

Effects of Green Appeals and Message Framing on Green Consumption

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There are two types of appeals in green ads: those that emphasize self-focused reasons and those that emphasize other-focused reasons. This research investigates the effect of green appeals and message framing in green ads on the purchase intention of green products. Results indicate that for social-benefit green products from which consumers experience heightened public accountability for environment, consumers respond better to positively framed ads. For self-benefit green products, negatively framed ads can lead to greater purchase intention. Findings contribute to existing research on consumers' green consumption decision making and provide evidence for the matching effect of message framing and green appeals.

Keywords: green product, message framing, green appeals, purchase intention, matching effect

INTRODUCTION

With the awakening of environmental awareness, consumers are willing to “pay for the privilege of buying green”. When consumers engage in environmentally friendly consumption behaviors, they are typically motivated by the benefits that green products appeal (Green and Peloza, 2014). The social-serving benefits that green products appeal emphasize the social and environmental contributions of buying green products. For example, purchasing fuel-efficient vehicles that produce fewer emissions, offer consumers a chance to protect environment (Hardy and Van Vugt, 2006; Green and Peloza, 2014). However, even though people want to help others, the benefits of green products to consumers themselves are still their concern. So, there is another kind of green appeal that emphasizes the benefits of buying green products to consumers themselves. These two different points of view highlight the two ways that marketers commonly appeal for green consumption: positioning green consumption either egoistically (i.e., highlighting the self-focused reasons) or altruistically (i.e., highlighting the other-focused reasons). Therefore, we refer to the former as “self-benefit” green products and define these products as those which focus on the benefits the product or service provides to the consumer (White and Peloza, 2009). We refer to the latter as “social-benefit” green products and define these as products that focus on the benefits received by others or, more broadly, by society (Fisher, Vandenbosch, and Antia, 2008). In view

of the differences in the above two appeals, this research investigates the differences of purchase intention for self-benefit green products and social-benefit green products, and the reasons leading to the differences in buying intentions.

With the increasing competition in the green market, marketers should seek the most attractive way of communication to attract consumers' attention. However, many green advertisements do not fully recognize the difference between the two green appeals, and then design a more suitable advertising message framework according to the different green appeals, which leads to the failure of green advertisements to achieve the best persuasive effect. As such, it is important to investigate consumers' preference for different types of green appeal and how to make green appeals play a better persuasive role. Therefore, this research aims to answer this question by exploring the role of message framing in different green appeal conditions. Researchers have examined the effectiveness of positive-framed and negative-framed persuasive messages in different contexts. However, previous studies have documented mixed findings about which type of framing is more persuasive. Lord (1994) conducted positively framed ads are found more persuasive than negative message framing in recycling, while the others found some evidence suggesting the stronger effectiveness of negatively framed ads (Obermiller, 1995). Considering these mixed results about the message framing, it is important to investigate the appropriate framing types for green advertising because green advertising regularly use both positive and negative framing types. Therefore, this research will further explore the condition under which social-benefit (self-benefit) green products are more effective than self-benefit (social-benefit) green products by showing the matching effect of green appeals and message framing in green ads.

This research makes several contributions to green consumption and green advertising literature. Firstly, our findings contribute to the understanding of how to communicate effectively with consumers in green consumption. We point out the importance of focusing on the perceptual and emotional differences brought about by different green appeals, which is ignored by the companies. Factors influencing the choice of green products of consumers, such as identity salience and perceived value of green product should be fully considered in marketing communications. Secondly, we extend previous research by examining the role of message framing in green ads. Our findings enhance the literature on green consumption communications by demonstrating the matching effect of green appeals and message framing on green consumption, which highlight the importance of considering both the green appeals and message framing in green ads, and show that the choice of message framing should vary depending on the type of green product.

