Simply Wrong: The 25% Rule Examined

By Douglas G. Kidder and Vincent E. O'Brien

Overview

The recent Uniloc ruling[1] that, on its face, unequivocally barred the use of the 25% Rule in litigation has triggered a discussion about the rule. Recently Robert Goldscheider, who was credited by the court as the originator of the rule, wrote an article explaining why he believed the ruling was incorrect.[2] We read Mr. Goldscheider's article with interest but were disappointed that, apart from a few minor details, the article did not add much to the discussion.

In the body of this article, we have summarized the reasons why we believe that Uniloc was absolutely on point and long overdue.[3] To begin with, there is no "rule" per se. Proponents of the rule generally describe it as being between 10 percent and 35 percent of either operating profits or gross profits. However, none of the proposed formulations have any theoretical or empirical basis to them. Support for the rule is largely secondary (articles referencing other articles describing the 25% Rule), normative (justifying the rule because it is believed to be normal practice) or anecdotal (referring to instances in which the 25% Rule was used). The two analyses that attempt to empirically verify the proposition that royalty rates are 25 percent of profits, fall apart under scrutiny. In the end, we believe that the Court in Uniloc got it right: "…the 25 percent rule of thumb is a fundamentally flawed tool for determining a baseline royalty rate in a hypothetical negotiation."[4]

2. There Is No "Rule"

Despite Mr. Goldscheider's recent article, the 25% Rule is best characterized as a "Rule of Thumb" because there is no single, definitive statement of the rule. In an attempt to clarify the rule, we endeavored to locate every article referring to the 25% Rule published prior to the Uniloc decision (38 in total) and noted the division of profits suggested (*e.g.* 25 percent), the level of profits suggested (*e.g.* gross profits, net profits), the basis for the rule (*e.g.* normative, anecdotal, secondary) and the source.[5] The definitions of the 25% Rule and a count of the number of articles espousing a particular definition are shown in Table 1 below.[6]

There are two points to read into this table: 1) support of the rule is almost entirely secondary (citing another article that discussed the 25% Rule), normative (claiming that it is used in licensing transactions) and anecdotal (anecdotes about how the author once used the rule in a licensing negotiation), and; 2) there is no commonly accepted definition of the 25% Rule.[8] We will take these two points in turn.

The single largest source of support for articles espousing the 25% Rule are other articles espousing

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1. *Uniloc USA v. Microsoft*, U.S. CAFC 2010-1035, -105, January 4, 2011.

2. Goldscheider, R., "The Classic 25% Rule," *les Nouvelles*, September 2011, pp. 148–159, at p. 155.

3. Original draft of this article is 45 pages long and was drafted just prior to the Uniloc decision—which we believe rendered the discussion moot.

4. *Uniloc USA v. Microsoft*, U.S. CAFC 2010-1035, -105, January 4, 2011.

Table 1: Support For The 25% Rule In Literature					
PERCENT OF PROFIT		**TYPE OF PROFIT**		**SUPPORT**	
Range	**#**	**Definition**	**#**	**Type**	**#**
25%	22	Gross	12	Secondary	14
25-33%	6	Unspecified[7]	12	Normative	8
15-25%	3	Net	10	None	7
10-30%	2	Operating	3	Anecdotal	5
10-35%	2			Empirical	2
10-25%	1			Theoretical	2
20-33%	1				
15-35%	1				

the 25% Rule with the second source of support being normative. But to be generally useful, the 25% Rule must reflect some underlying, verifiable scientific principle. If the 25% Rule was as widely used in licensing as its proponents claim, an empirical analysis of royalty rates and profits would show a clear relationship. Without such independent verification, the 25% Rule is no more than assertion. As we'll discuss later the two attempts at empirical validation of the rule fall flat.

The 25% Rule has no common definition. It has been stated as a range from 10 percent—35 percent of either gross or net profits. The proposed range between 10 percent of net profits and 35 percent of gross profits could easily cover an order of magnitude difference. While the consensus of the authors centers on 25 percent, there is certainly no general agreement that it is 25 percent and only 25 percent. The authors are split roughly into thirds on the level of profits to be considered as between gross, net and unspecified.

