Robert P. Merges, Economic Perspectives on Innovation: Patent Standards and Commercial Success, 76 Calif. L. Rev. 803 (1988); Edmund Kitch, Graham v. John Deere
invention.\textsuperscript{30} 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 non-patented features.\textsuperscript{31} This nexus can be established by evidence that the claimed feature is present in a number of commercially successful products\textsuperscript{32} or even survey evidence that the claimed feature leads to a competitive advantage.\textsuperscript{33}

In some cases, the Federal Circuit has suggested that an evaluation of secondary considerations is an essential part of the obviousness inquiry.\textsuperscript{34} 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.\textsuperscript{35} Moreover, perhaps to emphasize the important of these factors, the Federal Circuit has often referred to them as “objective” rather than “secondary” considerations.\textsuperscript{36} But theory and 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.\textsuperscript{37}

\textsuperscript{30} \textit{Brown & Williamson}, 229 F.3d at 1130.


\textsuperscript{32} Hughes Tool Co. v. Dresser Indus., 816 F.2d 1549 (Fed. Cir. 1987).

\textsuperscript{33} Winner Int’l Royalty Corp. v. Wang, 202 F.3d 1340, 1350-51 (Fed. Cir. 2000).

\textsuperscript{34} 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 \textit{must} be made . . . [including] secondary considerations of nonobviousness . . . .”) (emphasis added).

\textsuperscript{35} 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).

\textsuperscript{36} See, e.g., Apple Computer, Inc. v. Articulate Sys., Inc., 234 F.3d 14, 26 (Fed. Cir. 2000).

\textsuperscript{37} See, e.g., Brown & Williamson Tobacco Corp. v. Philip Morris Inc., 229 F.3d 1120, 1131 (Fed. Cir. 2000) (district court’s failure to consider secondary indicia of non-obviousness harmless error because “these indicators of nonobviousness cannot over the strong evidence of obviousness”); Riverwood Int’l Corp. v. Mead Corp., 212 F.3d 1365 (Fed. Cir. 2000) (“the objective factors did not carry sufficient weight to override a conclusion of obviousness based on
Federal Circuit jurisprudence likewise provides no clear hierarchy between secondary considerations, considered as a whole, and the other three *Graham* factors. And, in at least one case, the Federal Circuit has implied that some of these secondary considerations are intrinsically more important than others: in *Ecolochem, Inc. v. Southern California Edison Co.*, the court explicitly gave the three named considerations more weight than those which collectively fall under the “etc.” label. In other cases, though, the courts have drawn no such distinction and treated each of them in the same fashion.

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’s 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, if someone actually commercialized the invention, and made a lot of money doing so, that suggests that it wasn’t

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39 227 F.3d 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 v. Monoclonal Antibodies*, 802 F.2d 1367 (Fed. Cir. 1986).

40 *See, e.g.*, *Eli Lilly & Co. v. Goldline Pharms., Inc.*, 471 F.3d 1369, 1380 (Fed. Cir. 2006) (drawing no distinction between named and “etc.” factors).

obvious, because 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.\(^42\) 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.\(^43\) And evidence of third-party licensing may 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.”\(^44\)

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.”\(^45\) But, at the same time that the Federal Circuits laud these “real world considerations,” it has declined to rely on evidence of secondary considerations where it is at odds with the hypothetical nature of the obviousness construct.\(^46\)

\(^{42}\) Eli Lilly & Co. v. Zenith Goldline Pharms., Inc., 471 F.3d 1369, 1380 (Fed. Cir. 2007).

\(^{43}\) Advanced Display Sys., Inc. v. Kent State Univ., 212 F.3d 1272, 1285 (Fed. Cir. 2000). Merges argues that commercial success requires a chain of inferences, long-felt need a shorter chain of the same inferences, and failure of others no inferences at all. Thus, as he points out, failure of others is better evidence of nonobviousness than the other two. Merges, supra note __, at __.


