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Codebook for Empirical Study of Federal Circuit Obviousness Jurisprudence

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Purpose of this document: This document provides the coding framework for the data reported and analyzed in *The Federal Circuit's New Obviousness Jurisprudence: An Empirical Study*. This codebook was initially developed during the data collection stage of this project in order to maximize replicability and reliability in the collected data. It is being provided so that future researchers will have the information necessary to replicate the study and so that readers of the study who would like to know more about how the data was collected can easily access that information.[1]

Data Source and Collection: The data set used for this study consisted of all opinions of the Court of Appeals for the Federal Circuit in which a determination as to the obviousness of a patent was made during the period ten years prior to the Supreme Court's grant of certiorari in *KSR v. Teleflex* until five years after the Supreme Court's opinion in *KSR v. Teleflex*. The opinions used in this study were obtained by searching Westlaw for opinions containing an obviousness determination.[2] For the time period

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[1] Note that not all fields that were coded are analyzed in *The Federal Circuit's New Obviousness Jurisprudence: An Empirical Study*. In particular, the analysis of the Federal Circuit's citation of Supreme Court decisions was edited out of the final version of the article. To avoid undue complexity, those fields have been removed from this version of the codebook. In addition, some clarifications to the coding instructions were added to provide further details about decisions made during the coding stage.

[2] The exact procedure used to generate these results was as follows:
1.   Open WestlawNext
2.   Select "Advanced Search";
3.   Under "Jurisdiction" unselect all jurisdictions except for "Federal Circuit";
4.   In the "All of these terms" field type: patent & atleast2(obvious!);
        Note: Include the ampersands;
        Note: The "!" is a root expander and is used to search for all of the permutations of the word "obvious";
        Note: the "atleast#([term]" search parameter limits results to those that contain at least two instances of the stated term. In this case, "atleast2(obvious!)" meant that results were limited to those that contained at least two instances of some permutation of "obvious."
5.   Select "Advanced Search" to generate results;
6.   On the left column, select "Cases";
7.   Again on the left, under "Jurisdiction," expand "Federal" category and select "Cts. Of Appeals Federal Cir."
8.   Again on the left, expand "Date" category and select "Date Range." Enter "6/28/1996" into the "From:" box and "4/30/2012" into the "Until:" box.
This produced in 947 results. The resulting opinions were then exported to an Excel spreadsheet in five-year increments.

studied, these results represent the best available data.[3] In order to minimize under-inclusion errors, a broad electronic search was conducted so as to capture all possible relevant opinions.[4] The resulting opinions were manually reviewed to ascertain whether they contained an determination as to obviousness.[5] This approach - of first conducting a broad electronic search then reviewing the results by hand in order to determine relevance - is commonly employed in this type of empirical study.[6]

The manual review process was as follows: the complete set of 947 Federal Circuit opinions was first reviewed by a research assistant who eliminated cases that did not involve some form of obviousness determination (these cases were coded as "0" in "Obviousness_Initial"; they were not deleted from the dataset entirely). The research assistant had instructions to err broadly on the side of inclusion. I then reviewed the opinions coded as "1" to determine whether they involved an obviousness determination, and coded my final determination in "Obviousness_Final."[7] An obviousness determination was defined as whether or not the Federal Circuit addressed the obviousness of a utility patents in the context of a validity determination. As a result, obviousness determinations involving design patents were excluded, as were obviousness determinations for the purpose of determining whether there was an

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[3] Although some minor variations have been observed between the contents of the WESTLAW "CTAF" database and the LEXIS "Federal Circuit, US Court of Appeals Cases" database, those variations are likely minimal. *See* http://www.patentlyo.com/patent/2011/01/search-differences-between-westlaw-and-lexis.html. In any event, the same search conducted on the LEXIS Federal Circuit - US Court of Appeals Cases database produced in 957 results. Due to substantial differences in the way the way the two databases present case names and the volume of opinions, an inter-database comparison was not feasible.

[4] As detailed in footnote 2, the search encompassed all Federal Circuit cases between June 26, 1996 and April 30, 2012 that contained the term "patent" and at least two instances of a permutation of "obvious." A broader search that included cases with only one permutation of "obvious" could have been used instead; however, given that any actual determination of obviousness is likely to use a permutation of "obvious" more than once, it was deemed acceptable to limit the search in this manner in light of the human time necessary to review each opinion.

