



Faculty Publications

---

2008-01-01

## Sophistication, Bridging the Gap, and the Likelihood of Confusion: An Empirical and Theoretical Analysis

Glenn L. Christensen  
glennc@byu.edu

Eric D. DeRosia

Thomas R. Lee

Follow this and additional works at: <https://scholarsarchive.byu.edu/facpub>



Part of the [Business Administration, Management, and Operations Commons](#)

### Original Publication Citation

G.L Christensen, E.D. DeRosia, T.R. Lee. "Sophistication, Bridging the Gap, and the Likelihood of Confusion: An Empirical and Theoretical Analysis", *The Trademark Reporter* Volume 98, Issue 4, Pages 913-949, International Trademark Association, 7, 28.

### BYU ScholarsArchive Citation

Christensen, Glenn L.; DeRosia, Eric D.; and Lee, Thomas R., "Sophistication, Bridging the Gap, and the Likelihood of Confusion: An Empirical and Theoretical Analysis" (2008). *Faculty Publications*. 915.  
<https://scholarsarchive.byu.edu/facpub/915>

This Peer-Reviewed Article is brought to you for free and open access by BYU ScholarsArchive. It has been accepted for inclusion in Faculty Publications by an authorized administrator of BYU ScholarsArchive. For more information, please contact [ellen\\_amatangelo@byu.edu](mailto:ellen_amatangelo@byu.edu).

## SOPHISTICATION, BRIDGING THE GAP, AND THE LIKELIHOOD OF CONFUSION: AN EMPIRICAL AND THEORETICAL ANALYSIS\*

*By Thomas R. Lee, Eric D. DeRosia, and  
Glenn L. Christensen\*\**

### I. INTRODUCTION

Recent commentary has rightly lamented the uncertain state of the multifactor test for trademark infringement. “This heuristic device is the fulcrum of American trademark law,” yet the courts are in substantial disagreement as to which factors are relevant to an evaluation of the likelihood of confusion.<sup>1</sup> The doctrinal divide is substantial: “Some circuits claim to weigh heavily under certain factors what other circuits claim to ignore, and nearly every factor or combination of factors has been called the ‘most important’ by one court or another.”<sup>2</sup>

Despite this doctrinal disarray on a test of such central importance to trademark law, the multifactor inquiry has not been subjected to extensive scholarly analysis. The courts rarely evaluate the consumer confusion inquiry in light of “specific and persuasive evidence about consumer behavior,” relying instead on precedent built “on personal intuition and subjective, internalized stereotypes.”<sup>3</sup> And even the academic commentary is surprisingly bereft of careful scrutiny of the test.<sup>4</sup> Recent commentary rightly notes that the fields of “cognitive and consumer psychology” have

---

\* This article is based on the lead author’s presentation at INTA’s Fourth Learned Professor’s Symposium held in New York City on January 3, 2008.

\*\* Thomas R. Lee, Professor of Law, Brigham Young University; Academic Member, International Trademark Association; Eric D. DeRosia, Assistant Professor, Marriott School of Management, Brigham Young University; Glenn L. Christensen, Assistant Professor, Marriott School of Management, Brigham Young University. All authors contributed equally to this project. Special thanks to Joseph Benson, Elise Briggs, John Nielsen, and Margo Scott for their research assistance. The authors also gratefully acknowledge the generous support of research grants from the Institute of Marketing and the Marriott School of Management at Brigham Young University.

1. Barton Beebe, *An Empirical Study of the Multifactor Tests for Trademark Infringement*, 94 Cal. L. Rev. 1581, 1582 (2006).

2. *Id.* at 1583.

3. Ann Bartow, *Likelihood of Confusion*, 41 San Diego L. Rev. 721, 723, 772 (2004).

4. Beebe, *supra* note 1, at 1584 (noting that the “multifactor tests have received little academic analysis beyond that of the treatise writers, and no empirical analysis”).

“much to offer those interested in trademark law.”<sup>5</sup> Yet these and other calls for an interdisciplinary analysis of trademark law have yielded precious few contributions to our collective understanding of the factors that affect the likelihood of consumer confusion.<sup>6</sup> Even Barton Beebe, who has made an important contribution in his recent study of “which factors . . . actually drive the outcome of the test” based on a careful empirical study of trademark opinions in the federal courts, is careful to distinguish his evaluation of what *does* affect judicial outcomes from what *ought* to.<sup>7</sup>

This article takes up the “ought” question with respect to two factors at the center of the doctrinal debate in the courts: the relative “sophistication” of consumers in the relevant market and the likelihood that the senior trademark holder may “bridge the gap” to bring itself in closer competition with the junior user. With respect to both of these factors, there are important points of conflict in the case law. The conflicts go to such fundamental questions as (a) whether (and when) a sophisticated consumer might sometimes be *more* likely to be confused—the effect opposite of that almost unanimously predicted in the case law; and (b) whether (and how) a senior trademark holder can demonstrate an increased likelihood of confusion based on its plans to extend its brand to a new market.

In Part II below, we summarize the state of the law on the “sophistication” and “bridging the gap” factors, setting the stage for the need for careful analysis of conflicts that are currently plaguing the courts. Part III describes a theoretical model for understanding the role of these factors in the likelihood of confusion analysis. In this section, we develop models derived from consumer psychology literature in an attempt to inject some

---

5. Jacob Jacoby, *The Psychological Foundations of Trademark Law: Secondary Meaning, Genericism, Fame, Confusion and Dilution*, 91 TMR 1013, 1014 (2001). See also *id.* at 1068 (asserting that trademark practitioners and judges should no longer “rely on common sense or speculation regarding how the consumer’s mind operates,” and that “new findings regarding cognitive processes” can provide a “scientific foundation” for the law to replace “unreliable intuition” and “junk science”); Jerre B. Swann, *An Interdisciplinary Approach to Brand Strength*, 96 TMR 943, 945 (2006) (asserting that recent advances in “marketing and consumer psychology . . . possess untapped potential” in facilitating “more predictable, accurate and consumer-beneficial outcomes in trademark conflicts”).

6. A recent exception is our own attempt at presenting a theoretical model for understanding—and, to some extent, critiquing—the judicial understanding of the consumer “sophistication” factor. Thomas R. Lee, Glenn L. Christensen & Eric D. DeRosia, *Trademarks, Consumer Psychology, and the Sophisticated Consumer*, 57 Emory L. J. 575 (2007). The model developed in this article is summarized and applied at some length below. Jerre Swann has also offered some recent interdisciplinary commentary on consumer sophistication. See Jerre B. Swann, *Sophistication and the Sciences*, 97 TMR 1309 (2007).

7. Beebe, *supra* note 1, at 1600 (explaining that his study attempts to “settle the debate” as to the relative significance of the various factors—“at least with respect to the question of *is* rather than *ought*”).

coherence into the empty debate that marks the case law. Finally, we introduce and describe in Part IV an empirical study aimed at measuring the relative significance and interactions between these two factors.

Our theoretical model and empirical study support the hypothesis that the likelihood of consumer confusion is increased when a competitor of the senior trademark holder has “bridged the gap” to come into competition with the junior user. Thus, our analysis supports the view adopted by a minority of the federal circuits (five of thirteen)—that the prospect for “gap-bridging” is relevant to the likelihood of confusion. Our study also informs the debate in the case law as to the method of proving the likelihood of “bridging the gap.” Specifically, our findings support a consumer-centric approach to “bridging the gap” instead of a manager-centric one. Whatever makes a brand extension by the senior mark more plausible in the eyes of consumers will increase the likelihood of confusion—regardless of whether managers of the senior mark actually intend to “bridge the gap” into the new market.

Perhaps more significantly, we show that a more “sophisticated” consumer is *more* likely to suffer confusion in these circumstances. The case law is marked by a rather vacuous conflict between the widely invoked presumption that sophistication “usually militates against a finding of a likelihood of confusion” and the occasional—and precisely opposite—qualification that “it might on occasion *increase* the likelihood of confusion.”<sup>8</sup> Our findings identify one particular circumstance in which the occasional qualification holds and the usual presumption fails. Our theoretical analysis also explains the basis for this phenomenon, and thus a ground for informing the judicial consideration of when to apply the presumption and when to invoke the qualification. Finally, we offer some empirical analysis of some of the law’s proxies for sophistication, finding that education and consumer experience (but not income, age, or gender) are meaningful predictors of consumer care.

## II. SOPHISTICATION AND “GAP-BRIDGING” AS ELEMENTS OF THE MULTIFACTOR TEST FOR THE LIKELIHOOD OF CONFUSION

Although the likelihood of confusion tests applied in the various federal circuits share certain factors in common, there is “excessive intercircuit variation” in the content of the multifactor tests and even more variation in the application and relative

---

8. *Centaur Commc’ns, Ltd. v. A/S/M Commc’ns, Inc.*, 830 F.2d 1217, 1228 (2d Cir. 1987).

significance of those factors.<sup>9</sup> In all federal circuits, four factors are considered relevant: the similarity of the parties' trademarks, the competitive proximity of their products or services, the existence of "actual confusion," and the strength of the senior trademark.<sup>10</sup> Other factors considered in some (but not all) circuits include the defendant's intent in adopting the junior trademark, the relative "sophistication" of the relevant consumers, the similarity of the parties' marketing and sales channels, and the likelihood that the parties will "bridge the gap" to come into closer competition in the future.<sup>11</sup>

Our focus here is on the "sophistication" and "bridging the gap" factors. The paragraphs below summarize the courts' treatment—and extensive disagreement—about the relevance and nature of these factors. The case law is examined in the context of a hypothetical that is continued in the theoretical and empirical sections below. Under the hypothetical, a notebook computer is marketed under the CADILLAC brand name. The junior user has no affiliation with General Motors (GM), the owner of the CADILLAC brand of automobiles. And although GM has not licensed the CADILLAC mark for use in the computer market and has no plans to do so, our hypothetical assumes that one of GM's competitors (Mercedes-Benz) has introduced a line of officially licensed notebook computers.

The question evaluated throughout this article—at a doctrinal, theoretical, and empirical level—is whether consumer confusion is likely under these circumstances. This section focuses on the doctrinal question: whether under the various formulations of the multifactor test for trademark infringement GM is likely to succeed in establishing a likelihood of confusion. The short answer is that it depends in large part on where the case is pending because different circuits have adopted different formulations of the "sophistication" and "bridging the gap" factors that may produce drastically different outcomes under the hypothetical facts.

### ***A. Consumer Sophistication***<sup>12</sup>

The consumer sophistication factor encompasses several considerations that are thought by the courts to affect the attention consumers may pay to their purchases. In circuits that

---

9. Beebe, *supra* note 1, at 1583-90.

10. *Id.* at 1589.

11. *Id.* at 1590.

12. The discussion in this section borrows extensively—and without further citation—from the introductory sections of our article analyzing the sophistication case law under a consumer psychology model. See Lee et al., *supra* note 6, at 575 (2008).

consider this factor, the courts generally hold that if a consumer can be expected to exercise a high degree of care, he will be less likely to be confused about any connection between a senior and junior trademark.<sup>13</sup> A sophisticated consumer is expected to act not on “impulse,” but on the basis of “a careful consideration of the reliability and dependability of the manufacturer and seller of the product.”<sup>14</sup> In other words, a sophisticated consumer is one who is apt to spend more time, attention, or care in making a purchasing decision—and who is thus generally deemed less likely to be confused as to the source or sponsorship of the trademarked products he buys.<sup>15</sup> Unsophisticated consumers, by contrast, are “the ignorant, the unthinking and the credulous, who, in making purchases, do not stop to analyze, but are governed by appearance and general impressions.”<sup>16</sup> The prototypical unsophisticated consumer is the man walking the supermarket aisle who “undergo[es] . . . an experience not unlike that of hypnosis,”<sup>17</sup> in which purchases are made impulsively and thoughtlessly.