\(^{46}\) 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 “surprised” by the inventor’s work because the expert was not aware of all the prior art);
C. KSR and the Standard of Review

In KSR, the Supreme Court ostensibly made the obviousness inquiry more “flexible” and pragmatic. In rejecting the Federal Circuit’s rigid application of the function/way/result test, the Supreme Court ostensibly sought to create a test that would be more attuned to the 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.47

While the ultimate question of obviousness is an issue of law, the courts have recognized that obviousness must be determined with reference to the 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. However, at the same time that the Supreme Court purported to make the inquiry more flexible (and presumably fact-driven), it also reaffirmed that obviousness is an issue of law, and thus particularly appropriate for resolution at summary judgment.48 Nonetheless, in light of the presumption of validity, any factual questions underlying that determination are to be resolved by clear and convincing evidence.49

II. Procedural Effects of KSR

A. The Increasing Role of the PHOSITA

47 What the Court actually said was quite a bit more limited. 127 S. Ct. 1727 (“[F]inally, we conclude that KSR has shown no secondary factors to dislodge the determination that [the claim at issue] is obvious.”). See also Leapfrog Enter., Inc. v. Fisher-Price, Inc., 485 F.3d 1157 (Fed. Cir. 2007) (discounting compelling evidence of commercial success, praise and long-felt need in finding invention obvious).

48 KSR, 127 S. Ct. at __.

49 Pharmastem Therapeutics, Inc. v. Viacell, Inc., 491 F.3d 1342, 1360 (Fed. Cir. 2007).
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 by a case-by-case focus on what actual scientists in the field would know or could develop with ordinary inventive skill. 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 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.

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.

We expect two effects from this realist, 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 they think. While Graham v. John Deere spoke of a requirement to determine “the level of skill

50 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 granting doubtful patents. For empirical scholarship calling that latter sense into question, see, e.g., 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).

51 KSR, 127 S.Ct. at 1739.

52 Id. at 1741.

in the art,”

Rather, the courts have looked for a suggestion in the art to make the claimed invention, and paid less attention to whether those in the field would have figured out the claimed invention on their own. This will change in the wake of KSR. We expect to see greater reliance on expert testimony about what those of skill in the art would have known and been capable of developing.

Second, the role of the PHOSITA will expand beyond just combining existing references to include developing their own ideas. The PHOSITA has been treated in the Federal Circuit as a bit of a “dullard”, aware of the art but devoid of creativity or inventive skills. By contrast,

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

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. But that standard will satisfy the Court’s opinion only if it is closely tied to the actual knowledge and capabilities of the PHOSITA. For this reason, we agree with Joe Miller that the change in KSR is more than just one of “verbal formulae.” Joseph Scott Miller, Remaking Obviousness, 16 Tex. Intell. Prop. L.J. __, [draft at 3], available at http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1002454 (forthcoming 2008).

See, e.g., Standard Oil Co. v. American 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 . . .”); Rebecca S. Eisenberg, Obvious to Whom? Evaluating Inventions from the Perspective of PHOSITA, 19 Berkeley Tech. L.J. 885, 891 (2004) (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.”); Dan L. Burk & Mark A. Lemley, Is Patent Law
the Supreme Court spoke in *KSR* of the PHOSITA not simply as someone who combines preexisting work but 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 technique is obvious unless its actual application is beyond his or her skill.\(^{60}\)

. . . the 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.\(^{61}\)

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.*\(^{62}\)

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.\(^{63}\)

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 technology made it either desirable or feasible for the first time. 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. Under *KSR*, these

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\(^{60}\) *KSR*, 127 S.Ct. at 1740.

\(^{61}\) *Id.* at 1741.

\(^{62}\) *Id.* at 1742.

\(^{63}\) Scholars writing before *KSR* had referred to the non-creative PHOSITA as “tantamount to having read the nonobviousness requirement out of the statute,” Quillen, *supra* note __, 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, 76 (2004), suggesting that the change in focus is likely to be significant and to favor accused infringers.
exogenous factors too are part of the realist approach a PHOSITA would take to an invention. If everyone else is moving their business model online, doing so should not itself be nonobvious, even if there is no explicit suggestion to move this particular idea online too.\textsuperscript{64} 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 from the walls,\textsuperscript{65} but in collaborative teams with an open exchange of ideas.\textsuperscript{66}

As a general matter, we think the increased focused on a real-world, creative PHOSITA is a salutary development. As Becky Eisenberg has explained, “[a]ctive 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.”\textsuperscript{67} 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.\textsuperscript{68} Our optimism is subject to some important caveats, however, which we explore in Part III.

\section*{B. Patentee Reliance on Secondary Considerations}

Patentees won’t sit still as the standard shifts to make it harder to show nonobviousness,


\textsuperscript{65} Cf. In re Winslow, 365 F.2d 1017 (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).

\textsuperscript{66} Meurer \& Strandburg, \textit{supra} note __ (making this argument).

