

Emotional Response, Brand Recall and Response Latency to Visual Register for Food and Beverage Print Ads

Authors

Irma Puškarević*, Uroš Nedeljković, Dragoljub Novaković

University of Novi Sad,
Faculty of Technical Sciences,
Serbia

*E-mail: irma@uns.ac.rs

Abstract:

Understanding the nature of advertising principles or any other means of marketing communication that affects consume behavior has long been the subject of marketing research. The research of emotional response in relation to ad efficiency in this paper is an extension of the research previously conducted (Nedeljkovic et al., 2011). The aim of this research is to show how the ad content i.e. visual message in printed advertisements affects emotional response. Two hypotheses were postulated. First, we expected more positive response for ads with predominating iconic content. The second hypothesis sought to determine if greater response latency can be expected for ads with dominant tropological content. The method of research was SAM visual method of self-assessment. Emotional response and response latency of the participants were measured for advertisements for food and beverage products and services in order to determine how visual ad content influences emotional response of the participants, as well as the effectiveness of the advertising campaign. In an experiment the participants could rate their emotional response using the *Self-assessment Manikin* (SAM) scale toward both types of advertisements. At the same time the response latency was measured. The results show that the main hypothesis was neither confirmed nor rejected, whereas the second hypothesis was confirmed. We conclude that the attitude towards the ad, as mediating variable, is a good indicator of advertising effectiveness.

Keywords:

Advertising Effectiveness, Emotional Response, Gastronomic Icon

1. Introduction

Advertisers have become increasingly concerned with the communication value of their print advertisements. The importance of measuring advertising effectiveness lies mostly in the fact that advertisers need to know whether their investments in advertising will pay off or not. The today's consumers are overloaded with visual information and persuasive messages, which makes it challenging for companies to compete for attention. Constant changes and advances in theory and methodology influence the way that advertising effectiveness is measured. In the world of marketing research we can find several reasons why companies emphasize the importance of advertising effectiveness (Salice 2008). The prospective ad effectiveness can be measured using commercial pretesting methodology which, at least to some degree, provides qualitative factors associated with the ad content (Mackenzie et al., 1986).

First research studies in advertising effectiveness used ad liking scale which has proven very useful in predicting consumer's intentions towards advertised goods (Brown & Stayman, 1992). Another method is diagnostic pretesting. According to Mackenzie et al. (1986) this methodology presents us with consumer's responses which can then be examined in the attempt to "diagnose" the reason for the success or failure of the ad. Among the measures commonly used in diagnostic pretesting, apart from A_{ad} , we can find open-ended "playback" of message content, aided recall, brand attribute ratings, and brand attitude. Additionally, researchers are interested in consumer's emotional response as well as cognitive reaction considering they provide equally important diagnostic possibilities (Burke & Edell, 1989; Lavidge & Steiner, 1961; Morris et al., 2002; Allen et al., 1992). The newer studies exploit this notion to full extent. The reason for this can be found in the studies that confirm affective response needn't be connected to cognition (Machleit & Wilson, 1988).

Additionally, some authors in the area of attitude research suggest that consumers' attitudes towards one object may influence attitudes

towards other objects (Brown & Stayman, 1992). Thomas, Fowler and Grimm (2013) explore the impact of attitude towards advertising disclosures upon attitude towards the ad or brand. Using the attitude towards advertising disclosures scale of their own design, the authors demonstrate how an attitude towards a disclosure can moderate the effect that the presence of the disclosure has on consumers' perceptions of manipulative intent. On the other hand, in the attempt to help advertisers ensure the effectiveness of their advertisements, recent studies have used pretesting for measuring viewer's visual attention to advertising (Berger et al., 2012; Pieters et al., 2007; Pieters & Wedel, 2004) and visual complexity (Pieters et al., 2010). Berger et al. (2012) argue that focusing on the initial stage of a response hierarchy (cognitive, affective and behavioral) fails to give more accurate explanations as to how consumers process information. As a result of competitive clutter, advertisers are faced with a situation where consumers generally don't find commercial information interesting thus obligating advertisement design to be composed in such a way that viewers' attention is immediately directed to the crucial parts of the communication (Pieters et al., 2007). Potential problems with this design may surface when advertisers focus solely on breaking through the clutter using prominent visual elements that attract consumers' visual attention but also distract them from the pictorial elements that convey the intended message. Accordingly, Berger et al. (2012) suggest an instrument that can record visual attention and provide advertisers with implicit measures that can better predict consumer behavior.