[5] Many opinions use a permutation of "obvious" but do not involve determinations as to obviousness. Oftentimes the term appears in a background discussion of non-appealed issues, for example. Other times the term was used in a non-dispositive order. In addition, specific types of determinations were deemed to be outside the scope of this study. These included: obviousness-type double patenting, obviousness of design patents, and en banc denials. Such non-relevant opinions were coded as "0" in the Obviousness_Final field, and no further coding was performed on them. This procedure is consistent with prior empirical studies of obviousness. *See* Lee Petherbridge & R. Polk Wagner, *The Federal Circuit and Patentability: An Empirical Assessment of the Law of Obviousness*, 85 Texas Law Review 2051, 272 (2007); Christopher A. Cotropia, *Nonobviousness and the Federal Circuit: An Empirical Analysis of Recent Case Law*, 82 Notre Dame Law Review 911, 925 (2007); Ali Mojibi, *An Empirical Study of the Effect of KSR v. Teleflex on the Federal Circuit's Patent Validity Jurisprudence*, 20 Alb. L.J. Sci. & Tech. 559, 575 (2010).

[6] *See, e.g.*, Cotropia, 924; Petherbridge & Wagner, 2072; Mojibi, 575.

[7] I also reviewed a sample of cases coded "0" for purposes of quality control. No problems were identified.

interference-in-fact in the context of an interference proceeding. Obviousness-type double-patenting analyses were also excluded. While there is some justification for including at least the set of obviousness determinations made for the purpose of determining whether there was an interference-in-fact in the dataset because the court was dealing with issues of obviousness of a utility patent, it was decided to exclude these analyses *a priori* so as to focus on "traditional" obviousness determinations.

The procedure for opinions that were subsequently withdrawn or vacated by the Federal Circuit or Supreme Court was as follows: if the opinion was subsequently withdrawn in full, or the portion relating to obviousness was withdrawn, by the Federal Circuit itself, the original opinion was eliminated from the dataset. If only a portion of the opinion involving an issue other than obviousness was withdrawn, or the opinion was withdrawn in full and the portion involving obviousness was reinstated, the opinion was included in the dataset. Supreme Court actions were treated differently. Regardless of the particulars, if the opinion was reversed or vacated by the Supreme Court, the original Federal Circuit opinion was included in the dataset.

Rule 36 Affirmances: This study examines both what the Federal Circuit is saying about obviousness as well as outcomes of its obviousness determinations. However, a particular issue when examining outcomes at Federal Circuit is the court's use of Federal Circuit Rule 36, under which the court may summarily affirm the lower tribunal. Failure to account for these summary affirmances may result in underreporting the rate at which the Federal Circuit affirms the lower tribunal on a particular issue and could affect substantive results as well. In order to address this issue, a separate search was

conducted to identify summary affirmances that involved the issue of obviousness.[8] As with the opinions discussed above, the results of an electronic search were reviewed by hand in order to ascertain whether obviousness was at issue. Because, by their very nature, no court opinions are available for Rule 36 affirmances, the parties' opening briefs were examined to determine whether obviousness was raised.

Date Range: The date ranges for the study are between June 26, 1996 - April 30, 2012. This represents ten years before the Supreme Court's grant of certiorari in *KSR v. Teleflex* and five years after its opinion issued.[9]

Coded Parameters: The data coded for each case falls into two general categories: case parameters, which were coded on a per-case basis, and analysis-specific parameters, which were coded on a per-analysis basis.

Case variables were those that related to the case generally (such as case title and citation), and those that related to the Federal Circuit's use of Supreme Court precedent. Because one question involved who the Federal Circuit was citing in its opinions, it stood to reason that the opinions should be treated as individual units of analysis.

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[8] The procedure detailed in footnote 2 was followed using the search phrase "Fed. Cir. R. 36" & "district court." This search produced 700 results that were manually examined as discussed above. An identical search conducted in the LEXIS Federal Circuit - US Court of Appeals Cases database produced in 781 results; however, because the parties' briefs were not provided for many of these results, and thus no assessment could be made as to whether the appeal involved an obviousness determination, it was deemed preferable to use the dataset obtained from WESTLAW.

