When Profit Equals Price: Consumer Confusion About Donation Amounts in Cause-Related Marketing

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A series of five studies examine potential consumer confusion associated with the "percentage of profit" wording often used to describe cause-related marketing in which money is donated to a charity each time a consumer makes a purchase. The initial four studies demonstrate that (1) expressing the donation amount as a percentage of profit leads to widespread confusion and near universal overestimation of the amount being donated, (2) even consumers who have had formal accounting training are susceptible to this bias, (3) participant motivation in an experimental setting cannot account for these results, and (4) people report higher attitudes toward a company and express stronger purchase intentions as a function of the percentage value of the donation but not as a function of whether it is a percentage of profit or price. The authors conclude with a study that explores several potential affirmative disclosures for the percentage-of-profit problem.

Cause-related marketing (CRM) is a promotional technique that enables a sponsoring firm to affiliate itself with a charity by donating money that is "linked to customers' engaging in revenue-producing transactions with the firm" (Varadarajan and Menon 1988, p. 60). Typically, this is done by stating to consumers that some amount of money will be donated to a charity each time a purchase of the product is made. It is a rapidly growing form of promotion that is expected to exceed $945 million in spending in North America in 2003 (IEG 2002).

Previous CRM research suggests that the presence of such promotions can have a beneficial impact on the way consumers perceive advertisers (Ross, Patterson, and Stutts 1992) and that CRM influences their purchase decisions (Pracejus and Olsen, in press; Webb and Mohr 1998). Strahilevitz and Meyers's (1998; see also Strahilevitz 1999) research further suggests that under some conditions, most people prefer that a company donate a portion of the price to charity rather than reduce the price of the item.

If the amount donated through CRM were always stated in a transparent, straightforward way, there would be little concern about potential consumer confusion. Previous academic research that examines the impact of CRM on brand choice (e.g., Barone, Miyazaki, and Taylor 2000; Pracejus and Olsen, in press; Strahilevitz 1999; Strahilevitz and Meyers 1998) has always presented participants with the actual amounts being donated, expressed in absolute dollar terms. However, transparency of donation amounts is far from universal in actual CRM practice. Casual observation suggests that among the offerings, some are expressed as a percentage of the sales price (a reasonably straightforward calculation), others are expressed as a percentage of profits, and some are expressed in completely vague terms (e.g., a portion of the proceeds will be donated). Although other work has considered the use and impact of vague quantifiers in CRM (Pracejus, Olsen, and Brown, in press), this article focuses on the distinction between two prevalent formats: percentage of price and percentage of profit. A content analysis of CRM offers on the Web has determined that both formats occur with some frequency and that percentage-of-profit formats are used more than five times as often as percentage-of-price formats (Pracejus, Olsen, and Brown 2003).

Both formats may represent good-faith attempts to express the amount being donated; however, they may not be equivalent with respect to their ability to accurately convey this amount. There is reason to believe that percentage-of-profit formats are more problematic than percentage-of-price formats. For example, some consumers may employ inappropriate estimation strategies. Note that requiring a consumer to estimate on the basis of profit involves an extra mathematical step than does calculating a percentage of the sales price. Specifically, whereas the latter requires only one calculation (i.e., x% of the price), the former requires an estimation of the profit and a calculation of the donation amount based on this value. Although we do not argue that consumers are incapable of performing two operations, imposing a second step adds to the complexity of the task and expands the likelihood of error (i.e., assuming that for any given operation performed there is some possibility of error).

It is well documented that people often take computational shortcuts, which can result in poor approximations of true numeric values. For example, Eddy (1982) found that 95% of physicians, given all necessary information, estimated posterior probabilities of breast cancer given a positive test result as between 70 and 90%, when the true probability was 7.8%. This order-of-magnitude error was largely due to the physician sample's ignoring or improperly using one or more critical pieces of information. Similar findings have been obtained for posteriors associated with other diseases (Casscells, Schoenberger, and Graboys 1978; Hammerton 1973) and even the color of a taxi (Bar-Hillel 1980; Tversky and Kahneman 1982). However, people's inability to make accurate calculations is not limited to complex, probability-format Bayesian posteriors. For example, it has been shown that many consumers engage in inappropriate

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strategies when doing something as simple as determining which of two packages has the lower price-per-unit weight (Capon and Kuhn 1982).

Such biases, which are prevalent in calculation, have also been observed in estimation. People have been shown to engage in estimation strategies that may involve calculation (Brown 2002b; Brown and Siegler 1993). In such cases, if the calculation is biased, the resulting estimations also will be biased. Beyond this, it is well documented that estimation strategy selection can be restricted by (1) the availability of task-relevant information and (2) the nature of task-relevant information (Blair and Burton 1987; Brown 2002a). Previous research also shows that estimation bias is systematically related to strategy selection.

Because people often take computational shortcuts, it seems likely that a small subset of the population skips the step of estimating profit levels entirely. We refer to this possibility as the profit-equals-price (PEP) effect, which may lead to drastic overestimation of the amount being donated in a CRM campaign. For example, if a brand states that "10% of the profit will be donated" and the profit level is 10%, this is equivalent to a "1% of price" donation level. Given the PEP effect, a consumer would mistakenly calculate 10% of the price, resulting in a donation estimate that was off by an order of magnitude (i.e., ten times too high).

Even when people do take profit into consideration when calculating the donation estimate, estimates of CRM donation amounts can be quite poor. Because consumers do not typically know the actual profit level for an item, stating a donation as a percentage of profit is potentially confusing. This situation is more problematic because recent research has demonstrated that consumers are inclined to overestimate profits, often to an extreme extent (Bolton, Warlop, and Alba 2003). Consequently, by overestimating profits, consumers may overestimate the amount being donated in a CRM campaign. We refer to this as the profit-overestimation (PO) effect.

In addition, when the term "profit" is used, it is not clear whether this refers to the gross profit (i.e., the retail price of the item minus the price paid by the retail store to the supplier for the item) or the net profit (i.e., profit after additional costs of doing business, such as rent for the retail space, electricity, and payment of employees, are factored in). The latter is necessarily less than the former. Indeed, if a company refers to the net margin, it is possible that there is no net profit (depending on the level of the costs and the way they are allocated), even if gross profit is large. In such cases, a CRM offer predicated on a percentage of profit will result in no donation to charity whatsoever.