Another important aspect of advertising effectiveness is the appeal to innate and acquired instincts. Appeals can be defined as an approach we use in advertising to attract attention of the consumers in order to influence their feelings and attitudes toward a product or a service. Appeal thus represents the central idea behind the message. This objective was the ground for the first research made by the author, where the effectiveness level of visually encoded message in print ads for food and drink products or services was tested (Nedeljkovic et al., 2011). Author's

findings indicate that advertising for this type of products or services adoption of "gastronomic icon" promises positive valence and higher arousal i.e. positive emotional response. This update study also tests the hypothesis that gastronomic icon arouses innate instincts and leads to positive emotional response.

1.1. INSTINCTS AND APPEALS

Driving forces that lead us to pay attention to certain things are instincts and tendencies within us. From the socio-psychological point of view, a consumer, as a subject, is a complex system of motor and psycho-physical variables that all account to his or her behavior and are largely affected by external stimuli (*McDougall, 1926; Rot & Ralević, 1968*). The consumer's behavioral apparatus is, in part, a system of interconnected sensors that lead to the formation of impressions, decisions, conclusions and emotional responses. According to McDougall, the starting point of the analysis of human behavior should be the study of human tendencies and goals and discovering the basal and innate human drives that stimulate people to act in this or that way (*McDougall, 1926*). Some of the innate instincts are: fear, thirst, hunger, maternal instinct, sexual instinct, instinct for resting etc. On the other hand, tendencies and feelings we obtain through experience are considered to be acquired or intellectual instincts. Some of them are: social instinct, instinct for knowledge, instinct for fight, instinct for savings, instinct for patriotism, etc. The strength of an instinct awakened in the subject equals the strength of the appeal (*Nedeljković, 2001*). Nedeljković also explains that the strength of the appeal depends on the quality and the number of carefully chosen appeal principles targeted to social-historical structures i.e. the subject's profile. The rhetoric of print ad, where tropological content is dominant, hence stirs acquired (intellectual) instincts. We can assume then that print ads displaying gastronomical icon stir innate instincts most successfully considering their connection to primary emotional reactions.

1.2. AD CONTENT AS A PART OF THE MESSAGE'S VISUAL REGISTER

Contemporary advertising is presently more than ever facing a challenge in forming an adequate and attractive visual message, whose sole purpose is to keep the audience's attention and make them act in accordance with the message. Semiotic theories of codes are the groundwork for numerous advertising studies. Since codes are systems for knowledge management and the basis of all cultural communications, semiotic theories of codes are regarded as additional key for reading hidden messages in advertisements. Eco (1973) makes a distinction between visual and verbal register. Within visual register he finds five content levels: iconic, iconographic, tropological, topic and enthymematic. This paper explores only the effects of the iconic and tropological content. The iconic content is the least dependant on the rhetoric of the verbal register of the message, and it is the content that is oriented towards itself the most. The most common portrayal of this content is through an iconic image (the icon) that represents physical values of the theme in the best light, but also depicts the theme's distinctive values. If we observe print advertisements for food and drink products or services, we can describe the iconic content as the photographic representation of that product or service. Considering that these ads advertise food and drink products or services, the message must be coined to appeal to our innate instincts for food (hunger) and drinking (thirst). Bearing this in mind, we used gastronomic icons in our experiment, that is, the photographs of food and drink which provoke these instincts instantly. In order to emphasize the quality and advantage of the product or service, close shots with central composition were used. On the other hand, tropological content exploits visual tropes in a form of rhetorical figures. Essentially, the message is represented in a more imaginative and unusual way. This unconventional representation demands more time to process unlike the iconic content that is decoded instantly. The most commonly used rhetorical figures are metaphor and personification, sometimes double metonymy, in print ads where tropological content is more dominant.

Practitioners have used several models in order to investigate the way visual elements in advertisements affect consumer response. However, these models have been investigated in overlapping ways, making it difficult to distinguish theoretical boundaries. Analyzing the experimental studies, Scott (1994) grouped these models into two broad orientations: affective response (classical conditioning) and information processing. In the first model, the comprehension of the visual code is an automatic, affective or unconscious act (or all of these at once). Images in use here are 'iconic' and they simply point to objects or experiences. The second model explores visuals as complex semantic content with a possibility to develop a guided approach, one that will engage the viewer into cognitive tasks. Applying this knowledge to semiotic canons, more precisely to Eco's five levels of visual codification, we can discuss the impact of these visual codes in relation to these two models.

