jrc
Journal of Research for Consumers

Issue: 2, 2001

Beware of Product Labels!

AUTHOR(S): Geoffrey Jalleh, Robert J. Donovan

ABSTRACT

Previous studies have shown that the positive framing of a meat product attribute (i.e., 75% fat-free) results in more positive evaluation of the product than its presumed equivalent negative framing (25% fat). This article tests the robustness of this framing effect on attitudes and purchase intention by varying the proportions of the fat and fat-free labels. The results suggest that consumers need to be wary of products with a 'fat-free' label, especially those less than 90%, as these labels appear to increase attribute perceptions and purchase intention relative to their equivalent % fat labels.

ARTICLE

INTRODUCTION

In recent years, there has been increased promotion of healthy behaviours (e.g., quit smoking, exercise more, eat less fat, eat more fruit n' veg) in the community, mainly via mass media campaigns. One positive outcome is that consumers appear more health conscious in their food purchases. Marketers of consumer products have responded by introducing more healthy alternatives, such as low fat, low sugar and salt-free products. One outcome in the fat content area has been the labelling of products in term of fat-free, rather than the percent fat (i.e, meat labelled as 85% fat-free rather than 15% fat).

The influence of this labelling technique on consumers' perception of the product may be assessed in the area of framing. Framing, as used by psychologists and others studying decision making, generally refers to presenting one of two *equivalent value* outcomes to different groups of decision makers, where one outcome is

presented in *positive* or *gain* terms, and the other in *negative* or *loss* terms. In the consumer products area, Levin (1987) and Levin and Gaeth (1988) found that a product attribute presented as 75% lean beef (positive frame) was more effective in terms of eliciting positive attitudes toward the beef than when presented as 25% fat beef (negative frame). Levin (1987) argued that this was probably due to the 75% lean label generating more positive associations than the 25% fat label. The 75% lean beef was rated more positively than the 25% fat beef on: good taste-bad taste; lean-fat; high quality-low quality; and greaseless-greasy. In a later study, Levin and Gaeth (1988) showed that the label effect persisted but was weakened by tasting of the beef prior to carrying out the above ratings.

Kahnemann and Tversky (1982) hypothesised that individuals evaluate alternative outcomes with reference to some reference point and that the frame alters an individual's reference point. Donovan and Jalleh (1999) replicated and extended the Levin beef framing studies (Levin, 1987; Levin & Gaeth, 1988) by exploring the possibility that the fat frame varies subjects' reference point in their evaluation of fat content. Donovan and Jalleh (1999) introduced a 75% fat-free label to provide a more direct complement to the label 25% fat, and because this label appears to be more commonly used in practice in meat packaging than a '% lean' label. Donovan and Jalleh (1999) also measured people's free associations to the words 'lean, ' fat-free' and 'fat'; and to the labels '75% lean', '75% fat-free' and '25% fat' when applied to meat labels. Third, to explore prospect theory's claim that judgements are made with respect to some neutral or reference point (Kahneman & Tversky, 1979), respondents were asked whether the label to which they were exposed was above average, below average, or average with respect to meat of that type.

The present study was designed to test the robustness of the framing effect on attitudes and purchase intention by replicating the Donovan and Jalleh(1999) study by varying the proportion of fat to include two more points commonly found on meat products: 10% fat vs 90% fat-free; and 15% fat vs 85% fat-free. We first re-present the Donovan and Jalleh (1999) method and results before presenting the methodology and findings of the replication study.

DONOVAN AND JALLEH (1999) STUDY

Method

One hundred and fifty (N=150) undergraduate students aged 18-25 years were intercepted at various locations on the University of Western Australia campus. Respondents were randomly allocated to

one of the three frames: 75% lean, 75% fat-free, and 25% fat. Respondents were asked to rate the labelled meat product ('hamburger meat') on five point bipolar scales as in Levin's studies (good taste-bad taste; lean-fat; high quality-low quality; and greaseless-greasy), and to indicate their purchase intention on a five-point *very likely - very unlikely* scale.