A key threshold question in the case law is how to distinguish the careful and sophisticated consumer from the unthinking and credulous one. Although the courts have not attempted to articulate any comprehensive theoretical framework for assessing consumer propensities toward care, a few consistent themes have emerged in the case law.<sup>18</sup> The principal strands of analysis in the

---

13. *Sally Beauty Co. v. Beautyco, Inc.*, 304 F.3d 964 (10th Cir. 2002).

14. *Astra Pharm. Prods., Inc. v. Beckman Instruments, Inc.*, 718 F.2d 1201, 1206 (1st Cir. 1983).

15. Search sophistication, as recently formulated by Barton Beebe, “refers to the consumer’s capacity to distinguish between similar trademark uses (i.e., to avoid identity confusion), and furthermore, to recognize that such uses designate different sources (i.e., to avoid inferential confusion).” Beebe, *supra* note 1, at 2035. This is the “sophistication” the law is generally concerned with as a factor relevant to the likelihood of confusion; it is distinct from “persuasion sophistication,” a concept Beebe describes as referring “to a consumer’s opportunity to resist commercial persuasion attempts”—to “cope’ with marketplace persuasion” aimed at “delud[ing]” the consumer into purchasing a product or service on the basis of the “selling power” or “differential distinctiveness” of a trademark. *Id.* at 2047-50.

16. *Florence Mfg. Co. v. J.C. Dowd & Co.*, 178 F. 73, 75 (2d Cir. 1910).

17. *Pikle-Rite Co. v. Chicago Pickle Co.*, 171 F. Supp. 671, 676 (N.D. Ill. 1959).

18. Trademark law treatises provide a general overview of the case law addressing this factor, but not any comprehensive theoretical analysis. See 2 Anne Gilson LaLonde, *Trademark Protection and Practice* § 5.08 (asserting that “the courts classify purchasers into two types, ordinary purchasers and discriminating purchasers,” that the former have “no special training or experience,” and that the latter have either “special training” or “purchase costly products”); 3A Louis Altman & Malla Pollack, *Callmann on Unfair Competition, Trademarks and Monopolies* § 21:10 (May 2003) [hereinafter *Callmann*] (stating that the degree of consumer care “will differ according to the ‘character of the article, the use to which it is put, the kind of people who ask for it, and the manner in which it is ordered’”); 3 J. Thomas McCarthy, *McCarthy on Trademarks and Unfair Competition* §§ 23:95-23:102 (4th ed. 2004) [hereinafter *McCarthy*] (identifying price, class of purchasers, and other factors relevant to the degree of consumer sophistication).

case law include the assertion that consumer care or sophistication correlates positively with price,<sup>19</sup> length and complexity of the purchase transaction,<sup>20</sup> infrequency of purchase,<sup>21</sup> and education, age, and income<sup>22</sup>; and the notions that professional buyers,<sup>23</sup> avid hobbyists,<sup>24</sup> and (sometimes) women<sup>25</sup> are more sophisticated.

The perceived degree of sophistication can have a significant effect on the degree of protection afforded to a trademark holder. Some courts have gone so far as to suggest that a high degree of consumer sophistication in a target market may trump all other factors, virtually eliminating the likelihood of consumer confusion in the case of a professional or highly sophisticated buyer.<sup>26</sup> Other courts are more measured in their assessment of the relative significance of this factor, suggesting that its “import” is “small indeed” (at least in cases where the junior and senior trademarks are “identical”).<sup>27</sup>

---

19. Checkpoint Sys., Inc. v. Check Point Software Techs., Inc., 269 F.3d 270, 284 (3d Cir. 2001) (citing 3 McCarthy, *supra* note 18, § 23:95).

20. See Lee et al., *supra* note 6, at 609.

21. Compare Black & Decker, Inc. v. N. Am. Philips Corp., 632 F. Supp. 185, 193 (D. Conn. 1986) (finding that consumers of hand-held vacuum cleaners are relatively sophisticated in that such a “product is not the kind of household item that one purchases frequently, but rather is an item that the purchaser expects will last for a lengthy duration and therefore would require care in its purchase”), with Kimberly-Clark Corp. v. H. Douglas Enter., Ltd., 774 F.2d 1144, 1146 (Fed. Cir. 1985) (concluding that consumers of disposable diapers exhibit a “lesser standard of purchasing care” given that such products “are relatively inexpensive and frequently replaceable”), and K-Swiss, Inc. v. USA AISIQI Shoes, Inc., 291 F. Supp. 2d 1116, 1125 (C.D. Cal. 2003) (“Athletic shoes are common consumer items and often are purchased several times a year. A reasonable consumer, therefore, is unlikely to exercise a high degree of care in selecting shoes.”).

22. See Lee et al., *supra* note 6, at 627.

23. See, e.g., Moore Bus. Forms, Inc. v. Rite Aid Corp., 210 U.S.P.Q.2d 2024, 2029 (W.D.N.Y. 1991), *modified*, 1992 WL 125561 (W.D.N.Y. May 29, 1992), *aff'd*, 983 F.2d 1048 (2d Cir. 1992) (declaring that business executives are simply more sophisticated in many areas); HQ Network Sys. v. Executive Headquarters, 755 F. Supp. 1110, 1119 (D. Mass. 1991) (holding that business executives are generally more sophisticated in all areas).

24. See, e.g., Interstellar Starship Servs. v. Epix, Inc., 125 F. Supp. 2d 1269, 1277-78 (D. Or. 2001) (holding that hobbyists are grouped into the category of “expert” buyers for sophistication purposes).

25. See Lee et al., *supra* note 6, at 637.

26. Sara Lee Corp. v. Kayser-Roth Corp., 81 F.3d 455, 467 (4th Cir. 1996) (holding that the “relative sophistication of the market may trump the presence or absence of any other factor”). See also 3A Callmann, *supra* note 18, § 21:12, at 21-121 (stating that a professional or sophisticated buyer’s “detailed knowledge of the product and careful examination with respect to its technical requirements are factors of greater significance than the trademarks used”).

27. Kiki Undies Corp. v. Promenade Hosiery Mills, Inc., 411 F.2d 1097, 1101 (2d Cir. 1969). See also Habitat Design Holdings Ltd. v. Habitat, Inc., 436 F. Supp. 327, 331 (S.D.N.Y. 1977) (stating that “[t]he Second Circuit has noted that the importance of this criterion is minimal where the marks in question are identical”). Professor Beebe’s empirical study found that “across the 292 opinions sampled from circuits that explicitly consider this [sophistication] factor, the factor was found to disfavor a likelihood of confusion (that is,

Courts and commentators reflexively—and almost unanimously—conclude that sophistication in any of its various forms is negatively correlated with the likelihood of confusion.<sup>28</sup> The standard explanation is that confusion is a state of error or mistake, and that a consumer who is more sophisticated (in the sense of spending more time or cognitive energy on the purchase or being more highly motivated to focus on the purchase) is more likely to dispel that error than one who is less sophisticated.

Potential consumers of CADILLAC notebook computers would probably be deemed sophisticated. Because notebook computers are relatively high-priced and are generally purchased by more highly educated consumers, the courts probably would expect consumers of such items to exercise a high degree of care in the purchase process. Thus, most courts would find the sophistication factor to cut against the likelihood of confusion.

That is by no means a foregone conclusion, however. Not all courts consider consumer sophistication in their multifaceted evaluation of the likelihood of confusion.<sup>29</sup> And even where this factor is considered, there is a debate in the case law about the fundamental question of which way sophistication cuts. Sometimes the courts turn the usual presumption upside down, asserting that sophisticated consumers are *more* likely to be confused.

The Second Circuit is the principal judicial source of the view that it may be “a sophisticated . . . consumer who is most likely” to be confused by a junior use of a trademark that is similar to a senior mark.<sup>30</sup> In the *Lois Sportswear* case, for example, that court found a likelihood of confusion arising out of the defendant’s use of a stitching pattern on the back pocket of the defendant’s jeans that was “nearly identical” to that long used by the plaintiff Levi Strauss & Co.<sup>31</sup> In so doing, the court asserted that “[p]resumably it is . . . sophisticated jeans buyers who pay the most attention to back pocket stitching patterns,” and thus that such consumers are most likely to “assume that the presence of [Levi’s] trademark

---

consumers were seen as sufficiently sophisticated not to be confused) 39% of the time and to favor a likelihood of confusion [because consumers were unsophisticated] 28% of the time.” Beebe, *supra* note 1, at 1643. Those data, however, say very little about the relative significance of the sophistication factor as compared to other factors. Our analysis does not offer any empirical answer to this important question, but we do offer some theoretical analysis in Part III.B., below.

28. See the accompanying text at notes 13-17, *supra*.

29. Beebe, *supra* note 1, at 1591, Table 1 (noting that the tests from the Fourth, Fifth, and Eleventh Circuits do not encompass this factor).

30. *Lois Sportswear, U.S.A., Inc. v. Levi Strauss & Co.*, 799 F.2d 867, 875 (2d Cir. 1986).

31. *Id.*



stitching pattern on [defendant Lois Sportswear's] jeans indicates some sort of association between the two manufacturers."<sup>32</sup>

Yet despite the occasional reference to this contrary proviso, the courts have made little or no attempt to explain when a finding of sophistication will have its usual effect of reducing the likelihood of confusion and when such a finding might have the opposite effect. The result is a confusing patchwork of cases in which most courts proclaim the orthodox view that sophistication decreases the risk of confusion while others rather inexplicably state that the opposite is true.

In *Arrow Fastener Co. v. The Stanley Works*, for example, the plaintiff Arrow asserted that defendant Stanley's use of "T50" as part of the model number for one of its pneumatic staplers infringed its T-50 trademark for hand-operated staple guns, arguing that "knowledgeable purchasers . . . are precisely the individuals who would be familiar with T-50 . . . and seek products from the same source."<sup>33</sup> The Second Circuit acknowledged the "support in the case law" for sometimes treating sophistication as a plus-factor for confusion, but ultimately rejected it—without any theoretical explanation for its decision and on the sole basis of its assertion that a purchaser in the "fairly detailed purchasing process" for the purchase of a Stanley pneumatic stapler "can be expected to 'possess a high level of knowledge' and is 'not likely to be confused by the use of 'T50' in the product's model number.'"<sup>34</sup>

Thus, the prevailing view in the Second Circuit is that "[s]ophistication usually militates against a finding of a likelihood of confusion, though it might on occasion *increase* the likelihood of confusion, depending upon the circumstances of the market and the products."<sup>35</sup> The problem is that no one has articulated just what "circumstances" are relevant to this important distinction. In short, the notion of sophistication as *enhancing* the likelihood of

---

32. *Id.* (also concluding that "in the post-sale context, the sophisticated buyer is more likely to be affected by the sight of appellee's stitching pattern on appellants' jeans and, consequently, to transfer goodwill"). See also *Philip Morris Inc. v. Star Tobacco Corp.*, 879 F. Supp. 379, 388 (S.D.N.Y. 1995). The *Philip Morris* case involved a claim that the defendant's GUNSMOKE cigarettes had adopted a trade dress similar to that used by the plaintiff's MARLBORO brand. Noting "that a very large number of regular consumers view the MARLBORO trade dress—the cowboy transformed into the 'Marlboro Man' inhabiting 'Marlboro Country'—with sufficient approval to influence their purchasing decisions," the court concluded that if "that sort of consumer decision making [is] 'sophisticated,' then it is a form of sophistication that actually increases the likelihood that these consumers would be confused by GUNSMOKE's similar trade dress." *Id.*

33. 59 F.3d 384, 399 (2d Cir. 1995).