Of course, in a perfect universe, the optimal approach would be to collect and review these orders and briefs from the Federal Circuit itself, as was done by Kimberly Moore to study patent claim construction reversal rates. *See* Kimberly A. Moore, *Markman Eight Years Later: Is Claim Construction More Predictable?*, 9 Lewis & Clark L. Rev. 231(2005). One of the limitations of using an electronic database such as WESTLAW or LEXIS is that the further back one goes, the less complete the data tends to be. For example, if the search "Fed. Cir. R. 36" & "district court" is run on WESTLAW for the time period April 26, 1996-January 1, 2004 (the time period encompassed by Moore's study, see p. 239), it generates 225 results (excluding three references in precedential opinions), as compared with Moore's reported 276 Rule 36 affirmances during that time period. In contrast, for the time period 10/1/2010 to 9/30/2011, the number of results of the search on WESTLAW (75) match exactly with the output from the Federal Circuit's own website. *See* http://www.patentlyo.com/patent/2011/10/cafc-patent-opinions-down-rule-36-affirmances-up.html. Note that the Federal Circuit's website historically has exhibited a similar characteristic: the further back one goes, the less there is available.

This is not a perfect world, however, and given resource constraints as well as the reasonable completeness of the WESTLAW data set, it was determined that the WESTLAW dataset would be used. Furthermore, it should be kept in mind that obviousness determinations represent only a (small) subset of the total set of Rule 36 affirmances, *see* Cotropia, 925 fn. 72 (reporting 24 Rule 36 affirmances involving nonobviousness between January 1, 2002 through December 31, 2005), and thus probably have a limited effect on the data even during the older time periods.

[9] KSR Cert granted: June 26, 2006; KSR opinion: April 30, 2007

A different analytical unit was needed for recording outcomes and examining the court's legal reasoning. Although sometimes an opinion will contain just a single obviousness determination, often the court will make multiple obviousness determinations within a single opinion. To address this, outcome-based coding was performed on an analysis-specific level. The defining characteristic of an analysis-specific record entry in the dataset is that it comprises a distinct analysis of an obviousness claim in an opinion for the court.[10] In many instances, a case is equivalent to a record entry. But in some cases involving multiple patents, or multiple sets of claims within a patent, a case gives rise to multiple record entries because different patents or sets of claims are subject to different analyses. To be clear, if an opinion involves a claim that four patents were found to be obvious and the court's analysis addresses all of the patents in a single textual analysis, then a single record entry was made in the dataset. By contrast, if the court used one analysis to conclude that one of the patents was obvious and then used a separate analysis to find that the other three were not, then two record entries are made in the dataset.[11]

By their very nature, summary affirmances under Fed. Cir. R. 36 do not provide multiple textual analyses or rationales for each patent. Thus, to the extent any analyses of the data include summary affirmances, they may tend to undercount the number of analyses. Overall, however, because of the relatively conservative approach as to what constituted an analytical unit applied to the substantive opinions, it is unlikely that this limitation affected the results in any meaningful way.

General Case Variables:

Serial		
Description: Unique record identifier		
Format: A#####	Example: A00001	
Notes: automatically generated for each record entry following completion of coding.		

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[10] This approach is typical of those used in prior empirical studies on outcomes in order to address the multiple-determination issue. *See* Lee Petherbridge, et al., *The Federal Circuit and Inequitable Conduct: An Empirical Assessment*, 84 S. Cal. L. Rev. 1293(2011).

[11] It should be noted that a relatively conservative approach to what constitutes a distinct unit of analysis was employed in that multiple *arguments* as to obviousness were not treated as separate units of analysis, nor was insubstantial parsing of separate claims. For example, if a patent challenger presented three separate combinations of prior art references and argued that all three rendered a single patent obvious, and the Federal Circuit analyzed all three combinations separately, it was nevertheless recorded as a single analytical unit. Similarly, if the Federal Circuit discussed the obviousness of each claim as a patent, but in such a way that was insubstantially distinct, they were treated as a single analytical unit.