Although the frequency of "creative" accounting in CRM is not known, anecdotal evidence points to its existence. In 2001, Oregon's attorney general charged the operators of "The Miracle of a Million Lights" with making bogus claims that a portion of admission proceeds from an annual Christmas light display would benefit charities. The operators responded by saying, "There was no profit, I don't think, any year. We're not going to say we're guilty, because we're not" (Hogan 2001, p. A1). Despite this reasoning, the owners agreed to pay a $31,200 settlement to the charities involved. Specifically, Oregon Attorney General Hardy Myers stated, "When a for-profit entity represents that proceeds from an event or product sale will be donated to charity, the law requires the entity to actually make the donation" (Oregon Department of Justice 2001).

The issue of transparent portrayal of the actual amount being donated has received additional attention from regulators. For example, a consortium of 19 states' attorneys general issued "Draft Report on Cause Marketing" (State of California, Office of the Attorney General 1999), which specifically states, "Advertisements arising from all corporate-nonprofit arrangements shall not mislead, deceive, or confuse the public about the effect of consumers' purchasing decisions on charitable contributions by the consumer or the commercial sponsor." Thus, from a consumer protection perspective, there is reason to believe that any method of expression that could lead to the systematic overestimation of donation values would be of concern.

Because there are at least two theoretical mechanisms (PEP and PO) by which consumers might overestimate donation amounts when presented as a percentage of profit, and because regulators have expressed concern about the accurate portrayal of these amounts, we believe that the investigation of the impact of different formats is an important marketing and public policy issue. We present five studies to examine biases that might occur when donation information is presented as a percentage of profit. The first four studies demonstrate the following: (1) Expressing the donation amount as a percentage of profit leads to widespread confusion and near universal overestimation of the amount being donated, (2) even consumers who have formal accounting training are susceptible to this bias, (3) participant motivation in an experimental setting cannot account for these results (a $5 award for accurate estimates does not improve estimation accuracy), and (4) people report higher attitudes toward a company and stronger purchase intentions as a function of the donation amount (1% versus 10%) but not as a function of the term "profit" or "price" being used as the base. We conclude by exploring several potential affirmative disclosures for the percentage-of-profit problem along a continuum that balances the potential for consumer confusion with intrusiveness (see Mazis et al. 1981).

Study 1

The purpose of the initial study is threefold: (1) to indicate whether expressing information as a percentage of price leads to acceptable estimates and therefore whether it is a suitable method of expression in and of itself, (2) to determine whether consumers understand the concept of profit, and (3) to understand the nature of profit estimates provided by participants and the extent to which this information is incorporated into the donation estimates in percentage-of-profit formats.

Experimental Design and Procedure

A total of 62 students in an introductory anthropology course voluntarily participated in this study. We used a one-way, two-level design, manipulating the type of offer provided to the respondents: 5% of profits and 5% of the retail price. The experimental advertisement was for a fictitious office equipment retailer (Office Warehouse) and featured a photograph of a brand-name ink-jet printer for $149.96. The printer and the sales price were based on an actual advertisement for a comparable ink-jet printer featured at the

same price. We chose ink-jet printers because of their relevance to the student sample. Specifically, we conducted testing with a separate group of 33 undergraduate students. A total of 66.7% of these participants had previously been involved directly in the purchase of an ink-jet printer, and 84.8% of participants had purchased an ink-jet printer in the past and/or intended to purchase one in the next two years.

In an effort to make the advertisement appear realistic, several printer features were displayed in the advertisement (i.e., 2400 × 1200 dpi resolution, enhanced color layering, ability to print nine pages per minute, and inclusion of bonus software). Furthermore, at the bottom of the advertisement, we provided a statement about the donation policy that read: "As part of our continuing commitment to the community, [phrase explaining type of donation] will be donated to a local charity." The phrase was either "5% of the retail price" or "5% of the profit from the sale of this item" (see Figure 1).

Participants were told that they would be given a newspaper advertisement for Office Warehouse, a retailer that was not yet present locally, and given one minute to view the advertisement. After viewing the advertisement, they put it in an envelope and were given a survey packet that began with a two-minute filler task that asked about computer and printer usage. On completion of the survey packet, participants provided a dollar estimate of how much would be donated to charity for each printer sold. Participants then put the survey in the envelope with the advertisement. A final sheet was distributed, asking participants to indicate the price of the printer and the amount of profit they believed would be made each time a printer was sold.

Results

Given the retail situation we presented to respondents (i.e., a tangible product that would have cost something to manufacture), 5% of profits must be less than 5% of price. Thus, it is notable that we observed no estimation difference between the profit condition ($\bar{x}$ = \$7.48, standard deviation [s.d.] = 2.46) and the price condition ($\bar{x}$ = \$7.07, s.d. = 1.41, t_{60} = .81, not significant [n.s.]). Indeed, the mean donation estimate was nominally higher in the percentage-of-profit condition, and both groups displayed a median estimate of \$7.50. For both groups, 58.1% (18 of 31) of participants provided a donation estimate of exactly 5% of the price (i.e., \$7.49 or \$7.50). Further examination of the estimates reveals that 64.3% of participants in the 5%-of-profit condition provided an estimate within \$.50 of \$7.49 (the actual value for "5% of sales price"). This does not differ significantly (χ^2_1 = .68, n.s.) from the 5%-of-price condition in which 74.2% of participants provided responses within this range.

A possible explanation is that participants did not comprehend the concept of profit; however, this does not appear to be the case. When asked to estimate the level of profit on the printer, 96.8% of participants in the 5%-of-profit condition correctly provided a profit level less than the reported price, with a mean value of 43.91% (s.d. = 19.95). In the percentage-of-price condition, 96.8% of participants also provided a profit value less than zero, with a mean value of 49.59% (s.d. = 16.38). The groups did not significantly differ on this value (t_{60} = 1.21, n.s.)

To investigate further whether the "5% of profit" wording was systematically misleading, we calculated a derived donation estimate for participants in this group. As we noted previously, all participants were asked to estimate the amount of profit that they believed was made from each printer. Thus, although the advertisement does not present an objective value for the level of profit, individual assessments were available. To obtain the derived estimate, we multiplied each participant's profit estimate by .05. Only two participants (6.5%) in this condition had derived estimates that were within \$1 of their actual estimate. When this is compared with the 74.2% of people in the 5%-of-price condition whose estimates are within \$1 of the true value of \$7.50, it can be said that the 5%-of-profit condition is significantly more confusing for consumers (χ^2_1 = 29.56, p < .001) and possibly more misleading.

