The Eye of the Beholder:
Affective and Attentional Outcomes of Selective Attention to Advertising

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Abstract

Advertisers often assume that ads that are encountered but not explicitly processed either have no effect, or a positive effect due to mere exposure. However, recent research in visual neuroscience has shown that when a non-target object is exposed, it can lead to negative rather than positive affective ratings for that object. Two studies reported here show that the difference in outcome may depend on one's goal at time of ad exposure. When engaged in exploratory search, a mere exposure effect is obtained. Conversely, goal-driven attention causes ad devaluation. Outcomes in terms of affective evaluation as well as future attention for the exposed ads are tested. Effects of exposure are also found for individual differences in attentional control. Additionally, implications for current advertising avoidance models are discussed.

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{ LITERATURE REVIEW

Every day we are exposed to thousands of advertisements. As we walk down the streets there are ads on billboards, bus stops, ads on cars, packaging and storefronts. Ads are on TV, magazines, radio, websites and cellphones. Go to a restaurant and they may be on the coasters and in restrooms. Even eggs in grocery stores and air sickness bags and tray tables[1] on airlines contain advertising. Advertisers in the U.S. spent more than $69 billion on these placements in 2005 (Elliot, 2006), and consumers are constantly exposed to these ads every day. Yet consumers actively attend to only a small minority of the ads they are exposed to.

Much of the literature in advertising looks at the processing that occurs once attention has been paid to the ad itself. While this is obviously important in order to understand how ads influence consumers, it would seem equally important to better understand what happens to the ads that are not attended to, or are actively ignored.

Advertising Avoidance

Though encountering advertising is a daily occurrence for most people, these exposures are not always met with welcome. A 2005 Yankelovich report showed record levels of consumer resistance to marketing as well as increased levels of dislike for ads and more aggressive efforts to avoid interactions with marketing stimuli. In the advertising literature, this reaction has been termed 'advertising avoidance' and has been defined as all of the actions media users employ in order to reduce exposure to ad content (Speck and Elliot, 1997). Avoidance has been operationalized to include: ignoring, flipping or skipping (such as in a magazine or with a device like TiVo), and eliminating

[1] Printed eggs through EggFusion and airline ads through US Airways; as reported by MSNBC

ads. However, this operationalization is confounded by including two very different situations, one where ads are completely avoided and the consumer is never even exposed to them (e.g. flipping the channel or leaving the room before the commercials come on) and situations where the consumer is exposed to ads (however briefly) but ignores them (e.g. talks to a friend while the commercials are on). Under the current definition of avoidance employing ad-blocking software that leaves white space instead of banner ads on webpages is treated as being exactly the same as someone who does not using this software but simply ignoring the ads that appear on the page. However, these situations may be different in terms of the qualitative interaction with the ad itself and they would also be considered differently in terms of media planning statistics and in counting number of contacts between the brand and consumer.

Speck and Elliot (1997) did distinguish between the strategies employed to achieve avoidance. They considered ignoring to be a cognitive strategy, while they labeled leaving the room as a behavioral strategy, and switching the channel to be a mechanical strategy (Speck and Elliot, 1997). However, the crucial aspect of this is not in the means used to achieve avoidance, but in the potential impacts of these varying strategies. Unfortunately, they failed to address this issue.

For the purpose of this paper, advertising avoidance is limited to situations where people avoid ads they are exposed to, rather than those ads they manage to not be exposed to by turning off a medium or channel. Exposure and attention have been viewed as prerequisite conditions for message influence (Slater, 2004). This in itself implies that many processing models are based on attention as a linear function which

begins at a passive baseline of zero and only goes up, ending in full attention paid. If an ad is ignored, this would imply 'zero' attention and therefore 'zero' effect of the exposure. However, ignoring an ad may be different than conceptualizing it as non-attention to the ad. If an ignored ad involves a process that is separate and distinct from non-attendance, then perhaps the outcomes may be different than 'no effect' as well.

Advertising researchers have tended to fall into this trap of assuming that the extreme opposite of ad attention is simply a complete lack of attention. As a result, they tend to believe that the worst outcome that could occur if consumers didn't attend to their ad would be a waste of the ad dollars spent to place it. However, it may be that active avoidance is a better descriptor of what occurs at the negative end of the attention continuum, rather than no attention. Speck and Elliot (1997) concluded their own study of advertising avoidance by noting that they suspect that the dynamics and processes of advertising avoidance are related to, but distinct from, the dynamics of attention to ads. In fact, they speculated that advertising avoidance was not a passive process because in order to avoid an ad, one must take action. This action may have consequences that most advertising researchers have not previously contemplated.