34. *Id.*

35. *Centaur Commc'ns, Ltd. v. A/S/M Commc'ns, Inc.*, 830 F.2d 1217, 1228 (2d Cir. 1987).

confusion in some circumstances is oft cited,<sup>36</sup> seldom actually applied,<sup>37</sup> and never coherently explained.

Thus, without some further analysis, it is hard to offer a confident prediction about the likely impact of the consumer sophistication factor in the hypothetical CADILLAC notebook computer case. This is a good example of a case where trademark doctrine is, “in the hands of an experienced judge or litigator, notoriously pliable.”<sup>38</sup>

### ***B. The Likelihood of “Bridging the Gap”***

The likelihood of “bridging the gap” is a factor considered by some courts in cases where the junior and senior markets are not closely proximate. In the circuits that consider this factor, the idea is that although the junior user’s market may be at some competitive distance from the senior trademark holder’s market, that “gap” may be bridged at some point in the future. Thus, continuing the example introduced above, if GM is deemed likely to bridge the gap from the automobile market to the notebook computer market, some courts would conclude that the likelihood of confusion is increased.

Only five of the thirteen federal circuits expressly consider the likelihood of “bridging the gap” as a factor in the likelihood of confusion calculus.<sup>39</sup> Thus, in most circuits, the courts presumably would deem the lack of proximity between the automobile and notebook computer markets to be a significant factor militating against the likelihood of consumer confusion—without regard to

---

36. Recent citations of the principle include: *Fibermark v. Brownsville Specialty Paper Prods., Inc.*, 2006 U.S. Dist. LEXIS 14019, No. 7:02-CV-0517, at \*18, n. 5 (N.D.N.Y. 2006) (explaining that “[t]he Second Circuit does not blindly apply the sophistication factor in the likelihood of confusion analysis” and that “it recognizes that sophistication ‘might on occasion *increase* the likelihood of confusion, depending upon the circumstances of the market and the products,” but failing to identify the relevant “circumstances”); *Cartier v. Samo’s Sons, Inc.*, 2005 U.S. Dist. LEXIS 23395, No. 04 Civ. 2268, \*22-23 (S.D.N.Y. 2005) (indicating that “[i]n certain contexts, the sophistication of the buyer ‘might not be determinative’ because ‘it is sophisticated buyers . . . who pay the most attention’ to certain aspects of a luxury product,” but never reaching the question of whether that principle applied to the plaintiff’s claim for trade dress infringement of its watch design); *MB Fin. Bank v. MB Real Estate Serv., LLC*, 2003 U.S. Dist. LEXIS 10578 No. 02 C 5929, at \*48-49 (N.D. Ill. 2003) (noting Second Circuit authority holding that sometimes “sophistication will only lead to more confusion,” criticizing the plaintiff for “turning the sophistication argument on its head” “without any evidentiary support,” but failing to explain when sophistication may have that effect or what sort of evidence the plaintiff should have presented).

37. To our knowledge, the only two cases that have actually applied the doctrine are *Lois Sportswear*, 799 F.2d at 875, and *Philip Morris*, 879 F. Supp. at 388.

38. Beebe, *supra* note 1, at 1583-84.

39. *Id.* at 1591, Table 1.

any likelihood that GM might be thought likely to “bridge the gap” into the computer market.

Even in circuits that consider this factor, there is an important rift as to the nature of proof required to establish that a “gap-bridging” extension is likely. One line of the cases takes a managerial perspective, requiring proof of concrete, material plans for extension; another takes a consumer’s perspective, evaluating the likelihood of extension from the standpoint of a reasonable consumer.<sup>40</sup>

The former set of cases deems the potential for extension “unpersuasive unless plaintiff [can] prove a strong likelihood that it would soon bridge the gap by expanding into the defendant’s product market.”<sup>41</sup> Under this line of cases, the existence of brand extension by a plaintiff’s competitors is not itself a consideration that enhances the likelihood of confusion. Thus, in *Horn’s, Inc. v. Sanofi Beaute, Inc.*,<sup>42</sup> a New York district court found insufficient evidence of a likelihood that a fashion industry magazine publisher would “bridge the gap” to the perfume market occupied by the plaintiff. The court acknowledged that “companies having an expertise in fashion often market perfumes”—to the degree that “[o]ne is hard-pressed to think of a fashion designer whose name is not linked to a perfume.”<sup>43</sup> Yet the court found that the “bridging the gap” factor “militates against finding a likelihood of confusion,” because “none of [plaintiff’s] plans to develop and market a fragrance is concrete, nor has any materialized.”<sup>44</sup>

---

40. See 3A *Callmann*, *supra* note 18, § 21:50 (citing cases and noting that some courts require proof of “a ‘strong possibility’ that one party will expand its business to compete with the other as a basis for inferring a likelihood of confusion”).

41. 3 *McCarthy*, *supra* note 18, § 24:17 (citing *Emerson Elec. Mfg. Co. v. Emerson Radio & Phonograph Corp.*, 105 F.2d 908 (2d Cir. 1939); *S.C. Johnson & Son, Inc. v. Johnson*, 116 F.2d 427 (2d Cir. 1940); *California Fruit Growers Exch. v. Sunkist Baking Co.*, 166 F.2d 971 (7th Cir. 1947); *Boise Cascade Corp. v. Cascade Coach Co.*, 168 U.S.P.Q. 795 (T.T.A.B. 1970); *Avon Shoe Corp. v. David Crystal, Inc.* 279 F.2d 607 (2d Cir. 1960)).

42. 963 F. Supp. 318 (S.D.N.Y. 1997).

43. *Id.* at 325 (noting that “Calvin Klein, Donna Karan and Giorgio Armani quickly come to mind”).

44. *Id.* Compare *Worthington Foods, Inc. v. Kellogg Co.*, 732 F. Supp. 1417, 1450-51 (S.D. Ohio 1990) (finding that the “line of expansion” factor “militates against a finding of a likelihood of confusion” between the plaintiff’s HEARTWISE mark for “breakfast meat substitute products” and the defendant’s HEARTWISE breakfast cereal where the plaintiff had failed to “come forward with a signed purchase agreement” or any other “firm evidence” of expansion, and despite the relatedness of the parties’ goods and the plaintiff’s intent to purchase a “company making a ready-to-eat cereal”).

The *Horn* court cited *Lang v. Retirement Living Publishing Co.*, 949 F.2d 576 (2d Cir. 1991), in support of its requirement of “concrete” proof, but the *Lang* case is distinguishable on a ground that actually undermines the *Horn* court’s rejection of the “brand extension” concept. In *Lang*, the Second Circuit quoted the Restatement (Third) of Unfair Competition for the proposition that a plaintiff’s intent to expand “does not affect” the likelihood of confusion “‘unless known by prospective purchasers.’” *Id.* at 582 (citing Restatement (Third)

The latter, contrary set of cases is exemplified by the Third Circuit's decision in *Fisons Horticulture, Inc. v. Vigoro Industries, Inc.*<sup>45</sup> In *Fisons*, the plaintiff, which marketed peat moss under the trademark FAIRWAY, brought trademark infringement claims arising out of the defendant's use of the FAIRWAY GREEN mark on fertilizer. In finding the "extension" factor to weigh in favor of a likelihood of confusion, the court adopted the consumer perspective. It noted the evidence in the record that "the market leader" and "three other lawn and garden companies . . . sell both peat moss and fertilizer under the same brand name."<sup>46</sup> Thus, because "the public is used to seeing both fertilizer and peat moss marketed under the same name by the same company," the court held that the "extension" factor "weighed heavily in plaintiff's favor."<sup>47</sup>

The choice between the managerial and consumer perspectives could make a big difference to the outcome of our CADILLAC computer case. Under the *Horn's* managerial approach, GM's lack of any "plans to develop and market" a notebook computer would turn this factor in the junior user's favor, and the significant gap between cars and computers might be enough to tip the scales against GM. Yet the consumer approach would allow GM to turn the factor in its favor, by demonstrating that after the MERCEDES-BENZ extension into the computer market the public has become "used to seeing" the convergence of these two markets.

Thus, as with the sophistication factor, it is hard to make a confident prediction as to how the "bridging the gap" factor might cut in our hypothetical case. The case law itself yields no clear answers; the law is in dire need of a clear theory and some empirical analysis.

---

of Unfair Competition § 21 reporter's note at 21 (1995)) (emphasis in *Lang*). The negative implication is significant: if prospective purchasers are aware of the likelihood of expansion, there may be an impact on the likelihood of confusion *even in the absence of any "concrete" plans by the plaintiff*.

45. 30 F.3d 466 (3d Cir. 1994).

46. *Id.* at 480.

47. *Id.* at 480-81. The *Fisons* court also noted that the plaintiff had presented evidence of its own "planned expansion," but its analysis accorded independent significance to evidence of brand extension. *Id.* See also *Scarves by Vera, Inc. v. Todo Imp. Ltd.*, 544 F.2d 1167, 1174-75 (2d Cir. 1976) (finding that because many high-fashion designers had expanded into the cosmetics and fragrance fields, it was likely that consumers would think that the plaintiff, a high-fashion designer, had also done so); *Planetary Motion, Inc. v. Techsplosion, Inc.*, 261 F.3d 1188, 1202 (11th Cir. 2001) (holding that the fact that other companies had products in the fields of email software and email service made it likely that consumers would be confused by two different companies using the same trademark in the two fields); *Polyglycoat Corp. v. Env'tl. Chem., Inc.*, 509 F. Supp. 36, 39 (S.D.N.Y. 1980) (stating that the likelihood of confusion in the use of the same trademark on both a car dealership and an auto body shop was high because other dealerships often had auto body shops).

### III. A CONSUMER PSYCHOLOGY PERSPECTIVE ON SOPHISTICATION AND “GAP-BRIDGING”

Although the case law is mostly bereft of any careful theoretical explanation of the significance of the sophistication and “gap-bridging” factors in the likelihood of confusion calculus, there is a rich body of consumer psychology literature that contains the building blocks for such an explanation. In the paragraphs below, we use that literature to develop models of consumer cognition that can be used to evaluate the proper role of these two factors.

First, in modeling the role of consumer sophistication, we identify two general antecedents to the exercise of consumer care: a sufficient level of “motivation” for care and an adequate “ability” to be careful. We develop these antecedents to explain the usual presumption that careful consumers are less likely to be confused, and also to identify circumstances in which the opposite result may occur.

Second, in modeling the relevance of “gap-bridging,” we look to the theory of schemas, which are structures in a consumer’s long-term memory that describe categories of objects. We develop the schema model to explain why the prospects for “bridging the gap” may be relevant to the likelihood of confusion, and to take sides in the debate over whether this factor should be evaluated under a managerial or consumer approach.

We also bring these models together to evaluate the likelihood of confusion (under the “sophistication” and “bridging the gap” factors in particular) in our CADILLAC computer case. Ultimately, we explain the basis for our hypotheses (measured empirically in Part IV. below): (1) that “gap-bridging” by a competitor of the senior trademark holder into the junior user’s market will increase the likelihood of confusion; and (2) that sophisticated consumers are *more likely* to be confused in the face of expansion by a competitor.

#### *A. A Consumer Psychology Model of Sophistication*<sup>48</sup>

In the marketplace, trademarks (referred to as “brands” in the marketing and consumer behavior literature) are helpful to consumers—not only by indicating the product’s source but also by giving consumers a quick-and-dirty indicator of a variety of product attributes and quality. After identifying the brand, the consumer is able to make a wide variety of inferences regarding the product without laborious investigation. For example, a consumer who identifies a notebook computer as being a DELL

---

48. For a fuller description of this model, see Lee et al., *supra* note 6, at 583.

brand product may forego an in-depth analysis of each attribute of the product and may infer a certain level of quality.