Figure 1. Newspaper Advertisement Used in Studies

Discussion

An objective of this study was to examine the extent to which expressing the donation as a percentage of price results in an acceptable understanding of the amount donated. Approximately 75% of the participants in this condition correctly understood the amount donated to be \$7.50 (i.e., \$149.96 × .05), which suggests that the calculation is doable. Furthermore, the average estimate was nominally less than the actual amount (i.e., \$7.50), though not significantly different. The median amount was exactly \$7.50 in the percentage-of-price condition.

Another objective was to examine whether consumers understand the concept of profit. When directly asked about the concept, approximately 95% did. Although our participants would have no reason to know the actual profit level for ink-jet printers, it is quite low.[1] Given the somewhat unusually low profit level on this particular class of consumer electronics, it is perhaps instructive to consider the gross profit margin for consumer electronics as a whole, which is approximately 38% (Risk Management Association 2003).

Comparison of the profit value estimated by participants (46.8%) even to the liberally high value of 38% demonstrates

[1]A national office-supply chain that is a member of a retail center associated with University of Alberta indicated that profit levels are kept extremely low (less than 5%) on ink-jet printers in an effort to foster adoption. Profits are then made on the sale of ink-jet cartridges. This profit strategy appears to mimic that of ink-jet printer manufacturers, which also make only "single-digit" profits on ink-jet printers (*U.S. News & World Report* 1999).

considerable profit overestimation ($t_{68} = 3.98$, $p < .001$). Thus, regardless of whether net or gross profits are considered, our participants overestimated profit levels, thereby replicating previous findings (Bolton, Warlop, and Alba 2003). Consequently, even if consumers correctly multiplied their profit estimates by 5%, an inflated donation estimate would still result. Thus, if participants in the percentage-of-profit condition had actually used their estimates for profit, it is likely that we would have observed a PO effect. However, this point is moot because of the great number of our participants who exhibited the PEP effect, which results from the use of an incorrect mathematical method to estimate donation amounts (i.e., consumers bypass estimation and use the price instead of the profit estimate). This conclusion is based jointly on the following: (1) The vast majority of participants appeared to understand the concept of profit and provided an average value much less than 100%; (2) few participants in the percentage-of-profit condition produced a donation estimate that was close to the derived value of 5% of their profit estimate; and (3) approximately 60% of participants in the percentage-of-profit condition provided a value that was identical to 5% of the sales price, a value that cannot be accounted for by a calculation based on 5% of their profit estimate. Stated differently, few people used the profit estimate at all in the calculation of the donation amount. To better understand this phenomenon, we set out to replicate and extend Study 1, attempting to establish boundary conditions. A possibility is that the effect is only obtained when a distracter task is imposed between ad exposure and estimation, as we did in Study 1. Therefore, Study 2 participants were required to make estimates immediately after exposure to the advertisement. It is also possible that mistaking profit for price was largely a function of participants' lack of working fluency with these terms. To test this, we selected participants in Study 2 from two populations, one of which had some formal training in accounting.

Study 2

Experimental Design and Procedure

This study employed students in an introductory psychology course (n = 81) and students in the third and fourth years of an undergraduate business program (n = 61). None of the psychology students in this study had completed an accounting course, whereas the business students had all completed at least two courses in accounting (financial and cost accounting).

The study manipulated the donation condition (5% of profits versus 5% of the retail price) and employed a two-level covariate regarding participants' accounting knowledge (no formal training versus some courses in accounting). The same advertisement used in Study 1 was also used in this experiment. In contrast to Study 1, respondents provided their donation estimates immediately after viewing the experimental advertisement. In addition, at the end of the survey, respondents were asked to recall verbatim the CRM donation phrase used in the advertisement. All other dependent variables and procedures remained identical to Study 1; the profit estimate and retail-price recall were assessed after all other dependent variables.

Results

We conducted analysis of variance (ANOVA) to examine the impact of the phrase (i.e., profit versus price) and the accounting knowledge covariate (i.e., participants dichotomously scored as having or not having formal accounting training) on donation estimates. Information about the donation estimates is provided in Table 1. The mean estimate was \$7.69 (s.d. = 3.07), and we did not find that it differs as a function of price versus profit ($F_{1, 137} = 1.40$, n.s.), accounting knowledge ($F_{1, 137} = .98$, n.s.), or an interaction between the two ($F_{1, 137} = .19$, n.s.). The mean donation estimate was \$7.42 (s.d. = 2.71) across the percentage-of-profit conditions and \$7.99 (s.d. = 3.40) across the percentage-of-price conditions. Note that the mean for the percentage-of-profit conditions is approximately 5% of the retail price (\$7.50). Further examination of estimates reveals that 69.4% of the estimates in the percentage-of-profit conditions are within \$.50 of \$7.50, compared with 65.7% in the percentage-of-price conditions. Indeed, 51.4% of participants in the percentage-of-profit conditions estimated either \$7.49 or \$7.50. In the percentage-of-profit conditions, only five participants (6.9%) were within \$1.00 of their derived estimate.

If we examine the deviation of estimates from values based on 5% of the sales price and 5% of the profit estimate of each participant, or "calculated values," for the price and profit conditions respectively, we again find significantly poorer estimates for the percentage-of-profit format ($F_{1, 137} = 40.83$, $p < .001$). We found that neither the main effect for accounting training ($F_{1, 137} = .401$) nor the two-way interaction ($F_{1, 137} = .016$) was significantly different. For the percentage-of-profit conditions, participants overestimated the value of the donation by an average of \$4.20 (s.d. = 3.31), which is significantly different from zero ($t_{70} = 10.69$, $p < .001$). However, participants in the percentage-of-price condition nominally underestimated the calculated value by \$.49 (s.d. = 3.40), which is not significantly different from zero ($t_{68} = 1.19$, n.s.).

In the percentage-of-profit conditions, 95.8% of participants reported profit estimates less than the retail price, similar to the value in the percentage-of-price conditions (97.1%), which again suggests that failure to estimate 5% of profit correctly was not driven by a failure to understand the word "profit" per se. The implications of this are striking, suggesting that people with and without formal accounting training fail to observe the price/profit distinction at the time of reading or do not make the connection at the time of estimation.