Respondents were asked whether the label indicated that the product was above average, average, or below average in fat content with respect to meat products of that type. It was hypothesized that this rating would mediate the framing effect in that those rating the labelled meat above average with respect to fat content, regardless of the label, would rate the meat more negatively than those perceiving the product as average or below average in fat content. That is, a covariance analysis with fat rating as the covariate should result in an absence or at least a significant reduction in any framing effect.

Twelve respondents were excluded from the analyses: four did not complete the questionnaire and eight indicated they were vegetarians.

Results

Frame Effect.

The means and MANOVA results are shown in Table 1. There was a main effect for label for purchase intention and all attributes. There was no significant difference between the 75% fat-free and 75% lean labels on purchase intention or on any of the attributes, but all differences between each of these labels and the 25% fat label were significant. Given a scale mid-point of 3, the 25% fat labelled product was rated slightly negatively on all attributes whereas the 75% labels were rated slightly positively. Purchase intention was overall unlikely for the 25% product and around the mid-point for the 75% products. These results were consistent with those of Levin (1987) and Levin and Gaeth (1988).

Table 1. Attribute and purchase intention mean ratings, MANOVAs and ANCOVAR (Perceived fat rating): Donovan and Jalleh (1999)

	Labels					
	75% Lean	75% Fat-free	25% Fat	N	Manova p	Ancovar p
Buy*	2.99[a+]	3.11[b]	3.70[ab]	138	.023	.095
Taste	2.27[a]	2.47[b]	3.05[ab]	138	.006	.019
Quality	2.58a	2.67b	3.42ab	138	.001	.004
Greasiness	2.80[a]	2.65[b]	3.51[ab]	138	.001	.003
Lean/Fat	2.52a	2.46b	3.50ab	138	.000	.000

* Ratings ranged from one to five with lower numbers representing more favorable responses.
\+ Same letter indicates significant difference (p<.05); no or different letter indicates non significance.

Ratings with Respect to Average Fat Content.

Table 2 shows the means and MANOVAs by perceived fat content relative to average, collapsed across all three label conditions. Purchase intention and attribute ratings are clearly associated with perceived fat content relative to average: respondents who rated the labelled product as below average in fat content were significantly more likely to buy and had more favorable attribute ratings than those who rated the product as average or above average.

Table 2. Attribute and purchase intention mean ratings and MANOVAs by perceived fat content: Donovan and Jalleh (1999)

	Fat Content Perceived as …				
	Above Average	Average	Below Average	N	p
Buy*	3.85[a+]	3.41[b]	2.72[ab]	138	.000
Taste	2.97[a]	2.70[b]	2.24[ab]	138	.018
Quality	3.29[a]	3.14[b]	2.36[ab]	138	.000
Greasiness	3.53[ac]	2.99[c]	2.59[a]	138	.001
Lean/Fat	3.39[a]	2.97b	2.28[ab]	138	.000

* Ratings ranged from one to five with lower numbers representing more favorable responses.
\+ Same letter indicates significant difference (p<.05); no or different letter indicates non significance.

The 75% labels were clearly distinguished from the 25% label with respect to perceived fat content relative to average: 43% and 45% rated the 75% lean and 75% fat-free labels respectively *below* average, versus 22% for the 25% fat label; and 31% rated the 25% fat label *above* average versus 21% and 22% for the 75% lean and 75% fat-free labels respectively. Consistent with our hypothesis, ANCOVAR markedly reduced the significance of the difference in purchase intention (from p=.023 to p=.095), and had some effect on the significance of differences on the attribute ratings (see Table 1). Nevertheless, the framing effect remained for the most part substantial and significant.

Associations Study

To provide some qualitative input to these data and to assist in interpretation, Donovan and Jalleh (1999) carried out a small scale follow-up study to explore people's associations to the labels and their perceptions of the relative fat and meat content of the three labels.

Associations data were gathered from N=45 undergraduate students intercepted at various locations on the University of Western Australia campus. The questionnaire first obtained free associations to the *words* 'lean', 'fat', and 'fat-free' without stating any meat or food context ("What comes to mind, if anything, when I say the word ….?"). Respondents then were presented with all three meat labels together (i.e., '75% lean meat', '75% fat-free meat' and '25% fat meat') and asked which of these they would prefer to buy - and why. The order of presentation for the tasks was randomized across respondents.
Respondents' associations were classified (by two independent coders) as positive, neutral or negative and were as follows:

Fat-free: positive - 40%; neutral - 53%; negative - 7%.
Lean: positive - 44%; neutral - 53%; negative - 2%.
Fat: positive - 0%; neutral - 60%; negative - 40%.

