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Implicit Associations in Novel Television Advertising

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In partial fulfillment of the requirements

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MASTER OF ARTS IN PSYCHOLOGY

By

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Edmond, Oklahoma

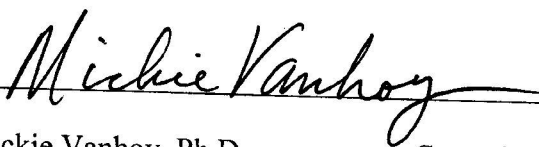
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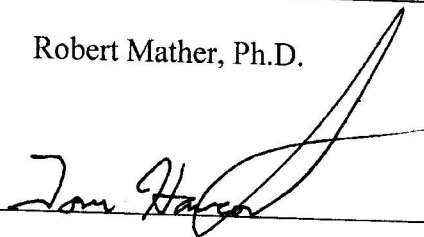
A THESIS


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Abstract

Advertising is a billion-dollar business, largely invested in television commercials. Although advertising in technology-based contexts such as Internet sites and digital video recording systems is increasing, television advertising remains in the top percentage of expenditures. The purpose of this investigation was to facilitate positive explicit and implicit attitudes toward featured products and services. The Implicit Association Test (IAT) is a putative measure of the robustness of non-conscious associations between concepts. In the IAT, participants categorize words or pictures as rapidly as possible. Concepts with compatible associations such as YOUNG=HAPPY produce faster and more accurate categorization times than concepts with incompatible associations such as YOUNG=DISASTER. Effective television commercials produce positive associations between the featured product and the concept GOOD, which should increase categorization times to associations such as PRODUCT=HAPPY and slow response times to associations such as PRODUCT=DISASTER. In the current study, undergraduates watched a television program embedded with foreign commercials before completing an IAT. The logos for products reappeared in the IAT (old products) with logos for new products. The hypothesis that positive associations were faster and more accurate for old products versus novel products was not supported.

Implicit Associations in Novel Television Advertising

Online advertising has been gaining momentum in percentages of spending in the United States over the past few years; however, television advertising still receives the largest portion of the spending, accounting for nearly twice as much as online advertising expenditures. Online advertising accounted for almost 15% of the total spending in July of 2011, reaching about \$30 billion, while television advertising reached approximately \$60 billion (Frommer, 2011). The research concerning the effectiveness of advertising is important with such high stakes, so to what extent do television advertisements affect people when they view commercials in the context of a television show?

Citizens in European countries who are exposed to more television advertising recall less brand information than citizens in countries who are exposed less television advertising (Danaher, Bonfrer, & Dhar 2008). This fact may seem counterintuitive because the more people see something, the better they should remember it. There should be better methods for analyzing advertisement effectiveness and impact with companies investing billions of dollars in these methods. The implications go beyond fast food, auto insurance, and soda brands, though. Better advertising could improve the effectiveness of public service announcements and health-related broadcasts with topics such as anti-smoking, safe driving, or healthy eating. For example, the obesity rates in American youth are astounding and cost people around \$147 billion in 2008 (Finkelstein, 2009, U.S. Obesity Trends, 2010). Activists use research on the effects of food advertisements on children to determine how companies target them; however, experts continue to debate the impacts of advertisements. The negative implications of child targeted advertising could be better addressed with a better understanding of how an adult processes advertising information.

Prospect theory suggests that people weigh gains and losses in order to make decisions (Kliger & Tsur, 2011). Traditionally people see potential losses as more affecting than potential gains, which does not make sense when people would like to think their choices are rational. Unconscious mechanisms and decision-making strategies play a huge role in the consumer world. The best way to look at consumer behavior may be through attitude formation and expression.

Attitudes

The current line of advertising research focuses on attitude, which is the disposition a person holds toward a stimulus whether that is a person, object, or idea (Madhavaram & Appan, 2010; Sarnoff, 1960). A product logo, for example, is capable of eliciting strong attitudes. Harley Davidson manufactures motorcycles but has developed a culture all its own through positive attitudes held by its followers. The bike has moved into clothing, trucks, and a sundry of other products that promote a strong attachment between followers. This attitude toward symbols can also be seen when a celebrity comes out with their own clothing line. Positive attitudes toward the performer translate into positive attitude toward the product they endorse. The positive attitude people hold toward a logo can strongly affect their purchasing behavior for a variety of products. Marketing research uses attitude assessment to determine what products people favor. The thought is that attitudes toward advertisements lead to brand attitude that, in turn, lead to brand choice, according to ad theory. This stance has made attitude-toward-the-ad theory one of the dominant theories in the field (Madhavaram & Appan, 2010). A person watching a Keystone Light commercial may form a positive attitude toward the commercial because it is funny and entertaining. They then associate the Keystone logo

with those positive attitudes they have for the commercial, which causes them to buy Keystone when they go to the store.

