Relative Vs. Absolute Comparison of Prices

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In the context of two experiments, the authors examine the manner in which high and low prices are compared. They find that a comparison of sale price to regular price may be more likely to involve a relative (percent) assessment, whereas a comparison of sale price to a competitor’s price may be more likely to involve an absolute difference assessment. The authors find that horizontal (i.e., side-by-side) placement of prices may result in more holistic processing, and a greater tendency to estimate discounts in relative terms. Conversely, vertical (i.e., columnar) placement facilitates digit-by-digit comparison, and therefore may result in more specific calculation procedures (i.e., a greater tendency to compute absolute numerical difference).

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EXTENDED ABSTRACT

The widely used practice of comparative price advertising has been a focal point of consumer and marketing research for decades (e.g., Compeau and Grewal 1998). Marketers may engage in comparative price advertising by: a) contrasting a higher “regular” price with a lower “sale” price, or b) comparing a “competitor’s” price to the marketer’s own sale price (Compeau, Grewal, and Chandrashekaran 2002). In either case, the higher regular (or competitor’s) price serves as an externally supplied frame of reference, which leads consumers to perceive less benefit from continued search (Urbanby, Bearden, and Weilbaker 1988), and to associate less sacrifice with the lower sale price (Compeau et al. 2002). Consequently, comparative price advertising tends to engender more favorable consumer value perceptions, and marketers embrace this form of advertising as a means to affect consumers’ purchase decisions and stimulate sales.

Comparison of regular-to-sale or competitor-to-marketer (sale) prices may also lead consumers to assess a price discount. That discount could be perceived in relative (i.e., as a percentage) or absolute terms. Absolute discount is defined as higher price minus lower price, whereas relative (percentage) discount is defined as [(higher price–lower price)/higher price]. Although the latter may involve a more complicated computational procedure, research has demonstrated that consumers exposed to comparative price advertisements containing regular and sale prices are able to assess relative price discounts with a fairly high degree of accuracy, even in relatively low involvement settings that evoke minimum cognitive expenditure (e.g., Coulter and Norberg 2009).

A preponderance of studies in the numerical cognition literature has demonstrated that numerical magnitude comparisons typically follow the Weber-Fechner Law. That is, numerical comparisons follow a log-linear function such that the perceived difference between numbers is compressed as the size of those numbers increases (Dehaene et al., 1990). Consequently, when making quantitative comparisons, one’s ability to distinguish between two numbers (e.g., determine which is larger or smaller) is directly related to the relative difference between them (Dehaene, 1992). Studies within the pricing literature confirm that perceived numerical differences may involve relative, rather than absolute, amounts (e.g., Kruger and Vargas 2008; Coulter and Norberg 2009). However, other recent studies suggest that consumers’ evaluation of a price discount can be impacted by the absolute difference between the two prices (Thomas and Morwitz 2009). Therefore, a primary goal of the present study is to examine the circumstances under which a price difference might be assessed and encoded in relative versus absolute terms.

Understanding such a distinction is important because it allows the marketer to present his/her price comparison in the most favorable possible light. For example, consider two price discounts: $222/$211 and $45/$40. If consumers were more likely to assess absolute (relative) discounts in the former (latter) instance, then marketers might communicate the $11 (rather than 5%) difference for the $222/$211 discount, but the 11% (rather than 5%) difference for the $45/$40 discount. In addition, research has shown that both conscious and non-conscious processes may operate at encoding to impact the perceived magnitude of a price discount. Price discount effects reported in the literature that are theoretically grounded in these processes include the “physical font size effect” (Coulter and Coulter 2005), “discount-distance congruency effect” (Coulter and Norberg 2009), “left digit effect” (Thomas and Morwitz 2005), “right digit effect” (Coulter and Coulter 2007), and “ease-of-computation effect” (Thomas and Morwitz 2009). All of the aforementioned effects depend on the manner in which prices are compared (i.e., in relative versus absolute terms). Thus knowledge of this comparison procedure allows the marketer to understand (and manipulate) the other perceptual processes that operate at encoding to impact discount assessments.

In this paper, we suggest that a comparison of sale price to regular price may be more likely to involve a relative (percent) assessment, whereas a comparison of the marketer’s own sale price to a competitor’s price may be more likely to involve an absolute difference assessment. We further suggest that the physical placement of prices in a comparative price advertisement may impact how those prices are contrasted. Because horizontal (i.e., side-by-side) physical placement hinders digit-by-digit comparison, that type of format may result in more holistic price processing and a greater tendency to estimate discounts in relative terms. Conversely, vertical (i.e., columnar) placement facilitates digit-by-digit comparison, and therefore may result in a greater tendency to calculate the absolute numerical difference.

We examined our hypotheses in the context of two Experiments. In E1 subjects were asked to evaluate the magnitudes of a series of price discounts, which were represented by two prices presented to them on successive computer screens. The instructions did not specify whether the magnitudes were to be assessed in absolute or relative terms, but did specify that the higher prices referred to either a competitor’s prices, or the seller’s own “regular” prices. We measured the perceived magnitude of the discounts on a 10-point semantic differential scale anchored by “small” (1) and “large” (10). Reaction time (i.e., the 2nd dependent variable) was measured in milliseconds using a commercially available response-time software. A 2 (separation: horizontal, vertical) x 2 (higher price: competitor vs. regular) x 15 (absolute difference: range=1-92) x 27 (relative numerical difference: range=1.10%-50%) mixed between/within-subjects design was employed. Preliminary ANOVA results revealed that when subjects were told that the higher price referred to a competitor’s (regular) price, the absolute (relative) difference between prices affected both discount magnitude perceptions and reaction time. Further when prices were viewed in vertical (horizontal) format, the absolute (relative) difference between prices impacted both discount magnitude perceptions as well as reaction time.

In order to assess the degree to which absolute versus relative difference drives consumer purchase in a forced choice scenario, we conducted a second experiment. In E2 eighteen participants are asked to choose between two sets of discounts, and choice/reaction time was assessed using the same response-time software. Logistic regression revealed that participants chose the greater relative discount for 91% of horizontal comparisons, but for only 56% of vertical comparisons; vertical format was 2.13 times more likely to predict choice of the higher absolute difference than was horizontal format. Participants chose the greater relative discount for 78% of
regular high price cases but for only 67% of competitor high price cases; the regular high price was .55 times less likely to predict choice of greater absolute discount than competitor high price.

Initial results from our two experiments support our contention that serial/columnar price presentation format and regular/competitor reference price designation will impact whether prices are compared in absolute or relative terms. These results have important implications for the marketing practitioner.

REFERENCES