Even Mr. Goldscheider is unclear in his definition. In his most recent article, Mr. Goldscheider stated that the rule is a 25:75[9] split of operating profits or "pre-tax" profits.[10] This matches the definition he used in 2002:

> …the 25 Per Cent Rule is an allocation (or splitting) of operating profits. Explicit consideration is given to all of the costs, including non-manufacturing overhead, that are needed to support a product or are driven by the product. The Rule is not a split of gross profits.[11]

However, in 1971 and in 1984, Mr. Goldscheider defined the rule as calling for 25 percent of gross profits:

> A rule of thumb that royalties shoud [sic] be 25 percent of the gross profits has been successfully

argued, and has frequently resulted in the licensor obtaining a rate higher than the so-called "standard" 5 percent.[12]

According to this hypothesis, a licensor that brings a respectable quantum of intellectual property rights, including ongoing support, to the bargaining table should be entitled to a royalty, however calculated, that is equivalent to 25 percent of the gross profit before taxes expected to be realized by the licensee from its operations under the agreement. This is merely a starting point for setting a figure, to be raised or lowered, depending on the qualitative and quantitative contributions of the respective parties.

So long as the "25% Rule" is recognized as being a relatively crude tool, or starting point, that is applicable in some-but by no means all-circumstances, it can have value as part of the exercise.[13]

Even though Mr. Goldscheider now unequivocally states that it is operating profits that are to be considered, at least one court has specifically allowed testimony based on the use of gross margin for the 25% Rule.[14]

Some proponents of the 25% Rule have proposed that it is really a "rule of thumb." Making the 25% Rule a heuristic does not cure its problems. It is still not based on theory or empirical evidence. It is simply a random starting point which, by itself, makes it inadmissible in court.

The 25% Rule does not correctly identify profits that might potentially be split between the licensee and licensor. The 25% Rule considers profits at the level of the product and not at the level of the patented technology, *i.e.* it considers all profits from the patented product and not just the profits attributable to the patented feature. Profits for almost all products result from more than just a patented technology. A patented technology that is a minor improvement will yield very little additional profit margin (if any) to an existing product and yet the 25% Rule allocates approximately 25 percent of the entire profits of the product to the patented technology. If an allocation of profits is appropriate (and any such allocation implicitly rejects any non-infringing alternatives), the only economically rational profits to be allocated are

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5. For a copy of the table of articles reviewed, please contact the authors.

6. Note that a single article may support the use of the 25% Rule in multiple ways and a few of the articles were critical of the 25% Rule and thus offered no support.

7. Includes such definitions as "true," "potential" and "realized."

8. Of the two theoretical justifications for the rule, one posits it as a special case and the other is little more than assertion.

9. Goldscheider, R., "The Classic 25% Rule," *les Nouvelles*, September 2011, pp. 148–159, at p. 155.

10. Goldscheider, R., "The Classic 25% Rule," *les Nouvelles*, September 2011, pp. 148–159, e.g. pp. 152, 156.

11. *Emphasis in the original*. Goldscheider, Jarosz, Mulhern, *Use of the 25% Rule in Valuing IP*, *les Nouvelles*, December, 2002, at 131.

12. Goldscheider & Marshall, *The Art of Licensing from the Consultant's Point of View*, The Law And Business Of Licensing 2, Clark Boardman Co, 1980, at 652.

13. Goldscheider, "Role of the Expert Witness," *les Nouvelles*, March 1984, pp. 1-6, at p. 3.

14. *Civix v. Expedia*, 2005 WL 5961023 (N.D.Ill.).

incremental profits that are unobtainable without the use of the patented technology, not the entire profits generated from the sale of the product.[15]

3. Theoretical Problems With The 25% Rule

From a legal perspective, the 25% Rule appears to circumvent the current law. Prior to 1946 infringer's profits were an available damages remedy but the courts struggled with the difficult question of how to apportion those profits between the patent and other business assets.[16] The 25% Rule doesn't even attempt to address this difficult question; it simply allocates 25 percent of all profits from infringing sales to the patent-holder. Wrapping the crude split of the infringer's profits in the cloak of a reasonable royalty does nothing to alter the underlying fact that it is simply a 75/25 split of the infringer's profits with no basis for such a split. As the U.S. Supreme Court wrote in Aro:

> But the present statutory rule is that only "damages" may be recovered. These have been defined by this Court as "compensation for the pecuniary loss he [the Patentee] has suffered from the infringement, without regard to the question whether the defendant gained or lost by his unlawful acts." *Coupe v. Royer*, 155 U.S. 565, 582. They have been said to constitute "the difference between his pecuniary condition after the infringement, and what his condition would have been if the infringement had not occurred." *Yale Lock Mfg. Co. v. Sargent*, 117 U.S. 536, 552. The question to be asked in determining damages is "how much had the Patent Holder and Licensee suffered by the infringement. And that question [is] primarily: had the Infringer not infringed, what would the Patent Holder-Licensee have made?" *Livesay Window Co. v. Livesay Industries, Inc.* supra, 251 F.2d, 469, 471.[17]

From a theoretical perspective a key underlying premise of the 25% Rule is demonstrably false. If the 25% Rule is valid, then the royalty rate should increase with the profitability of the licensee. If royalty rates and profits were linked, then we would see license rates for the same patent that varied by the profitability of the licensee. For example, we would see that the MPEG patents that enable digital music

would command different rates when used in more and less profitable products. Yet, in our experience, this has simply never been the case.

Rights to the same patents under the same terms are typically licensed for the same rate. In actual license negotiations, we've never seen a situation in which, all else being equal, a highly profitable company is asked to pay more for a license than an unprofitable company. Even if the licensee is losing money on the patented product, the licensor is still entitled to a royalty. The parity of license terms is sometimes even written into the contract in the form of a most-favored licensee clause.

In fact even Mr. Goldscheider's genesis story for the 25% Rule leaves no variability for the different profit margins of the licensees.[18] According to the 25% Rule, the royalty rate should have varied from 5 percent; somewhat lower for lower-profit companies and somewhat higher for higher-profit companies. While each of the licensees may well have agreed to a standard rate of 5 percent, it is almost certainly not the case that each of the licensees managed to obtain identical 20 percent profit margins in different years across different geographies.

4. Empirical Evidence Does Not Support The 25% Rule

Neither of the two published analyses that attempt to justify the 25% Rule empirically offers much support. In 2002 an article was co-authored by Goldscheider, Jarosz and Mulhern published in *les Nouvelles*[19] and as a chapter in a book.[20] In 2009 a white paper by Kemmerer and Lu was posted on SSRN.com.[21]

The relationship being tested in both these papers, even if found to hold, would offer only tenuous support for the 25% Rule. Both papers attempt to show a relationship between average industry profits and average industry royalty rates. A better empirical test of the 25% Rule would relate the profits from licensed products to the royalty rates paid for those products since the 25% Rule is applied at the level of the product, not the industry. Looking to industry profits and industry median rates are two levels re-

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15. For a more complete discussion of this see: Kidder, D., O'Brien, V., "Infringer's Profits Should Not Be the Focus of Patent Damages Cases," Dunn on Damages (4), Fall 2011.

16. 7, Donald S. Chisum, Chisum on Patents, Matthew Bender, §20.02[3]–[4].

17. *Aro Manufacturing v. Convertible Top Co.*, 377 U.S. 476, 507 (1964).

18. Goldscheider, R., "The Classic 25% Rule," *les Nouvelles*, September 2011, pp. 148–159, at p. 152.

19. Goldscheider, Jarosz & Mulhern, *Use of the 25% Rule in Valuing IP*, *les Nouvelles*, December 2002.

20. Smith & Parr, Intellectual Property: Valuation, Exploitation And Infringement Damages, John Wiley & Sons, 2005.

21. Kemmerer & Lu, *Profitability and Royalty Rates Across Industries: Some Preliminary Evidence*, white paper available on *SSRN.com*.

moved from the product. Thus the best the analyses could hope for is indirect support for the rule.

There is no reason to believe that industry-level profitability is a good proxy for the profitability of any single company (much less any single product). As Professor Richard Rumelt observed in 1987:

> Empirical work also reveals that the dispersion of long-term profit rates within industries is very much larger than the dispersion of industry profit rates across industries. For example, applying a variance components analysis to rates of return on capital displayed by 1,292 U.S. corporations over a twenty-year period obtained the results shown in Table 7-1. The data show that the variance in long-run profitability *within* industries is three to five times larger than the variance *across* industries. Clearly, the important sources of excess (or subnormal) profitability in this data set were firm specific rather than the results of industry membership.[22]

Thus, the biggest source of variability in profitability is not *inter*-industry, but rather *intra*-industry. When the same patents are licensed to multiple competitors in an industry for the same royalty rate, the 25% Rule simply fails (unless by some happenstance all of the companies had identical profit margins that happened to be four times the royalty rate.)