People once thought that attitude was one construct, and that people held multiple and sometimes competing attitudes at one time (Sarnoff, 1960). This could be likened to a more complicated Spy versus Spy game in each individual's head with different attitudes fighting for dominance. This theory requires multiple constructs and an internal representation of all possible choices. However, researchers subdivided this single construct into implicit and explicit attitudes. Researchers have consistently found people readily access their explicit attitudes through self-report, while response time (RT) on measures such as the Implicit Association Test (IAT) or sequential priming tasks measure implicit attitudes (Gawronski & Bodenhausen, 2006). Self-report measures, which make up a large amount of attitude research, only provide explicit measures of consumer preferences (Morris, Woo, Geason, & Kim, 2002; Gorn & Goldberg, 1980; Wedel, Pieters, & Liechty, 2008).

The problem with explicit measures is that people can easily manipulate them if they feel that they hold an unpopular opinion or want to promote/hinder the progress of the experimenter. Because people know what an experimenter is asking about with explicit measures, they may lie to keep their answers in line with social norms, or they may not even know their true attitudes or preferences (Kam, 2007). People also demonstrate explicit attitudes that correlate with social norms (Karpinski & Hilton, 2001). Researchers believed that explicit attitudes were the best predictors of behavior; however, this is no longer the case in all situations (Greenwald & Banaji, 1995). People are prone to misrepresenting themselves for several reasons. They may not want to display a view that is considered unacceptable by their group, or their preferences may be

due to automatic processes outside of their conscious awareness. Automatic processes include those processes that are spontaneous, unconscious, uncontrollable, and expending little or no cognitive resources (Burdein, Lodge, & Taber, 2006). People along with advertising researchers are unable to rate commercials in order of effectiveness consciously. An anti-smoking campaign had people from both of these groups rate how effective they thought three anti-smoking advertisements would be. Researchers also recorded brain activity in the medial prefrontal cortex and the number of calls received by the stop smoking hotline after each advertisement appeared. They found that these two groups rated commercials in the reverse order of what brain activity and actual calling from viewers showed (Wolpert, 2012). Advertising agencies often use focus groups and experts to determine what advertisements to broadcast. However, these groups do not know what will actually cause people to act.

Implicit Attitudes

Originally, researchers thought that explicit and implicit measures showed the same properties (Boldero, Rawlings, & Haslam, 2006), but researchers have found evidence that contradicts this notion. Implicit and explicit measures are related but distinct from one another (Neto, 2009; Nosek & Smyth, 2007). Explicit attitudes are usually recently acquired and predictive of deliberated behaviors, whereas researchers believe implicit attitudes are more stable and develop from long-term social experiences (Gawronski & Bodenhausen, 2006; Son Hing, Chung-Yan, Hamilton, & Zanna, 2008). This idea means that people make thoughtful decisions using explicit attitudes and spontaneous decisions using implicit attitudes; however, complex decisions may require a combination of the two (Wänke, Plessner, Gartner, & Friese, 2002). A man may hold an implicit preference for fruity drinks but not order them at a bar for fear of looking

unattractive to others. His thought out response would be to avoid the socially unaccepted Mai Tai, but if he is distracted, he may order it on an impulse because that drink is what he actually prefers. He would use both processes if the bar offered drinks with a wide range of acceptability.

Implicit attitudes are defined as connections driven by unconscious or inaccurately identified processes that lead to positive or negative thoughts or actions toward a target stimulus (Hoffmann & Mai, 2011; Hummert, Garstka, O'Brien, Greenwald, & Mellott, 2002; Greenwald & Banaji, 1995; Nosek & Smyth, 2007). They develop over time and are relatively stable, unlike explicit attitudes that may be different in each unique social situation (Czellar, 2006). Sometimes explicit attitudes may seem more stable, but that is because social norms take longer to change and people's attitudes often fall in line with them instead of with their true beliefs (Pieters, Warlop, & Wedel, 2002). For example, a person might have racial prejudices and display them around friends but hide them from experimenters when asked directly how he/she feels about minorities. This explicit attitude would seem stable because the majority of the population has not condoned racism for several years though implicit racism is only slowly tapering off.