Obviously, before consumers can enjoy the benefit of using a brand name as a short-cut indicator of quality, consumers must identify the brand. The process undertaken by consumers to recognize and identify the brand has been called the “source-identification judgment.”<sup>49</sup> Because brands are so useful as indicators of quality, consumers often perform a source-identification judgment when they consider products.<sup>50</sup>

However, this is not to suggest that consumers always perform the source-identification judgment in a thorough and vigilant way. The source-identification judgment is a cognitive process. Consumers must gather information that is potentially relevant to the judgment (e.g., trade dress, brand name, etc.); they must consider and comprehend the information; and they must in turn integrate it into a single source-identification judgment. One of the main tenets of the consumer behavior literature is that cognitive processes such as these require cognitive effort. Just as physical activity (e.g., climbing stairs) requires physical effort, so mental activity (e.g., searching the environment for information) requires cognitive effort. Thus, a consumer *might* expend the cognitive effort necessary to perform the source-identification judgment in a thorough and vigilant manner. Alternatively, a consumer might expend less cognitive effort, yielding a haphazard and thoughtless source-identification judgment. Such a judgment would be characterized by gathering inadequate environmental information, not attempt to comprehend information that is challenging, and integrating the information in a careless and offhand way.

It should be noted that this description of the cognitive effort that is expended by consumers during the source-identification judgment is consistent with the law’s description of a “degree of care” being exhibited by consumers in the context of source confusion. Courts have sometimes referred to consumers exerting a “high degree of care”; such consumers can be more thoroughly described as exerting the cognitive effort necessary to make the source-identification judgment in a vigilant and thoughtful way. Similarly, courts have sometimes referred to consumers who exert a “low degree of care.” Such consumers are those who fail to exert sufficient cognitive effort during the source-identification judgment.

---

49. *Id.*

50. *Id.*

### 1. Motivation and Ability as *Minus Factors*

The consumer psychology literature has identified two principal antecedents to an individual consumer's exertion of cognitive effort. The first broad category of antecedents relates to the individual's *motivation* to expend cognitive effort. Just as people are typically reluctant to exert physical effort (e.g., people using escalators instead of climbing stairs) but will do so if they are sufficiently motivated, consumers will exert cognitive effort only if they are sufficiently motivated. In effect, consumers act as cognitive misers<sup>51</sup> who exert cognitive effort only when they have sufficient incentive to do so.<sup>52</sup>

Two principal sources of motivation are identified in the literature: personal involvement (both situational and enduring) and intrapersonal traits. The perception of personal relevance or salience in a product or service offering is the essential characteristic of a consumer's personal involvement.<sup>53</sup> Motivation to engage in extended cognition can also emerge from the personality and intrapersonal traits that are part of a consumer's makeup.

The second broad category of antecedents is the individual's *ability* to exert cognitive effort. Just as people may be inhibited in their ability to perform a physical task (e.g., the box is too heavy to lift or a person has an injured back that inhibits the ability to lift it), a wide variety of factors can restrict a consumer's ability to exert cognitive effort as they perform the source-identification judgment.

A customer thus comes to a purchase situation with intrapersonal traits that can either enable or inhibit his ability to process information. For example, some consumers are simply

---

51. See Michael J. Houston et al., *Picture-Word Consistency and the Elaborative Processing of Advertisements*, 24 J. Marketing Res. 359 (1987) (showing the role of elaborative processing during advertising exposure). See generally Alice H. Eagly & Shelly Chaiken, *Attitude Structure and Function*, in 1 *The Handbook of Social Psychology* (Daniel Todd Gilbert et al. eds., 4th ed. 1993); James M. Olson & Mark P. Zanna, *Attitudes and Attitude Change*, 44 *Ann. Rev. Psychol.* 117 (1993).

52. A pejorative reading (i.e., consumers are cognitively lazy and therefore corrupt and deficient) is unnecessary. By expending physical effort only when motivated to do so, humans conserve energy and thereby hold in reserve the energy to act when necessary. An individual who continually expends maximum physical effort at every possible opportunity would expend mostly unnecessary effort and would probably be unable to survive. The same can be said for cognitive effort; if the many judgments an individual makes during a typical day were made with maximum vigilance and thoroughness, the individual would be unable to function effectively.

53. Richard L. Celsi & Jerry C. Olson, *The Role of Involvement in Attention and Comprehension Processes*, 15 J. Consumer Res. 210, 211 (1988).

faster or more capable processors than others.<sup>54</sup> This ability enables such consumers to process more information and with a greater attention to detail. Also, some consumers have previous experience with the product or product category that is facilitative of extended cognition. With past experience, knowledge structures develop in memory that lay the foundation for expertise. These extended knowledge structures are then available to the consumer when exerting cognitive effort as part of mental processes.<sup>55</sup> These consumer experts can employ these memory structures to compare, contrast, counter-argue, confirm, integrate, and, in other ways, elaborate upon during the consumer decision-making process.<sup>56</sup>

Consumer behavior studies suggest that overall intelligence and education are both directly related to a person's ability to exercise consumer care. Higher levels of intelligence will endow the consumer with greater processing capacity.<sup>57</sup> Further, much like an upgrade in hardware processing power, greater educational attainment is shown to advance intelligence by improving processing strategies, problem-solving skills, and the ability to parse and comprehend complex information.<sup>58</sup>

In addition to a consumer's processing capacity, extensive knowledge of a particular product or product category (i.e., greater consumer expertise<sup>59</sup>) also facilitates deeper and more efficient cognitive processing.<sup>60</sup> In fact, having previous experience with and knowledge of a product and its product category facilitates the acquisition of new information regarding that product and category, while also increasing the efficiency<sup>61</sup> and accuracy<sup>62</sup> of the information search.

---

54. Arie W. Kruglanski et al., *Separate or Equal?: Bimodal Notions of Persuasion and a Single Process "Unimodel,"* in *Dual-Process Theories in Social Psychology* 293, 298-99 (Shelly Chaiken & Yaacov Trope eds., 1999).

55. *Id.* at 298.

56. *Id.*

57. See Rolph E. Anderson & Marvin A. Jolson, *Technical Wording in Advertising: Implications for Market Segmentation*, 44 *J. Mktg.* 57, 63-64 (1980).

58. See Nancy Lampert, *Critical Thinking Dispositions as an Outcome of Undergraduate Education*, 56 *J. Gen. Educ.*, 17, 17-18 (2007).

59. Joseph W. Alba & J. Wesley Hutchinson, *Dimensions of Consumer Expertise*, 13 *J. Consumer Res.* 411, 411 (1987).

60. Durairaj Maheswaran & Brian Sternthal, *The Effects of Knowledge, Motivation, and Type of Message on Ad Processing and Product Judgments*, 17 *J. Consumer Res.* 66, 66 (1990).

61. See Merrie Brucks, *The Effects of Product Class Knowledge on Information Search Behavior*, 12 *J. Consumer Res.* 1, 1-16 (1985); Jacoby, *supra* note 5, at 1023-28.

62. See Cynthia Huffman & Michael J. Houston, *Goal-Oriented Experiences and the Development of Knowledge*, 20 *J. Consumer Res.* 190, 190-207 (1993).



Individuals develop more elaborate knowledge structures around what they experience more frequently.<sup>63</sup> Thus, consumers who purchase the same product frequently have greater knowledge in that category, which amounts to an increase in ability. Similarly, consumers exposed to repeated advertising are more likely to develop richer product knowledge structures that are facilitative of consumer care.<sup>64</sup>

Motivation and ability alone are each necessary but insufficient conditions for an individual to exert cognitive effort and thus be “sophisticated” in a legal sense. That is, if either motivation or ability is lacking, the individual will exert little cognitive effort while performing the source-identification task.

Thus, the consumer behavior literature suggests that if a consumer is to perform the source-identification judgment in a meticulous and vigilant manner, she must be sufficiently motivated and also able to exert the cognitive effort necessary to perform such a judgment. In contrast, if an individual lacks either motivation or ability to expend cognitive effort while making the source-identification judgment, she will perform the task in a haphazard and offhand manner, resulting in an increased likelihood of confusion.

Much of the case law concerning consumer sophistication can be understood in light of this model.<sup>65</sup> When courts deem a group of consumers to be sophisticated, they are often suggesting that some aspect of the purchase process triggers a high level of situational motivation or that the relevant consumers are intrinsically motivated to think deeply about the product at hand. At other times, the courts focus on traits of the relevant customers that are perceived to be related to consumers’ ability to engage in extended cognition and exercise a high degree of care when finding consumers to be sophisticated. Unsophisticated consumers, by contrast, are those that either lack such motivation or that are subject to some situational or systemic constraint on their ability to exert cognitive effort.

This model explains why we should generally expect so-called sophisticated consumers to be less susceptible to confusion. Consumers with greater ability (whether due to situational or intrapersonal factors) are better able to exert more cognitive effort and are better enabled to perform the source-identification judgment (unless they have limited motivation to do so), and thus will be less likely to be confused.

---

63. C. Whan Park et al., *Consumer Knowledge Assessment*, 21 J. Consumer Res. 71 (1994).

64. See Alba & Hutchinson, *supra* note 59, at 415-17.

65. For an extensive discussion of the cases and a more complete elaboration of the model, see Lee et al., *supra* note 6, at 589.

## 2. Motivation and Ability, as *Plus Factors*

What of the opposite proviso in the case law—that sometimes sophisticated consumers are *more likely* to be confused? Our model also provides a basis for understanding why (and when) that proviso might hold. Sophistication will have its anticipated effect of diminishing the likelihood of confusion if and only if the consumer's exercise of care can be expected to reveal a distinction between the senior and junior sources. That may not happen if, for example, the junior mark is identical to the senior one and the consumer lacks adequate motivation to pursue an inspection beyond a simple comparison of the junior and senior labels.

This explains why sophisticated consumers may not be *less* likely to be confused. But why would they be even *more likely*? The answer is that in some circumstances, a consumer with a greater ability to process carefully and deeply will be *more likely* to perceive a false connection between the senior and junior trademarks. A more able and careful consumer, for example, might be expected to be more likely to perceive an initial connection between CADILLAC automobiles and a CADILLAC brand notebook computer because they think more deeply than their less capable (as to innate ability, educational attainment or expertise in the product category) counterparts. If careful thought cues a false connection that might not occur to less “sophisticated” consumers, and the exercise of consumer care cannot be expected to dispel that connection in the face of an apparently identical junior use,<sup>66</sup> the “sophisticated” consumer is the one that may be most likely to be confused.

### ***B. “Gap-Bridging”: Categorization and Schema Theory***

A further understanding of the cognitive processes that underlie the source-identification judgment can be found in schema theory.<sup>67</sup> A schema is a structure in the consumer's long-term memory that describes a category of objects. Included with the schema may be a wide variety of memory associations developed through experience such as specific examples of category members, a representation of a prototypical (average or ideal) category member, the attributes necessary for category membership, optional attributes, a sense of how common each

---

66. See, e.g., *In re New Archery Prods. Corp.*, 218 U.S.P.Q. 670 (T.T.A.B. 1983) (finding that purchasers of fishing and hunting equipment are apt to be discriminating purchasers, but nevertheless could be confused as to the connection between RAZORBACK 5 as a mark for arrowheads and RAZORBACK for fishing lures).

67. For detailed reviews, see David J. Schneider, *The Psychology of Stereotyping* (2004) and also David L. Hamilton & Jeffrey W. Sherman, *Stereotypes*, in *Handbook of Social Cognition*, Vol. 2 1-68 (Robert S. Wyer & Thomas K. Srull eds., 1994).

attribute is among category members, and a set of hypotheses about what attributes typically go together among members of the category.<sup>68</sup> Schemas are hierarchical<sup>69</sup> in the sense that most schemas have superordinate categories (e.g., the consumer may classify the CADILLAC MOTORS schema as a member of the LUXURY VEHICLE schema) and subordinate categories (e.g., the consumer may be aware of many models of CADILLAC cars and trucks and consider them all to be subtypes within the CADILLAC MOTORS schema).