To gain deeper insight into the underlying process, we conducted additional analysis. After training, two participants, blind to treatment condition and hypotheses, were given the actual verbatim donation phrases recalled by each respondent. The phrases were randomized so as not to confound treatment condition and order of evaluation by the coders. The vast majority of respondents (96%) provided some description of the offer. Each phrase was coded for donation type; specifically, each phrase was designated as belonging to one of five categories: 5% of profit, 5% of sales, 5% but no base (e.g., 5% is donated to charity), other, and no answer. Initial intercoder agreement was 92%. Differences were resolved through discussion and mutual agreement between the coders. Results are presented in Table 1.

With respect to recalling 5% of price in the 5%-of-price condition, participants with accounting knowledge (61.3%) and participants with low accounting knowledge (66.7%) were equally good. They were also equally bad at correctly recalling the phrase 5% of profit in the 5%-of-profit condi-

Table 1. Study 2: Mean Estimate and Phrase Recall by Expertise and Donation Type

	High Accounting Knowledge		Low Accounting Knowledge	
	Percentage-of-Profit Condition (n = 30)	Percentage-of-Price Condition (n = 31)	Percentage-of-Profit Condition (n = 42)	Percentage-of-Price Condition (n = 39)
Donation Estimate Measures				
Mean estimate	$6.98	$7.83	$7.73	$8.12
Median estimate	$7.12	$7.50	$7.50	$7.50
Standard deviation	$2.23	$4.00	$2.99	$2.87
Profit Estimate Measures				
Mean estimate	41.25	48.20	41.21	41.07
Median estimate	33.44	46.68	40.00	33.34
Standard deviation	18.19	17.88	20.28	26.85
Donation Policy Recalled				
5% of profits	13.3	9.7	9.5	2.6
5% of sales price	56.7	61.3	64.3	66.7
5% but no base	16.7	25.8	23.8	15.4
Other	10.0	3.2	2.4	7.7
No response	3.3	.0	.0	7.7
Calculated Value Accuracy				
Correct estimate[a]	6.7	67.7	2.4	64.1
Δ from derived estimate	$3.94	$–.33	$4.38	$–.62
Correct recall of price[b]	90.0	93.5	90.5	84.6
Understanding of "profit"[c]	96.7	96.7	95.2	97.4

[a]Based on estimate being within $.50 of derived estimate.
[b]Based on estimate being within $1.00 of actual.
[c]Defined by provision of profit estimate that was lower than the retail price.
Notes: Unless indicated otherwise, figures are given as percentages.

tion (13.3% versus 9.5%; $\chi_1^2 = .26$, n.s.). An explicit comparison within each group can also be made. In the high-accounting-knowledge group, those in the 5%-of-price condition were better at recalling the correct phrase than were those in the 5%-of-profit condition ($\chi_1^2 = 14.93$, $p < .001$). The same was true for the low-accounting-knowledge group ($\chi_1^2 = 28.32$, $p < .001$). Consequently, both groups were better able to correctly recall percentage of price than percentage of profit. However, there is substantial evidence that participants did pay attention to the advertisement: Approximately 90% correctly recalled the purchase price, and 93% were able to provide some coherent statement about the donation offer (i.e., they remembered one or more of the points in the CRM offer correctly).

Discussion

As in Study 1, results suggest that most participants who were asked to estimate a percentage of profit mistakenly calculate a percentage of price. Formal accounting training does not improve the results. Studies 1 and 2 demonstrate that people mistakenly calculate percentage of price when they are told that a percentage of profit will be donated.

However, it is possible that experimental subjects lacked the motivation to process the information at a level necessary to notice the difference between price and profit. If participants in our experiments pay less attention than do consumers in a more natural setting, our results can be called into question. To rule out this possibility, Study 3 explores estimation accuracy when a monetary incentive is used to improve motivation to process information. This is an extremely conservative test, as such an incentive will likely create a motivation to process, which exceeds that of typical consumers. However, if a significant number of participants still estimate 5% of price instead of 5% of profit, we will have strong evidence of a real potential for consumer confusion (and overestimation) associated with the percentage-of-profit format.

Study 3

Experimental Design and Procedure

Twenty-nine students in a psychology course participated for the opportunity of a $5 award for accurately answering questions about an advertisement. Participants were told that they would be given one minute to view an advertisement and that they would then be asked three questions about the advertisement. They were told that if they answered all three questions correctly, they would be given $5. All participants were given the 5%-of-profit advertisement used in the first two studies. After viewing the advertisement for one minute, they placed it into an envelope and were given the three questions: (1) "According to the ad you just saw, each time a [brand name] is sold, an amount of money will be donated to charity. How much money will the Office Warehouse donate to charity for each Cannon S400 printer sold (Please express as a numerical value.)?" (2) "What is the price of the printer?" and (3) "How many pages per minute does the printer print?" As in Study 2, participants were then asked to recall the donation phrase and to estimate the Office Warehouse's profit on the sale of each printer.

Results

The $5 incentive was quite successful in motivating participants to process the information in the advertisement. Of 29

participants, 27 correctly recalled the page-per-minute rate as 9, and 28 of 29 correctly recalled the price as $149.96. However, only 3 of 29 estimated the amount donated as less than $7.49 (for purposes of remuneration, we considered any value less than $7.49 a "correct" answer). Therefore, it appears that 89% of participants based their estimates on 5% of the sales price, not 5% of the profit (given that profit must be less than price for the type of product advertised). Compared with the percentage-of-profit conditions in previous studies, it appears that the $5 incentive to process the information carefully actually made estimates worse. That is, the 89% of participants who exhibited the PEP effect in Study 3 is significantly higher than the 51.9% who exhibited the effect in Study 2's percentage-of-profit condition ($\chi_1^2 = 12.9$, $p < .001$) and the 58.1% who exhibited the effect in Study 1 ($\chi_1^2 = 7.65$, $p < .01$). The 89% of participants who made this mistake (26 of 29) in Study 3 is also significantly different from zero ($\chi_1^2 = 47.13$, $p < .001$).

Three people were within $1 of the derived estimate (i.e., 5% of their estimate of profit); however, it appears that these people also used sales price as a basis for calculation but had reasonably close estimates because they believed that profits on the $150 product were in excess of $142. The average profit estimate including these three participants was $81.47 (s.d. = 35.40); it was $73.25 (s.d. = 27.94) excluding these participants. Note that two participants did not provide estimates for profit and were not included in the calculations.

An examination of the donation phrases recalled indicates that 11 of the 29 (38%) participants correctly recalled that the donation was 5% of profits, 5 (17%) incorrectly recalled 5% of price, 11 (38%) indicated 5% but did not provide a base, and 2 did not provide a response.