Though they are considered stable, implicit attitudes do succumb to priming effects. When participants saw Coke logos paired with positive images and Pepsi logos paired with negative images, a difference was seen in their implicit associations; however, only the magnitude of the preference/dislike changed (Hummert et al., 2002). In some cases, manipulated implicit attitudes changed explicit measures over time as well (Ranganath & Nosek, 2008). This finding is promising for advertising researchers. If a person's brand attitude can be changed on an implicit level, and this can influence their

explicit attitudes as well, then companies may be able to change brand preference through advertising alone. Though implicit attitudes are not immune to priming, marketing research can still benefit by evaluating messages and visual components (Wanke et al., 2002). Dr. Frank Luntz conducts research on explicit attitudes of speeches in real time to evaluate word choice; an implicit measure would provide information regarding particular visual and verbal stimuli that are very complex (Luntz, 2007). Other attitude research has also shown dynamic properties of attitude. This research suggests that some judgments are stable while others fluctuate over time (Vallacher, Nowak, & Kaufman, 1994). Implicit measures are more sensitive to subtleties such as tone of voice or visual data as a whole and thus provide more information than explicit measures.

Implicit attitudes have been essential to the continued study of sensitive topics such as racism, sexism, and ageism. Implicit attitudes provide a more honest assessment of feelings toward minority groups because people tend not to publically admit negative feelings toward them as well as other groups. Implicit attitudes are devoid of what has been termed a truth value, meaning the person does not have to enforce an implicit attitude whereas he/she would have to with an explicit attitude (Gawronski & Bodenhausen, 2006). For example, a person may not buy a particular brand of vegetables because he/she explicitly believes that they are not as good as another brand. The implicit reason for this choice may be that the commercial shows images of farms, which the viewer implicitly believes are dirty. The negative implicit attitude causes a negative and misattributed explicit view of the product.

Implicit associations have also been used to elaborate on other psychological phenomena such as the mere exposure and halo effects (Greenwald & Banaji, 1995). In the case of mere exposure, people are unable to attribute their liking of a person or object

due to the fact that they have simply seen it before. Interestingly, this effect has been shown to increase with events that decrease the memorability of the stimuli, such as distractor stimuli or time between exposure and testing. People even show stronger preferences to novel stimuli when the primes used are suboptimal and not consciously processed (Murphy & Zajonc, 1993). Mere exposure, a type of associative learning, has fallen under the research interests of marketing executives recently as well (Gibson, 2008). It stands to reason that the array of stimuli in complex advertisements serve as primes for the target brand and may be more important to the brand image than the information about the product itself.

In the case of the halo effect, people misattribute their positive feelings for a target stimulus. One example would be identifying a person as friendlier when the evaluation is based more on the person's favorable appearance than on his/her actions. People often have positive implicit associations long before they can communicate these feelings explicitly. People who are given four decks of cards, two favorable and two unfavorable, will use the favorable decks more frequently before they consciously realize the difference between the two (Rubinson, 2010). Advertising agencies need to pay special attention to these factors. Not only are they only accessible through implicit measures, but they also play a huge role in television advertising. Only small portions of commercials contain the product logo in comparison to other information, but all contain characters and scenes meant to entertain the viewer.

Though implicit attitudes are introspectively inaccessible (Hummert et al., 2002), they are subject to manipulation. High self-monitors, people who attend considerably to how they present themselves to others, can manipulate their responses to implicit measures, but this manipulation usually occurs when the belief is highly stigmatized, the

subject of research involves discrimination, or the participants are explicitly told to manipulate their scores and how to do it (Czellar, 2006). Advertising research, however, does not usually look at issues that are highly controversial or have an obvious desired or undesired opinion, so self-monitoring should not be an issue in this type of research. The stimuli for television advertising are so complex that it would be hard for a viewer to discern what is being evaluated in cases where sensitive topics are presented.

Advertisers should use implicit measures to look at brand attitude because under cognitive load, they predict behavior better than explicit measures (Czellar, 2006). Cognitive load occurs in situations that are complex, such as while trying to decide between multiple products with similar attributes. Also, consumption is driven by automatic processes and explicit measures do not work for brand image and advertisement impact because these decisions are made predominantly by subconscious attitudes (Hoffmann & Mai, 2011; Mason, Greenwald, & Bruin, 2004; Messner & Vosgerau, 2010). People perceive minor details that would go undetected with explicit measures. People process subtle facial feature manipulations of political candidates on implicit measures. They tended to favor faces that have been manipulated to look more like themselves (Nevid & McClelland, 2010).

