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**AGE DIFFERENCES IN LIKING AND RECALL  
OF AROUSING TELEVISION COMMERCIALS**

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## **AGE DIFFERENCES IN LIKING AND RECALL OF AROUSING TELEVISION COMMERCIALS**

### **ABSTRACT**

This paper examines age differences in liking of arousing television commercials and recall of the advertised brands and products. Based on the activation theory of information exposure, sensation seeking theory and the limited capacity model of mediated message processing, we expect that the effects of arousing commercials on liking and recall are moderated by age. An experiment (N = 66) indeed demonstrated that older adults showed more liking of calm commercials and better recall of the brands and products in these commercials than in arousing ones, whereas younger adults liked the arousing commercials more and remembered brand and products in these better.

### **INTRODUCTION**

It is widely recognized that people aged 50 years and older are an important target group for commercial organizations (Ahmad, 2003): the world population is ageing (United Nations, 2009) and consumers of 50 years and older have 42% more disposable income than other consumers (Robinson et al., 2003). It is therefore problematic that older adults hold less favorable attitudes toward advertising than younger adults (Shavitt et al., 1998). One of the explanations could be that older adults find television commercials too boisterous, fast-paced and “noisy,” in order words, that commercials generate too much arousal in them. In the current age of advertising clutter, advertisers need to attract attention by being “noisy” and including flashy visuals, but this may be detrimental for attracting older consumers. Surprisingly, no scientific research on the effects of age on processing of arousing commercials has been conducted so far.

Research on cognitive aging suggests that older adults process information differently than younger people which could result in differences in their processing of television advertising. However, although there is a lot of research examining the effects of aging on cognitive processing, there is not much research on how these cognitive effects of aging might alter mediated message processing (Lang, 2006). A few studies on television news processing indeed suggest age differences (Hendriks Vettehen et al., 2008), and the current study adds to this literature by testing whether such age differences are found in processing of advertising. In sum, the present study examines whether there are differences between older and younger adults in liking and recall of arousing television commercials.

### **THEORETICAL BACKGROUND**

Arousal is the state of an organism that in everyday terms means alertness, vigor, peppiness, and activation (Humphreys and Revelle, 1984). Arousal may be thought of as a dimension ranging from extreme drowsiness at the one end to extreme excitement at the other. Arousal level is the result of internal and external stimulation (Humphreys and Revelle, 1984). In studies on television news processing, the term ‘emotional arousal’ is used, referring to the degree of excitation the viewer experiences (Hendriks Vettehen et al., 2008; Lang, 2000).

Two aspects of television messages can result in arousal: audiovisual production features and content (Grabe et al., 2001; Lang et al., 1999; Yoon et al., 1998). First, with respect to audiovisual production features, studies (e.g., Lang et al., 1999) found that fast pace elicited

self-reported arousal. Pacing is defined as the number of cuts in a message (Lang et al., 1999). This number of camera shots is the most studied feature, but other production features such as music, sound effects and decorative editing techniques such as wipes and dissolves can also lead to arousal (Kleemans and Hendriks Vettehen, 2009).

Second, with respect to content, a distinction must be made between arousal effects of the topic and the images that are used. Topics that concern a threat to safety such as news about violence and catastrophe are considered arousing, whereas news items focusing on topics such as politics, economics, healthcare, or education are often viewed as quite boring (Grabe et al., 2003). Along these lines, commercials containing fear appeals are considered arousing (Steenkamp et al., 1996). Some authors (Hendriks Vettehen et al., 2005) add vividness as a characteristic of arousing content. Vividness has been identified as information that is emotionally interesting, concrete, image-provoking and proximate in a sensory or spatial way (Nisbett and Ross, 1980). Regarding emotional content in advertising and arousal, Holbrook and O'Shaughnessy (1984) postulate that an emotional appeal might associate the product with a desired state of vitality and liveliness, while overstimulation or sluggishness should be avoided. In sum, we define commercials as arousing when they contain many camera shots, combined with sound effects, loud music, depiction of emotions or people in close-up.

### **Liking of Commercials**

The Activation Theory of Information Exposure (Donohew et al., 1980; Donohew et al., 1998), and in particular those elements of the theory that are based on Zuckerman's sensation seeking theory (Zuckerman, 1994) help explain why certain people like arousing commercials whereas others do not. According to the activation theory, media consumers prefer a level of arousal that makes them feel comfortable. However, individuals differ in their need for arousal. In contrast to people low in need for arousal (the so-called low sensation seekers), people high in need for arousal (high sensation seekers) seek varied, novel, complex and intense sensations and experiences, and have the willingness to take risks for the sake of such experiences.