From a schema theory perspective, the cognitive process undertaken by a consumer when she encounters a product and identifies its brand (i.e., identifies the product's source) can be described as a categorization process. Categorizing a stimulus as an instance of a particular memory schema requires a number of steps.<sup>70</sup> First, the consumer uses attributes of the stimulus to identify a potential schema, thereby activating the schema in memory.<sup>71</sup> Next, the consumer evaluates the likelihood that the stimulus is an instance of the activated schema.<sup>72</sup> This evaluation requires a comparison between the stimulus and expectations for category members as implied by the schema. If no mismatches are found between the stimulus and the schema, the consumer will categorize the stimulus as an instance of the activated category. For example, if a consumer encounters a large car with the word "Cadillac" and the Cadillac logo on the vehicle's front grill, he might activate his CADILLAC MOTORS schema, would find no mismatches between the stimulus and the attributes implied by the schema and would therefore categorize the vehicle as an instance of the CADILLAC MOTORS schema. Such a consumer might say, "That car is a Cadillac." From a legal perspective, such a categorization constitutes an identification of the product's source.

---

68. Mita Sujun, *Consumer Knowledge: Effects on Evaluation Strategies Mediating Consumer Judgments*, 12 J. of Consumer Res. 31-46 (1985).

69. David E. Rumelhart & Andrew Ortony, *The Representation of Knowledge in Memory*, in *Schooling and the Acquisition of Knowledge* 99-135 (Richard C. Anderson, Rand J. Shapiro & William E. Montague eds., 1977); Ulrich Neisser, *Cognition and Reality* (1976); Barbara Loken & James Ward, *Alternative Approaches to Understanding the Determinants of Typicality*, 17 J. of Consumer Res. 111-26 (1990).

70. For a detailed review, see Joel B. Cohen & Kunal Basu, *Alternative Models of Categorization: Toward a Contingent Processing Framework*, 13 J. of Consumer Res. 455-72 (1987).

71. C. Page Moreau, Arthur B. Markman & Donald R. Lehmann, "What Is It?" *Categorization Flexibility and Consumers' Responses to Really New Products*, 27 J. of Consumer Res. 489-98 (2001).

72. Susan T. Fiske & Steven L. Neuberg, *A Continuum of Impression Formation, From Category-Based to Individuating Processes: Influences of Information and Motivation on Attention and Interpretation*, in 23 *Advances in Experimental Social Psychology* 1-74 (Mark P. Zanna ed., 1990).

If there are mismatches (i.e., there is incongruity) between the stimulus and the activated schema, the categorization effort may be rejected<sup>73</sup> and the consumer may search his or her memory for another schema to activate and consider.<sup>74</sup> Alternatively, the consumer may accept the categorization by creating a new subtype within the schema.<sup>75</sup> For example, if a consumer were to encounter a notebook computer labeled with the word "Cadillac," he or she might find a notebook computer to be incongruous with the CADILLAC MOTORS schema. If the consumer encountered enough information<sup>76</sup> to convince him or her that the notebook is, indeed, manufactured or sponsored by the automobile manufacturer (e.g., an ad for the notebook computer uses the CADILLAC logotype and contains photographs of the notebook computer sitting in or on a CADILLAC car), the consumer may accept notebook computers as a new kind of CADILLAC product. In other words, the consumer may update his or her CADILLAC MOTORS schema to include CADILLAC NOTEBOOK COMPUTERS as a new subtype. Subtyping is a form of categorization,<sup>77</sup> so subtyping constitutes an identification of the product's source from a legal perspective. Continuing the example, by accepting CADILLAC NOTEBOOK COMPUTERS as a subtype of CADILLAC, the consumer has identified CADILLAC MOTORS as the source or sponsor of the laptop computer.

A key question, therefore, is under what conditions will a person subtype within the schema rather than reject the categorization and search for a new schema to consider? Findings in the literature<sup>78</sup> suggest that the extent of incongruity between the stimulus and the activated schema is one determinant. Subtyping is more likely for moderate incongruity than for severe incongruity. The rationale for this effect offered in theoretical models<sup>79</sup> is that severely incongruous stimuli are not seen as plausible subtypes. For example, most consumers might find a

---

73. Susan T. Fiske & Mark A. Pavelchak, *Category Based versus Piecemeal Based Affective Responses, Developments in Schema-Triggered Affect*, in *Handbook of Motivation and Cognition: Foundation of Social Behaviour* 168-203 (Richard M. Sorrentino & Edward Tory Higgins eds., 1986).

74. See Fiske & Neuberg, *supra* note 72.

75. Renee Weber and Jennifer Crocker, *Cognitive Processes in the Revision of Stereotypic Beliefs* 45 *J. of Personality and Social Psychology* 961-77 (1983); Mita Sujjan & James R. Bettman, *The Effects of Brand Positioning Strategies on Consumers' Brand and Category Perceptions: Some Insights from Schema Research*, 26 *J. of Mktg. Res.* 454-67 (1989).

76. See Fiske & Pavelchak, *supra* note 73.

77. Zeynep Gürhan-Canli & Durairaj Maheswaran, *The Effects of Extensions on Brand Name Dilution and Enhancement*, 35 *J. of Mktg. Res.* 1-19 (1998).

78. See *id.* and Sujjan & Bettman, *supra* note 75.

79. See Fiske & Pavelchak, *supra* note 73.

CADILLAC VAN to be only moderately incongruent with their CADILLAC MOTORS schema, so upon seeing an advertisement for such a van, most consumers might find such a subtype to be plausible and would update their CADILLAC MOTORS schema to include a CADILLAC VAN subtype. In contrast, CADILLAC brand notebook computers might be seen as severely incongruent. Because a CADILLAC NOTEBOOK COMPUTER schema would be less plausible, such consumers would be less likely to categorize the notebook computer as a subtype of the CADILLAC MOTORS schema and thus reject it as emanating from CADILLAC MOTORS.

Subtyping has the effect of making the schema as a whole more inclusive, allowing the category to be applied to a wider variety of stimuli and extending the underlying knowledge structure. In a sense, subtyping “stretches” the schema, allowing more stimuli to fall within its bounds.

### 1. Schema Theory and Product Proximity

A straightforward interpretation of schema theory suggests that when consumers are offered a junior mark in a product category that is different from the senior mark’s category (e.g., a CADILLAC brand notebook computer), the likelihood that consumers will categorize the product as a subtype of the senior mark (i.e., the likelihood that consumers will suffer confusion) is related to the product’s incongruity with the senior mark’s schema. Subtyping is more likely for moderately incongruent products because they are seen as more plausible subtypes than severely incongruent products.

As described thus far, the implications of schema theory are consistent with the “competitive proximity” factor considered in the law. If the junior mark is in a product category that is low in “competitive proximity” with the senior mark, consumers will find subtyping to be implausible and will therefore be unlikely to suffer confusion.

### 2. Schema Theory and “Gap-Bridging”

What is the relevance of “gap-bridging” under this model? In the language of marketing, “gap-bridging” would be termed a brand extension—that is, a current brand name that is applied to a new product in a completely new product category,<sup>80</sup> such as Hershey’s extension of REESE’S brand of candy into the peanut butter category as a competitor of ConAgra Food’s PETER PAN and J.M. Smucker’s JIF peanut butters.

---

80. David A. Aaker & Kevin Lane Keller, *Consumer Evaluations of Brand Extensions*, 54 J. of Mktg. 27-41 (1990).

The managerial practice of brand extension into even far flung markets is rampant and on the rise.<sup>81</sup> The proliferation of brand extensions is a fundamental reality of the marketplace in the 21st century.<sup>82</sup> For example, Mannheim Steamroller, a new age musical group well known for its holiday music CDs, extended its brand into a line of ready mix hot chocolate. Victoria's Secret makes a line of laundry products including detergent and fabric softener. Bic, the famous makers of pens, lighters, and shavers extended its brand into cologne and perfume. Harley Davidson has introduced branded wine coolers. Both Honda and Toyota launched boats. Crayola, the famous wax crayon brand, extended into popsicles. General Mills extended the WHEATIES brand in a line of multivitamins. And the U.K. brand VIRGIN has been vastly extended across the breadth and width of the marketplace. As just a few examples, Virgin is a record label (VIRGIN MUSIC), and sells music and sundries (VIRGIN MEGASTORES), air travel (VIRGIN ATLANTIC), gas and electric utilities (VIRGIN ENERGY), soft drinks (VIRGIN COLA), Internet service (VIRGIN NET), banking and credit card service (VIRGIN ONE), mobile phone service (VIRGIN MOBILE), vodka (VIRGIN VODKA), and even space tourism (VIRGIN GALACTIC).

Of particular interest in the present hypothetical are brand extensions by a competitor of the senior mark. Our hypothesis on this point embraces the consumer-centric approach to "gap-bridging" in the case law.<sup>83</sup> In light of the schema model developed above, we anticipate that if the competitor of the senior mark extends its brand into a new product category, then consumers will view a new product in that new product category from the senior mark (or a junior mark that appears to be the senior mark) as more plausible. Consider again CADILLAC MOTORS as the senior mark. A CADILLAC brand notebook computer may be too implausible to be commonly subtyped by consumers. But if consumers believe a brand of luxury automobiles other than CADILLAC (e.g., MERCEDES-BENZ) has already extended its brand into the notebook computer market, consumers would evaluate a CADILLAC notebook computer as more plausible and would, therefore, be more likely to suffer confusion when faced with a junior mark of CADILLAC brand notebook computers.

---

81. Kevin L. Keller, *Strategic Brand Management*, Upper (2003) (noting that between 80 and 90 percent of all products introduced each year are either line or brand extensions of existing products).

82. Kevin J. Clancy & Jack Trout, *Brand Confusion*, 80 *Harvard Bus. Rev.* 22 (2002); Richard Gibson, *The End of the Line? Overkill on Extensions*, *Wall St. J.*, June 18, 1990, at B1.

83. See the discussion accompanying text at *supra* notes 39-47.

This expectation is based on an application of the aspects of schema theory reviewed above. When MERCEDES-BENZ extends its brand by introducing a notebook computer, consumers are expected to modify their MERCEDES-BENZ schema by adding a new subtype: the MERCEDES-BENZ NOTEBOOK COMPUTER schema. This stretches the MERCEDES-BENZ schema to be more inclusive of new stimuli. Because the MERCEDES-BENZ schema is part of the LUXURY VEHICLE schema, the superordinate schema is stretched as well in the sense that a wider variety of stimuli can now be categorized as belonging to the LUXURY VEHICLE schema. Because CADILLAC MOTORS is also part of the LUXURY VEHICLE schema, a CADILLAC brand notebook computer would only be moderately incongruent with the consumer's existing schemata. As a result, a CADILLAC notebook computer is more plausible than it would be in the absence of the MERCEDES-BENZ brand extension. With this higher plausibility comes a greater likelihood of subtyping and, therefore, confusion.

This theoretical reasoning is consistent with associative network models of memory,<sup>84</sup> which suggest that because CADILLAC and MERCEDES-BENZ are both well-known luxury automotive brands, the CADILLAC MOTORS memory node and the MERCEDES-BENZ memory node are linked in consumers' memories. When MERCEDES-BENZ extends its brand into the notebook computer category, consumers will form a memory link between the MERCEDES-BENZ memory node and the NOTEBOOK COMPUTER memory node.<sup>85</sup> As a result, the CADILLAC MOTORS node will be more closely (but not directly) linked with the NOTEBOOK COMPUTER node. When subsequently presented with a CADILLAC NOTEBOOK COMPUTER, an associative link between the CADILLAC MOTORS node and the NOTEBOOK COMPUTER node is quicker and easier for consumers to form (as compared to a situation of no brand extension for MERCEDES-BENZ). The ease of forming associative links has been shown to be used by consumers as a heuristic in decision making,<sup>86</sup> with the end result that consumers accept CADILLAC brand notebook computers as plausibly being sponsored by CADILLAC MOTORS.