1.3. CONVENTIONAL AND UNCONVENTIONAL PRINT ADVERTISEMENTS

Advertising messages in print advertisements can be categorized into two groups according to the way they are visually encoded. Ads encoded with conventional visual content belong to the first group, and ads encoded with unconventional visual content belong to the second group. Conventionally encoded ads are the most commonly used method in visual communication of print advertising due to their simplicity and unambiguity. Ads with dominant iconic content can be found in this group. Unconventionally coded ads developed as the result of the fierce market competition. There were a lot of products that were similar in one or the other way and advertisers started thinking about special, or in some way different, advertising technique. Developing this technique they were able to play around with an alternative choice of the theme or visual content. Ads with dominant tropological content can be found in this group.

2. Material and methods

Researchers have taken a great interest in examining the A_{ad} in more depth in response to previous studies that reveal A_{ad} to be an important mediator of advertising response (Batra & Ray 1986; Mackenzie et al. 1986; Mitchell & Olson 1981; Moore & Hutchinson 1983). Their interest stems particularly to its causal and consequential variables as a part of the advertising process that can affect consumer's purchase intention and attitude toward the ad. Causal antecedents of A_{ad} have been ignored in previous research. Due to relatively diverse literature related to A_{ad} it was difficult to properly conceptualize this measurement method. In their research, MacKenzie and Lutz (MacKenzie & Lutz 1989) present evolution of causal framework which completes the evolution of A_{ad} model. Their framework was organized from the literature to a testable theoretical model of A_{ad} antecedents. Guided by their definition, we are now able to look at this method as "a situationally bound construct, an attitudinal reaction to the ad generated at the time of exposure."

Considering previous general preoccupations of advertising research that consumer is "a cognitive information processor", it wasn't until early '80s that researchers have adopted a perspective that A_{ad} has two components, the cognitive and the affective one (Shimp 1981). Studies examining the role of affect in advertising connect this component to conative and cognitive attitude. Some researchers believe that cognition always mediates affective reaction (Greenwald & Leavitt, 1984; Fishbein & Middlestadt, 1995), and others suggest that affect in large influences consumers response (Edell & Burke, 1987; Holbrook & Batra, 1987; Morris et al., 2002). They believe that a better prediction of behavior can be achieved if we concentrate more on analyzing the consumer's emotional response and its influence on conative attitude i.e. purchase intention. However, we cannot exclude the findings where cognition can drive affect (Edell & Burke, 1987; Holbrook & Batra, 1987). Additionally, some researchers argue that affect can directly influence attitude (Brown & Stayman, 1992; Cohen & Areni, 1991).

The easiest way to measure emotion is to ask people how they feel or felt at a previous point of time. But emotions are multi-dimensional, including different dimensions of pleasure and excitement. The Self Assessment Manikin (SAM), developed by Lang (1980), is a visual self-report instrument that relies on Mehrabian and Russell's PAD-dimensions (1974). This PAD scale refers to 3-dimensional structure: pleasure, arousal and dominance. Pleasure covers emotions from pleasant to unpleasant; arousal those from sleepiness to frenetic excitement, whereas dominance shows control over some emotions.

2.1. THE PURPOSE OF THIS RESEARCH.

Let us assume that the visual coding of the iconic or tropological content in printed ads for food and services induces different emotional responses within the test subjects. The goal of this paper is thus to determine which of the above mentioned levels of the visual register triggers a more positive emotional response, i.e., which type of ad is more effective. Considering the fact that the emotional component of an attitude is equally important as the cognitive one, i.e., according to Morris and the authors it has a stronger effect on the formation of cognitive attitude than on conative (purchase intention and interest for the brand) we can then question, among other things, whether relying on emotional response measurement would produce a more valid result (Morris et al., 2002). It is for that reason that the recall test of the ad content and advertised brand was conducted as additional copy-testing.

2.2. HYPOTHESES

H1: A more positive emotional response is expected for the dimensions of pleasure and arousal for ads with more dominant iconic content.

H2: Greater response latency is expected for the dimensions of pleasure and arousal for ads with dominant tropological content.