Sensation seeking has been shown to peak in adolescence and to decline with age thereafter (Zuckerman et al., 1978; Zuckerman, 1994), suggesting that younger viewers have higher needs for arousal than older viewers. In news research (Hendriks Vettehen et al., 2008) and studies on public service announcements (Lang et al., 2005) it has therefore been suggested that younger adults are more at ease with higher levels of emotional arousal than older viewers: Not only because they are of an age at which sensation seeking is at its highest (Zuckerman, 1994), but also because they were raised in a fast-paced, arousing media environment (Bellamy and Walker, 1996). Translating these results to advertising may imply that younger adults like arousing commercials more than older adults. To test this assumption the following hypothesis was formulated:

H1: The effect of arousal in commercials on liking of commercials is moderated by age, such that older adults like calm commercials more than arousing commercials, whereas younger adults like arousing commercials more than calm ones.

### **Brand and Product Recall**

The Limited Capacity Model of Mediated Message Processing (Lang, 2000) is a widely used model that helps to understand how arousal affects information processing. The central assumption of the model is that a person's ability to process information is limited: People have only a limited pool of the mental resources that they need to process messages (Lang,

2000). Memory for a message is determined by the amount of resources allocated to message processing (Lang, 2000), and research on cognitive aging has shown age differences in this allocation of resources (Lang, 2006). First, older adults' orienting responses, which determine resource allocation, seem to habituate more slowly, which could mean that arousing content is too fast for them to process. Therefore, among older adults, arousing content may have less chance to be processed than calm content. Second, research has shown that older adults automatically allocate more cognitive resources to less arousing stimuli than younger adults, which enhances their processing and memory of calm content. Third, research also suggests that arousing messages and negative messages may elicit greater aversive activation in older adults. Aversive activation impairs the processing of the message content, because cognitive resources are allocated to retrieving information that is already stored. Fourth, studies have shown that older viewers are overloaded by complex structure at a lower level of complexity than adolescent and young adult viewers are (for an overview, see Lang, 2006). Thus the research on cognition and aging warrants the expectation that older adults recall brands and products in arousing commercials less than younger adults.

H2: The effect of arousal in commercials on recall of brands and products is moderated by age, such that older adults recall more brands and products from calm commercials than from arousing commercials, whereas younger adults recall more brands and products from arousing commercials than from calm ones.

## METHOD

A quasi-experiment was conducted, using an older and a younger group. Both groups watched the same eight television commercials, four arousing and four calm. Liking of the commercial was measured after each commercial and recall of brand and products was measured after the respondents had watched all commercials.

### **Stimulus materials**

The material consisted of eight Dutch television commercials. We chose products and services that are equally relevant to both age groups: food, sandwich toppings, phone companies and electricity companies. We ensured that the commercials had approximately the same length, around 30 seconds. At the time of the experiment, the commercials were not broadcast on television. Based on the literature discussed above, we defined arousing commercials in terms of both production features and content. The arousing commercials contained many shots per minute (31 to 96), music, emotions and showed people and children. The calm commercials had much less shots per minute (7 to 16) and did not contain music or emotional content. For each of the four product categories, an arousing and a calm commercial were selected.

The sequence in which the commercials are shown could affect the results. Therefore, half of the sample saw the commercials in sequence 1 to 8, whereas the other half of the sample saw the commercials in sequence 8 to 1. This way we could test whether the first or the last commercials were remembered better.

*Pretest.* We measured arousal for eight commercials by using the Self Assessment Manikin (Bradley and Lang, 1994) among five older adults and five younger adults. This assessment is a non-verbal pictorial measurement technique that is widely used to measure arousal. The pretest showed that two commercials that we considered arousing, did not lead to sufficient self-reported arousal. Thus these were removed and replaced by two other commercials.

### **Procedure and Participants**

The experiment was conducted online. Participants were instructed not to play the commercials full screen, to watch the commercials only once, to put the volume at the level they would do when watching television and to sit at about 60 centimeters from the screen. The introduction to the questionnaire stated that the survey was about appreciation of commercials; it did not say it was about arousal or recall.

The young group ( $N = 34$ ) consisted of students from a university in the Netherlands. Their mean age was 23.00 ( $SD = 1.60$ ), with a range of 20 to 25 years. The older group consisted of family members of these younger participants ( $N = 32$ ). Their mean age was 64.03 ( $SD = 5.40$ ), with a range of 58 to 78 years. Gender and educational level were asked, and in the analysis we checked whether these viewer characteristics affected the results.