Goldscheider, Jarosz and Mulhern's analysis and resulting conclusions are deeply flawed. The authors concluded that the average royalty rate as a percent of average profits across all industries was 25 percent[23] This conclusion is entirely misleading as their data shows no relationship between average industry profitability and median royalty rates. Figure 1 plots Goldscheider, Jarosz & Mulhern's royalty rates against their calculated industry profitability with each point on the chart representing a different industry.[24] Also shown is a line that represents the 25% Rule. Simply by observation the line is not representative of the data—a flat line at 4 percent could just as easily have

Figure 1. Goldscheider, Jarosz & Mulhern Data
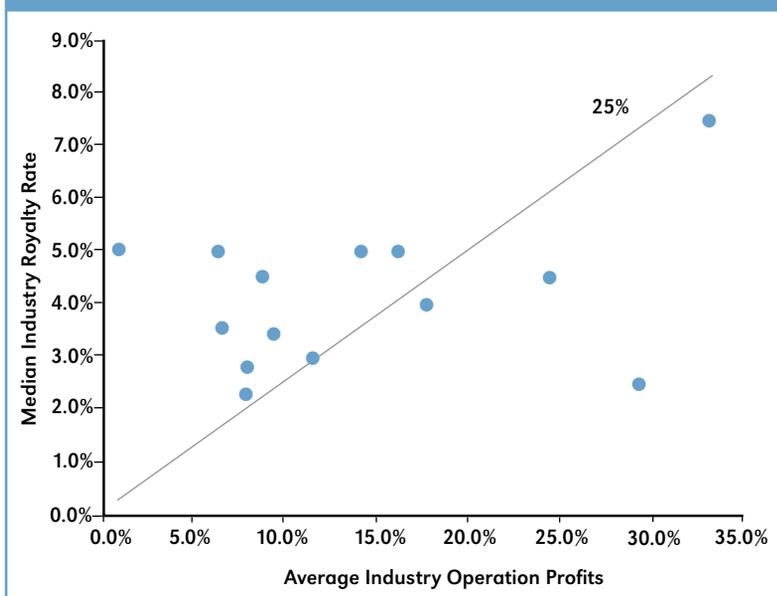
been drawn. More importantly, when analyzed by proper statistical tests, the line fails to fit the data.

A simple linear regression using the Average Industry Operating Profits to predict the Median Industry Royalty Rate shows that the coefficient is not statistically different from zero.[25] Therefore, using this data set there is no statistically significant relationship between "average industry profitability" and "median industry royalty rate"; much less a 25 percent relationship.[26]

The available data for this analysis will also tend to bias the royalty rate upward. The data used

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22. *Emphasis in the original*. Rumelt, R., *Theory, Strategy and Entrepreneurship*, "The Competitive Challenge," Harper & Row, 1987, at 141.

23. Goldscheider, Jarosz &Mulhern, "Use of the 25% Rule in Valuing IP," *les Nouvelles*, December 2002, at 133.

24. Note that the "Media and Entertainment" industry was omitted from their analysis.

25. The regression has an Adjusted R-squared of 0.033, Intercept of 3.4 percent (T-statistic of 5.22), and Coefficient of 4.8 percent (T-statistic of 1.2).

26. If anything, the chart shows that royalty rates range between 2 and 5 percent. This, however, is wrong because of a bias in the data used in the study which comes from a service called RoyaltySource (*http://www.royaltysource.com*). RoyaltySource collects its data from publicly-available documents such as submissions to the Securities and Exchange Commission and licenses reported in the press. Both are upwardly biased. The first source requires that only significant licenses need be revealed. The latter would by its nature only include licenses the parties deemed significant. Licenses to valid patents that have nominal royalty rates are not likely to be considered significant and are thus not likely to be included in the RoyaltySource data.