The word 'fat' generated generally neutral or negative associations (e.g., unhealthy; bad for you; yuck), whereas the words 'lean' and 'fat-free' generated generally neutral or favorable associations (e.g., healthy; good for you).

Of the 45 respondents, 23 (51%) preferred to buy the 75% fat-free meat, 20 (44%) the 75% lean meat, and none chose the 25% fat (two had no preference). The main reasons given for preferring the 75% fat-free meat were that it "has the least fat" (n=11), and "it is healthier/good for you" (n=10). The main reasons why the 75% lean meat was chosen were that "it is healthier/good for you" (n=6), and "it doesn't mention the word fat" (n=3). Respondents rejected the 25% fat meat because "it highlights the fat in the meat" (n=8), and "it doesn't sound appetising" (n=5).

Half of the respondents spontaneously commented that the fat and lean content of each of the three beef labels was the same, but they would prefer to buy one of the 75% labels (e.g., "I know they're the same, but I wouldn't buy the 25% fat one"). Consistent with the main study finding, it was noted that the associations data included several comments suggesting that the 25% product contained *more* fat than average, while the two 75% labels contained *less* fat than average.

THIS STUDY

Method

Subjects were recruited by professional interviewers in the central shopping mall of the city centre. Those that considered themselves vegetarians were excluded from the study. A total of one hundred and eleven (N=111) subjects aged between 18 and 40 years participated in the study. There was approximately equal representation of males and females in each framing condition.

Respondents were randomly allocated to one of four frames: 10% fat, 90% fat-free, 15% fat, and 85% fat-free. Respondents were asked to rate the labelled meat product ('sausages') and to indicate their purchase intention on the same measures as in the Donovan and Jalleh (1999) study.

Results

Frame Effect.

The means and MANOVA results are shown in Table 3. There was a main effect for the 15% fat vs 85% fat-free labels for purchase intention and all attributes except taste: respondents were significantly more likely to buy and had more positive perceptions of the 85% fat-free sausages than the 15% fat sausages. Similarly, the 90% fat-free sausages were rated significantly more positively than the 10% fat sausages, but, although it was in the same direction, there was no significant difference for purchase intention.

Table 3. Attribute and purchase intention mean ratings, MANOVAs: This study

	Labels			
	15% Fat N=54	85% Fat-free N=53	10% Fat N=52	90% Fat-free N=52
Buy*	3.51[a+]	2.23[a]	2.67	2.36
Taste	2.71	2.33	2.70	2.56
Quality	2.70[a]	2.24[a]	2.67[a]	2.14[a]
Greasiness	2.96[a]	2.35[a]	2.87[a]	2.29[a]
Lean/Fat	3.12[a]	2.10[a]	2.78[a]	1.98[a]

* Ratings ranged from one to five with lower numbers representing more favorable responses.
\+ Same letter indicates significant difference ($p<.05$); no or different letter indicates non significance.

Figure 1 shows the results for the fat and fat-free labels for the three corresponding proportions. It appears that the greater the amount of fat in the product, the greater the framing effect; or, to put it another way, the greater the positive payoff for marketers by using a % fat-free rather than a % fat content label.

Click here for figure 1

GENERAL DISCUSSION

Framing Effect.

Donovan and Jalleh (1999) confirmed Levin and Gaeth's (1988; Levin, 1987) findings that a 75% lean label is significantly and substantially more effective than a 25% fat label in attracting likely purchase intention and more favorable attribute ratings for a meat product. They also showed that a 75% fat-free label was similarly superior to the 25% fat label, and no differences were found between these two 75% labels on purchase intention or attribute ratings. This study provides evidence for the robustness of the framing effect with the framing effect holding for the 15% fat vs 85% fat-free labels in terms of purchase intention and three of the four attribute measures. For the 10% fat vs 90% fat-free labels, the framing effect was found for three of the four attribute measures, but was not significant for purchase intention, although in the positive direction. It may well be that a threshold effect is operating, in that the lower the fat content, the less positive impact of a fat-free label.