Case_title
Description: Full case title, as exported from Westlaw
Notes: Machine-coded.

Case_serial		
Description: Numerical indicator for each case.		
Format: C#####	Example: C00001	
Notes: automatically generated for each record entry following completion of coding.		

Docket		
Description: Case docket numbers		
Format: [xx-xxxx]	Example: 09-1518	
Notes: Exported directly from Westlaw. Machine-coded. Opinions may have multiple docket numbers.		

Full_Cite
Description: Full Reporter citation.
Notes: Format may vary. Exported directly from Westlaw. Machine-coded.

WESTLAW_Cite
Description: Alternate Westlaw citation
Notes: Exported directly from Westlaw. Machine-coded.

Date		
Description: Date opinion issued.		
Format: [year]-[month]-[date]	Example: 2011-05-23	

Date
Notes: Based on "filed" date in Westlaw. Exported directly from Westlaw. Machine-coded.

Obviousness_Initial		
Description: Initial determination of whether obviousness was at issue in the appeal.		
0	No obviousness determination	
1	Obviousness determination	
See methodology discussed above for ascertaining whether there was an obviousness determination. Coder: Research Assistant		

Obviousness_Final		
Description: Final determination of whether obviousness was at issue in the appeal.		
0	No obviousness determination	
1	Obviousness determination	
See methodology discussed above for ascertaining whether there was an obviousness determination. Coder: Rantanen		

Precedential		
Description: Identifies whether the opinion was precedential.		
0	Nonprecedential	Includes cases summarily affirmed under Fed. Cir. Rule 36.
1	Precedential	Notes

Precedential
Notes: Nonprecedential opinions are identified on the face of the opinions. Coder: Research Assistant

Rule_36		
Description: Identifies whether the appeal was summarily affirmed under Fed. Cir. Rule 36.		
0	Appeal not summarily affirmed	
1	Appeal summarily affirmed	
Notes: Appeals that are summarily affirmed under Rule 36 state so on the face of the order. No additional reasoning for the affirmance is provided. Coder: Research Assistant		

En Banc		
Description: Identifies whether the obviousness portion of the opinion is en banc.		
0	Obviousness portion of opinion is not en banc.	
1	Obviousness portion of opinion is en banc	
Coder: Research Assistant.		

Opinion1_Type		
Description: Identifies the agreement among the panel for the court's opinion as to obviousness		
1	Unanimous authored	Does not include per curiam opinions
2	Majority	
3	Per curiam	

Opinion1_Type		
4	Other	For unexpected circumstances, such as a two-judge panel split.
Relates only to issue of obviousness. If a judge writing separately joins the entirety of the obviousness portion of the opinion of the court, but writes separately, code as 1. If a judge is writing separately on the issue of obviousness, code as 2 (or 4, where relevant). Coder: Research Assistant.		

Opinion2_Type		
Description: Identifies the type of alternate opinion on the issue of obviousness.		
1	Concurrence	
2	Dissent	
Notes: Relates only to concurrences/dissents as to obviousness. A concurrence as to obviousness in its entirety is treated as if the author joined the opinion of the court. A concurrence as to obviousness where the author writes separately on the issue is treated as a concurrence. Coder: Research Assistant		

Opinion3_Type		
Description: Identifies the type of alternate opinion on the issue of obviousness.		
1	Concurrence	
2	Dissent	
Notes: Relates only to concurrences/dissents as to obviousness. Relates only to concurrences/dissents as to obviousness. A concurrence as to obviousness in its entirety is treated as if the author joined the opinion of the court. A concurrence as to obviousness where the author writes separately on the issue is treated as a concurrence. Coder: Research Assistant		

Post_KSR		
Description: Identifies when the opinion issued in relation to *KSR v. Teleflex*		
0	Opinion issued before certiorari was granted in *KSR*	
1	Opinion issued after the Supreme Court's opinion in *KSR*	
2	Opinion issued between the Court's grant of certiorari and its opinion in *KSR*	
Notes: Automatically generated based on parameter 7_Date.		

