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## Effects of age, need for cognition, and affective intensity on advertising effectiveness

Jane McKay-Nesbitt <sup>a,\*</sup>, Rajesh V. Manchanda <sup>b</sup>, Malcolm C. Smith <sup>b</sup>, Bruce A. Huhmann <sup>c</sup><sup>a</sup> Bryant University, College of Business, 1150 Douglas Pike, Smithfield, RI, 02917, United States<sup>b</sup> Department of Marketing, I. H. Asper School of Business, University of Manitoba, Winnipeg, MB, Canada R3T 5V4<sup>c</sup> New Mexico State University, College of Business, MSC 5280, P.O. Box 30001, Las Cruces, NM 88003-8001, United States

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## ABSTRACT

This paper explores how individual characteristics of age, need for cognition (NFC), and affective intensity (AI) interact with each other and with advertising appeal frames (i.e., rational, positive-emotional, negative-emotional) to influence ad attitudes, involvement, and recall. The mixed design study reveals that younger adults recall emotional messages, especially negative ones, better than rational ones, but recall does not differ for older adults across appeal frames. Older adults prefer rational and positive messages to negative-emotional messages but ad attitudes do not differ among younger adults across appeal frames. Finally, age interacts with AI, but not NFC, to influence ad responsiveness. Both age and AI influence ad attitudes such that older adults exhibit the most positive ad attitudes across all appeal frames.

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## 1. Introduction

Consumers today are bombarded with marketing messages and the sheer abundance of these messages causes marketers to be increasingly concerned with advertising effectiveness. Consequently, researchers exploring advertising effectiveness have identified message framing as a factor contributing to persuasion (e.g., [Chandran and Menon, 2004](#)). How ad information is presented, or framed, influences consumers' willingness to attend to and remember ad content.

Marketing messages can be framed in various ways ([Bagozzi et al., 1999](#)). For example, rationally-framed messages provide information to persuade through appeals to recipients' thoughts. Alternatively, emotionally-framed messages attempt to persuade through appeals to emotions. Emotional appeals can be further differentiated in terms of valence: positive (e.g., joy, warmth, happiness) or negative (e.g., fear, guilt, worry).

Research shows that both thoughts and feelings contribute to advertising effectiveness ([Edell and Burke, 1987](#)). However, conditions under which thoughts versus positive or negative feelings are more important for advertising effectiveness are not fully understood. This research addresses this issue by exploring moderating effects of three

specific individual differences on the relationship between message framing and ad effectiveness. Specifically, this work explores the interaction of age, need for cognition (NFC), and affective intensity (AI) with advertising message frames (positive-emotional, negative-emotional, and rational) to influence ad attitudes ( $A_{ad}$ ), ad involvement ( $I_{ad}$ ), and ad recall ( $R_{ad}$ ).

This research both replicates and extends previous work. Involvement's inclusion extends [Williams and Drolet's \(2005\)](#) work on older adults. Consideration of positive and negative *emotions*, versus positive and negative *information* in ad appeals extends [Zhang and Buda's \(1999\)](#) work on NFC. Inclusion of involvement and recall extends [Moore and Harris's \(1996\)](#) work on AI. Finally, this work contributes to understanding factors that influence advertising effectiveness by exploring how previously identified moderators interact with each other (i.e., age and NFC, and age and AI) and with message appeal frames to influence ad attitudes, involvement, and recall.

## 2. Theoretical background

## 2.1. Emotional versus rational message frames and ad effectiveness

Some researchers argue that informational properties of messages are more influential than emotions in generating positive attitudes ([Holbrook, 1978](#)). Other researchers contend that emotions can influence behavior independent of cognitions and accord greater importance to emotion's role in determining advertising effectiveness ([Brown et al., 1998](#)). Affective processes, however, are most likely to

\* Corresponding author.

E-mail addresses: [jmckayne@bryant.edu](mailto:jmckayne@bryant.edu) (J. McKay-Nesbitt), [raj\\_manchanda@umanitoba.ca](mailto:raj_manchanda@umanitoba.ca) (R.V. Manchanda), [malcolm\\_smith@umanitoba.ca](mailto:malcolm_smith@umanitoba.ca) (M.C. Smith), [bhuhmann@nmsu.edu](mailto:bhuhmann@nmsu.edu) (B.A. Huhmann).

take precedence over cognitions for low-relevance attitudes and objects (Zajonc, 1984). Age also moderates the effectiveness of emotionally-framed advertising appeals. Older adults better like and recall emotional than rational appeals, whereas younger adults better like and recall rational than emotional appeals (Williams and Drolet, 2005). Together, these findings suggest that, under low-involvement conditions, emotionally-framed appeals will be more effective than rationally-framed ones, especially for older than younger adults.

Therefore,

**Hypothesis 1a.** For low-involvement products, emotionally-framed ad appeals will produce more positive  $A_{ad}$ , and greater  $I_{ad}$ , and  $R_{ad}$  than rationally-framed ad appeals.

**Hypothesis 1b.** Age will moderate the effects of emotional appeals on  $A_{ad}$ , and  $I_{ad}$ , and  $R_{ad}$ , such that the effects will be stronger for older than younger adults.