THEORETICAL BACKGROUND

Green Appeal Types and Consumer Attitude

Research on consumer reactions to green products suggests that there are two types of green appeals for green products: social-benefit green appeals and self-benefit green appeals. Self-benefit green appeals are defined as those which focus on the benefits the product or service provides to the consumer, and social-benefit green appeal are those which focus on the benefits received by others or, more broadly, by society (White and Peloza, 2009; Green and Peloza, 2014).

Social-benefit green appeal (e.g., highlighting how the use of a green product helps prevent environmental degradation and can provide benefits to the environment and society) is posited that "socially responsible consumption is socially oriented, not self-centered" (Webb, Mohr and Harris, 2008). Such appeals aim to encourage people to "do good", causing consumers to buy green products because it allows them to contribute to the welfare of the society. When consumers know their purchase of green products can help reduce the detrimental impact on environment, they can experience the feeling of altruism and moral satisfaction (Andreoni, 1990; Kahneman and Knetsch, 1992). The signal effect of purchasing social-benefit green products contributes to consumers' salient identity (i.e. personal or social identity) (Pinto, 2014; Bodner and Prelec, 2003; Mazar, Amir and Ariely, 2008). Therefore, the salient identity and the heightening public self-image concerns can be a strong positive effect on consumers' intentions to buy social-benefit green products.

Self-benefit green appeal (e.g., highlighting the main beneficiary of support is consumers themselves when purchasing green products), on the other hand, encourages people to purchase green products by mainly focusing on the functional or material benefits consumers might gain from the green product, such as health benefits and material savings over the long run (Paul and Rana, 2012; Diamond and Loewy, 1991). As consumers pay more and more attention to health problems, the self-benefit green products are becoming more and more attractive to consumers (Paul and Rana, 2012). In addition, the benefits of self-benefit green products can help consumers better rationalize their consumption behavior by showing benefits to themselves rather than to others. Therefore, as for self-benefit green products that mainly provide the benefits to consumers themselves, creating awareness of self-interest such as benefits to health and safety which is closely related to consumers' life can effectively improve consumers' purchase intention (Paul and Rana, 2012; Touza and Perrings, 2011).

Although these two types of green appeals can both bring benefits to consumers, exploring the differences between consumers' preference for these two types of green appeals is becoming increasingly important. We propose that compared to social-benefit green appeals, consumers show more preferences to self-benefit green appeals. According to social exchange theory, people's consumption decisions are usually based on the trade-off between cost and return (Blau, 1964). For social-benefit green products that provides social benefits but produces personal costs, consumers tend to think that the costs they pay are higher than their actual benefits. So, they are often hesitant to do so unless they can justify to themselves that their behavior serves their own self-interest (Holmes, Miller and Lerner, 2002). But for self-benefit green products, we propose that compared to social-benefit appeals, consumers may react more positively to self-benefit appeals. Because these highlighted green benefits allow them to better rationalize their consumption behavior (White and Peloza, 2009). In this case, we propose that consumers are more likely to purchase self-benefit green products, because self-benefit appeals highlight a favorable cost-benefit ratio. Higher cost-benefit ratio can lead to greater perceived value, which can lead to greater purchase intention. Thus, we derive the following hypothesis:

H1: *Compared to social-benefit green appeals, consumers have a stronger preference for self-benefit green appeals.*

H2: *The effect of green product appeals (social-benefit vs. self-benefit) on purchase intention is mediated by perceived value.*