Discussion

In Studies 1 and 2, it is possible that participants were less motivated to process the ad information than consumers would be in real purchase environments. However, the same criticism cannot be made of Study 3, because people were offered a $5 incentive to answer questions about the advertisement correctly. Participants in this study paid careful attention to the advertisement, as is evidenced by the near universal recollection of the price and the page-per-minute rate of the printer. Despite the careful attention achieved by the monetary incentive, 89% of participants erroneously calculated 5% of the purchase price when asked to estimate 5% of the profit. This rate is significantly higher than the error rate in Studies 1 (58.1%) and 2 (51.4%). Giving people incentive to carefully process the ad information made the PEP effect problem considerably worse.

Just as the results cannot be explained in terms of diligence, they cannot be explained by the inability of participants to notice the phrase. When asked to write down the phrase about the donation, approximately 40% recalled that the donation amount was 5% of the profit, and only 17% mistakenly recorded 5% of the price. Thus, an explanation based on a failure to notice the term "profit" does not explain why at least 40% of the participants did not report a value different from the 5% of price calculation. Furthermore, as is noted in previous studies, people do seem to have some understanding of the concept of profit when specifically asked to think about it. In this study, 97% provided profit estimates less than the retail price.

Thus far, we have demonstrated that expressing CRM donations as a percentage of profit leads to widespread confusion and systematic overestimation of the amount being donated. However, it is not known whether the format used (percentage of price versus percentage of profit) affects traditional persuasion measures, such as attitude toward the ad, attitude toward the brand, and purchase intention. Several possibilities exist. First, a backlash effect is possible; that is, although percentage-of-profit formats result in overestimation of donation amounts, they signal that some sort of accounting "trick" is being deployed. Such a backlash effect would be in line with research on tensile price claims (e.g., up to 70% off), which suggest that increasing ambiguity results in decreased valuation of the advertised information (e.g., Biswas and Burton 1993; Mobley, Beardon, and Teel 1988). Darley and Smith (1993) also demonstrate that perceived objectivity/verifiability of the information presented in an offer may have an impact on the credibility associated with the brand, which may in turn affect brand perceptions and purchase intentions. This logic suggests that the percentage-of-profit formats result in lower attitudes and purchase intentions than do percentage-of-price formats (because the former is more ambiguous and less verifiable than the latter).

A second possibility, in line with estimation findings to this point, would be that consumers do not make a fundamental distinction between profit and price and therefore produce elevated donation estimates in the former case. These upwardly biased estimates, in turn, may have a positive impact on attitudes and intentions (i.e., enhancement). In such a condition, it might be expected that attitudes are influenced by the percentage amount associated with a donation, not by the profit/price distinction. Third, it is possible that neither the percentage value associated with the donation nor the format affects these measures. Study 4 uses a between-subjects experiment to examine these three possibilities.

Study 4

Experimental Design and Procedure

A total of 133 students in an undergraduate introductory marketing course participated in this study. We employed a 2×2 factorial between-subjects design, manipulating the percentage associated with the donation (1% versus 10%) and the type of donation (percentage of profit versus percentage of price). The experimental advertisements and viewing conditions were similar to those that we used in previous studies. After viewing one of the four advertisements, participants responded to a series of statements about Office Warehouse on a seven-point scale anchored by "strongly disagree" (1) and "strongly agree" (7). The statements were as follows:" Overall, I have a positive attitude toward the Office Warehouse ad"; "Overall, I have a positive attitude toward Office Warehouse"; and "If Office Warehouse comes to my city, I will buy from them."

Results

Table 2 presents mean values by condition and multivariate ANOVA results. For all three statements, perception varied as a function of the amount of the donation. The 10% condition resulted in higher evaluations than the 1% condition for attitude toward the ad (5.01 versus 4.55), attitude toward the brand (4.94 versus 4.38), and purchase intention (4.41 versus 3.88). However, the phrase (i.e., profit or price) asso-

Table 2. Study 4: Estimates and Attitude Measures by Condition

	Mean Evaluation by Condition[a]				Analysis of Variance (F-value)		
	Percentage of Profit		Percentage of Price				
	1% (n = 34)	10% (n = 34)	1% (n = 32)	10% (n = 33)	Phrase (P) Main Effect	Amount (A) Main Effect	P × A Interaction
Overall, I had a positive attitude toward the Office Warehouse advertisement.	4.41 (1.04)	5.03 (.64)	4.69 (.61)	5.00 (.81)	.26	9.26*	1.00
Overall, I have a positive attitude toward Office Warehouse.	4.26 (.87)	4.85 (.49)	4.50 (.65)	5.03 (.78)	2.03	14.92*	.04
If Office Warehouse comes to my city, I will buy from them.	3.79 (1.02)	4.53 (.74)	3.97 (.93)	4.30 (.47)	.03	12.02*	1.69
Overall MANOVA Model[b]					.79 (3, 127)	6.96* (3, 127)	.86 (3, 127)

[a]Mean of seven-point scale anchored by 1 = "strongly disagree" and 7 = "strongly agree." Variance is reported in parentheses under the mean.
[b]Values for effects are Wilks' lambda; hypotheses degrees of freedom and error degrees of freedom are reported in parentheses beneath.
*$p < .001$.

ciated with the donation had no impact, either directly or in interaction, on any dependent variables.

Recall that in this particular category (ink-jet printers) profits are less than 10% (i.e., "single digits"). As a result, $1.50 is the highest donation amount to which "10% of the profits" could refer. This is the same amount as 1% of the price. To test whether these numerically equivalent statements (in terms of donation amount) lead to different attitudes and intentions on the part of consumers, we performed a contrast between the two cells. Although attitude toward the ad ($t_{64} = 1.76$, $p < .10$) and attitude toward the brand ($t_{64} = 1.90$, $p < .10$) show only marginal superiority for the 10%-of-profit condition, this format results in significantly superior performance for purchase intention ($t_{64} = 2.49$, $p < .05$). Thus, it appears that stating donation amount as a percentage of profit rather than a percentage of price can result in enhanced consumer response.

Discussion

This study explores whether the percentage-of-profit format leads to backlash or enhancement. We found no evidence for backlash. Although subjects responded more favorably to CRM offers involving 10% than 1%, we found no differences for whether this percentage was of price or profit. Therefore, it appears that though higher donation percentages can affect attitudes and intentions, the price/profit distinction does not.