Implicit Association Test

The IAT is the most popular method for assessing implicit associations because of its sensitivity and reliability (Gibson, 2008; Greenwald, McGhee, & Schwartz, 1998; Perugini, 2005; Ranganath & Nosek, 2008). The IAT demonstrates the predictive validity of implicit measures on behavior of consumers under cognitive load, and many disciplines take advantage of its decreased vulnerability to self-presentation biases and the range of concepts that can be studied (Greenwald, Nosek, & Banaji, 2003). This

feature is especially important for advertising because the stimulus is complex. People experience a great deal of cognitive load when they are analyzing a large number of products, information, and pictographic imaging. The IAT puts participants under increased cognitive load, which increases the external validity and reduces self-presentation effects (Czellar, 2006). Scores on the IAT demonstrate a resiliency to faked results, and studies reporting faked scores involved experimenters instructing participants to slow their response times (Czellar, 2006). The IAT has an internal consistency measure around $\alpha = .8$, a test-retest value of $r = .6$, and the greatest evidence of predictive and construct validity when compared to other implicit measures (Perugini, 2005). A Cronbach's alpha, which ranges from zero to one, is considered good when it is .8 to less than .9 and excellent when it is .9 and above. This means that there is a strong correlation between items within the test. The test-retest value accounts for 36% of the variance, so one could accurately predict the score on the second test by knowing the score on the first test 36% of the time.

The IAT is a computer-based measure that compares response times (RT) between categories (Czellar, 2006; Foroni & Bel-Bahar, 2010; Gibson, 2008; Greenwald, Nosek, & Banaji, 2003; Hummert et al., 2002). It usually begins with a practice trial of one category with two opposite dimensions, positive and negative words for example. Participants see the two categories at the top left and right of their screen followed by a stimulus word in the center (Figure 1). The participant determines which category the word belongs to and presses the appropriate, designated key on a keyboard. Then, the participant proceeds to another practice trial using the target stimuli of heroes and villains, for example. This trial would proceed in the same manner as the practice trial. The participant finishes two experimental trials where he/she pairs positive with heroes

and negative with villains or positive with villains and negative with heroes with reversed target pairing in the sixth and seventh block. The fifth block would be another practice trial with the target categories switched, followed by two additional experimental trials using the new categorization schema. Shorter RTs are expected for congruent paired stimuli than incongruent stimuli (heroes and positive stimuli should elicit shorter RTs in this example).

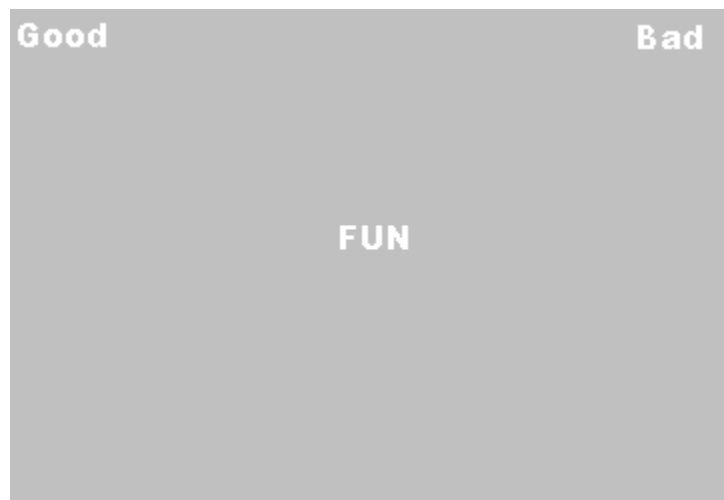


Figure 1. Block 1 categorization screen for positive and negative words. The color of the background was changed from black to gray and the words were changed from teal to white.

The IAT has been used in consumer research as well. Participants in one study completed IAT pairing positive and negative words as well as Coke and Pepsi logos. They then underwent a blind taste-test with the two products. Experimenters found that the brand participants preferred in the IAT was the same one preferred in the taste-test (Mason, Greenwald, & Bruin, 2004). In a separate study, conditioning impacts on two soda brands were examined, and participants preferred brand logos that had been paired with positive images to those paired with negative images on an IAT as long as they had no strong, prior preference (Gibson, 2008). Greenwald and Banaji (1995) admitted that

possibly the most important challenge left to face would be to modify the IAT to assess individual differences, which has yet to be done.