Matching Effect of Green Appeals and Message Framing in Green Ads

The framing effect is a near mirror-image reversal of preference depending on the framing of the options (Tversky and Kahneman, 1981). Framing effects are important to the study of decision making because they illustrate the inconsistency of choices and alter individuals' attention to the messages and the subsequent comprehension prior to making their judgments (Kahneman and Tversky, 1979; Maheswaran and Meyerslevy, 2004). There are two types of message framing that are commonly used in green advertising—positive message framing and negative message framing. Positive message framing is defined as communications that emphasize advantages or the potential gains to consumers. Negative message framing is defined as communications that point out disadvantages or the potential losses to consumers in a situation (Grewal, 1994). Researchers have examined effectiveness of positive message framing and negative message framing in different contexts and there are several empirical studies applied positive versus negative message framing to environmental communications. However, previous studies have documented mixed findings about which types of framing is more persuasive. For example, positive message framings are found more persuasive than negative message framing in recycling, while negative-framed message from a personal acquaintance were more effective in influencing actual recycling (Lord, 1994). Obermiller (1995) found that issue salience is an important determinant of the effectiveness of message framing, which indicates that negative message framing is more persuasive for the low salience issue of energy conservation, and positive message framing are more persuasive for the high salience issue of recycling. However, there is less research about the effect of message framing on

green advertising persuasion from the perspective of green appeals, which provides space for the research of this paper. Therefore, this paper will further investigate the matching effect of green appeals and message framing in green ads.

According to associative learning theory, memory is structured as an associative network consisting of various nodes connected by associative links (Anderson, 1976; Martindale, 1991). In the memory network model, activation is assumed to spread from activated nodes to other nodes along the links in the network (Grunert, 1996). The more related the two concepts are, the more likely the two concepts will become integrated within an associative network. When a link between two concepts is presented in the memory system, the spreading activation from one node to the other will become automatic and the related areas of the memory network can do further cognitive processing (Grunert, 1996; Rodgers, 2003). The ease of information processing can transfer to more favorable attitudes and make the information more persuasive and effective (Higgins et al. 2003; Lee and Aaker, 2004).

The preceding overview of green consumption literature shows that product appeals can induce particular affective (e.g. the feeling of altruism and more concerning on health) and cognitive processing styles (Y. Kong and L Zhang, 2014). The discussion of the message framing suggests that positive/negative message framing may induce some types of emotions or concerns, which are relevant to the affective/ cognitive processing style induced by the product types. In the context of green advertising, both the green appeals and message framing may become integrated within an associative network. Specifically, when consumers consider self-benefit green products that provide direct benefits to consumers themselves, consumers' choice is influenced by many factors and self-interest has been given more weightage (Holmes, Miller and Lerner, 2002), which makes consumers be much more seriously concerned about the benefits and loss of not buying (Paul and Rana, 2012; White and Peloza, 2009). In this condition, the negative-framed green ads that emphasize the loss and the negative consequences of not buying a green product will attract consumers' immediate attention and behavioral intention (Schwartz, 2012; Taylor, 1991), which facilitates consumers' information processing by compatible with their focus. Thus, associative link between the green attribute and the information will be built automatically and make the negative-framed ads more persuasive.

As for the social-benefit green appeals that mainly emphasis benefits for society in general, previous research suggests that sustainable consumption relates to a shared consciousness that stems from social categorization and social identity (Cherrier, 2006). When consumers purchase social-benefit green products that help reduce the detrimental impact on environment, they can experience the feeling of altruism and moral satisfaction (Andreoni, 1990; Kanhneman and Knetsch, 1992). The salient identity and self-image concerns can activate impression motivation, and the relevant norm should provide information regarding how to engage in impression construction, for example, by appearing to be more social-serving than self-serving (Katherine and John, 2009). Therefore, the adoption of social-benefit green products may depend upon reasons beyond conservation of the environment and consumers may pay more attention to the 'gain' when pay for social-benefit green products such as the achievement of social value and identity. In that case, positive-framed ads emphasize advantages and highlight the impression construction (i.e., the selection of an appropriate impression to convey to others) will strengthen consumer's perception of green products and increase the consumer's sense of pleasure, which leads to greater purchase intention for social-benefit green products (Dholakia,2000). Thus, we derive the following hypothesis:

OVERVIEW OF STUDIES

To test these hypotheses, we conduct two studies. Study 1 lend supports for our basic hypothesis that consumers show greater purchase intention for ads that emphasize self-benefit green appeals compared to ads that emphasize social-benefit green appeals. Study 1 also tests the mediating role of perceived value.