In an attempt to better understand the data, the authors sought to obtain a disaggregated set. John Jarosz, an author of the article, replied that they only obtained the industry median royalty rates from RoyaltySource and no further detail was available. We were also unsuccessful in obtaining the raw data directly from RoyaltySource. Thus, the Goldscheider, Jarosz and Mulhern data cannot be replicated or otherwise verified.

in the analysis is collected from publicly-available documents such as submissions to the Securities and Exchange Commission and licenses reported in the press. Both sources will tend to only report licenses with higher rates. The SEC only requires that significant licenses be revealed while license terms that are publicly revealed would only include licenses the parties deemed significant. Patent licenses with nominal royalty rates are not likely to be considered significant and are thus not likely to be included in this data.

Our conclusion about the lack of support for the 25% Rule in the Goldscheider, Jarosz and Mulhern article is supported by Kemmerer and Lu. They conclude that:

> As a result, using the data in Goldscheider, *et al.* (2002), we cannot demonstrate that there is general linear relationship between the reported royalty rates and operating profit margins across the 14 industries defined by the authors.[27]

Kemmerer and Lu continued further by constructing their own data set with company profitability and median royalty rates. They were able to find a relationship if EBITDA margins are used and the data are truncated to remove any companies with negative margins. We believe that the relationship found is an artifact of the analysis and does not hold up under any serious scrutiny.

To begin with, we don't know of any principle that would justify calculating industry average profit margins by excluding the money-losing companies in that industry. Unprofitable companies still pay royalties–almost certainly at the same rates as profitable companies. We believe that this truncation likely had a material effect on the results.[28]

Based on their summary charts and tables, it does not appear that Kemmerer and Lu's analysis has any more validity than Goldscheider, Jarosz & Mulhern's. Their graphical presentation of the data shows that their conclusions are heavily dependent on the "Me-

Figure 2. 2007 Reported Royalty Rates And Gross Profit Margins
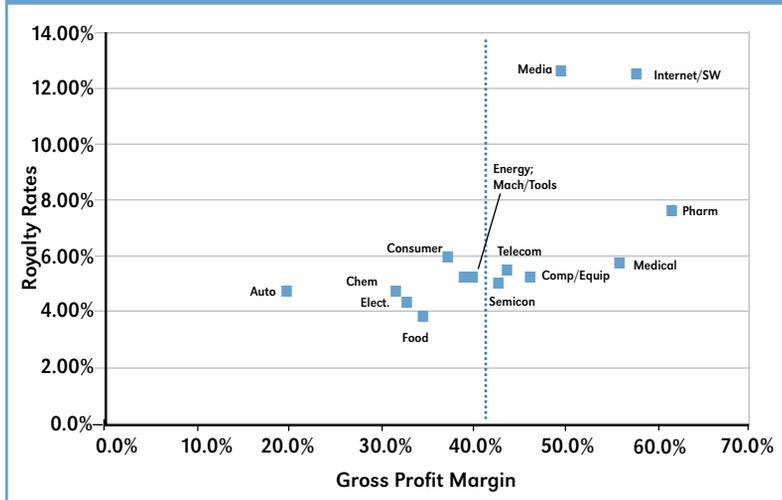
dia"[29] and "Internet/SW" industries that have median reported royalty rates in excess of 12 percent. Yet we know from personal experience that the licenses in those industries frequently include far more than just patent rights. In particular, in software, a 12 percent royalty rate is indicative of a software license (*i.e.* rights to working code), not a patent license.

There are additional problems with the data used by Kemmerer and Lu. The median royalty rates and the industry average profits do not match in time: royalty rates were calculated over a 21-year span while the profits were calculated over a 3-year span. There is a high likelihood that the reported royalty rates are inflated because of the reporting bias noted earlier and the inclusion of rights beyond just patents. (Note that this is also the case in Mr. Goldscheider's genesis story in which the licensed properties included trade secrets, trademarks and ongoing technical support which are rarely if ever part of the hypothetical negotiation in patent damages.)[30]

In conclusion, the two papers which attempt to provide empirical support for the 25% Rule are both fatally flawed. The 2002 paper by Goldscheider, Jarosz and Mulhern does not support any relationship between industry average profits and industry average royalty rates. The 2009 paper by Kemmerer

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27. Kemmerer, Lu, *Profitability and Royalty Rates Across Industries: Some Preliminary Evidence*, white paper available on SSRN.com, at 11.