\textsuperscript{67} Eisenberg, \textit{supra} note __, at 897.

\textsuperscript{68} Cf. Samson Vermont, \textit{Independent Invention as a Defense to Patent Infringement}, 105 \textit{Mich. L. Rev.} 475 (2006) (applying Bayesian analysis to design rules to grant patents only when the invention would not have been made without the patent).
of course. They will look for whatever tools they have to 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, 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-\textit{KSR} world for several reasons. First, almost all the secondary considerations the courts have considered support rather than undermine patentability. Courts have held that the commercial success of the invention, a long-felt need for the invention, the failure of others to make the invention, prior art teaching away from the inventive approach, copying of the invention by others, and public recognition of the patentee as the inventor are all evidence that can tend to prove nonobviousness. \footnote{See, e.g., \textit{Arkie Lures, Inc. v. Gene Larew Tackle, Inc.}, 119 F.3d 953 (Fed. Cir. 1997) (discussing secondary considerations); \textit{Hybritech, Inc. v. Monoclonal Antibodies, Inc.}, 802 F.2d 1367, fn. 4 (Fed. Cir. 1986); Robert P. Merges et al., \textit{Intellectual Property in the New Technological Age} 237-38 (4\textsuperscript{th} ed. 2006); Rochelle Dreyfuss, \textit{The Federal Circuit: A Case Study in Specialized Courts}, 64 \textit{N.Y.U. L. Rev.} 1 (1989) (same).} Invoking these “objective” factors can only help patentees, since the Federal Circuit has held that the absence of these secondary considerations is not proof of obviousness, but instead is “neutral.” \footnote{See, e.g., \textit{Custom Accessories, Inc. v. Jeffrey-Allan Indus.}, 807 F.2d 955 (Fed. Cir. 1986); \textit{Medtronic Inc. v. Intermedics, Inc.}, 799 F.2d 734 (Fed. Cir. 1986).} Only one secondary consideration – simultaneous invention by others – points in the opposite direction, and the Federal Circuit has been somewhat dismissive of that factor. \footnote{See, \textit{e.g.}, \textit{Hybritech, Inc. v. Monoclonal Antibodies, Inc.}, 802 F.2d 1367, fn. 4 (Fed. Cir. 1986) (“simultaneous development may or may not be indicative of obviousness”; finding that it was irrelevant); \textit{Lindemann Maschinenfabrik GMBH v. American Hoist & Derrick Co.}, 730 F.2d 1452 (Fed. Cir. 1984) (same); \textit{Stewart-Warner Corp. v. City of Pontiac}, 767 F.2d 1563, 1570 (Fed. Cir. 1985) (suggesting that near-simultaneous invention shouldn’t be considered unless it occurred before the patentee’s invention). For an argument that simultaneous invention should}
considerations, where present, is close to a no-lose proposition for patentees.

The second advantage for patentees of reliance on secondary considerations is that they offer a compelling story for the finder of fact. As the jury focuses on a more realist 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, it is likely that the person of ordinary skill would not have taken the approach the patentee did.

Finally, secondary consideration can in some circumstances serve as an antidote to the serious problem of hindsight bias. Indeed, the Federal Circuit has referred to secondary considerations as being “used by the courts in an effort to compensate for hindsight.” 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.\textsuperscript{74}

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.\textsuperscript{75} One can also criticize evidence of copying and acquiescence as circular, since patent enforcement can cause the marketplace to fall into line, taking a license even to patents they believe should never have been issued. By contrast, as Merges points out, failure of others is much more direct evidence that coming up with the invention was not as easy as the defendant now claims. And evidence that scholars or businesses were “teaching away” from the invention is also strongly suggestive that PHOSITAs making or reading those statements would be disinclined to follow the path the inventor did.\textsuperscript{76} Provided courts take these inference concerns seriously, secondary considerations can improve the obviousness inquiry by adding relevant evidence that is more

\textsuperscript{74} See, e.g., Pro-Mold & Tool Co., Inc. v. Great Lakes Plastics, Inc., 75 F.3d 1568 (Fed. Cir. 1996); 3M Co. v. Johnson & Johnson Orthopaedics, Inc., 976 F.2d 1559 (Fed. Cir. 1992).