Study 2 tries to explore the role of message framing in green ads (H3a and H3b). This study aims to show the matching effect of green appeals (social-benefit vs. self-benefit green appeals) and message framing (positive-framing vs. negative-framing) in green ads.

Study 1

Study 1 tested our basic proposition that compared to social-benefit green products, consumers are more willing to buy self-benefit green products. We induced product appeals (self-benefit vs. social-benefit) in this study by showing product information that emphasizing self-focused reasons (vs. other-focused reasons). We predicted that consumers are more willing to buy self-benefit green products (vs. social-benefit green products vs. control).

Method

296 participants ($M_{age}=27$, 119 males) took part in this study. Participants were randomly assigned to one of the three (social-benefit vs. self-benefit vs. control) between-subject conditions.

Firstly, participants read product information about an air conditioner with upgrade of green attribute. Specifically, participants in the social-benefit green product condition were required to read the information that introduced the green attribute of the air conditioner and emphasized the value of green attribute to environmental protection. Participants in the self-benefit green product condition were required to read the information that introduced the green attribute of the air conditioner and emphasized the value of green attribute to consumer health. Participants in the control condition were asked to read product information about the green attribute of the air conditioner. After reading the product information, participants were asked to complete the questionnaire. Firstly, participants were asked to indicate their agreements with the statements regarding their perceived benefit of the green product (social-benefit vs. self-benefit, 1=strongly disagree, 7=strongly agree). Then, participants responded to 2-items assessing purchase intent (1=strongly disagree, 7=strongly agree). Finally, we measured participants' perceived value of the green products.

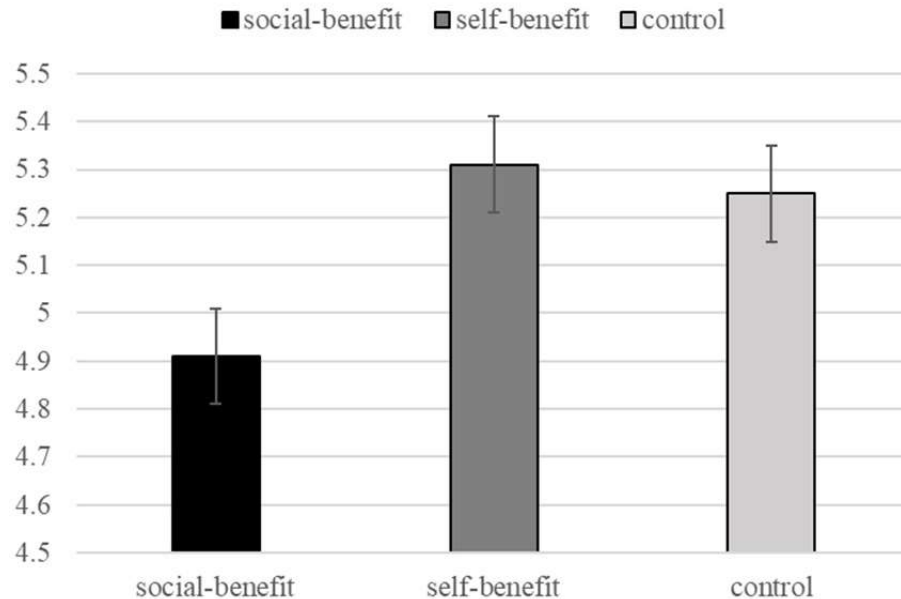
Results and Discussion

Manipulation Check. As expected, participants in the self-benefit green appeal condition perceived that the green products are much more self-benefit than those in the control condition and social-benefit condition ($M_{perceived\ self-benefit}=5.15$, $SD_{perceived\ self-benefit}=1.35$; $F(1,294)=12.680$, $p<.00$). The perception of social-benefit attribute in the social-benefit condition was marginal greater than those in the self-benefit condition ($M_{perceived\ social-benefit}=4.96$, $SD_{perceived\ social-benefit}=1.25$; $F(1,294)=2.118$, $p<.01$)