28. We requested a copy of the data used in the paper from the authors, but were politely declined.

29. Kemmerer & Lu further note that the Media industry accounts for only 1.4 percent of the total transactions in the database, while Medical and Pharm together account for over half of the transactions.

30. Goldscheider, R., "The Classic 25% Rule," *les Nouvelles*, September 2011, pp. 148–59, at pp. 151–152.

and Lu finds a relationship between royalty rates and industry profits but we believe that relationship is spurious because it requires excluding unprofitable companies from the data set, is heavily dependent on the "Media" and "Internet/SW" industries for which the reported median royalty rates are inflated by a great deal more than patent licenses, and suffers from additional issues.

5. Bias and Anchoring

We believe that the 25% Rule tends to over-compensate patent holders since the 25% Rule is based on the profits of the entire product and not just the additional profits from the patented technology. In his 1971 article, Mr. Goldscheider supported this view by arguing that the 25% Rule led to higher rates:

> A rule of thumb that royalties shoud [sic] be 25 percent of the gross profits has been successfully argued, and has frequently resulted in the licensor obtaining a rate higher than the so-called "standard" 5 percent.[31]

An upward bias from a starting point based on the 25% Rule will remain in place during the analysis due to a phenomenon that behavioral economists refer to as anchoring. As described in the seminal paper on anchoring:

> **Adjustment and Anchoring**
>
> In many situations, people make estimates by starting from an initial value that is adjusted to yield the final answer. The initial value, or starting point, may be suggested by the formulation of the problem, or it may be the result of a partial computation. In either case, adjustments are typically insufficient. That is, different starting points yield different estimates, which are biased toward the initial values. We call this phenomenon anchoring.[32]

While proponents of the 25% Rule argue that it should be used with caution and only as a starting point, the inherent bias in the estimate is almost certain to flow through to the final conclusion.

Anchoring has been investigated and found to hold true in a wide range of situations in the thirty-five years since it was described in the Tversky and Kahneman article.[33] While we are not aware of any research testing it specifically in the context of patent damages, it has been shown to hold in the court room in criminal sentencing decisions:

> Anchoring effects–the assimilation of numerical judgments to a given standard–have been demonstrated in many judgmental domains. Even sentencing decisions are subject to anchoring effects. In court proceedings this gives disproportionate weight to the prosecutor, whose sentencing demand serves as an anchor. The prosecution's sentencing demand even affects defense attorneys, who assimilate their own sentencing recommendation to it. This influence seems to remain outside of defense attorneys' awareness. Expertise does not attenuate this bias. Accordingly, defendants might be better off if defense attorneys could make their final case prior to the prosecutor's case.[34]

There are two points to notice here: anchoring is largely outside the individual's awareness, and expertise does not attenuate the bias. The individual expert starting a Georgia-Pacific analysis with the 25% Rule will likely remain biased and anchored, and even though an opposing expert may counter that opinion, the judge and jury will remain biased by the initial figure presented.

6. Conclusion

We believe that the 25% Rule has been correctly tossed onto the scrap-heap of junk science by the CAFC. While there have been numerous articles citing it, there are none that provide any sound empirical or theoretical basis for the rule. On the contrary, there are significant theoretical problems with the rule and attempts to justify it empirically fall flat. The normative arguments (that the 25% Rule is used by some licensing professionals) may be individually correct, but it does not raise the 25% Rule to the level of science or explain why the same patents licensed to multiple companies are generally licensed at the same royalty rates. ■

31. Goldscheider, Marshall, "The Art of Licensing From the Consultant's Point of View," 6 *les Nouvelles,* 166. (1971)

32. Tversky, Kahneman, "Judgment Under Uncertainty: Heuristics and Biases," *Science*, New Series, Vol. 185, No. 4157. (Sep. 27, 1974), at 1128.

33. For a very readable discussion of anchoring and other effects, see Ariely, "Predictably Irrational: The Hidden Forces That Shape Our Decisions," Harper Collins, 2008.

34. Englich, *Blind or Biased? Justitia's Susceptibility to Anchoring Effects in the Courtroom Based on Given Numerical Representations*, Law & Policy, Vol. 28, No. 4, October 2006.