However, we did find evidence of enhancement. Participants who were told that 10% of the profits would be donated reported significantly higher purchase intentions than did participants who were told that 1% of the price would be donated. We admit that our participants had no way of knowing the profit level for ink-jet printers. Our point is that in a low-margin product category, stating the same $1.50 donation as a percentage of profit can result in higher purchase intentions than presenting it as 1% of price. Although the current study cannot determine whether this is due to the PO effect or the PEP effect, given the overwhelming PEP effect in Studies 1–3, we suspect that the PEP effect operates in this case. Regardless of whether it is caused by either effect, the format used can affect consumer purchase intentions. We believe this is evidence of an enhancement effect associated with percentage-of-profit formats.

The Federal Trade Commission (1983) notes that three conditions must be present to satisfy conditions for deception: (1) The practice must be likely to mislead consumers; (2) the ability to mislead consumers is examined from the perspective of reasonable consumers in the group targeted; and (3) the practice must be material, thereby influencing consumers' decisions. Studies 1–3 seem to establish the first two principles. Furthermore, failure to consider the term "profit" may lead to misperceptions of the amount donated, which this study suggests may affect purchase intentions. It is possible that the failure to describe the profit levels more fully results in confusion and therefore may speak to the need for some form of affirmative disclosure. As Mazis and colleagues (1981, p. 15) note, "First Amendment cases support the proposition that remedies should keep the flow of commercial information as 'clean' as possible without unduly restricting total information flow." They further indicate that information remedies vary with respect to their restrictiveness, from the removal of restraints on information flow (e.g., eliminating constraints on some advertising practices) to the enhancement of information flow (e.g., providing additional information) and the restriction of information flow (e.g., banning certain statements).

Therefore, the goal of Study 5 is to examine how the overestimation of donation might be reduced, short of eliminating percentage-of-profit formats altogether. This is worthwhile because an outright ban (i.e., the most restrictive remedy) on a legally definable phrase such as "percentage of profit" is unlikely. Specifically, Study 5 explores whether affirmative disclosures can reduce the miscomprehension rate associated with percentage-of-profit formats (for a discussion and use of disclosure statements to remedy the misinterpretation of advertising information, see Andrews, Netemeyer, and Burton 1998). Several options are considered, ranging from simply defining profit to providing explicit information about profit levels.

Study 5

Experimental Design and Procedure

This study employed 137 students participating for research credit in an introductory marketing course. Participants were shown one of four advertisements identical to those used in the previous studies, with the exception of the phrase presented. All advertisements included the phrase "5% of the profit from this product will be donated to charity." To explore potential affirmative disclosures that might mitigate consumer overestimation of donation amount in percentage-of-profit formats, we employed a one-way, four level, between-subjects design, manipulating the additional phrase: (1) The control was no additional information; (2) a minimal definition, "profit is defined as the sales price minus the cost paid by Office Warehouse for each printer" (definition condition); (3) a percentage statement about the amount of profit, "the profit on this item is 40% of the sales price" (40% condition); and (4) a concrete statement about the amount of profit, "the profit on this item is $60" ($60 condition). These conditions represent a continuum of abstraction, culminating in a statement that provides a direct specification of the dollar value of the profit. As such, this last condition might be considered a control with which the other conditions can be compared. That is, whereas the first control enables a comparison of how much better a condition fared than the "most basic/abstract," the last condition serves as a benchmark for comparison of how a condition fared relative to the "most complete/concrete." Thus, we consider how the other conditions fare in relation to these two.

In the three conditions in which the affirmative disclosures are present, the information is provided immediately after the "5% of the profit from this product will be donated to charity" statement and is provided in the same size font and style. That is, although some participants had examined the provision of the disclosure information in a footnote (e.g., Andrews, Netemeyer, and Burton 1998), we present the information jointly and equivalently with the 5%-of-profit statement. The dependent variables and procedure were identical to those in Study 2.

Results

We used three different criteria to test the effectiveness of the affirmative disclosures (for a breakdown of relevant statistics by condition, see Table 3). The first criterion is labeled "donation policy recall criterion" and focuses on the ability of the affirmative disclosure to enhance the correct recall of the phrase "5% of profit." The second criterion, labeled "reduced systematic error criterion," examines the ability of the affirmative disclosure to reduce the number of people who incorrectly use what would appear to be a 5%-of-price calculation. This may be investigated on two fronts: (1) the ability of the affirmative disclosure to reduce the number of people who make estimates close to the $7.50 level (i.e., 5% of price) and (2) the ability of the affirmative disclosure to lower the average (over)estimate of the amount donated rel-

Table 3. Study 5: Evaluation of Estimates by Affirmative Disclosure (AD) Condition

	Control (No AD) (n = 37)	Definition AD (n = 35)	Profit Stated as $ Value AD (n = 32)	Profit Stated as % Value AD (n = 33)
Donation Estimate Measures				
Mean estimate	7.83	5.77*	4.32*	3.52*
Median estimate	7.50	5.00	3.25	3.00
Standard deviation	1.73	3.30	3.00	1.45
Profit Estimate Measures				
Mean estimate	46.60	32.42*	43.67	43.23
Median estimate	50.00	33.34	40.00	40.00
Standard deviation	17.26	13.31	9.77	13.16
Donation Policy Recalled				
5% of profits	5.4%	68.6%*	81.3%*	81.8%*
5% of sales price	83.8%	11.4%*	12.5%*	9.1%*
5% but no base	10.8%	2.9%	.0%	.0%
Other	.0%	2.9%	6.3%	3.0%
No response	.0%	2.9%	.0%	3.0%
Calculated Value Accuracy				
Correct estimate[a]	5.4%	28.6%**	40.6%*	48.5%*
Δ from derived estimate ($)	4.36	3.28	1.06*	.27*
Correct recall of price[b]	91.9%	94.3%	90.6%	93.9%
Understanding of "profit"[c]	100.0%	97.1%	100.0%	100.0%

[a]Based on estimate being within $.50 of derived estimate.
[b]Based on estimate being within $1.00 of actual.
[c]Defined by provision of profit estimate that was lower than the retail price.
*$p < .001$.
**$p < .01$.
Notes: Comparisons of means (i.e., results reported as a dollar value) were performed with simple t-tests. Comparisons of frequencies (i.e., results reported as a %) were performed using chi-square analysis. Comparisons reflect the affirmative disclosure condition relative to the control condition.

ative to the control condition. Although these two are related, the specific measures and statistical analyses differ. The third criterion, labeled "calculated value accuracy criterion," concentrates on the ability of the affirmative disclosure to enhance the correct calculation of the estimate. By "correct," we mean that the respondents' donation estimate is accurate with respect to a calculation of 5% of their estimate of profit (i.e., the profit estimate multiplied by .05). Thus, for the conditions in which the profit levels are overtly stated, the comparison is still made on the basis of derived estimates to provide a consistent basis for comparison.