General Obviousness-related Case Parameters

KSR_Cite		
Description: Identifies whether the opinion cites *KSR v. Teleflex*		
0	Does not cite *KSR v. Teleflex*	
1	Cites *KSR v. Teleflex*	
Notes: This is machine determined by searching for the case citation within the results. For this and all related variables, the following procedure is employed: 1) Perform the full case search detailed above. 2) Under "Search within Results" search for "550 U.S. 398" to see which of the Federal Circuit cases cite *KSR v. Teleflex*.		

Common_Sense_Used		
Description: Court used common sense in determining issue of obviousness		
0	Court does not invoke "common sense" as a component of the obviousness determination	

Common_Sense_Used		
1	Court invokes "common sense" as a component of the obviousness determination	
Notes: Keyword search: "common sense," then manual review for relevance. Does not include citation of Supreme Court use of common sense in the obvious to try quote. Coder: Rantanen		

Predictable_Uses		
Description: References predictable uses of prior art elements (or rearranging old elements with same functions).		
0	Court does not reference predictable use	
1	Court references predictable use	
Notes: Keyword searches: "predictable" or "old elements," then manual review for relevance. Only examined for post-KSR opinions. Coder: Rantanen		

TSM_Formal		
Description: References "teaching," "suggestion" and "motivation"		
0	Court does not reference TSM	
1	Court references TSM	
Notes: Formalist analysts - i.e.: whether the opinion contains the terms teach!, suggest!, and motivat! within the same sentence. Results were based a computer search for these terms using root expanders. Results were then reviewed to exclude instances where the terms were used in the Westlaw headnotes. Coder: Rantanen		

TSM_Use		
Description: Identifies whether the analysis uses "teaching-suggestion-motivation"		
0	Does not use the teaching-suggestion-motivation test	
1	Uses the teaching-suggestion-motivation test	
Notes: This variable should only be coded as 1 if the teaching-suggestion-motivation test is actually used. If the TSM test is merely discussed in the context where the CAFC notes in passing that the Supreme Court held that the TSM test was not exclusive in *KSR*, this variable should be coded as 0. In addition, it should only be coded as 1 if it involves a teaching or suggestion *whether* to combine prior art. It should be coded as 0 if it only involves a teaching or suggestion *how* to make a particular technology. This is a difficult field to code post-*KSR*, as the court rarely sets out its analysis in formal TSM terms. Instead, it often seems to just conclude that there was a "motivation" or "suggestion" to combine, without actually articulating the TSM test. For purposes of coding, as long as the CAFC's analysis involves assessing whether there was a "teaching," "suggestion" or "motivation" to combine or modify references, it should be coded as 1. If the CAFC instead discusses a "reason" to combine, it should be coded as 0. Variations on the root terms are acceptable (example: "motivated," "suggests," etc.). Coder: Rantanen		

RTC1		
Description: Reason to combine must be found in the prior art.		
0	Court does not require reason to combine to be found in the prior art	
1	Court requires reason to combine to be found in the prior art.	
Coder: Rantanen		

RTC2		
Description: Reason to modify or combine but does not specify that it is required to come from a specific source		
0	Court either does not require a reason to modify or combine or specifies that it must come from a specific source.	
1	Court requires reason to modify or combine but does not specify that it is required to come from a specific source	
Coder: Rantanen		

RTC3		
Description: Reason to combine may come from a PHOSITA, references, or nature of the problem to be solved		
0	Court either does not require a reason to modify or combine, specifies that it must come from the prior art, or does not specify that it is required to come from a specific source.	
1	Court requires reason to combine and specifies that it may come from a PHOSITA, references, or nature of the problem to be solved.	
Coder: Rantanen		

RTC4
Description: Condensation of RTC1-3

RTC4		
0	No	Code as 0 only if all of RTC1, RTC2, and RTC3 are 0.
1	Yes	Code as 1 if any of RTC1, RTC2, or RTC3 are 1.
Coder: Machine coded based on contents of RTC1-3 fields.		