Explicit attitudes are more predictive of behavioral than implicit measures in some cases. However, there seem to be methodical problems with the design of these studies when they concern preferences. One such study showing explicit attitudes being more predictive used fundamentally different target objects, apples versus candy bars (Karpinski & Hilton, 2001). This approach poses a unique complexity. Instead of just looking at a preference for one construct over the other (e.g., one brand of candy bar over another or junk over healthy food in general) this choice combines an array of preference evaluations. Confounds include, but are not limited to, the persons preference for apples, healthy food, and the particular candy bar offered. The participant's decision will also reflect their assessment of the situation. They may not take the candy bar because they do not want the experimenter to see them as an unfit person. Another limitation to this type of research is that people explicitly state their preference and are then immediately asked to make that same decision. This could influence the participant's decision because of compliance or cognitive dissonance. He or she will have made the experimenter aware of an initial preference and will feel compelled to act in a way congruent to that statement (Fasterling, 2012).

With current methods of research using categorization of pictures and words, the IAT provides advertisers with a considerable amount of information regarding preferences to products, but complex stimuli require further investigation. People may view brand logos in conjunction with stimuli that they find positive as well as negative in a television advertisement. This approach is similar to showing a soda logo with positive and negative words. What would the IAT outcome be in this case? Researchers need to

find a way to analyze implicit associations in visual fields that are more complex and determine what visual stimuli influence implicit associations the most.

Advertising Limitations

Advertising research may be affected by the disparity between viewing advertisements in typical settings versus laboratories. That is, research participants in the bulk of studies view advertisements independently of other stimuli rather than in a more natural setting with advertisements embedded within other entertainment, television shows for example (Danaher, Bonfrer, & Dhar, 2008). Subliminal processing of stimulus increases mere exposure and the halo effect. Mere exposure effect occurs when a person responds more favorably to a stimulus that they have seen previously (Gillebaart, Förster, & Rotteveel, 2012). A person may have favorable feelings toward a person they pass in the hallway every morning because he/she has seen that person before. This suggests that exposure to an advertisement should increase liking as well, provided the advertisement is positive. The halo effect shows that unconscious associations may cause positive associations with a stimulus (Dennis, 2007). Advertisers use attractive models for this reason. The product is associated with good looks and often wealth. The stimuli people believe they are attending to may not be where attention is actually focused.

There have been a few studies on visual attention and television advertisements. When digital video recorders (DVR) were first introduced to the public, companies worried that their advertisements would not be viewed due to fast-forwarding during commercials. Researchers found that ownership of a DVR would not influence buying behavior because viewer attention was more focused while fast-forwarding (Bronnenberg, Dubé, & Mela, 2010). Another study found that as long as the brand logo was centered, memory of the brand was not reduced (Brasel & Gips, 2008). Eye tracking

in this study showed that attention to commercials increased while people were fast-forwarding through advertisements. The current study focused less on remembering the logo and more on the overall effect of the advertisement and the implicit attitudes it produced.

The purpose of the current study was to understand the influence that advertisements have on consumer attitudes toward a product. Every day the media bombards people with promotional information trying to get them to purchase one product or another. The question is, “How exactly do advertisements influence brand logo attitudes?” Social psychology, along with marketing, has seen an increased demand for development of indirect measures (Greenwald & Banaji, 1995). The current study evaluated television advertisements in a natural way and determined how this affected their implicit associations to the logos they viewed. The researcher hypothesized that participants would have faster RTs in an IAT to logos for products they had previously seen in commercials (Old) than for products that they had not seen before (New).

Method

Participants

Participants consisted of university students (N=36) taking undergraduate courses at the University of Central Oklahoma. They participated in order to have course requirements fulfilled. The study excluded participants under 18 years of age and those who were not native English speakers for control purposes. A computer randomly assigned participants to one of two groups, each receiving a different commercial set to minimize confounding variables. They were recruited using the University of Central Oklahoma SONA system, which also ensured that the restrictive categories were excluded.

Materials

All sections of the study were completed on a desktop computer except for the informed consent form and demographic form. The participants first completed the pencil and paper informed consent form. Participants then watched a video on the computer screen and filled out a pleasantness scale for each of the six commercials in the video. The video was the BBC documentary *Atom: Clash of the Titans*. The study included twelve total advertisements for foreign products (six food commercials and six bank commercials) each lasting between 30 and 55 seconds. Both conditions six of the twelve commercials while the other six were used as novel products in the IAT. Following the video, participants completed a seven-part IAT that was presented using DirectRT (Emperisoft, 2008). The participants concluded the experiment with a pencil and paper demographics survey controlling for knowledge of foreign language and previous exposure to the logos.