In conditions in which profit is either overtly stated as 40% of the price or specified as $60, participants' median estimate for profit was 40% of the price ($60). However, even in these conditions, only 53.1% of people in the 40% condition and 72.7% in the $60 condition correctly stated the profit level as $60. Furthermore, although the mean profit estimate for the 40% condition (43.23%) was not significantly different from the actual value of 40% ($t_{32} = 1.41$, n.s.), it was higher in the $60 condition (43.67%; $t_{31} = 2.12$, $p < .05$).

Donation Policy Recall Criterion

We directly assessed participant recall of the specific wording used to describe the CRM donation as we did in Studies 2 and 3. Using this criterion, we found each affirmative disclosure condition to improve correct recall of the phrase "5% of profit" significantly, relative to the mean recall of 5.4% observed in the control condition (definition condition: $\bar{x} = 68.6\%$, $\chi_1^2 = 31.11$, $p < .001$; 40% condition: $\bar{x} = 81.8\%$, $\chi_1^2 = 40.94$, $p < .001$; and $60 condition: $\bar{x} = 81.3\%$, $\chi_1^2 = 41.97$, $p < .001$). However, the three affirmative disclosure conditions do not vary in their effectiveness with this criterion ($\chi_2^2 = 2.88$, n.s.).

Reduced Systematic Error Criterion

In Studies 1–3, the most common error observed in the 5%-of-profits condition was the apparent calculation of the donation based on 5% of the price rather than an estimation based on the profit level. Thus, a method of comparing the three affirmative disclosures is to examine the percentage of participants who provided estimates close to $7.50 (i.e., those who incorrectly calculated 5% of the price). An examination of the number of people who estimated values within $.50 of this value (i.e., from $7 to $8) reveals that 89.2% of the control condition provided estimates in this range. With the affirmative disclosures, this drops to 25.7% in the definition condition, 9.1% in the 40% condition, and 3.1% in the $60 condition. Significant differences are observed between the control condition and the definition condition ($\chi_1^2 = 28.85$, $p < .001$), the 40% condition ($\chi_1^2 = 43.81$, $p < .001$), and the $60 condition ($\chi_1^2 = 49.86$, $p < .001$). Compared with the $60 condition, the definition condition is significantly different ($\chi_1^2 = 6.47$, $p < .01$), but the 40% condition is not ($\chi_1^2 = .93$, n.s.).

When we used a narrower range of $7.49 or $7.50, the values changed slightly, but the pattern observed is similar, with values of 67.6%, 14.3%, 6.1%, and 3.1% for each of the four conditions, respectively. The significant differences observed for the $.50 range also hold for the $.01 range specification, with the exception of the difference between the $60 condition and the definition condition, which is no longer significant ($\chi_1^2 = .93$, n.s.).

Investigating the ability of the affirmative disclosures to lower the average (over)estimate of the amount donated, we found a similar pattern to the preceding analysis. An ANOVA indicates that the four conditions differed in mean donation estimates ($F_{3, 133} = 20.278$, $p < .001$). The estimate in the control condition ($\bar{x} = \$7.83$) was significantly greater than the definition condition ($\bar{x} = \$5.77$, $t_{70} = 3.34$, $p < .001$), the 40%-profit condition ($\bar{x} = \$3.52$, $t_{68} = 11.23$, $p < .001$), and the $60-profit condition ($\bar{x} = \$4.32$, $t_{67} = 6.05$, $p < .001$). The donation estimate was nominally higher in the definition condition than in the $60 condition, albeit at a marginal level ($t_{65} = 1.88$, $p < .10$). Although we observed no difference between the two conditions when the profit level was provided ($t_{63} = 1.38$, n.s.), there was a significant difference between the definition condition and the 40% condition ($t_{66} = 3.61$, $p < .001$).

Calculated Value Accuracy Criterion

An ANOVA indicates that the deviation from the calculated value (i.e., each participant's estimate of profit multiplied by 5%) also varied across conditions ($F_{3, 132} = 16.61$, $p < .001$). These values (t-values indicate whether the deviation of the estimate from the derived estimate differed from zero) were $\bar{x} = \$4.36$, s.d. = 2.41 for the control condition ($t_{36} = 11.01$, $p < .001$); $\bar{x} = \$3.28$, s.d. = 3.34 for the definition condition ($t_{33} = 5.73$, $p < .001$); $\bar{x} = \$.27$, s.d. = 1.72 for the 40% condition ($t_{32} = .91$, n.s.); and $\bar{x} = \$1.06$, s.d. = 3.21 for the $60 condition ($t_{31} = 1.87$, $p < .10$). With the use of deviation from calculated values as a criterion, only the 40% condition acts as a fully effective affirmative disclosure.

To compare the effectiveness of the affirmative disclosures with the two extreme conditions (i.e., the control condition and the $60-profit condition), we performed several planned contrasts. We observed no significant difference between the definition condition and the control ($t_{70} = 1.56$, n.s.). However, both the 40% condition ($t_{68} = 8.07$, $p < .001$) and the $60 condition ($t_{67} = 4.86$, $p < .001$) differed significantly from the control. Although the definition condition differed significantly from the $60 condition ($t_{64} = 2.75$, $p < .01$), we observed no significant difference between the 40% condition and the $60 condition ($t_{63} = 1.24$, n.s.). Thus, on this dimension, we found only the 40% and $60 conditions to be effective affirmative disclosures.

Discussion

Results suggest that all three affirmative disclosure conditions can be effective in reducing error associated with percentage-of-profit formats. However, the relative effectiveness of the three affirmative disclosures varies with the evaluative criteria used. The definition affirmative disclosure appears to be effective with respect to the reduced systematic error criterion and the donation policy recall criterion. Indeed, for both measures, the only significant difference observed between the definition and other affirmative disclosures was a lower observed donation estimate in the 40% condition. However, with respect to the calculated value accuracy criterion, estimates in the definition condition were no better than in the control, though the two more onerous affirmative disclosures were significantly better.