2.3. PARTICIPANTS

The study was conducted on a sample of 60 people, ages 17 to 64 (average age – 26 years). There were 48, 33% of women (29 people) and 51, 66% of men (31 people). Besides the data on the participants, an influential piece of data relevant to the research was how many participants practice graphic design in order to determine whether or not the familiarity with the practice of graphic design has an impact on consumer's interaction with the ad. We found that 20% (12 people) of the participants practice graphic design, whereas the other 80% (48) have no knowledge about graphic design.

The research instrument consisted of 20 relevant ads divided into two groups based on the ad content, the ones with iconic and the ones with tropologic content (the first 10 ads are iconic and the remaining 10 are tropologic). The ads displayed 5 categories of products and services which include: coffee, candy, beer, restaurant and juice and soda-pop. Each of the mentioned categories has been displayed through four ads, two of which contain dominant iconic and the other two tropologic content. Among the selected stimuli, there were no ads representing brands on the market in the Republic of Serbia, which excluded the possibility of previous convictions or attitudes towards the brand. Being familiar with the brand influences the relationship between the attitude towards the ad and the attitude towards the brand. It is assumed that the attitude towards the ad has a direct influence on the attitude towards the brand and that this influence is more significant in the case of the brand utterly unfamiliar to the consumer (Machleit & Wilson 1988). Products and services in the ads with dominant iconic content (first category of the ad) are visually and rhetorically coded with gastronomic icons or a combination of a gastronomic icon and a metonymy. Products and services in the ads with a dominant tropologic content are coded with visual tropes, metaphors or personification (second category of the ads).

2.4. MEASUREMENT SCALE

Underneath each ad there was a *Self-assessment Manikin (SAM)* scale (Lang 1980), a non-verbal technique for the measurement of emotion consisting of three dimensions – pleasure, arousal and dominance (PAD) from the model formulated by Mehrabian and Russell (1977). Upon observing the ad the participant fills out the scale, after which they shift to the other page. Each of the three scales contains 9 fields and the task is to mark the field that best represents the emotional reaction in the participant, induced by the ad while watching it. At the beginning of the grading instrument there is a detailed explanation about what each of the scales represents. The participants were required to grade their emotional state using the scales. They were unfamiliar with any other detail regarding the study.

For each ad, a response delay time of each participant was noted (in milliseconds) for each of the three PAD dimensions. Using a modified version of the SAM technique, the emotional response to the stimuli and response time was measured (Irtel 2007).

2.5. RECALL TEST

Recall test is used in marketing and represents one of the most important measures of advertising effectiveness. Thanks to the recall test, valuable information regarding the prominence of ads can be gained, so it can be stated that it is the marker of which ad elements provoke the audience the most.

For those purposes, upon the conclusion of the experiment, a recall test was conducted in the form of an inquiry that the participants filled in after observing and grading the ad. At the beginning of the inquiry they entered the data regarding their age and gender. The recall test was conducted for a sample of 20 participants, age 17 to 44 (average age 25). 65% of the participants (13 people) were female, while 35% (7 people) were male. Within the inquiry, three questions for each category of the advertised

products were posed, for example for the product category “coffee”:

1. Which coffee ad has lingered in your memory?
2. Do you remember which brand was advertised in the ad?
3. Which advertised coffee brand do you remember?

For the remainder of the categories (beer, juice/soda, restaurant and candy) the same sort of questions was repeated.

3. Results

3.1. EMOTIONAL RESPONSE – ALL PARTICIPANTS.

In order to determine the differences in emotional grading for all three dimensions, we used the variance analysis (ANOVA). The significance level was defined to $p < 0.05$.

A significant influence of the content on the dimension-arousal was noticed, where a significant statistical difference of $p = 0.03$ was noted.

The analysis has shown that there is no significant influence of the ad content on the grade of the dimensions of pleasure and dominance.

Table 1. ANOVA analysis of PAD components for all advertisements.

Dimension	F	p
Pleasure	1.999	0.158
Arousal	4.712	0.030
Dominance	3.409	0.065

After the ANOVA analysis, a Post Hoc analysis i.e., a cross reference of all of the ads, was conducted. For the dimension-arousal, it was shown that there was a significant statistical difference between some of the advertisement (Table 2).