\textsuperscript{76} Simultaneous invention is also a potentially valuable piece of economic evidence, since 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, since even if the patentee would not have developed the invention without the benefit of a patent, it appears others would have. Vermont, \textit{supra} note __, at 497-500. 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, \textit{Proof of Copying}, \textit{supra} note __, at 1528-29 (making this point).
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.\textsuperscript{77}

\section*{C. Applying the New Rules: Procedural Problems}

The previous two sections have suggested that the nature of the obviousness inquiry will change after \textit{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, however. Neither the PTO nor the courts are currently set up to effectively collect and analyze this information.

\subsection*{1. The PTO}

The PTO is inundated with patent applications. They receive nearly 450,000 applications per year, and have roughly a million unexamined applications pending in the office. They can process as many applications as quickly as they do – obviously not quickly enough – because they devote very little time to the evaluation of each application. Patent examiners spend on average only 16-18 hours per application, spread over three to five years.\textsuperscript{78} And those 18 hours are spread among a variety of tasks, only some of which involve the evaluation of the invention in light of the prior art.\textsuperscript{79}

\textsuperscript{77} 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. Allison & Lemley, \textit{supra} note __, at 236 tbl. 11. And of course the invention was made even earlier than the filing date.


\textsuperscript{79} “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
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.\textsuperscript{80} Their analysis of obviousness has traditionally been correspondingly limited, comparing the application to the elements of prior patents and whatever non-patent prior art has been submitted.

\textit{KSR} will put enormous pressure on this assembly-line approach. If the most important questions in an obviousness inquiry are realist ones – what does the PHOSITA know, what can they 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. But it is far from clear how examiners can acquire this evidence, or that even if they do they will have the time to evaluate it.\textsuperscript{81} Certainly examiners are 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.

Under current PTO practice, there are two basic ways examiners could try to draw on the 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, this process will normally happen again, and may happen several more times. The Examiner may also conduct an “interview” with the applicant in which they discuss allowability 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 \textit{total} time the Examiner spends on all these tasks over the 2-3 year prosecution of the patent is 18 hours on average.”


\textsuperscript{81} To be sure, it is possible that the higher standard of patentability under \textit{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’re 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
knowledge of the PHOSITA. First, they could simply rely uncritically on factual affidavits filed by the applicant. Applicants file affidavits already to provide factual support for a number of issues, including enablement. 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 in the PTO, examiners may have no choice but to accept these affidavits uncritically. This is unfortunate. Since these affidavits will not be subject to cross-examination or to rebuttal by an expert proffered by an opponent, 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. Examiners are, after all, generally trained in the technical field in which they review applications. Perhaps they are themselves PHOSITAs, or at least experts

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82 A third way is to try to bring neutral outside experts into the PTO process. See Eisenberg, supra note __, 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 (2006).

We are doubtful that the PTO can improve ultimate decision-making 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.

83 See In re Sullivan, 498 F.3d 1345 (Fed. Cir. 2007) (reversing a Board finding of obviousness because the applicant submitted affidavits on teaching away and unexpected results, and the Board was required to give them weight).

84 Eisenberg makes this suggestion. Eisenberg, supra note __, at 898-99.
who can be expected to know what the level of skill in the art was at the time of the invention.\textsuperscript{85} Accordingly, we could simply trust the knowledge or common sense of the examiner. The Patent and Trademark Office 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 fact-finder when resolving the Graham inquiries.”\textsuperscript{86} Thus, 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.”\textsuperscript{87} This sounds awfully close to a factual conclusion on the ultimate question of obviousness. 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 she knows the invention is obvious.

This is a serious problem, one that is likely to come up often in the realist world of obviousness, 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.\textsuperscript{88} If the examiner does so, the applicant then has the burden of rebutting those reasons, either by persuading the examiner that he is wrong through argument or, more likely, by submitting an affidavit

\textsuperscript{85} See In re Berg, 320 F.3d 1310 (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 error or contrary factual evidence, those findings can establish a prima facie case of obviousness.”).

\textsuperscript{86} 72 Fed. Reg. 195, 57526-35.

\textsuperscript{87} Id.

\textsuperscript{88} 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
explaining the knowledge or ability of those of skill in the art.\textsuperscript{89} That affidavit should not be
determinative, however. The examiner should be entitled to reject the claims in an affidavit if
(1) 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.\textsuperscript{90} This
approach isn’t 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.