---

84. Maureen Morrin, *The Impact of Brand Extensions on Parent Brand Memory Structures and Retrieval Processes*, 36 J. of Mktg. Res. 517-25 (1999).

85. Paul M. Herr, Peter H. Farquhar & Russell H. Fazio, *The Impact of Dominance and Relatedness on Brand Extensions*, 5 J. of Consumer Psych. 135-59 (1996).

86. Amos Tversky & Daniel Kahneman, *Availability: A Heuristic for Judging Frequency and Probability*, 5 Cognitive Psychology 207-32 (1973); Norbert Schwarz, Herbert Bless, Fritz Strack, Gisela Klumpp, Helga Rittenauer-Schatka, & Annette Simons, *Ease of Retrieval as Information: Another Look at the Availability Heuristic*, 61 J. of Personality & Social Psychology 195-202 (1991); Angela Y. Lee & Aparna Labroo, *Effects of Conceptual and Perceptual Fluency on Affective Judgment*, 41 J. of Mktg. Res. 151-65 (2004).

The implications of schema theory described here are also consistent with an assumption that consumers form rational expectations based on their past experiences in the marketplace. During many years of playing the role of consumer, people are likely to have observed that firms commonly follow a pioneer-follower pattern with brand extensions. For example, after Dell extended from computers into plasma flat-screen televisions, longtime computer rival Gateway responded with a similar brand extension. Likewise, after Kawasaki extended from motorcycles into personal watercraft, competitor Honda responded with a similar brand extension. Because this pioneer-follower pattern is so frequently followed in the marketplace,<sup>87</sup> consumers may expect that the extension by Mercedes-Benz into the notebook computer market will be followed by other luxury automakers (e.g., CADILLAC MOTORS). As a result, CADILLAC brand notebook computer will thereafter be plausible to consumers.

#### IV. AN EMPIRICAL STUDY OF “SOPHISTICATION” AND “GAP-BRIDGING” AS FACTORS IN THE ANALYSIS OF THE LIKELIHOOD OF CONFUSION

The above discussion sets the stage for our empirical study of the sophistication and “gap-bridging” factors. With respect to the latter, our hypothesis is that if a senior mark’s direct competitor extends into a new product category, consumers are more likely to be confused by a junior mark in the new product category.

H1: If a competitor of the senior mark extends its brand into a new product category, the likelihood of confusion from a junior mark in the new product category will increase (versus no brand extension by the competitor of the senior mark).

This hypothesis implicates two dimensions of the conflict in the case law detailed above. First, H1 embraces the view of the minority of courts that consider the likelihood of brand extension—“bridging the gap”—as a relevant plus-factor for consumer confusion. Although the courts tend to discount or even ignore this factor,<sup>88</sup> H1 suggests that the likelihood of bridging the gap can be an important consideration in assessing the likelihood of confusion. Second, the hypothesis also has implications for the nature of the “bridging the gap” factor and for its method of proof in the courts. We posit that the likelihood of consumer confusion will be enhanced by a consumer-expectation approach to bridging

---

87. Peter N. Golder & Gerard J. Tellis, *Pioneer Advantage: Marketing Logic or Marketing Legend?* 30 *J. of Mktg. Res.*, 158-70 (1993).

88. See Beebe, *supra* note 1, at 1591, Table 1.



the gap: that consumers will be more vulnerable to confusion if they expect brand extension by the senior mark, even in the absence of any concrete plans.

For the effect in H1 to manifest, in the terms of the continuing hypothetical, consumers must update the MERCEDES-BENZ schema and also the superordinate LUXURY VEHICLE schema, and they must retrieve and carefully consider the CADILLAC schema when categorizing the CADILLAC brand laptop computer. In performing this cognitive activity, we hypothesize that sophisticated consumers will be more likely to be confused. Specifically, consumers with greater ability to process such information will be facilitated in the cognitive schema-updating tasks noted above.

Our second and third hypotheses evaluate the impact of a series of considerations utilized by the courts as proxies for ability-related sophistication. Under H2, we consider a set of proxies for sophistication—consumer expertise and educational attainment—that find support in the theoretical foundations of consumer psychology. Under H3, we look at other consumer sophistication proxies adopted by the courts—gender, age, and income—that are not well-supported in consumer theory.

First, we hypothesize that consumers with greater expertise in the junior product category will be more likely to be confused.

H2a: If a competitor of the senior mark extends its brand into a new product category, consumers with higher expertise in the new product category will be more likely to be confused by a junior mark in the new product category (versus consumers with lower expertise).

This hypothesis finds support in our consumer psychology model. Consumers having greater expertise in a product category have extended knowledge structures stored in long-term memory that enable them to notice and process new information more carefully and to capture and parse nuance of meaning unavailable to more novice consumers.<sup>89</sup> Thus, more expert consumers will attend to and comprehend the details of advertising for products in their area of expertise and will be better able to integrate that information with existing knowledge relative to their more novice counterparts. These expert consumers are thus more likely to notice the details of competitors' brand extensions thus updating their more elaborate schema for the category, which in turn will increase the plausibility of further brand extensions across the same category gap.

---

89. Eric J. Johnson & J. Edward Russo, *Product Familiarity and Learning New Information*, 11 J. of Consumer Res. 542-50 (1984).

Second, we make a similar hypothesis for consumers with more generalized ability not specific to the product category:<sup>90</sup>

H2b: If a competitor of the senior mark extends its brand into a new product category, consumers with higher generalized consumer expertise will be more likely to be confused by a junior mark in the new product category (versus consumers with lower generalized consumer expertise).

Our model provides similar support for this hypothesis: Certain individuals are consistently and trans-situationally more involved in consumption and marketplace activities than are others;<sup>91</sup> their continued interest in consumption and the marketplace produces familiarity and expertise that increases the ability of these consumers to process market information (such as advertising and other marketing communications) more carefully. As with product category expertise, these generalized experts are more likely to attend to and process more carefully the details of brand extensions in the marketplace, making further extensions across similar marketplace boundaries seem more plausible. On the other hand, consumers with lower generalized consumer ability will have more restricted cognitive structures to work with when processing market information and thus are less likely to encode details of marketplace information. The more attenuated cognitive processing of these “less sophisticated” consumers will make it less likely that consumers will register individual brand extensions.

Third, formal education also may facilitate the processing of marketplace information.<sup>92</sup> More educated consumers thus are also more likely to process the details of brand extensions by competitors in the marketplace and in turn to find similar brand extensions plausible. This suggests that:

H2c: If a competitor of the senior mark extends its brand into a new product category, consumers with higher education will be more likely to be confused by a junior mark in the new product category (vs. consumers with lower education).

Consumer expertise and educational attainment are conceptually similar to the forms of consumer ability considered by the law under the umbrella term “sophistication.” Thus, H2a, H2b and H2c

---

90. Lawrence F. Feick & Linda L. Price, *The Market Maven: A Diffuser of Marketplace Information*, 51 J. of Mktg. 83-97 (1987).

91. Harold H. Kassarian, *Low Involvement: A Second Look*, 8 Advances in Consumer Research 31-34 (1981); Mark E. Slama & Armen Tachchian, *Selected Socioeconomic and Demographic Characteristics Associated with Purchasing Involvement*, 49 J. Marketing, 72, 73 (1985).

92. Studies have shown that educational attainment will facilitate cognitive ability. See Lampert, *supra* note 58, at 17-18.

implicate additional dimensions of the case law conflicts described above. We hypothesize that these forms of consumer sophistication will make consumer confusion *more likely* in circumstances where a competitor of a senior mark has extended its brand into the product category occupied by the junior user. Under such circumstances, and for theoretical reasons explained above, our hypotheses reject the general rule in the case law—which assumes a negative correlation between sophistication and consumer confusion—and provides at least one basis for finding a positive correlation.

Next, we also consider some other proxies for consumer sophistication that are not well supported by the consumer psychology model of consumer sophistication. Because some courts have held that women are more careful and thus more sophisticated consumers than men, gender is directly investigated.<sup>93</sup> In this context, where greater care is theoretically expected to lead to greater confusion, it is hypothesized that:

H3a: If a competitor of the senior mark extends its brand into a new product category, females will be more likely to be confused by a junior mark in the new product category (versus males).

Next, given that the courts frequently assume a positive correlation between increasing age and increased consumer care, age is directly investigated. Generally it is held that older consumers are sophisticated,<sup>94</sup> while younger consumers are believed to be as relatively careless.<sup>95</sup> Following the intuition of the courts, it is hypothesized that:

H3b: If a competitor of the senior mark extends its brand into a new product category, older consumers will be more likely to be confused by a junior mark in the new product category (versus younger consumers).

Finally, while there is no theoretical foundation for the expectation that income or wealth correlates directly with the ability related aspects of customer sophistication, some courts have held that “low income groups” are “less sophisticated shoppers

---

93. 3 McCarthy, *supra* note 18, § 23:99.

94. See *e.g.*, Banfi Prods. Corp. v. Kendall-Jackson Winery, Ltd., 74 F. Supp. 2d 188, 199 (E.D.N.Y. 1999) (finding consumers of wine, who are likely to be older than the general population, to be relatively sophisticated).

95. See *e.g.*, Blake Publ'g Corp. v. O'Quinn Studios, Inc., 202 U.S.P.Q. 848, 858 (S.D.N.Y. 1979).

than wealthier purchasers.”<sup>96</sup> Following these judicial findings, it is hypothesized that:

H3c: If a competitor of the senior mark extends its brand into a new product category, higher-income consumers will be more likely to be confused by a junior mark in the new product category (versus lower-income consumers).

Taken together, our empirical study of H1 through H3 has the potential to offer some concrete empirical answers to questions heretofore resolved only on the basis of judicial “intuition” and subjective “stereotypes.”<sup>97</sup> Our empirical results are particularly important because they address questions marked by hollow disputes in the case law—such as whether and when sophistication may cut in favor of confusion, whether and when the likelihood of “bridging the gap” may cut against it, and whether or not factors like formal education, purchasing experience, gender, age, and income are relevant.

## A. Method

### 1. Participants

To test our hypotheses, a study was conducted in which 495 people participated in an online questionnaire in return for a \$1 cash-equivalent incentive.<sup>98</sup> Rather than attempting to simulate a naturalistic purchase environment for laptop computers, controlled research settings such as this are used to limit extraneous influences and focus the study on the variables of interest.<sup>99</sup>

### 2. Stimuli

With the goal of creating stimuli to test the hypotheses, a well-known automotive brand (CADILLAC) was chosen as the senior mark. Notebook computers were chosen as a product category for the junior mark because notebook computers were anticipated to be relevant to online participants. A fictitious junior mark

---

96. *Schieffelin & Co. v. Jack Co. of Boca*, 850 F. Supp. 232, 250 (S.D.N.Y. 1994); *see also* *Telemed Corp. v. Tel-Med, Inc.*, 588 F.2d 213, 220 (7th Cir. 1978) (“Defendants gear their program not to the discriminating professional but rather to the public in general, especially those members in the lower income, less sophisticated ‘market.’”); *Citibank, N.A. v. Citytrust*, 596 F. Supp. 369, 373 (E.D.N.Y. 1984) (identifying an instance of actual confusion in the record and noting that such consumer “might fairly be characterized as sophisticated if there is a correlation between accumulation of wealth and sophistication”).

97. Bartow, *supra* note 3, at 723, 772.

98. Participants were recruited from a random sample of the 1.7 million member *Authentic Response* online research panel.