Compared with the control, both the $60 condition and the 40% condition were effective on all criteria, but only the

40% condition was able to reduce the deviation of the estimate from the derived estimate (i.e., 5% of the estimated profit) to a value that did not significantly differ from zero. Furthermore, compared with the $60 condition, only the 40% condition resulted in a profit estimate that did not significantly differ from the true value. These findings are notable, given that the 40% condition actually required an additional computational step to determine the profit level (i.e., .40 × $149.96); in the $60 condition, the profit level was explicitly provided. It is possible that the 40% condition made the required task that much more explicit; nonetheless, future examination of this issue would be of merit.

Taken together, the criteria for assessing the effectiveness of the affirmative disclosures suggest that (1) the least onerous criteria, definition, is effective;[2] (2) the two more onerous affirmative disclosures, 40% and $60, are generally more effective than the definition; and (3) disclosing profit as a percentage (i.e., the 40% condition) may be more effective than disclosing an absolute amount (i.e., the $60 condition).

General Discussion

This article demonstrates that expressing a CRM donation as a function of profit results in an upward bias in consumer estimates of the amount donated. Although part of the bias is attributable to simple overestimation of profit levels (the PO effect), the larger issue is that most people fail to consider that profit is a fraction of price (the PEP effect). This bias cannot be explained by a lack of diligence, the failure to notice the term "profit," or an inability to comprehend what the term means. Rather, it appears that people fail to integrate their knowledge that profit is a fraction of price correctly into their estimations. Although similar findings have been shown previously for calculations (Bar-Hillel 1980; Capon and Kuhn 1982; Casscells, Schoenberger, and Graboys 1978; Eddy 1982; Hammerton 1973; Tversky and Kahneman 1982), we know of no prior research that has demonstrated this result for estimations of any sort.

The overestimation we observed persisted even for those participants who had formal accounting training (Study 2) and those who were given a monetary incentive to provide accurate estimates (Study 3). That the latter group actually exhibited a stronger PEP effect than any other calls into question whether some of the respondents given credit for adjusting their estimates downward in Studies 1 and 2 simply made a calculation error.

It is possible that the nature of the task used in Study 3 implied a precise answer and that the task unduly encouraged some participants to use the well-defined information that was available (i.e., the donation percentage and price). However, the large PEP effects witnessed in Studies 1 and 2 argue against a rigid set of circumstances, such as a focus on monetary reward, being necessary for the effect. The results of Study 4 indicate that PEP effects may obtain without explicitly asking for a number to be generated. Here, we found significant differences between 1 and 10%, regardless of whether it was a percentage of price or profit. However, we found no difference between price and profit in either the 1% or the 10% condition. Therefore, consumers appear to ignore the difference between price and profit even when merely making an assessment. This argues against the necessity of "requesting a number" to obtain confusion between price and profit. Regardless, further research examining the specific mental processes used would be worthwhile.

We believe that the first three studies make a strong case for the confusing nature of percentage-of-profit formats. We have demonstrated that even in conditions of high knowledge of business terms or high incentive to be accurate, people produce biased estimates. Although we did not test it here, it seems reasonable that people who have high business knowledge or direct financial incentive are not more likely than average consumers to make the PEP error. However, further research could test this assumption formally.

It was unclear whether a large, systematic bias in donation estimates leads to economic advantage for a firm expressing its CRM donation as a percentage of profit. To explore this issue, Study 4 investigated the impact of format on more proximal measures, such as attitudes and purchase intentions. Although the numerical value (1% versus 10%) had an impact on these measures, whether the percentage was of profit or price had no effect. Furthermore, comparison of the 1% of price cell with the numerically equivalent 10% of profit cell (i.e., both implied a $1.50 donation for a $150 printer) showed a significant positive impact for the percentage-of-profit format on the measure most proximal to choice: purchase intention. The goal of this study was to examine how such CRM campaigns would affect attitudes toward the retailer as a whole. Further research that examines attitudes toward the manufacturer would also be of interest. It should also be noted that the scales we used to assess attitudes were single-item. Further research might consider multi-item scales to examine the attitudes measured.

Given the Federal Trade Commission policy about deception, price may be material because of its likely impact on behavior. Our final study examines ranges of affirmative disclosures that vary in the burden or limitation on speech imposed on marketers and demonstrates that several are reasonably effective in reducing the problem of overestimation in the percentage-of-profit format. The least restrictive option (from a "freedom of speech" perspective) is to provide some adequate clarification about what is meant by "profit." The most restrictive solution is to ban the use of this term in advertising when referring to CRM donation amounts because of the resultant misunderstanding it creates. If the goal is to draw greater attention to the term "profit" and to foster some use of profit estimates, the former may be sufficient. However, if the goal is to provide information that is unambiguous and not subject to misinterpretation or misuse, the latter may be preferable. Research presented herein examines the confusion that exists between the terms "price" and "profit." Because consumers are rarely given explicit information about the amount (and type) of profit for a given product, additional ambiguity is present when the donation is premised on profit rather than price. Because the percentage-of-profit format is inherently ambiguous, the research we have cited suggests that percentage-of-profit formats result in decreased attitudes and intentions. We did not find this to be the case.

[2]This refers to how onerous the disclosure would be in terms of revealing information that would normally remain confidential. It is possible that the "definition" affirmative disclosure might actually be considered more onerous in terms of advertising space required.

Specifically, in Study 4, we do not observe lower attitudes and intentions in the percentage-of-profit conditions.

The research presented herein has several limitations. First, although we took steps to ensure that the product class used in the experiments was relevant to students, the use of students serves as a limitation on the ability to generalize to all facets of society. This having been stated, using university students with either accounting training or high motivation likely presents a strong test of the ability of the general public to provide an acceptable estimate (i.e., a sample of the general public is likely to do worse, not better). Second, the research presented herein was limited to evaluations made regarding a print advertisement for an ink-jet printer. Further research might explore estimates for other product classes in other media formats.

In summary, the research studies presented herein suggest that in an advertising context, consumers may not make a distinction between profit and price and tend to use the latter to develop their donation estimate. Consequently, donation estimates that are based on a percentage-of-profit format are generally upwardly biased. This is true even when incentive or ability to produce unbiased estimates is high. Although this bias can be somewhat mitigated by applying affirmative disclosures, none are as effective at reducing this bias as simply stating the donation as a percentage of price.

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