Procedure

Participants arrived at the experimental room and an experimenter seated them in front of a computer screen. The participants sat six feet away from a 32 inch, flat-screen monitor at eye-level. The experiment room contained a computer screen with mounted eye-tracker, keyboard, and eye-tracker monitoring equipment but was clear of any other objects. Only one experimenter and one participant were in the room during the experiment. A researcher gave the students a clipboard with a pencil and the consent form to read as the researcher read it aloud. The experimenter asked the participant if anything needed clarification, informed them they could stop participating at any time without repercussion, and read them the instructions (Appendix A) if the participants wished to continue and signed the consent form.

Following the instructions, the researcher began one of two videos with commercials embedded in the video. The participant was also handed the pleasantness scale on a clipboard with a pen to fill out during the video (Appendix B). After the video, the researcher handed the participant a keyboard and instructed him/her to press the space bar to begin the second part of the experiment. The computer program presented the participant with instructions on how to complete the categorization task (Figure 2).

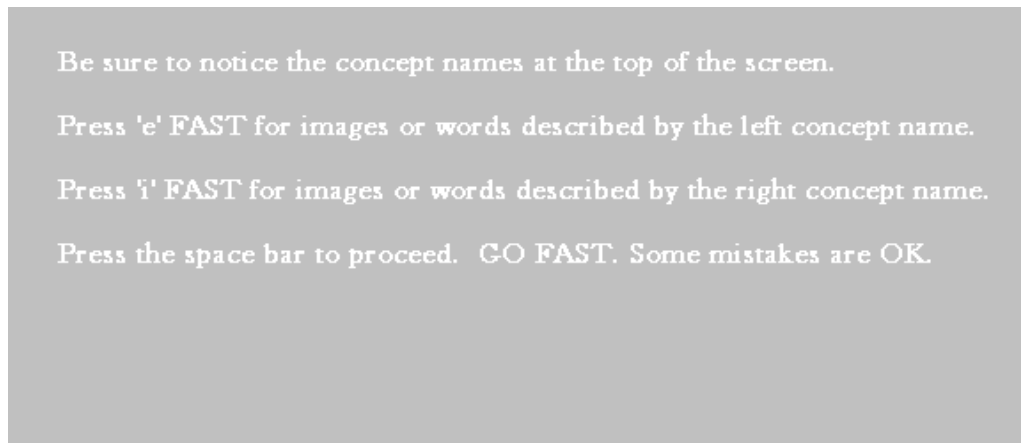


Figure 2. Instructions presented before each block of the IAT. The background was changed from black to grey and the words were changed from teal to white.

DirectRT presented all stimuli on a black background. Participants were first given words one at a time in 24 Arial font, all capitalized, bold, and centered. The category titles at the top were 24 Arial font, capital and lower case. All category titles were presented in this font in the upper left and upper right corners of the screen in a light blue font. All sorting words were presented in light blue as well and centered. The sorted words came from Mason, Greenwald, and Bruin (2004) and were categorized as either good or bad. When participants saw a good word (e.g., love), they pressed the key corresponding to the correct category label. Incorrect responses were recorded as false and excluded from the data set.

The participant then completed a similar task, except that instead of sorting words into good or bad categories, they sorted product logos into categories based on color (black or colored). The product logos appeared centered on a 300X300 megapixel, white background in the center of the screen. All of the sorting stimuli remained on the screen until the participant pressed the correct key. The participant saw 12 product logos (6 black and 6 colored) and 16 words (8 good and 8 bad).

After completing these two practice trials, participants completed two combined trials where a word and logo category appeared on each upper corner of the screen. The computer program randomly selected logo or word stimuli for the participant to identify (Figure 3).



Figure 3. Combined sorting task with words and logos. The background was changed from black to grey and the words were changed from teal to white.

Following these two paired trials, another practice trial was performed switching the logo categories so that the category that was previously on the left was on the right and the one on the right was now on the left. The sixth and seventh trials were the same as the third and fourth except for the new logo category placement. At the end of the last block, the monitor displayed a solid black screen. The experimenter handed the participants a

demographic questionnaire to fill out and a debriefing statement with contact information. The experimenter said, “Thank you for your participation in this study. You have completed the experiment. Please fill out this survey and hand it to the experimenter on your way out.”