## 2.2. Positive- versus negative-emotion appeal frames

The valence of ad-evoked feelings influences attitudes toward the ad and the brand. Some suggest that positive-appeal frames produce more favorable attitudes toward ads, and that positive emotions increase attitudes toward ads and brands, while negative emotions do the opposite (e.g., Edell and Burke, 1987; Cotte et al., 2005). However, both the mood as information hypothesis (Schwarz and Clore, 1988) and the mood repair hypothesis (Isen, 1984) propose that cognitive elaboration is greater when negative emotions predominate, suggesting that negative ad frames will be more effective than positive ones in influencing  $A_{ad}$ . Indeed, negative emotions cause consumers to process information effortfully and systematically (Keller et al., 2002). Together, these findings suggest that whereas a positive frame may cause one to like an ad, a negative frame that evokes greater elaboration, will generate greater  $I_{ad}$  and  $R_{ad}$ .

Age also moderates the effectiveness of positive- versus negative-emotional appeals. Older adults are more likely than younger adults to attend to and remember emotionally meaningful information, especially positive information (Fung and Carstensen, 2003). However, older adults recall emotional appeals that focus on avoiding negative-emotional outcomes better than ones that focus on achieving positive-emotional outcomes (Williams and Drolet, 2005). Therefore, this study predicts an age by framing interaction. Specifically,

**Hypothesis 2a.** Older adults will have more positive  $A_{ad}$ , and greater  $I_{ad}$ , and  $R_{ad}$  when ads are framed positively versus negatively.

**Hypothesis 2b.** Younger adults will have more positive  $A_{ad}$ , and greater  $I_{ad}$ , and  $R_{ad}$  when ad appeals are framed negatively versus positively.

## 2.3. Need for cognition

NFC is the tendency of an individual to derive intrinsic enjoyment from engaging in effortful information processing (Cacioppo and Petty, 1982). Cacioppo et al.'s (1996) meta-analysis shows that in general, higher-NFC individuals better recall information, think more about substantive arguments in a persuasive communication, are less influenced by heuristic message cues, exhibit more positive attitudes toward stimuli requiring thought, and have attitudes that are more predictive of subsequent behavior than lower-NFC individuals. Thus, higher-NFC individuals should exhibit more positive  $A_{ad}$ , and greater  $I_{ad}$ , and  $R_{ad}$ , than those with lower NFC. Additionally, higher-NFC individuals are expected to find ad appeals containing factual information more appealing and persuasive than messages containing emotional information. The weak negative relationship between age and NFC (Cacioppo et al., 1996) suggests that NFC is stable over time.

Thus, although younger and older should not differ in NFC, this study predicts:

**Hypothesis 3a.** An NFC main effect will produce more positive  $A_{ad}$ , greater  $I_{ad}$ , and  $R_{ad}$  among higher- compared to lower-NFC individuals, regardless of the message recipient's age.

Interestingly, positive and negative information equally persuades higher-NFC individuals, whereas negative information persuades lower-NFC individuals more than positive information (Zhang and Buda, 1999). Thus:

**Hypothesis 3b.** NFC will interact with appeal framing such that rationally- versus emotionally-framed ad appeals will heighten  $A_{ad}$ ,  $I_{ad}$ , and  $R_{ad}$  of higher-, not lower-NFC individuals, regardless of age.

## 2.4. Affective intensity

AI refers to the intensity or strength with which individuals experience both positive and negative emotions (Larsen and Diener, 1987). When individuals are exposed to positive-emotional appeals, higher-AI individuals exhibit more positive ad attitudes than lower-AI individuals (Moore and Harris, 1996). Higher-AI individuals also exhibit stronger emotional responses to ads than lower-AI individuals. They also experience higher levels of empathic involvement with ads (Moore and Homer, 2000). Therefore,

**Hypothesis 4a.** AI will interact with appeal frames such that, higher-AI individuals will have more positive  $A_{ad}$ , and greater  $I_{ad}$ , and  $R_{ad}$  than lower-AI individuals, when ad appeals are framed emotionally versus rationally.

The socioemotional selectivity theory suggests that older adults manage both experience and emotions to ensure positive-emotional outcomes and that emotionally meaningful information is more important for them than for younger adults (Carstensen et al., 2003). In addition, emotional intensity of negative emotions tends to decrease with age (Barrick et al., 1989). Therefore,

**Hypothesis 4b.** Age will moderate the AI by appeal frame interaction on  $A_{ad}$ ,  $I_{ad}$ , and  $R_{ad}$  such that when higher-AI adults view emotionally- versus rationally-framed ad appeals, older adults will exhibit more positive  $A_{ad}$ , and greater  $I_{ad}$ ,  $R_{ad}$  than younger adults.

**Hypothesis 4c.** An age by AI by appeal frame interaction will encourage the most positive  $A_{ad}$ , and greater  $I_{ad}$ ,  $R_{ad}$  among older adults when AI is higher, and appeal frames are positive versus negative.

**Hypothesis 4d.** The three-way interaction will encourage the most positive  $A_{ad}$ , and greater  $I_{ad}$  and  $R_{ad}$  among younger adults when AI is higher, and appeal frames are negative versus positive.

## 3. Method

### 3.1. Study design

Hypotheses were tested in a 2 (age: older versus younger)  $\times$  2 (AI: higher versus lower)  $\times$  2 (NFC: higher versus lower)  $\times$  3 (appeal frame: rational, negative-emotional, or positive-emotional) mixed design with age, AI, and NFC as between-subjects factors and appeal frame as a within-subjects factor.

### 3.2. Participants

Older participants were recruited from community groups and younger adults from a North American university where they received course credit in return for participation. One hundred and fifty-one

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