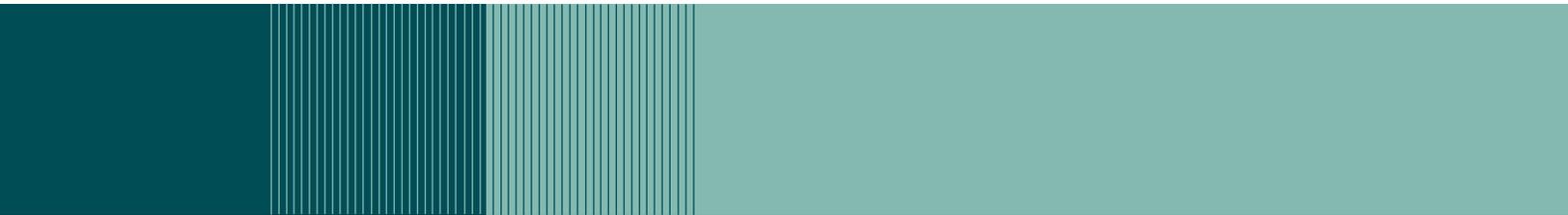January 8, 2007

# Survey Techniques for Rigorous Measurement of Damages in Trade Dress Confusion Cases

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# I.      Introduction

The purpose of this paper is to describe Choice Modeling, a method for measuring the degree of confusion in trade dress infringement cases and for simultaneously measuring the size of any damages that may result from the confusion.  The method, which has been improved upon by economists at NERA, is often used in market research.  Under a Choice Modeling exercise, survey respondents compare the features of a product, including brand name, trade dress and price, and report their preferences for a particular combination of features.  An example, described below, will illustrate the concept.

Choice Modeling has at least two significant advantages over conventional surveys.  First, since Choice Modeling is derived from a well-formulated theory of consumer behavior, results can be translated into monetary values, not merely reports of the percentage of respondents indicating that they were confused.  The effect of an allegedly confusing brand name or product trade dress is measured in terms of lost sales occurring at specific price levels, all else equal.  Choice Modeling can also be used to make direct estimates of possible damages from decreased profit margins due to any price reductions required to maintain market share.

Second, Choice Modeling surveys reduce the amount of bias introduced by the interaction between the interviewer and the respondent.  In fact, no interviewer or respondent could possibly guess the significance of any answer or how a response relates to the final analysis.

# II.      An Illustrative Survey

Choice Modeling can be explained by describing a synthetic survey that we undertook for demonstrative purposes.  We examined a trade dress issue involving running shoes sold within a hypothetical marketplace of four manufacturers.  These included three industry stalwarts – Nike, New Balance and Reebok – and a fourth obscure manufacturer offering its shoes under either or both of the brand names, "Lightning" or "Reebeck."

Each brand of running shoe was described by several characteristics:  brand name, weight, availability of width sizing, impact cushioning and shoe upper body material.  These characteristics can be combined in hundreds of ways to make up a full description of a product. For instance, a Nike shoe may weigh 10 ounces, have a nylon upper body, EVA mid-sole, come in varying width sizes and cost $90.

Using standard sampling techniques, we generated hundreds of different combinations of attributes and printed the descriptions on a large number of product-description cards.  Four such cards are shown in Figures 1 through 4.  Survey respondents were each given sets of four randomly selected cards and asked to rank the cards in order of their preference for the combinations of attributes. (Note that there is limited opportunity for the respondent's answer to be biased in response to any perceived preferences of the interviewer.)  The responses were then analyzed using statistical programs developed at NERA.

This survey, administered to both recent college graduates and attorneys, yielded several interesting results. As might be expected, the prominent brand name shoes—Nike, New Balance, and Reebok—had market shares which were less sensitive to price differentials than did the obscure Reebeck and Lightning brands. Not surprisingly, the presumably relatively well-off attorneys demonstrated somewhat lower price sensitivity than the younger respondents.

We also undertook an experiment in which the manufacturer of the relatively obscure Lightning brand attempted to increase market share by marketing a brand called "Reebeck." We observed direct evidence of consumer confusion. This was revealed in two ways. Assume for the moment that the marketplace actually consisted of four brands of shoes—Nike, New Balance, Reebok and an obscure brand—each with identical product characteristics and prices. When the obscure brand was "Lightning," market shares were heavily dominated by the three prominent brand names, with Nike having the leading share (see Figure 5.) However, when the obscure brand was sold under the "Reebeck" label (and nothing else changed), its market share increased by three percentage points over the "Lightning" brand. In today's running shoe market, that magnitude of change would involve many millions of dollars.