Table 2. Significant statistical difference for the dimension-arousal.

	ad #6	ad #7	ad #9	ad #17	ad #18	ad #20
ad #2	0.04	0.001		0	0.003	
ad #4				0.005		
ad #7			0.002			
ad #8				0.11		
ad #9				0	0.006	
ad #11				0.007		
ad #17						0.03

3.2. EMOTIONAL RESPONSE WITHIN THE GROUPS.

The responses obtained from the participants who practice graphic design and those who do not have been analyzed separately. A significant statistical difference has been noted with graphic designers in all three PAD dimensions (Table 3). A more positive emotional response has been noted for ads with dominant tropological content than for those with iconic content. No significant statistical differences have been noticed with the participants who do not practice graphic design.

Table 3. Significant statistical difference within the group of participants graphic designers.

Dimension	F	p
Pleasure	5.661	0.018
Arousal	11.420	0.001
Dominance	17.047	0.000

3.3. RESPONSE LATENCY – ALL PARTICIPANTS.

When response latency is in question, the variance analysis has disclosed the influence of ad content to the response delay time with the dimension-pleasure, where a significant statistical difference of $p=0.009$ was noted.

The analysis has shown that there is no significant influence of the ad content on the response delay time with the dimensions of arousal and dominance.

Table 4. Significant statistical difference in response latency within the group of participants laymen.

Dimension	F	p
Pleasure	6.802	0.009
Arousal	0.053	0.817
Dominance	1.884	0.170

3.4. RECALL TEST.

When brand memory is in question, it turned out that the greatest number of participants consider the most striking brand to be *Melita coffee* (ad #2), that is, the brand shown in the ad in the foreground in the form of the gastronomic icon (iconic contents).

4. Discussion

When measuring emotional response of the participants, significant statistical difference was found for the dimension of arousal, whereas the results for the dimension of pleasure and dominance did not show any significant statistical differences. A better emotional response was recorded for advertisements encoded with tropological content than for those encoded with gastronomic icon. When we look at the results obtained from a group of non-designers separately, in a two-dimensional space, through a qualitative analysis we perceive latent variables.

Table 5. Results of the recall on print ad test.