Three implications of this kludge are worth considering. First, the increased importance
that will be placed on affidavits in the PTO after \textit{KSR}, coupled with the inability of the examiner
to cross-examine the affiant or seek independent confirmation, raises the risk of misleading
affidavits by applicants. 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 that the examiner must disprove
obviousness,\textsuperscript{91} rather than requiring the applicant to bear the initial burden of justifying its


\textsuperscript{89} \textit{Cf.} Joshua D. Sarnoff, \textit{Bilcare, KSR, Presumptions of Validity, Preliminary Relief, and
Obviousness in Patent Law} 36-39 (working paper 2007) (suggesting that \textit{KSR} mandates a set of
burden-shifting presumptions). We are not convinced that \textit{KSR} mandates a burden-shifting
approach, but as a practical matter it may be the only way for the PTO to implement a realist
approach to obviousness.

\textsuperscript{90} While 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 Mark A. Lemley & Bhaven Sampat, \textit{Is
the Patent Office a Rubber Stamp?} (working paper 2008) (documenting extremely low grant rate
where two examiners must agree before granting a patent). \textit{But cf.} John R. Allison & Starling
Hunter, \textit{On the Feasibility of Improving Patent Quality One Technology At a Time: The Case of
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.

\textsuperscript{91} \textit{See, e.g., In re Spada,} 911 F.2d 705 (Fed. Cir. 1990); \textit{In re King,} 801 F.2d 1324 (Fed. Cir.
1986) (discussing the PTO’s burden to come forward with a prima facie case of invalidity). The
entitlement to a patent. If the examiner can act as a 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 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 coming to the right outcome.\footnote{\text{92}}

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. However, notwithstanding the intensely factual nature of the obviousness inquiry, the Court is clear that it is a question of law, and that even disputes in expert testimony won’t prevent summary judgment.\footnote{\text{93}}

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 Federal Circuit has referred to this as “but a procedural mechanism allocating the burdens of going forward and persuasion,” not a substantive standard for breaking ties.\textit{In re Piasecki}, 745 F.2d 1468 (Fed. Cir. 1984); Philippe Signore, \textit{There is Something Fishy About a Presumption of Obviousness}, 84 \textit{J. Pat. & Trademark Ofc. Soc’y} 148 153-56 (2002) (discussing the history of and justification for this presumption).\footnote{\text{92}} For more general arguments along these lines, see Doug Lichtman & Mark A. Lemley, \textit{Rethinking Patent Law’s Presumption of Validity}, 60 \textit{Stan. L. Rev.} 45 (2007); Mark A. Lemley, \textit{Rational Ignorance at the Patent Office}, 95 \textit{Nw. U. L. Rev.} 1495 (2001).\footnote{\text{93}} This has actually been the Federal Circuit rule since Aktiebolaget Karlstads Mekaniska Werkstad v. ITC, 705 F.2d 1565, 1575 (Fed. Cir. 1983).
Northern District of California, which has promulgated model patent jury instructions.\textsuperscript{94} The Northern District offers one set of instructions in which the district court gives only the underlying factual determinations to the jury, and a second set of instructions in which the district court also puts the ultimate question of obviousness to the jury – although the instructions caution that such a verdict is merely advisory, and that the ultimate determination of obviousness remains 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.\textsuperscript{95} 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, since an evidentiary burden of proof has no applicability to a question of law.

We think this is the wrong approach. An obviousness inquiry that focuses on the real world is a question of fact.\textsuperscript{96} This is not to say that summary judgment is never appropriate: sometimes there really isn’t a good faith dispute as to whether an invention is obvious. But a realist approach would limit the number of cases in which summary judgment is appropriate, and give the jury substantially more leeway in evaluating the obviousness of an invention. After all, the factual issues laid out in \textit{Graham} are frequently 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

\textsuperscript{94} Available at www.cand.uscourts.gov.


\textsuperscript{96} This argument has been raised before. \textit{See, e.g.,} Note, \textit{Nonobviousness in Patent Law: A Question of Law or Fact?}, 18 \textit{Wm. & Mary L. Rev.} 612 (1977) (arguing that obviousness should be treated as a pure question of fact).
person of skill would be motivated to come up with the purported invention. 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.
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. After all, the Patent and
Trademark Office is making an ultimate conclusion of obviousness; if the patent is presumed
valid, then that determination is presumed to be correct. Why would we not give the same
deffence to the district court’s evaluation of the evidence and what would in fact have been
obvious to a person skilled in the art?