Purchase Intention. Consistent with our prediction, participants in the social-benefit green products condition reported lower purchase intention compared to self-benefit green products ($M_{social-benefit}=4.91$, $SD_{social-benefit}=1.19$; $M_{self-benefit}=5.31$, $SD_{self-benefit}=1.13$; $p=.013$). This finding supports our basic hypothesis (H1) that compared to social-benefit green products, consumers are more willing to buy self-benefit green products (see FIGURE 1). Purchase intention in the control condition was marginal higher than that in the social-benefit green product condition ($M_{social-benefit}=4.91$, $SD_{social-benefit}=1.19$; $M_{control}=5.25$, $SD_{control}=1.01$; $p=.053$). Participants' purchase intention did not differ between the self-benefit green product condition and control condition ($M_{self-benefit}=5.31$, $SD_{self-benefit}=1.13$; $M_{control}=5.25$, $SD_{control}=1.01$; $p=.69$).

Mediation Analysis. Mediation analyses confirmed that the effect of green appeals on purchase intention. The bootstrapping procedure (5,000 samples, PROCESS Model 4; Hayes 2012) with product types as the independent variable, the perceived value as the mediator, and purchase intention as the dependent variable yielded a 95% confidence interval that excluded zero ([-.1886,-.0008]), suggesting a significant mediation effect.

FIGURE 1
MEAN RATINGS OF PURCHASE INTENTION: THE EFFECT OF GREEN PRODUCT TYPES



Study 2

The objective of study 2 was to test the matching effect of green appeals and message framing in green ads.

Method

220 participants ($M_{age}=28$; 47% male) took part in this study. Study 2 used a 2×2 between-subject design where message framing (positive vs. negative) and the type of green appeal (self-benefit vs. social-benefit) were manipulated. The manipulation of green appeals was the same as Study 1. Participants in the social-benefit green product condition read product information that introduced the green attribute of the air conditioner and the value of green attribute to environmental protection. Participants in the self-benefit green product condition read the information that emphasized the green attribute of the air conditioner and the value of green attribute to consumer health. After reading the article, as a manipulation check, participants indicated their agreement with statements regarding their perceived benefit of the green product (social-benefit vs. self-benefit, 1=strongly disagree, 7=strongly agree).

After reading the product information, participants were asked to read the advertising. Each group was shown an advertisement (positive-framing vs. negative-framing). Those in the self-benefit green product condition read the advertising that is positively framed is “Choose green-home type air conditioner, get green living” and the negatively framed advertising is “Miss green home air conditioner, miss green living”.

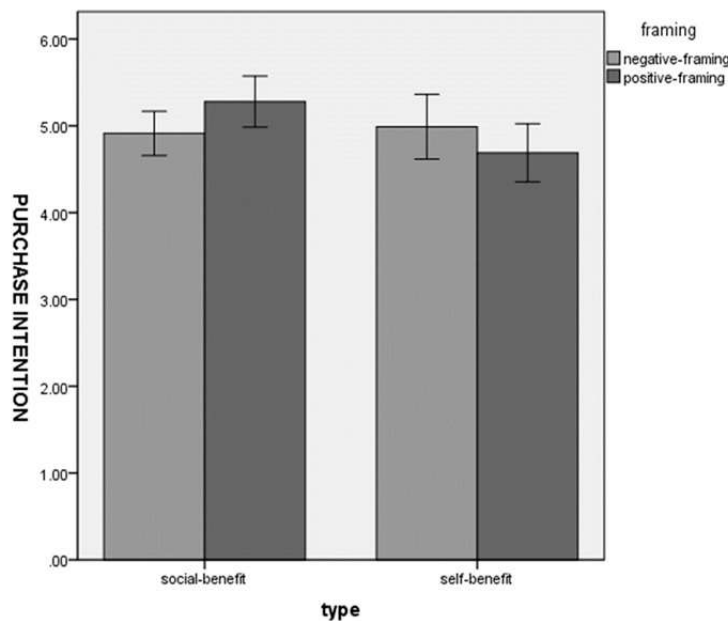
After reading the advertising, participants were asked to complete the questionnaire. Following exposure to the four condition, participants indicated what’s the information the advertising emphasized and how likely they were to purchase each one (1=very unlikely, 7=very likely). We predicted that in the social-benefit green product condition, individuals read the advertisement in positive message framing would be more willing to buy green products compared with their counterparts in negative message framing condition (H3a). On the contrary, in the self-benefit green product condition, individuals read the advertisement in negative message framing will be more willing to pay for the green products relative to those read advertisement in positive message framing condition (H3b).