Confusion could be capitalized on by charging a higher price for a product with the "Reebeck" brand rather than the "Lightning" brand. Indeed, for these respondents, we found that, all else equal, the obscure manufacturer could rebrand its running shoes from "Lightning" to "Reebeck," charge $20 more per pair, and not suffer any loss in market share. In real markets where trade name and/or trade dress infringement has occurred, we would expect the effects to be some combination of increased market share and higher price for the infringing brand, all else equal.

However, increased margins and higher market shares from using the "Reebeck" brand seem to have arisen only under circumstances in which the "Reebeck" brand was available and the "Reebok" brand was not. In the context of a shopping situation, this means that the overlapping brand names did not have a material impact in the marketplace when the retailer placed both "Reebok" and "Reebeck" side-by-side on the shelf. When consumer choice sets involved both brands, all else equal, the change from the "Lightning" brand name to "Reebeck" did not increase market share at all (see Figure 6.) In fact, in this case, all else equal, the obscure manufacturer would have had to discount its prices by $26 dollars to obtain the increase in market share that it previously had achieved through consumer confusion (see Figure 7.)

## III.    Examples of NERA Choice Modeling Projects

A specific and relatively straightforward example of work that NERA has done in this area involved an assessment of the effectiveness of account executives. The revenue request of an eastern local telephone exchange company was being challenged by the staff of a public service commission. The staff asserted that the expenses paid for account executives could not be justified. NERA estimated a choice model in which the telecommunications manager's telephone choice variables were price, technical characteristics, reliability, quality and speed of service, accuracy of invoices and the assistance of an account executive. NERA's analysis showed that in order to sell the same level of service without an account executive, the telephone

exchange company would have had to reduce prices by about 8.5 percent. Since account executives cost less than half of this amount, they were clearly a cost-effective expenditure, serving to reduce the costs of telephone service to residential ratepayers.

Another project arose out of the New York Mercantile Exchange's (NYMEX) desire to unbundle real-time data on commodity prices from other exchange prices. Specifically, NYMEX needed to know how much to charge for the first and additional data terminals which were used to recover this data. In order to determine the most profitable selling price of these services, NERA undertook a choice modeling exercise for the Exchange. The output from this effort was a matrix of potential pricing plans for the new ticker service; each associated with a revenue projection. The actual revenue achieved closely matched NERA's projections for the pricing plan eventually selected by NYMEX.

**FIGURE 1**

## SAMPLE PRODUCT CARD

Card Number: 82at296

| | |
|---|---|
| **Brand Name:** | **New Balance** |
| **Price:** | **$70.00** |
| **Material:** | **Nylon** |
| **Weight:** | **12.5 (oz.)** |
| **Cushion System:** | **EVA midsole** |
| **Width Sizing:** | **Not available** |

**FIGURE 2**

## SAMPLE PRODUCT CARD

Card Number: 76at879

| | |
|---|---|
| **Brand Name:** | **Reebok** |
| **Price:** | **$100.00** |
| **Material:** | **Leather** |
| **Weight:** | **10 (oz.)** |
| **Cushion System:** | **Air Cushions** |
| **Width Sizing:** | **Available** |

FIGURE 3

# SAMPLE PRODUCT CARD

Card Number: 92at512

| | |
|---|---|
| Brand Name: | Reebok |
| Price: | $80.00 |
| Material: | Leather |
| Weight: | 11 (oz.) |
| Cushion System: | EVA midsole |
| Width Sizing: | Not available |

FIGURE 4

# SAMPLE PRODUCT CARD

Card Number: 11at698

| | |
|---|---|
| Brand Name: | Reebeck |
| Price: | $90.00 |
| Material: | Leather and Nylon |
| Weight: | 12.5 (oz.) |
| Cushion System: | Air Cushions |
| Width Sizing: | Available |

FIGURE 5

# EFFECT OF BRAND NAME CONFUSION ON MARKET SHARE

| | Nike | New Balance | Reebok | Lightning | Reebeck |
|---|---|---|---|---|---|
| Scenario1: | 36% | 30% | 26% | 8% | |
| Scenario2: | 35% | 29% | 25% | | 11% |

Gain from Confusion:    3 Percentage Points
                          of Market Share

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**FIGURE 6**

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## CONSUMERS WHO SEE REEBOK AND REEBECK SIDE-BY-SIDE ARE NOT CONFUSED

|                | Nike | Reebok | Reebeck | New Balance |
|----------------|------|--------|---------|-------------|
| *Market Share* | 38%  | 24%    | 8%      | 30%         |

Same market share as if marketed as "Lightning"

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**FIGURE 7**

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## CONSUMERS WHO SEE REEBOK AND REEBECK SIDE-BY-SIDE ARE NOT CONFUSED

|                | Nike | Reebok | Reebeck | New Balance |
|----------------|------|--------|---------|-------------|
| *Market Share* | 36%  | 23%    | 11%     | 30%         |

No Name must discount Reebeck by $26

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