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 towards a realist
approach. Significantly, the inquiry into real world considerations is biased by the decidedly
counterfactual assumption that the real-world PHOSITA has possession of all the section 102
prior art, no matter how obscure or secret. As the court in Winslow put it, the obviousness

97 See, e.g., In re Rouffet, 149 F.3d 1350, 1357 (Fed. Cir. 1998) (the law “presumes that all
prior art references in the field of invention are available to this hypothetical skilled artisan”);
Custom Accessories, Inc. v. Jeffrey-Allan Indus., 807 F.2d 955, 962 (Fed. Cir. 1986) (“The
analysis still imagines the PHOSITA sitting in his lab with the prior art references hanging on the walls all around him. 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’re skeptical that this happens in most industries – 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.

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. 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. 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. But acts or documents that qualify as prior art won’t always be reasonably accessible to the

person of ordinary skill is a hypothetical person who is presumed to be aware of all the pertinent prior art.”

98 In re Winslow, 365 F.2d 1017 (C.C.P.A. 1966).
99 Empirical research suggests that scientists don’t in fact gain much of their knowledge from patents, turning instead 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), though recent changes in the law will hopefully reduce this problem.
100 35 U.S.C. § 102(e),(f).
PHOSITA. When the PHOSITA would not have access to prior art, even after a diligent search, it makes little sense under a nominally realist approach to pretend that they did. 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 – was 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, the Court held that previously-filed but still-secret patent applications under section 102(e) could be used for obviousness purposes, but it largely relied on the fact that they were prior art under section 102, and offered no reason to justify extending their reach to obviousness under section 103. The court did say that refusing to extend secret prior art into section 103 “would create an area where patents are awarded for unpatentable advances in the art,” but this is mere question-begging: the patentee’s advance is “unpatentable” only if one departs from the otherwise-realist structure of the obviousness inquiry and deems the PHOSITA aware of information that in fact she could not possibly have known. It is true that under the realist approach two people could ultimately obtain patents on things that

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102 Hazeltine, 382 U.S. at 252 (1965). See also In re Bass, 474 F.2d 1276 (C.C.P.A. 1973) (Rich, J., plurality opinion) (reaching the same conclusion for prior art under section 102(g)).

103 The language of section 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 section 102 must constitute “prior art” under section 103. Bass, 474 F.2d at __ (Baldwin, J., concurring). And indeed Congress has subsequently limited the term by excluding from the reach of section 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).

104 Hazeltine, 382 U.S. at __.
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.

In theory, secondary considerations could offer a counterweight here, bringing back a dose of realism to an obviousness inquiry 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, they are 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?\textsuperscript{105} 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 wouldn’t have been available to the PHOSITA.\textsuperscript{106}

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

\textsuperscript{105} See, e.g., Merck & Co. v. Teva Pharms. USA, 395 F.3d 1364 (Fed. Cir. 2005) (“Although commercial success might generally support a conclusion that the 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 (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 (Fed. Cir. 1997) (commercial success must have been caused by differences between patented invention and the prior art); Richdel, Inc. v. Sunspool Corp., 714 F.2d 1573 (Fed. Cir. 1983) (same); Winslow, 365 F.2d at 1017; Burk & Lemley, supra note __, at 1188 (“The PHOSITA is generally portrayed as having comprehensive knowledge of the references in the particular art.”).

\textsuperscript{106} Pharmastem Therapeutics, Inc. v. Viacell, Inc., 491 F.3d 1342, 1365 (Fed. Cir. 2007).
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 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. This doesn’t mean that there shouldn’t be a nexus between the invention and the commercial success or other objective

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107 We make this proposal only with respect to the obviousness inquiry. It is an open question in various sections of 102 whether that section is designed to require absolute novelty – proof that no one else has ever done this before – or relative novelty – the invention was not in prior art reasonably accessible to the public. For an example, compare the majority and the dissent in Baxter Int’l v. Cobe Labs., Inc., 88 F.3d 1054 (Fed. Cir. 1996) (debating the prior art status of a third party use that clearly occurred but that was extremely unlikely to be available to the public); Rosaire v. National Lead Co., 218 F.2d 72 (5th Cir. 1955). How this question should be resolved we leave for another day. It is worth noting that the patent reform bills pending in Congress at this writing would replace the existing definitions of prior art with a requirement that prior art be “reasonably accessible to the public.” *See, e.g.,* S. 1908, 110th Cong., 1st Sess. (2007).
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 whether the invention caused the patentee’s commercial success or whether the PHOSITA would have found the results of the invention unexpected.

IV. Conclusion

The immediate effect of *KSR*’s realist 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 real world would not have found the invention obvious. Similarly, if the court takes 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 realist 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.