Results and Discussion

Purchase Intention. As expected, participants in the social-benefit green product group were more willing to buy green products when read advertisement that are positively framed ($M_{\text{positive-framing}}=5.28$, $SD_{\text{positive-framing}}=0.18$) than participants read advertisement that are negatively framed ($M_{\text{negative-framing}}=4.91$, $SD_{\text{negative-framing}}=0.15$). However, in the self-benefit green product group, participants were more willing to buy green products when read advertisement that are negatively framed ($M_{\text{negative-framing}}=4.99$, $SD_{\text{negative-framing}}=0.17$) than participants read advertisement that are positively framed ($M_{\text{positive-framing}}=4.69$, $SD_{\text{positive-framing}}=0.15$).

Matching Effect of Product Types and Message Framing. An ANOVA with green appeals (social-benefit vs. self-benefit) and message framing (positive vs. negative framing) as independent variables and purchase intention for the air conditioner as the dependent variable revealed a significant interaction effect ($F(1,219)=4.26$, $p=.04$, $\eta^2=.019$). FIGURE 2 demonstrates the interaction pattern. These results support the argument that for social-benefit green products, green advertising that is positively framed will lead to greater purchase intention than that is negatively framed. For self-benefit green products, green advertising that is negatively framed will lead to greater purchase intention toward the products than that is positively framed.

FIGURE 2
MEAN RATINGS OF PURCHASE INTENTION:
THE EFFECT OF GREEN PRODUCT MESSAGE FRAMING



General Discussion

In two studies, we provide support for our basic assertion that consumers are more likely to purchase self-benefit green products compared to social-benefit green products (Study 1). Study 1 also tests the mediating role of perceived value. Furthermore, our results find the matching effect of green appeals and message framing in green advertising (Study 2). Specifically, for self-benefit green products that emphasize self-focused reason, advertising that are negatively framed can lead to greater purchase intention. For social-benefit green products that emphasize social-benefit reason, advertising that are positively framed can lead to greater purchase intention.

Our findings contribute to the literature on consumer reactions to green consumption and green communications in several ways. Firstly, we demonstrate the differences between consumers' preference

for social-benefit and self-benefit green appeals. Findings suggest that consumers show greater purchase intention for self-benefit green products compared to social-benefit green products, and the psychological mechanism of decision making towards these two types of green appeals has been explored. This research also indicates the importance to examine the role of value concerned differences in green consumption. Secondly, our findings enhance the literature on green consumption communications by demonstrating the matching effect of green product types and message framing in advertising persuasion. Our study points to a new and previously unexplored driver of consumers' attributions: the green appeals and message framing of green advertising that companies used to persuade consumers to engage in sustainable consumption. Specifically, we highlight the importance that the choice of advertising message framing should be compatible with the emotional type aroused by the green appeals and motivational predisposition of the message recipients. Importantly, this research also adds to the large body of literature on associative learning theory. This study extends the application of this theory in the field of green consumption and green communications by demonstrating the matching effects of product appeals and message framing in green advertising.