### **Dependent measures**

Liking was measured by asking respondents to grade each commercial on a scale ranging from 1 (negative) to 10 (positive) ( $M = 5.84$ ,  $SD = 1.08$ ). Brand and product recall was measured with an open-ended question at the very end of the questionnaire. Respondents were asked to write down the brands and products or services they remembered seeing in the commercials. Per commercial the scores ranged from 0 (when neither brand nor product was remembered) to 2 (when both brand and product were remembered) ( $M = 1.02$ ,  $SD = 0.42$ ).

## **RESULTS**

For each dependent variable, we conducted a repeated measures MANOVA with arousal and product category as within-subject factors and age as the between-subjects factor. Thus we tested the hypotheses, controlling for the different product types. The sequence in which the commercials were shown, gender and educational level were between-subject factors, and each was included separately in the analysis. The results indicated that sequence, gender and educational level did not have an effect on liking and recall. These factors are therefore excluded from the analysis as presented here.

### **Liking of Commercials**

As expected, the analysis showed an interaction effect between arousal and age,  $F(1,64) = 29.60$ ,  $p < .001$ ,  $\eta^2 = 0.32$ . The results showed that older adults indeed liked the calm commercials ( $M = 6.02$ ,  $SD = 1.24$ ) significantly more than the arousing commercials ( $M = 4.95$ ,  $SD = 1.81$ ), whereas younger adults liked arousing commercials ( $M = 6.41$ ,  $SD = 1.19$ ) significantly more than calm commercials ( $M = 5.91$ ,  $SD = 1.15$ ). Also, older adults liked the arousing commercials significantly less than younger adults. However, the two-way interaction effect was qualified by a three-way interaction effect between arousal, age and product category,  $F(3,62) = 6.99$ ,  $p < .001$ ,  $\eta^2 = 0.25$ . The results showed that for the product categories food, sandwich topping and phone companies the interaction effects were as expected (older adults liked the calm commercials more, whereas young adults liked the arousing commercials more), but for electricity companies the interaction effect was not significant ( $p > .05$ ).

### **Recall of Brands and Products**

Again, the analysis yielded a significant interaction effect between arousal and age,  $F(1,64) = 27.71$ ,  $p < .001$ ,  $\eta^2 = 0.30$ . Older adults remembered significantly less brands and products from arousing commercials ( $M = 0.62$ ,  $SD = 0.35$ ) than from calm commercials ( $M = 0.88$ ,  $SD$

= 0.49), while younger adults remembered significantly more brands and products from arousing commercials ( $M = 1.42$ ,  $SD = 0.33$ ) than from calm commercials ( $M = 1.12$ ,  $SD = 0.41$ ). In addition, older adults remembered significantly less brands and products from the arousing commercials than the younger adults. These effects held for all product categories, except for “electricity companies.” Surprisingly, for this category, older adults remembered more brands and products from the arousing commercial than from the calm commercial.

## CONCLUSIONS AND DISCUSSION

Our goal was to examine whether there are differences between older and younger adults in liking and recall of arousing television commercials. The present study is the first to show that older adults appreciate calm commercials more than arousing commercials, whereas younger adults appreciate arousing commercials more than calm commercials. In addition, older adults like arousing commercials less than younger adults. The present study also shows that older adults recall more brands and products from calm commercials than from arousing commercials, whereas the younger adults recall more brands and products from arousing commercials.

These findings have important implications for both theory and practice. The results indicate that theoretical models about cognitive aging and mediated message processing also apply to processing of television commercials. Age differences are not often taken into consideration in empirical studies on television message processing. This study strongly suggest that it is necessary to do so. For advertisers, this study shows that older adults clearly differ from younger adults in the level of arousal that they like. When targeting an older audience, it seems wise to design calmer commercials.

However, the analysis showed unexpected findings for one product category, the electricity companies. Here, older adults liked the arousing commercial better, and their recall of brand and product was also better for the arousing commercial. The explanation for this finding is most likely to be found in the content of the arousing commercial: a child playing in a bath was portrayed. We selected this commercial because it contained many camera shots, combined with music and the depiction of children which can generate emotional arousal (Hendriks Vettehen et al., 2005; Hendriks Vettehen et al., 2008).

The result for this product category nicely points out that regarding the processing of emotional content probably other developmental issues are at stake. Carstensen’s socio-emotional selectivity theory argues that older adults have a heightened sense of time as a scarce commodity which makes them seek out pleasurable, “gentle”, experiences (Carstensen et al., 2003). A study that derived hypotheses from this theory, found that older people remember a higher proportion of information from advertisements with an emotionally meaningful appeal, relative to those from advertisements with a knowledge-related appeal (Fung and Carstensen, 2003). Another study also found increased liking and recall of emotional ads among older consumers (Williams and Drolet, 2005). Our commercial with the child nicely fits this picture. Therefore our recommendation for future research is to study age differences for production features and emotional content separately.

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