Video and commercials. Participants viewed the same distractor video, a BBC documentary titled *Atom: Clash of Titans*. The video contained low levels of emotional content that would have been hard to find in other genres of movies. The documentary style also controlled for the mood state of participants prior to viewing the commercials. If an action film had been used, a strong emotional scene prior an advertisement could have confounded the memory of or emotional response to the advertisement. Each video contained three commercial breaks with two commercials during each break. The researcher selected the commercials based on their unfamiliar brands and similar emotional content, with none being highly evoking. Each group saw commercials for three banks and three food or drink products. Each video lasted approximately 35 minutes and each commercial ranged from 30-55 seconds. Participants saw the logos for all 12 products during the IAT. The six that were seen in the video were recorded as “Old”, while those that had not been seen before were recorded as “New”.

IAT. The IAT consisted of seven total blocks. The researcher modified the DirectRT IAT-Race program to present the stimuli desired in this experiment. The first two blocks consisted of only one stimulus (first words then logos) to be sorted into two different categories (good/bad and black/colored respectively). Once participants completed these two trial blocks, they completed two experimental blocks from which their associations were calculated along with blocks six and seven. For the fifth block, participants went back to a single stimulus sorting task with product logos; however,

during this trial, the logo categories appeared on the opposite side of the screen they were originally on. This change put the logos originally paired with positive words with negative words and those originally paired with negative words now paired with positive words. Participants completed the final two experimental blocks with the new pairings. Because the participants might not have remembered what logos they had and had not seen, the researcher used arbitrary sorting categories for the task, color. Participants may not have been consciously aware of the brand logos because many were displayed for a short time or were small and in a far corner of the screen away from the main content area.

Dependent variables (d). The researcher determined RT using the improved D algorithm proposed by Greenwald, Nosek, and Banaji (2003; Nosek & Smyth, 2007). This algorithm used data from blocks three, four, six, and seven and eliminated trials with response latencies greater than 10,000 milliseconds (ms) and those participants who had 10% or more of their latencies below 300 ms. Response latencies less than 300 ms suggest that the participant responded before processing the stimuli and those longer than 10,000 ms suggest that the participant became distracted and was not focusing on the task. Incorrect responses were also eliminated from the data set. False responses were recoded with the block mean RT + 600. The DV was calculated by dividing the block mean by the block SD.

Design

Participants were randomly assigned to a 2-way within-subjects experimental design. The independent variable was whether the participant was seeing new or old commercials. The participant's score was calculated using the improved D algorithm (Greenwald, Nosek, & Banaji, 2003). RTs over 10,000 ms were excluded as well as

participants with more than 10% RTs under 300ms. False responses were recoded with the mean RT + 600ms. The dependent variable 'd' was calculated by dividing the mean RT in each block by the mean SD. The data was analyzed using a Paired-Samples T-test

Results

The hypothesis that previously viewed product logos would have faster response times for positive words than new product logos was not supported. The current study found no significant difference between the mean response for old logos, those that had been seen previously, ($M = 2.88$, $SD = .06$) and new logos, those that had not been seen previously, ($M = 2.88$, $SD = .05$); (Figure 4). This suggests that participants did not have an implicit preference for previously seen product logos, and there was no significant difference after the within participants analysis $t(35) = 1.39$, $p = .173$.

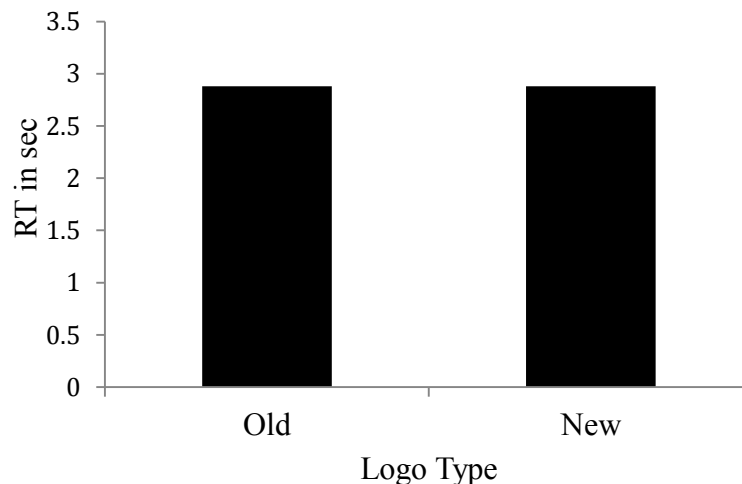


Figure 4. Mean response time for previously viewed and novel commercials.