From the managerial perspective, our findings contribute to the understanding of how to communicate effectively with consumers in green consumption. Firstly, our study points out the importance of consumers' perception and emotions aroused by the green appeals ignored by the companies. Factors influencing the choice of green products of consumers, such as perceived value of green product should be fully considered in green communications. Secondly, despite the popular use of green appeals in advertising to enhance the attractiveness to consumers, we highlight the importance of considering the differences in the psychological appeal of social-benefit and self-benefit green products, and showing that the choice of advertising message framing should vary depending on the types of green appeals. Ideally, for self-benefit green appeal, companies should choose the negative message framing in green ads and highlight the benefits that the green product brings to consumers themselves. Because it would be more easily for consumers to justify to themselves. For social-benefit green appeals, positively framed advertising would be more persuasive and the advantage of choosing green products such as identity salience should be emphasized.

Limitations and Further Research

The limitations of the present research reveal several opportunities for future research. Firstly, this research only measured consumers' willingness to buy green products, but not their real buying behavior, which is what needs to be further measured in the future research. Secondly, this research did not explore the purchase intention of those green products with both self-benefit and social-benefit attributes. This raises several interesting questions regarding how consumers respond to these situations. For example, how to improve consumers' perceived value in this condition? Is it a good strategy to emphasize only one appeal of green products? Thirdly, this paper used limited categories of green products in studies to explore how consumers respond to green appeals and message framing of green advertising. In future research, more categories of green products should be used to test the robust of the mechanism. Moreover, to test the external validity of the findings, field research should be conducted in the future.

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REFERENCES

- Andreoni, J. (1990). Impure altruism and donations to public goods: a theory of warm-glow giving. *Economic Journal*, 100(401), 464-477.
- Blau, P. M. (1964). Exchange and power in social life. *American Journal of Sociology*.
- Bodner, R., & Prelec, D. (2003). *Self-signaling and diagnostic utility in everyday decision making*.
- Coddington, W. (1993). *Environmental Marketing – Positive Strategies for Reaching the Green Consumer*. McGraw-Hill, New York, NY.
- Campbell, M. C., & Goodstein, R. C. (2015). The moderating effect of perceived risk on consumers' evaluations of product incongruity: preference for the norm. *Journal of Consumer Research*, 28(3), 439-449.
- Cherrier, H. (2006). Consumer identity and moral obligations in non-plastic bag consumption: A dialectical perspective. *International Journal of Consumer Studies*, 30(5), 515-523.
- Dowling, G. R. (1986). Perceived risk: the concept and its measurement. *Psychology & Marketing*, 3(3), 193–210.
- Dholakia, U. M. (2000). Temptation and resistance: an integrated model of consumption impulse formation and enactment. *Psychology & Marketing*, 17(11), 955–982.
- Fisher, R. J., Vandenbosch, M., & Antia, K. D. (2008). An empathy-helping perspective on consumers' responses to fund-raising appeals. *Journal of Consumer Research*, 35(3), 519-531.
- Green, T., & Peloza, J. (2014). Finding the right shade of green: the effect of advertising appeal type on environmentally friendly consumption. *Journal of Advertising*, 43(2), 128-141.
- Grewal, D., Gotlieb, J., & Marmorstein, H. (1994). The moderating effects of message framing and source credibility on the price-perceived risk relationship. *Journal of Consumer Research*, 21(1), 145-153.
- Grunert, K. G. (1996). Automatic and strategic processes in advertising effects. *Journal of Marketing*, 60(4), 88-101.
- Hardy, C. L., & Van, V. M. (2006). Nice guys finish first: the competitive altruism hypothesis. *Personality & Social Psychology Bulletin*, 32(10), 1402-13.
- Holmes, J. G., Miller, D. T., & Lerner, M. J. (2002). Committing altruism under the cloak of self-interest: the exchange fiction ☆, ☆☆. *Journal of Experimental Social Psychology*, 38(2), 144-151.
- Higgins, E. T., Chen, I. L., Freitas, A. L., Spiegel, S., & Molden, D. C. (2003). Transfer of value from fit. *Journal of Personality & Social Psychology*, 84(6), 1140-1153.
- Krystallis, A., & Chrysohoidis, G. (2005). Consumers' willingness to pay for organic food: factors that affect it and variation per organic product type. *British Food Journal*, 107(5), 320-343.
- Kahneman, D., & Knetsch, J. L. (1992). Valuing public goods: the purchase of moral satisfaction. *Journal of Environmental Economics & Management*, 22(1), 57-70.
- Kohnberning, C. A., & JacobJacob. (1974). Patterns of information acquisition in new product purchases. *Journal of Consumer Research*, 1(2), 18-22.
- Lord, K. R. (1994). Motivating recycling behavior: a quasiexperimental investigation of message and source strategies. *Psychology & Marketing*, 11(4), 341–358.
- Lee, A. Y., & Aaker, J. L. (2004). Bringing the frame into focus: the influence of regulatory fit on processing fluency and persuasion. *Journal of Personality & Social Psychology*, 86(2), 205.
- Mohr, L. A., Webb, D. J., & Harris, K. E. (2001). Do consumers expect companies to be socially responsible? the impact of corporate social responsibility on buying behavior. *Journal of Consumer Affairs*, 35(1), 45-72.
- Mazar, N., Amir, O., & Ariely, D. (2008). The dishonesty of honest people: a theory of self-concept maintenance. *Journal of Marketing Research*, 45(6), 633-644.
- Maheswaran, D., & Meyerslevy, J. (1990). The influence of message framing and issue involvement. *Journal of Marketing Research*, 27(3), 361-367.
- Miller, D. W. (1969). *Risk taking and information handling in consumer behavior*. Management Science.