It appears that the % fat content labels increase people's perceptions of the amount of fat in the product relative to the % fat-free complements. This is particularly evident in the 'lean/fat' ratings in Figure 1, and confirmed by the association data of Donovan and Jalleh (1999).

CONCLUSION

This study provides evidence as to why many marketers use % fat-free in their labelling for fat content rather than the more direct % fat. Percent fat labels appear to focus attention on the fat content of the product, hence influencing more negative attitudes toward the product (as measured by attribute ratings and purchase intention) than would be the case for % fat-free labels. However, it is likely that the framing effect is largely pre-cognitive. In the Donovan and Jalleh (1999) study, when respondents were presented with the three beef labels together and asked which one would they prefer to buy, half the respondents spontaneously commented that the fat and lean content of each of the three labels was the same, but they would still prefer to buy one of the 75% labels.

Consumers need to be aware of the influence of % content labelling on their attitudes and purchase intention. They need to be aware that products with a 'fat-free' label, especially those less than 90%, might increase their attribute perceptions and purchase intentions relative to their equivalent fat labels. As noted above, when the complementary labels are presented together, some consumers are aware of the impact of % fat-free labelling. Hence, when consumers are considering buying a product with a positively framed label, it is suggested that they take into account the flip side of the label. For example, in assessing hamburger mince with a 75% fat-free label, consumers need to re-label the product in their mind and ask themselves how they would feel about this product if it were labelled 25% fat before making a purchasing decision.

REFERENCES

Banks, S.M., P. Salovey, S. Greener, A.J. Rothman et al. (1995), "The Effects of Message Framing on Mammography Utilization,"*Health Psychology*, 14 (March), 178-184.

Block, L.G., and P.A. Keller (1995), "When to Accentuate the Negative: The Effects of Perceived Efficacy and Message Framing on Intentions to Perform a Health-Related Behavior," *Journal of Marketing Research*, 32 (May), 192-203.

Braun, K.A., G.J. Gaeth and I.P. Levin (1996), "Framing Effects with Differential Impact: The Role of Attribute Salience," *ACR Conference Competitive Paper*.

Chan, S. (1991), *The Effect of Manipulated Involvement and Message Framing on Attitudes and Intentions*, Honours Thesis, Department of Management, The University of Western Australia.

Donovan, R.J., and G. Jalleh (1999), "Positive Versus Negatively Framed Product Attributes: The influence of involvement," *Psychology & Marketing*, 28 (4), 215-234.

Ganzach, Y. and N. Karsahi (1995), "Message Framing and Buying Behavior: A Field Experiment," *Journal of Business Research*, 32 (January), 11-17.

Hoy, P.Y. (1991), *The Influence of Message Framing and Issue Involvement on Persuasion*, Honours Thesis, Department of Management, The University of Western Australia.

Jalleh, G. (1992), *The Impact of Message Framing and Involvement on Health Behaviour Advocacy*, Honours Thesis, Department of Management, The University of Western Australia.

Kahneman, D. and A. Tversky (1979), "Prospect Theory: An Analysis of Decision Making Under Risk," *Econometrica*, 6, 621-630.

Kahneman, D. and A. Tversky (1982), "The Psychology of Preferences," *Scientific American*, 46, 160-173.

Kanouse, D.E. (1984), "Explaining Negativity Biases in Evaluation and Choice Behavior: Theory and Research," in Kinnear, T.C. ed., *Advances in consumer research,* 11, Provo, UT: Association for Consumer Research, 703-708.

Lerman, C., E. Ross, A. Boyce, P.M. Gorchov et al. (1992), "The Impact of Mailing Psychoeducational Materials to Women with Abnormal Mammograms," *American Journal of Public Health*, 82 (May), 729-730.

Levin, I.P. (1987), "Associate Effects of Information Framing," *Bulletin of the Psychonomic Society*, 25 (March), 85-86.