Discussion

Attitude research contains conflicting interpretations and theories. The results suggest that implicit attitudes are more stable than some research suggests which would make them better focuses of advertising research. People would not be susceptible to

priming immediately following the study, and researchers could determine the long-term preferences a person holds. People's implicit attitudes have been studied extensively for target stimuli they are accustomed to seeing. However, the novel products used in the study may not have had the exposure time for implicit attitudes to form. Ad theory takes into consideration gradual build of positive attitude and repeated exposure to the advertisement.

Explicit attitudes still provide an ineffective measure of attitude. Priming of stimuli only affects the magnitude of IAT score, so participants may have only been marginally affected by seeing the advertisement. This would suggest that the IAT is robust to minute changes. Mere exposure would suggest that a significant difference would have been found between previously seen logos and novel ones, but there is no evidence the participants looked at the logo. The logos in many of the advertisements were small and in the far corner of the screen, so participants may not have been exposed to the stimuli at all.

Researchers have argued that the IAT does not actually measure preference but actually measures availability. Availability is a heuristic principle stating that people associate things faster that they have seen together most often (Kim, Malhotra, & Narasimhan, 2005; Tversky & Kahneman, 1973). The problem with the availability is that it requires mental representations that the brain holds in storage like a filing cabinet. The findings, along with other research, suggests that attitude is a fluid construct that is not as dichotomous as implicit and explicit. It would make more sense to look at attitudes in the terms of dynamical system that changes over time and is sensitive to initial conditions. Researchers should adopt the metaphor of a riverbed when discussing attitude. It does not make sense to have miniature selves in the brain competing over

what attitude to express. Do each of these constructs have implicit and explicit attitudes? The changing landscape of a riverbed would represent the social climate, past behaviors, and all other variables that affect attitude. All of these variables in unison guide the behaviors that are expressed and the thoughts that present themselves to the individual. It is difficult to study constructs focusing on dynamics, but it can make more sense when interpreting findings. Research should continue to study advertisements in natural settings and use what has been termed implicit attitudes until a better understanding of attitude can be found.

Previous research tended to focus on advertising in isolation, not in real world contexts, with the default an emphasis on internal validity. It is important to understand how advertising works in naturally complex situations. This study significantly increased external validity by including distractor information and a television show. It also looked at a type of advertising research that has been found to be most effective when evaluating consumer preferences in the terms of brand image. Advertising research needs to turn to implicit and behavioral measures to understand consumer preferences because of people's flawed judgment with regards to their attitudes.

One difficulty encountered during the study involved faulty equipment. During pilot studies, a limited amount of data was collected for visual fixation, but there were problems getting the eye tracking software connected to the hardware once the study began. This data might have provided further insight as to why there was no significant findings for previous exposure and implicit associations. It is also possible that the video produced negative feelings toward the advertisements. It was rather long and not emotionally exciting. The advertisements themselves may have also produced negative attitudes. People prefer advertisements presented in their native language (The language

of emotion, 2008). A future study should control more for video and advertisement content.

Research in this area is still limited by the fact that one output measure is being used to determine how a very complex input variable works. Though the current study was designed to improve the current methods utilized, it would be beneficial to see how a person's perception of an advertisement changes with time, depending on what the participant is focused on at each moment. Incorporating physiological measures, such as skin conductance or pupil dilation, could be the next step toward a fully comprehensive evaluation of each aspect of an advertisement. Another possible direction for future studies would be to monitor facial muscle movements in coordination with eye tracker gaze to see what specific aspects of an advertisement produce different positive or negative associations.

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Appendix A

In this experiment, we will be looking at the effects of television viewing on response times. You will watch a 35-minute video and then complete a short computer task measuring response times. During the video, you will fill out a pleasantness scale ranging from one, poor, to five, very pleasant, for each of the six commercials during the video. During the computer task, you will be asked to sort a series of words and pictures into categories by pressing specific keys on the keyboard I will hand you following the video. The keys you will use are the space bar, “e”, and “i” keys. Please follow the instructions on the computer screen and raise your hand if you have any questions.

Appendix B

Pleasantness Scale

Please rate the following commercials on their level of pleasantness. The scale ranges from 1-5 with one being the least pleasant and five being the most.

SWICA

1 2 3 4 5
 Poor Very Pleasant

Best Turkish Food

1 2 3 4 5
 Poor Very Pleasant

MIG

1 2 3 4 5
 Poor Very Pleasant

Habbib's

1 2 3 4 5
 Poor Very Pleasant

Deutsche Bank

1 2 3 4 5
 Poor Very Pleasant

Renault

1 2 3 4 5
 Poor Very Pleasant