- Obermiller, C. (1995). The baby is sick/the baby is well: a test of environmental communication appeals. *Journal of Advertising*, 24(2), 55-70.
- Paul, J., & Rana, J. (2012). Consumer behavior and purchase intention for organic food. *Journal of Consumer Marketing*, 29(6), 412-422.
- Pinto, D. C., Herter, M. M., Rossi, P., & Borges, A. (2014). Going green for self or for others? gender and identity salience effects on sustainable consumption. *International Journal of Consumer Studies*, 38(5), 540–549.
- Popielarz, D. T. (1967). An exploration of perceived risk and willingness to try new products. *Journal of Marketing Research*, 4(4), 368-372.
- Rodgers, S. (2003). The effects of sponsor relevance on consumer reactions to internet sponsorships. *Journal of Advertising*, 32(4), 67-76.
- Schwarz, N. 2012. Feelings-as-information theory. In P.A.M. Van Lange, A. Kruglanski, and E.T. Higgins (Eds.), *Handbook of theories of social psychology* (289308). Thousand Oaks, CA: Sage.
- Taylor, S. E. (1991). Asymmetrical effects of positive and negative events: the mobilization-minimization hypothesis. *Psychological Bulletin*, 110(1), 67-85.
- Touza, J. M., & Perrings, C. (2011). Good and bad increases in ecological awareness: environmental differentiation revisited. *Strategic Behavior & the Environment*, 1(1), 71-88.
- Tversky, A., & Kahneman, D. (1981). The framing of decisions and the psychology of choice. *Science*, 211(4481), 453.
- White, K., & Peloza, J. (2009). Self-benefit versus other-benefit marketing appeals: their effectiveness in generating charitable support. *Journal of Marketing*, 73(4), 109-124.
- W. D. D., & Loewy, B. Z. (1991). Effects of probabilistic rewards on recycling attitudes and behavior 1. *Journal of Applied Social Psychology*, 21(19), 1590–1607.
- Yam-Tang, E. P. Y., & Chan, R. Y. K. (1998). Purchasing behaviours and perceptions of environmentally harmful products. *Marketing Intelligence & Planning*, 16(6), 356-362.
- Zhang, Y. K. L. (2014). When does green advertising work? the moderating role of product type. *Journal of Marketing Communications*, 20(3), 197-213.