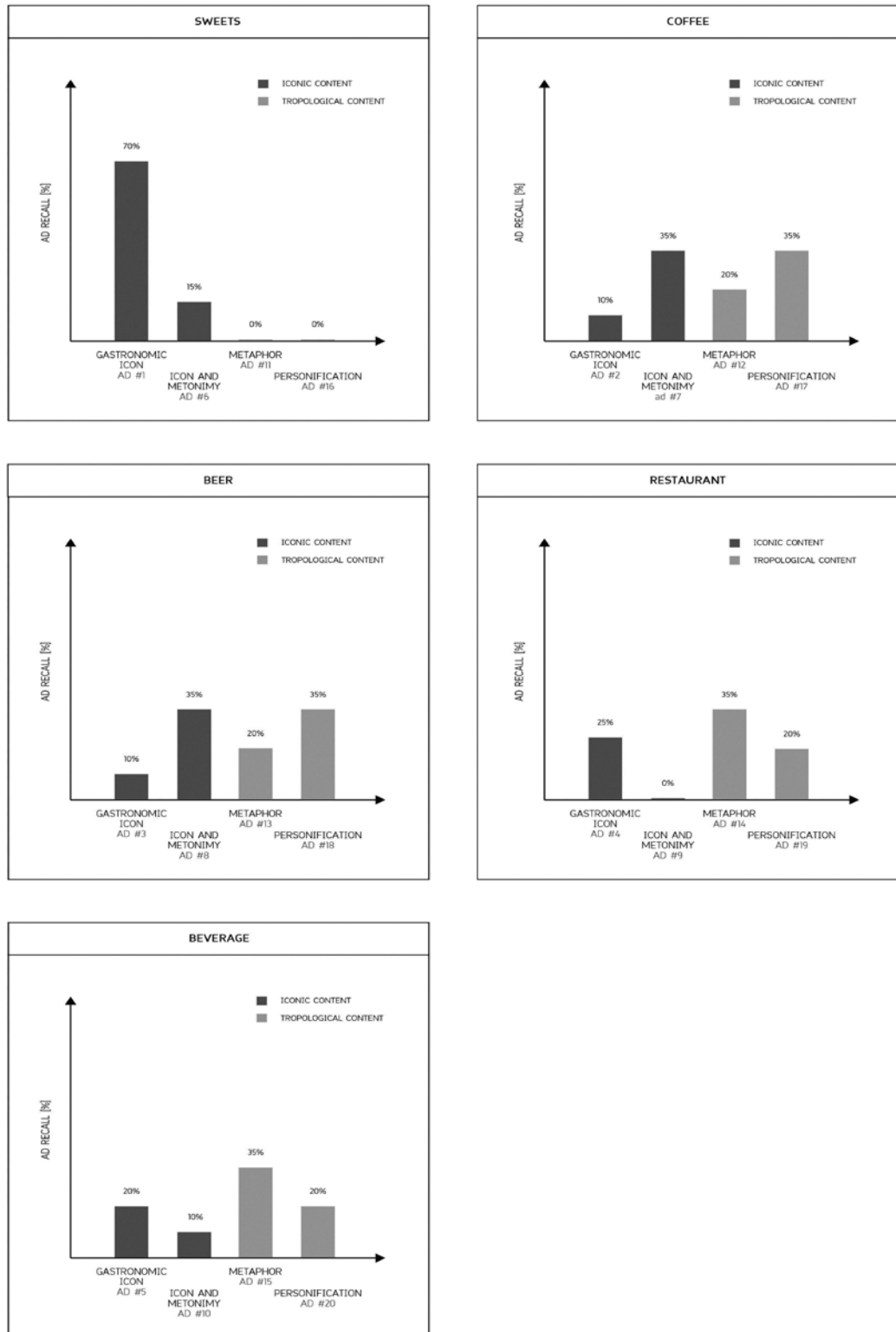


Figure 1 displays high values of a positive affective response (high pleasure and high arousal) for only six advertisements (Ad#7, Ad#18, Ad#6, Ad#17, Ad#19, and Ad #5) where the dominant trope is double metonymy and personification (figure 2). Double metonymy inevitably uses gastronomic icon, which is evident from ads #7, #6 and #5. This makes a valid reason not to dismiss hypothesis 1 a priori on the basis of the experiment.

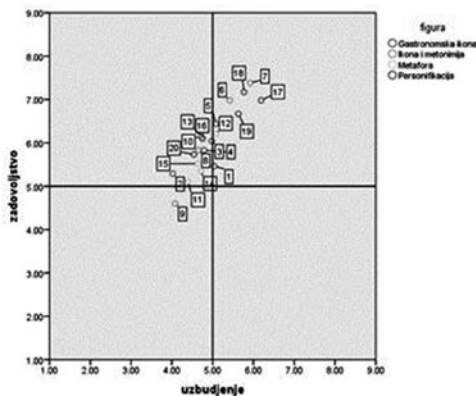


Figure 1. Means of pleasure and arousal in 2D view for the group of laymen participants (non-graphic designers).

By analyzing response latency, we found significant statistical difference of the dimension for pleasure, but not within the other two dimensions. We also recorded significantly higher values of response latency for tropological content than for the iconic content, which confirmed hypothesis 2.

The results obtained by the graphic designers show that there are no significant statistical differences for any of the PAD components. This is not surprising, considering that graphic designers are familiar with the unconventional codification of advertisements and that they do not need much time to decode them. The results of the layman participants show significant statistical difference in the dimension-pleasure. It took them more time to respond to advertisements with dominant tropological content, which was expected considering the fact that participants who do not practice design are unfamiliar with this type of visual codification.

The question whether advertisements that took longer to process gave a better emotional response was also the subject of analysis. For this reason we observed the correlation between response latency and values for dimension-pleasure (seeing that a significant statistical difference was noted here). The result is Pearson's coefficient that is -0.15. We can conclude from this negative amount that time and pleasure are inversely proportional i.e. ads that require longer time to be processed evoke worse emotional response. These results confirm the fact that a quicker response to ad content implies stronger beliefs in the ad (Aaker et al., 1980) by the consumers.

Based on the recall test results we can conclude that from the ad content aspect, in this experiment, we cannot establish a criterion whose features make the ad more distinguishable since the most memorable ads in all product categories have a different visual code. When analyzing the brand recall results, it is evident that 40% of the participants find Ad#2 to have most memorable brand. This is the ad from the first category with a gastronomic icon depicting hands holding a cup of hot coffee. A question rises as to why this particular brand when there are others coded in the same manner. One of the reasons may be the position of the brand name – emphasized with font's big scale alongside the gastronomic icon. This assumption is substantiated with additional results – two more brands participants recalled viewing Ad#3 (20%) and Ad#4 (15%) encoded in the similar way. Both ads show that the brand's logotype was positioned in the similar way (big scale, distinctive font) and has a gastronomic icon as the main visual content. These results indicate the course of further research in relation to advertisements encoded with a gastronomic icon. When there is a quicker response to ad content, then consumers have stronger beliefs in the ad.