Obviousness_Necessary		
Description: Obviousness necessary to outcome		
0	Obviousness unnecessary to outcome	
1	Obviousness necessary to outcome	
Notes: Purpose of field was to distinguish those Rule 36 dispositions that necessarily required obviousness to be decided by the court from those that could have been affirmed on grounds other than obviousness. In many instances, obviousness was the only issue appealed. However, in some instances the CAFC could have summarily affirmed on multiple grounds. For example, if the district court invalidated a set of claims on the grounds of both anticipation and obviousness, there is no reason to conclude that the CAFC affirmed the district court's obviousness determination. As a general rule, this parameter was coded as (1) when affirming a finding of obvious or nonobvious was necessary to summarily affirm the judgment. This included situations where the patent holder appealed a finding of noninfringement and the accused infringer cross-appealed a finding of no invalidity due to obviousness, following the rule of *Morton v. Cardinal* (1993). This rule was applied consistently across both pre- and post-*KSR* appeals. This parameter was coded only for Rule 36 dispositions. It was used for purposes of coding Parameter 9 (Obviousness_Final) for Rule 36 dispositions. Coder: Rantanen		

Analysis-specific coding

AnalysisN		
Description: Identifier for multiple obviousness analyses		
Format: A##	Example: A01	
Notes: Except when multiple obviousness analyses are present, this will always be A01. This variable greatly simplifies the per-case analysis by allowing for the exclusion of multiple instances of the same case. Coder: Rantanen		

Patent1		
Description: First patent considered in the analysis		
Format: text	Example: 5,245,618	
Coder: Rantanen. Collection mentioned but data not analyzed in paper.		

Patent2		
Description: Second patent considered in the analysis		
Format: text	Example: 5,245,618	
Coder: Rantanen. Collection mentioned but data not analyzed in paper.		

Patent3		
Description: Third patent considered in the analysis		
Format: text	Example: 5,245,618	
Coder: Rantanen. Collection mentioned but data not analyzed in paper.		

Patent4		
Description: Fourth patent considered in the analysis		
Format: text	Example: 5,245,618	
Coder: Rantanen. Collection mentioned but data not analyzed in paper.		

Patent5		
Description: Fifth patent considered in the analysis		
Format: text	Example: 5,245,618	
Coder: Rantanen. Collection mentioned but data not analyzed in paper.		

Technology		
Description: Broad technological area of the patent(s) at issue		
1	Biological	
2	Chemical	
3	Electronic	(includes software)
4	Mechanical	
Coder: Rantanen		

ProceduralPosture		
Description: Procedural posture of the obviousness issue at the lower tribunal		
1	PTO-Application	
2	District-Jury	Jury finding on obviousness (includes JMOL-denied)
3	District-Bench	
4	District-JMOL granted	Select this option when the judge overrides a jury verdict to the contrary. If the judge instead agrees with the jury that a patent is obvious or nonobvious, select option 2.
5	District-SJ	District court grant of summary judgment

ProceduralPosture		
6	District-PI	District court grant of preliminary injunction
7	ITC	Appeal from International Trade Commission
8	PTO-Interference	
Coder: Rantanen		

Posture_Outome		
Description: Lower tribunal's conclusion on obviousness		
0	Nonobvious	
1	Obvious	
Notes: If no preliminary injunction was entered on the ground that accused infringer raised a substantial question of validity based on obviousness, select 0, nonobvious. Coder: Rantanen		

CAFC_Result		
Description: Federal Circuit's conclusion on obviousness		
0	Nonobvious	
1	Obvious	Only enter this option if the CAFC actually holds the patent obvious.
2	No Final Determination	Select this opinion if the CAFC declines to find the patent either obvious or nonobvious, but remands for further proceedings.
Notes: If no preliminary injunction was entered on the ground that accused infringer raised a substantial question of validity based on obviousness, select 0, nonobvious. Coder: Rantanen		

Disposition		
Description: Federal Circuit's action on obviousness		
0	Reversed	(including reversed and vacated)
1	Affirmed	
2	Reversed and remanded	(or just remanded)
3	Vacated and remanded	
4	Vacated	
5	Other	
Coder: Rantanen		

Disposition_Condensed		
Description: Federal Circuit's action on obviousness		
0	Reversed	Costs of options [0] and [2] from Disposition
1	Affirmed	Consists of option [1] from Disposition
2	Vacated	Consists of options [3] and [4] from Disposition
Coder: Machine coded based on contents of Disposition field. This field represents a condensation of the Disposition field and was the field actually used in the final analysis.		