99. Richard L. Henshel, *The Purposes of Laboratory Experimentation and the Virtues of Deliberate Artificiality*, 16 *J. of Experimental Social Psychology* 466-78 (1980).

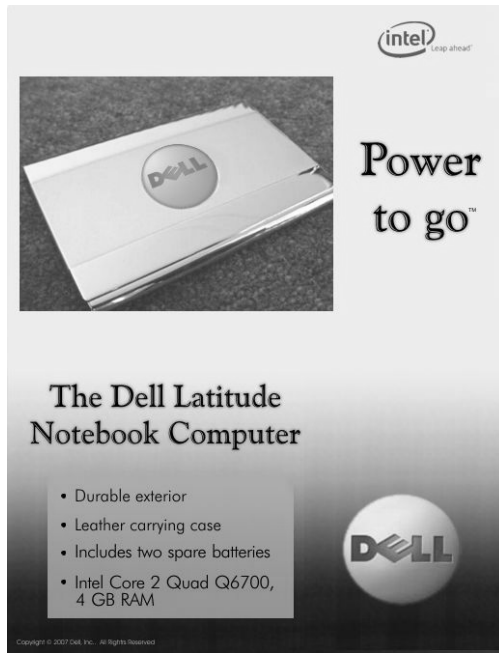
(CADILLAC brand notebook computers) was then created, along with an advertisement that described an upscale, luxurious notebook computer that could be offered by a firm attempting to infringe on the CADILLAC trademark. The following advertising text was introduced with the claim that it would “appear in the next edition of a popular computer-sales catalog.”

Cadillac brand notebook computer! This luxury notebook has an upgraded keyboard for better feel and absolutely silent typing. A dark mahogany inlay surrounds the screen. Matching dark mahogany accents are found on the wireless mouse and the leather carrying case. Intel Core 2 Quad Q6700, 4GB RAM, 200GB Hard Drive. *Price available upon request.*

H1 suggests that viewers of this advertisement will be more likely to suffer confusion by believing CADILLAC MOTORS to be the source of the notebook computer if another maker of luxury automobiles has already extended its brand into the luxury notebook computer product category. To test this hypothesis, three stimuli were created. The first stimulus (see Figure 1) was an experimental control designed to represent a typical advertisement for a notebook computer at the time of the study. The advertisement emphasized computing power and did not attempt to create an upscale positioning with luxurious product attributes.

The second stimulus informed participants of the launch of an upscale notebook computer (see Figure 2). Luxurious product attributes such as a titanium case were described in support of an upscale positioning. This second stimulus was another experimental control because the upscale notebook computer was described as being offered by a well-known computer company (Dell) rather than by an automotive company.

The third stimulus (see Figure 3) informed participants of the launch of an upscale notebook computer as a brand extension of a well-known automotive brand (MERCEDES-BENZ). To encourage participants to subtype the notebook computer in the MERCEDES-BENZ schema, the ad included a photo of a MERCEDES-BENZ car and a close-up of a MERCEDES-BENZ hood ornament. By comparing viewers of this stimulus with viewers of the two control stimuli, H1 can be tested.



The advertisement features a central image of a silver Dell Latitude notebook computer with the Dell logo on the lid. To the right, the Intel logo is at the top, followed by the slogan "Power to go™". Below the image, the text reads "The Dell Latitude Notebook Computer". A list of features is provided in a box: "Durable exterior", "Leather carrying case", "Includes two spare batteries", and "Intel Core 2 Quad Q6700, 4 GB RAM". A large Dell logo is positioned at the bottom right. A small copyright notice "Copyright © 2007 Dell, Inc. All rights reserved." is at the bottom left.

intel Leap ahead

Power to go™

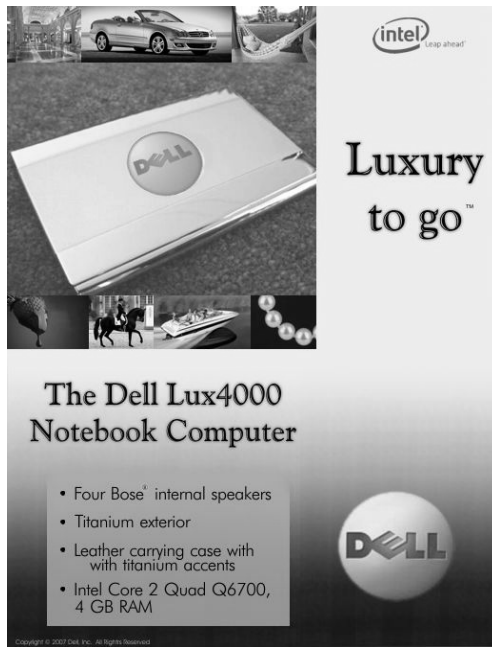
The Dell Latitude Notebook Computer

- Durable exterior
- Leather carrying case
- Includes two spare batteries
- Intel Core 2 Quad Q6700, 4 GB RAM

DELL

Copyright © 2007 Dell, Inc. All rights reserved.

Figure 1: Stimulus Shown in Condition 1 (Control Condition).



The advertisement features a central image of a silver Dell Lux4000 notebook computer with the Dell logo on the lid. To the right, the Intel logo is at the top, followed by the slogan "Luxury to go™". The central image is surrounded by four smaller images: a convertible car, a sailboat, a horse and rider, and a row of pearls. Below the image, the text reads "The Dell Lux4000 Notebook Computer". A list of features is provided in a box: "Four Bose® internal speakers", "Titanium exterior", "Leather carrying case with titanium accents", and "Intel Core 2 Quad Q6700, 4 GB RAM". A large Dell logo is positioned at the bottom right. A small copyright notice "Copyright © 2007 Dell, Inc. All rights reserved." is at the bottom left.

intel Leap ahead

Luxury to go™

The Dell Lux4000 Notebook Computer

- Four Bose® internal speakers
- Titanium exterior
- Leather carrying case with titanium accents
- Intel Core 2 Quad Q6700, 4 GB RAM

DELL

Copyright © 2007 Dell, Inc. All rights reserved.

Figure 2: Stimulus Shown in Condition 2 (Control Condition).

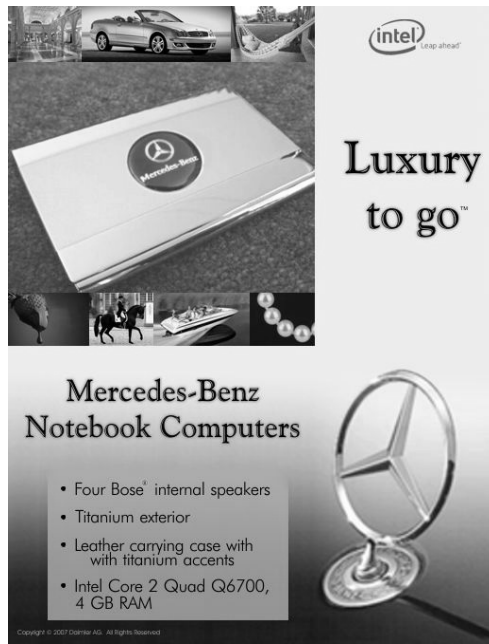


Figure 3: Stimulus Shown in Condition 3 (Treatment Condition).

### 3. Procedure

Participants were randomly assigned to view either the typical DELL computer advertisement (condition 1,  $n = 167$ ), the luxury DELL computer advertisement (condition 2,  $n = 165$ ), or the luxury MERCEDES-BENZ computer advertisement (condition 3,  $n = 163$ ). The experimental method was used to provide a rigorous test of the causality claimed in H1.<sup>100</sup> Depending on the assigned experimental condition, one of the three stimuli was shown as part of an online questionnaire instrument. The stimulus was shown in full-color, and the time of exposure was self-paced. Participants then completed a filler task to mask the purposes of the study. They were then shown the advertisement for the CADILLAC notebook computer and asked to complete the source-confusion battery (described below).

The study's independent variables were then measured. Similar to previous research,<sup>101</sup> expertise was operationalized in

100. Roger Kirk, *Experimental Design: Procedures for the Behavioral Sciences* (1995).

101. See, e.g., J. Edward Russo & France Leclerc, *An Eye-Fixation Analysis of Choice Processes for Consumer Nondurables*, 21 *J. Consumer Res.* 274, 282 (1994); see also Ronald D. Anderson, *Evaluating the Relationships Among Attitude Toward Business Product Satisfaction, Experience, and Search Effort*, 16 *J. of Marketing Res.* 394, 396 (1979).

this study as the number of computers the participant had purchased within the last five years. Based on previous research,<sup>102</sup> participants who have purchased computers more often can be expected to have a greater level of expertise with computer purchasing and computer brands.

Generalized consumer expertise was measured with the over-claiming technique—a method used by previous researchers<sup>103</sup> to measure the construct. The ability of participants to recognize brands in a wide variety of consumer product categories (and avoid claiming familiarity with fictitious brand foils) is measured with the technique. As such, the over-claiming technique is an application of signal detection theory, which has been applied to a wide variety of topics inside<sup>104</sup> and outside<sup>105</sup> the legal literature. Signal detection analysis researchers have embraced more than one method for scoring the accuracy of responses; the  $d'$  scoring

---

102. See Alba & Hutchinson, *supra* note 59, at 415-17.

103. Craig Nathanson et al., *Controlling Response Bias in the Measurement of Consumer Knowledge*, presented at the meeting of the Assoc. for Psychological Science, Washington, D.C. (2007). A related application of the over-claiming technique has been the measurement of generalized cognitive ability (Delroy L. Paulhus & P. D. Harms, *Measuring Cognitive Ability with the Overclaiming Technique*, 32 *Intelligence* 297, 298 (2004) and also Delroy L. Paulhus et al., *The Over-claiming Technique: Measuring Bias Independent of Accuracy*, 84 *J. of Personality & Social Psychology*, 681, 681 (2003)).

104. In the legal literature, signal detection theory has been applied to consumer information and antitrust law (Harry S. Gerla, *Federal Antitrust Law and the Flow of Consumer Information*, 42 *Syracuse L. Rev.* 1029, 1065 (1991)), judicial decision making (Barbara D. Underwood, *The Thumb on the Scales of Justice: Burdens of Persuasion in Criminal Cases*, 86 *Yale L. J.* 1299, 1331 n.93 (1977)), eyewitness identification (Dawn McQuiston-Surrett, *Sequential vs. Simultaneous Lineups*, 12 *Psychol. Pub. Pol'y & L.* 137, 159 (2006)), firearms identification (Victoria L. Phillips et al., *The Application of Signal Detection Theory to Decision-making in Forensic Science*, 46 *J. Forensic Sci.*, 294, 302 (2001)), jurors' presumption of innocence (Michael J. Saks & D. Michael Risinger, *Baselines, the Presumption of Guilt, Admissibility Rulings, and Erroneous Convictions*, 2003 *Mich. St. L. Rev.* 1051, 1053 (2003)) and prosecutors' judgments regarding evidence (Darryl K. Brown, *The Decline of Defense Counsel and the Rise of Accuracy in Criminal Adjudication*, 93 *Cal. L. Rev.* 1585, 1600 (2005)). For a general review of signal detection theory as it has been applied to the abilities of humans to make judgments in uncertain environments, see Neil A. Macmillan & C. Douglas Creelman, *Detection Theory: A User's Guide* (2d ed. 2005).