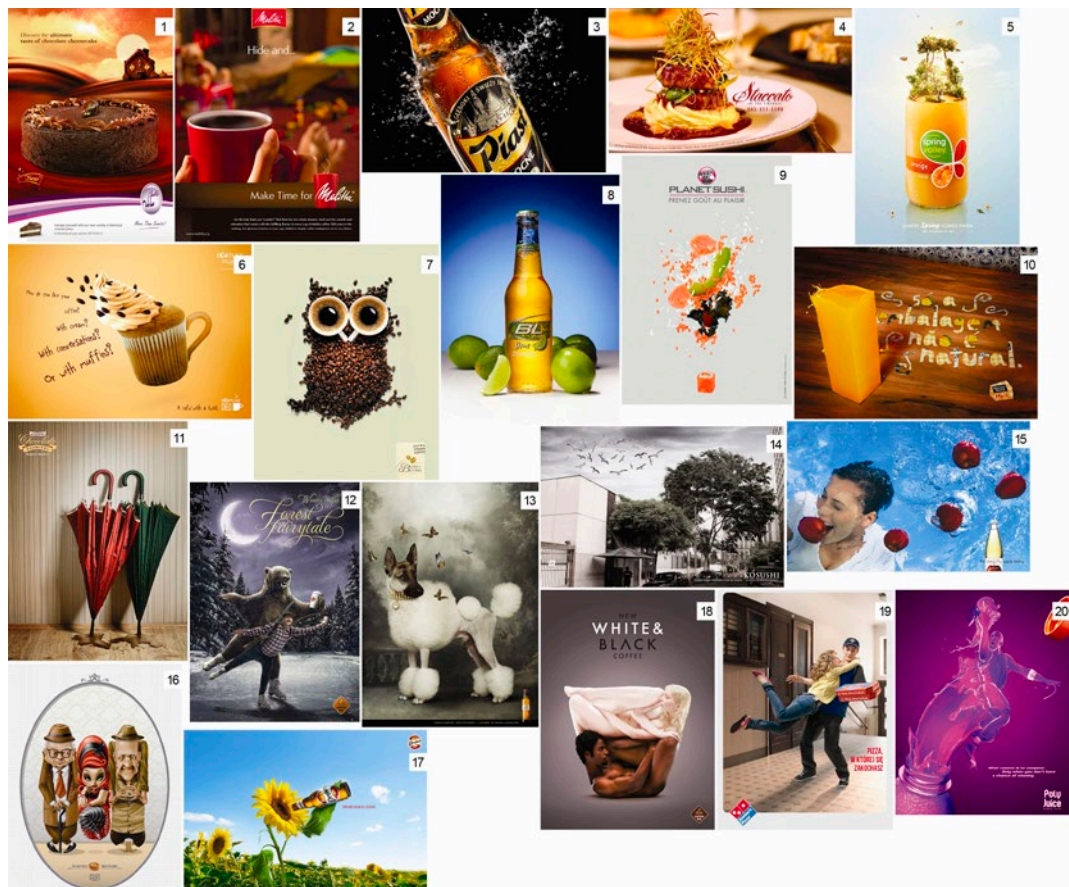


Figure 2. Stimuli – print ads from the experiment.

5. Conclusion

In the light of the findings presented here, we draw the conclusion that the attitude towards the ad has a significant mediating effect upon consumer's behavior; in some cases it can be the most precise indicator of advertising effectiveness. However, the attitude towards the ad, as a mediating variable, cannot be separated from other advertising measurement tools such as attitude toward the brand, brand awareness, brand and ad recall, etc. In the case of food and drink print advertising we find that both iconic and tropologic content provide a similarly effective emotional response, even though our assumption was made on the grounds that conventional visual codification with gastronomic icon will

be more effective. On the other hand, our assumption that ads with dominant tropological content will have a longer procession i.e. there would be significant response latency, was confirmed. The results indicate that participants decode ads with dominant iconic content without effort due to its directness in communication.

This research study presents the importance of affective response, i.e., emotional component of the attitude in advertising. Our findings can help graphic designers and advertisers create a more effective visual communication through print advertisements.

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