Levin, I.P. and G.J. Gaeth (1988), "How Consumers are Affected by the Framing of Attribute Information Before and After Consuming the Product," *Journal of Consumer Research*, 15 (December), 374-378.

Maheswaran, D. and J. Meyers-Levy (1990), "The Influence of Message Framing and Issue Involvement", *Journal of Marketing Research*, 27 (August), 361-367.

Meyerowitz, B.E. and S. Chaiken (1987), "The Effect of Message Framing on Breast Self-examination Attitudes, Intentions, and Behavior," *Journal of Personality and Social Psychology*, 52 (March), 500-510.

McNeil, B.J., S.G. Pauker, H.C. Sox Jr, and A. Tversky (1982), "On the Elicitation of Preferences of Alternative Therapies," *The New England Journal of Medicine*, 306, 1259-1262.

Petty, R.E. and J.T. Cacioppo (1983), "Central and Peripheral Routes to Persuasion: Application to Advertising," in Percy, L., & Woodside, A. eds. *Advertising and consumer psychology,* Lexington, MA: Lexington Books, 2-23.

Robberson, M.R. and R.W. Rogers (1988), "Beyond Fear Appeals: Negative and Positive Appeals to Health and Self-esteem," *Journal of Applied Social Psychology*, 18 (March), 277-287.

Rothman, A.J., P. Salovey, C. Antone, K. Keough, and C.D. Martin (1993a), "The Influence of Message Framing on Intentions to

Perform Health Behaviors," *Journal of Experimental Social Psychology*, 29 (September), 408-433.

Rothman, A.J., P. Salovey, C. Turvey, and S.A. Fishkin (1993b), "Attributions of Responsibility and Persuasion: Increasing Mammography Utilization Among Women Over 40 with an Internally Oriented Message," *Health Psychology*, 12 (January), 39-47.

Skowronski, J.J. and D.E. Carlston (1987), "Social Judgement and Social Memory: The Role of Cue Diagnosticity in Negativity, Positivity, and Extremity Biases," *Journal of Personality & Social Psychology*, 52 (April), 689-699.

Smith, G.E. (1996), "Framing in Advertising and the Moderating Impact of Consumer Education," *Journal of Advertising Research*, 36 (September/October), 49-64.

Smith, S.M. and R.E. Petty (1996), "Message Framing and Persuasion: A Message Processing Analysis," *Personality and Social Psychology Bulletin*, 22 (March), 257-268.

Steffen, V.J., L. Sternberg, L.A. Teegarden, and K. Shepherd (1994), "Practice and Persuasive Frame: Effects on Beliefs, Intention, and Performance of a Cancer Self-examination," *Journal of Applied Social Psychology*, 24 (May), 897-925.

Treiber, F.A. (1986), "A Comparison of the Positive and Negative Consequences Approaches upon Car Restraint Usage," *Journal of Pediatric Psychology*, 11 (March), 15-24.

Tversky, A. and D. Kahneman (1981), "The Framing of Decisions and the Psychology of Choice," *Science*, 211, 453-458.

Tykocinski, O., E.T. Higgins, and S. Chaiken (1994), "Message Framing, Self-discrepancies, and Yielding to Persuasive Messages: The Motivational
Significance of Psychological Situations," *Personality and Social Psychology Bulletin*, 20 (February), 107-115.

Weinberger, M.G., C.T. Allen and W.R. Dillon (1981), "Negative Information: Perspectives and Research Directions," in Monroe, K. ed. *Advances in consumer research*, 8, Ann Arbor, MI: Association for Consumer Research, 398-404.

Wilson, D.K., R.M. Kaplan and L.J. Schneiderman (1987a), "Framing of Decisions and Selections of Alternatives in Health Care," *Social Behaviour*, 2 (March), 51-59.

Wilson, D.K., K.A. Wallston, and J.E. King (1987b), "The Effects of Message Framing and Self-efficacy on Smoking Cessation," presented at the Annual Southeastern Psychological Association Convention, Atlanta, GA.

Wilson, D.K., K.A. Wallston, and J.E. King (1990), "Effects of Contract Framing, Motivation to Quit, and Self-efficacy on Smoking Reduction," *Journal of Applied Social Psychology*, 20 (April), 531-547.