105. For example, signal detection theory has been applied to aptitude testing (David Marvin Green & John A. Swets, *Signal Detection Theory and Psychophysics* (1966)), memory testing (William P. Banks, *Signal Detection Theory and Human Memory*, 74 *Psychology Bull.*, 81 (1970)), medical diagnosis (John A Swets, *Signal Detection Theory and ROC Analysis in Psychology and Diagnostics: Collected Papers* (1996)), accounting judgments (Robert J. Ramsay & Richard M. Tubbs, *Analysis of Diagnostic Tasks in Accounting Research Using Signal Detection Theory*, 17 *Behavioral Research in Accounting*, 149 (2005)) and weather forecasting (Lewis O. Harvey Jr. et al., *The Application of Signal Detection Theory to Weather Forecasting Behavior*, 120 *Monthly Weather R.*, 863 (1992)).



method was used here because it is the most commonly used method<sup>106</sup> for measures such as the over-claiming technique.

The education of the participant was measured as the number of years of formal education, including high school and any education after high school. Lastly, the participant's age, gender, and household income were measured via self-report.

The source-confusion battery measured the outcome of interest: whether the participant judged the CADILLAC brand notebook computer to have been manufactured or licensed by Cadillac Motors. Detecting such judgments among participants is somewhat difficult because straightforward measurement scales may lead to social desirability effects<sup>107</sup> and reactivity effects (e.g., asking participants directly if they thought the automaker was the source of the notebook may prompt participants to consider the automaker for the first time). The company identification method of Simonson<sup>108</sup> was used to measure whether the participant experienced confusion (including confusion as to source, sponsorship, or affiliation). Following Simonson,<sup>109</sup> participants were shown the junior mark (i.e., the ad for the CADILLAC brand notebook computer) but not the senior mark. Similar to Simonson,<sup>110</sup> the participants who reported that they believed CADILLAC MOTORS was the source of the product were coded as having suffered confusion.

The specific questions and coding for the measure of confusion were as follows: after viewing the advertisement for the CADILLAC brand notebook computer, participants were asked three questions in an open-ended format: (1) "What company makes the notebook computer described in the catalog?" (2) "What makes you think so?" and (3) "What other products (if any) does that company also make?" Participants were then asked the following question: "Products manufactured by one company are sometimes (but not always) approved, licensed or sponsored by another company. Consider the notebook computer described above. Do you think it was approved, licensed or sponsored by another company?" Participants who responded affirmatively were then asked two more open-ended questions: (1) "What company do

---

106. Ramsay & Tubbs, *supra* note 105, at 155 (commenting that the *d'* measure of accuracy is the one "traditionally employed.") Instructions for calculating the *d'* score are given by Macmillan & Creelman, *supra* note 104.

107. See Bradlee R. Boal, *Techniques for Ascertaining Likelihood of Confusion and the Meaning of Advertising Communications*, 73 TMR 405-35 (1983) (noting that participants may be reluctant to admit confusion to avoid an appearance of stupidity).

108. Itamar Simonson, *Trademark Infringement From the Buyer Perspective: Conceptual Analysis and Measurement Implications*, 13 J. of Pub. Ply. & Mktg., 181-99 (1994).

109. *Id.*

110. *Id.*

you think approved, licensed, or sponsored the notebook computer?" and (2) "What other products (if any) does that company also make?"

In accordance with the way these measures have been used previously,<sup>111</sup> it was decided *a priori* that participants would be coded as having suffered brand confusion if their responses to the source-confusion battery clearly referred to the automaker as the source of the notebook computer. For example, a participant who used phrases such as "It's General Motors," "It's the Detroit automaker," or "They make cars and SUVs" would be coded as having experienced confusion.

## B. Results

Two independent coders blind to the hypotheses and the experimental conditions evaluated each participant's responses to the open-ended questions in the source-confusion battery. Using the coding scheme described above, each participant was coded as either "confused" or "not confused." Intercoder reliability was very high (coding agreement = 99%, kappa = .96). The few disagreements between coders were resolved by discussion.

### 1. Testing H1

To test H1, the overall proportion of participants who were confused was calculated for each experimental condition. In condition 1, 12 percent of participants were confused, as compared to 18 percent in condition 2 and 39 percent in condition 3. A Chi-Square test ( $X^2 = 36.34$ ,  $df = 2$ ,  $p < .001$ ) indicates the three conditions do not have the same proportion of confused participants (i.e., at least one of the conditions is different from the others).

Comparing condition 1 to condition 2, the proportions of confused participants were not statistically different (Fisher's Exact Test  $p > .05$ ). Because there was no difference between likelihood of confusion for the two control conditions, it can be concluded that the likelihood of confusion for the CADILLAC notebook computer was not increased by an introduction of an upscale notebook computer under the DELL brand.

Most important for the test of H1 is the comparison between conditions 1 and 3. The proportion of confused participants in condition 1 (12 percent) was compared to the proportion of confused participants in condition 3 (39 percent), and the two proportions were found to be statistically different (Fisher's Exact Test  $p < .001$ ). Thus, as predicted by H1, it can be concluded that

---

111. *Id.*

the introduction of an upscale notebook computer under the MERCEDES-BENZ brand caused an increase in the likelihood of confusion.

It could be argued that it was merely the introduction of an upscale notebook computer in condition 3 that caused the observed increase in likelihood of confusion, rather than the product's branding as an extension of the MERCEDES-BENZ trademark. To test this alternate explanation for the findings, conditions 2 and 3 were compared. The proportions of confused participants in these two conditions were statistically different (Fisher's Exact Test  $p < .001$ ), suggesting that even when compared to the launch of an upscale DELL notebook computer, the launch of an upscale MERCEDES-BENZ notebook computer caused an increase in the likelihood of confusion.

## 2. Testing H2 and H3

Combined, H2 and H3 predict that a variety of constructs will influence the likelihood of confusion when Mercedes-Benz has extended its brand into the notebook computer category. To test these hypotheses, the probability of confusion among participants in condition 3 was modeled as a function of the measured independent variables using logistic regression:

$$\log(p / (1 - p)) = \text{Intercept} + \beta_1 \text{ProductExpertise} + \beta_2 \text{ConsumerExpertise} \\ + \beta_3 \text{Education} + \beta_4 \text{Gender} + \beta_5 \text{Age} + \beta_6 \text{Income}$$

In this formula,  $p$  is the probability of confusion, ProductExpertise is the measure of the participant's expertise with purchasing computers, ConsumerExpertise is the measure of the participant's generalized consumer expertise, Education is the number of years of the participant's formal education, Gender is coded 0 for male participants and 1 for female participants, Age is the participant's age (in years), and Income is the participant's household income. The estimated logistic regression coefficients for each condition are summarized in Table 1.

**Table 1. Logistic Regression Results**

Parameter	$\beta$ Estimate	Standard Error of $\beta$ Estimate
Intercept	-4.16	1.03 **
ProductExpertise	0.38	0.16 *
ConsumerExpertise	0.61	0.15 **
Education	0.15	0.07 *
Gender	-0.45	0.44
Age	0.01	0.01
Income	0.09	0.06

\*  $p < .05$  \*\*  $p < .0001$

The estimated coefficient for ProductExpertise was found to be statistically significant ( $p < .01$ ) and positive, suggesting that the variable was associated with increased likelihood of confusion. That is, in the context of a brand extension by Mercedes-Benz into the notebook computer product category, participants who had higher expertise in purchasing computers were more likely to suffer confusion when viewing the CADILLAC notebook computer. This finding supports H2a.

As shown in the table, the estimated coefficients for ConsumerExpertise ( $p < .001$ ) and Education ( $p < .05$ ) were also statistically significant and positive, suggesting that generalized consumer expertise and education were also associated with increased likelihood of confusion when participants were exposed to a MERCEDES-BENZ notebook computer. These findings support hypotheses H2b and H2c.

As also shown in the table, the estimated coefficients for Gender, Age and Income were statistically nonsignificant. This suggests that, in the context of a MERCEDES-BENZ brand extension into the notebook computer category, none of these variables influence the likelihood of confusion in any significant way. Thus, H3a, H3b and H3c were not supported.

## V. CONCLUSION

The theoretical and empirical tools utilized in the scholarly study of consumer behavior hold the potential to inform a broad range of conflicts in trademark law. Two such conflicts concern the

relevance and methods of proving the consumer “sophistication” and competitive “gap-bridging” factors in the judicial evaluation of the likelihood of confusion. Theoretical modeling and empirical testing allow us to take important steps beyond the stereotypes and impressionism that dominate the courts’ consideration of these issues.

As for “gap-bridging,” our study offers theoretical and empirical support for the hypothesis that a brand extension by a competitor of the senior mark increases the likelihood of confusion. Utilizing schema theory, we explain that consumers are likely to find an extension by the senior mark to be more plausible if a competitor of the senior mark has already made such an extension. With this increased plausibility comes an increased likelihood of schema subtyping and, therefore, an increased likelihood of confusion. The theoretical basis for the hypothesis finds support in our empirical study, which shows that consumers are significantly more likely to be confused by the introduction of a CADILLAC brand notebook computer if they have already been exposed to a MERCEDES-BENZ brand entry into that market.

Our analysis supports the view of a minority of the federal circuits that expressly consider the likelihood of “gap-bridging” as a factor in the likelihood of confusion calculus. We offer theoretical and empirical grounds for giving weight to this factor. Our analysis suggests that those circuits that have not embraced the “gap-bridging” factor should do so.

This factor arguably has only increased in practical significance of late, given the increasingly brand-extended world that we live in. Our analysis lends substantial weight to the relevance of this “widely adopted strategy,”<sup>112</sup> because it indicates that every new brand extension makes an entire set of trademarks (i.e., all the competitors of the extended brand) more vulnerable to source confusion. Moreover, the common practice of multiple brand extension (e.g., Honda’s marine engines, weed trimmers, and jet aircraft) provides important benefits to managers.<sup>113</sup> Such multiple brand extensions make their competitors vulnerable to source confusion from many different directions. Our study also informs the debate in the case law on the method of proof of “gap-bridging.” Where it is considered, “gap-bridging” should be evaluated from a consumer-expectation standpoint, and not (as some courts have suggested) merely from the perspective of concrete managerial plans.

---

112. Piyush Kumar, *The Impact of Cobranding on Customer Evaluation of Brand Counterextensions*, 69 J. of Mktg., 1, 1-18 (2005).

113. Vanitha Swaminathan, *Sequential Brand Extensions and Brand Choice Behavior*, 56 J. of Bus. Research 431 (2003).

As for consumer “sophistication,” we have identified theoretical and empirical support for treating this as a factor that cuts *in favor of* the likelihood of confusion (in the circumstances evaluated here). On a theoretical level, we explain that consumers with increased ability are those most likely to perform the cognitive processes necessary to make a connection between a junior and senior mark, and note that the exercise of consumer care cannot be expected to dispel that connection in the face of an apparently identical junior use. Thus, in the case of a junior mark that is indistinguishable on its face from the senior mark, we find reason to disagree with the conventional wisdom in the case law that sophisticated consumers are unlikely to be confused. Our empirical study supports this view, showing that study participants with greater “ability” to perform the source-identification judgment were more likely to be confused by the CADILLAC notebook computer.

Finally, our empirical study provides preliminary grounds for evaluating some judicial stereotypes of the “sophisticated” consumer. Three such stereotypes find preliminary confirmation in our data, in that confusion correlated positively in our study with product expertise, general consumer expertise, and educational attainment. For these consumers, their “sophistication” appears to enhance their ability to update the relevant memory schemata with information about brand extension, resulting in increased vulnerability to confusion. As for other stereotypes in the case law (e.g., that gender, age, and income affect the ability aspects of “sophistication”), however, we found no significant effect on the likelihood of confusion. Our analysis thus calls into question the judicial use of these stereotypes in the evaluation of the likelihood of confusion calculus.

Our approach is intended as a beginning, not an end, of a careful scholarly examination of the factors considered by the courts in their evaluation of the likelihood of confusion. On these and other factors, the theoretical and empirical tools employed by those who study consumer psychology can continue to inform and transform the law in a field that expressly relies on assumptions about consumer behavior.

---