So why do consumers avoid ads? Speck and Elliot (1997) found that search hindrance is a significant predictor of ad avoidance in all media. Search hindrance is the consumer perception that ads make it more difficult to engage with a medium for the reason intended (e.g. more difficult to read a newspaper due to the ads). A similar variable, perceived goal impediment was found recently to be the most significant antecedent explaining ad avoidance on the Internet (Cho and Cheon, 2004). Edwards, Li

and Lee (2002) also found that perceived intrusiveness leads viewers to avoid ads. Thus, in order to avoid the ad, some level of attention to the ad, however brief, is required. One could not identify it as an ad and feel that it was intruding or impeding goals unless there had been some attention paid. In other words, some level of identification of the item as an advertisement, or at least that it was an object that was not conducive to achieving their goal, has to be made when engaging with the medium.

Ads that are not fully attended to are often posited to be recipients of 'passive' attention. These ads have been looked at in terms of recall and recognition or affect rather than explicit attitude because it is thought that they do not receive the same cognitive processing as attended to ads. In exploring perceived intrusiveness of pop-up ads on the Internet, Edwards, Li, and Lee (2002) noted that intrusiveness led viewers to define ads as irritating, which, in turn, led to avoidance. The antecedents of this perceived intrusiveness were the congruence of the ad to the current task the person was engaged in and the intensity of the individual's cognitions at the time that the ad popped-up. Their conclusion, however, was that even if a forced exposure is greeted with a negative reaction and avoidance, it could still lead to increased levels of attention and processing and may facilitate memory for the ad. Thus, even if the ad was unwanted and avoided by the audience, it could still have positive outcomes for the advertiser.

The majority of research on advertising where an ad is not fully attended to assumes that the non-attendance is a passive act. These ads have also been conceptualized as incidental encounters, where the viewer is exposed to an ad that is not the focus of their attention. It has been found that incidental exposure can lead to both

semantic processing (process the meaning) and feature processing (process surface features of the ad; (Shapiro, MacInnis, and Heckler, 1997). These findings were explained with the idea that exposure leads to an increased accessibility of the representation of the exposed ad and that due to perceptual fluency (an increased ease in processing because of misattributed familiarity) these incidental exposures lead to a higher probability of inclusion in consideration sets for products (Shapiro, MacInnis, and Heckler, 1997). This is said to occur because previous exposure makes future processing of the item easier than anticipated and this unexpected ease is interpreted as liking.

Similarly, based on the assumption that prior exposure should lead to priming, Lee (2002) found that a brand in isolation (as opposed to being encountered in context such as in a sentence) increases perceptual priming. Perceptual priming is defined as enhanced performance in the representation of the physical features of an object. This can occur due to an incidental exposure of the perceptual features of an ad or logo that will again be encountered. It is this perceptual priming that increases stimulus based choice. When confronted with the exposed brands as choice options, the increased accessibility of the brand in memory leads to perceptual fluency that then allows the brands to 'catch the eye' and be chosen. Based on this, Lee concluded that elaboration is not always needed to increase memory for a brand or to increase brand choice.

Viewing avoidance as an active rather than a passive undertaking may change some of the underlying theories appropriate for predicting effects. In their study demonstrating implicit memory for ads that were not fully attended, Shapiro and Krishnan (2001) based their work on the notion that the level of attention paid to an ad

during exposure affects the level of processing and therefore is related to the encoding of the ad. Their study found that ads that had been viewed while attention was divided showed diluted or absent recall and recognition through explicit measures after a time delay, but implicit memory still existed (as shown by likelihood of choosing the brand in a forced-choice test). This would imply that encoding still occurred, even without the same level of explicit processing that fully attended ads received. However, that encoding may occur with negative or inhibited tags.

Other findings on search type and recall/recognition may shed light on an interesting contradiction in advertising research -- that people can easily or passively view ads while performing other tasks and yet complain about how distracting or annoying they are. To resolve this, Burke, Hornof, Nilsen and Gorman (2005) used eyetracking to see how people may be using websites and banners. When given goal-directed tasks people rarely looked directly at the banners, leading to "banner blindness". People typically avoided looking at locations where they expected ads to be and adopted search strategies to avoid ads that were distracting them from the task. Thus, during goal-directed tasks, people rarely looked directly at the banner ads. They referred to this phenomenon as "banner blindness". Somewhat surprisingly, banners were found to actually be more distracting during simple tasks, those tasks that employ less cognitive load (for similar findings see Diaper and Waeland, 2000; and Zhang, 2000). This increased distraction is hypothesized to be due to the increased amount of available attentional resources that exists when doing simple tasks as opposed to the lesser amount of attentional resources available during difficult tasks. It may be that ads appearing

during difficult tasks were just ignored more effectively due to the necessity of accomplishing the primary task. Generally, Burke et al. found that static banner ads slow search by around 6.5% compared to the control condition where the same banners were simply gray boxes, showing that some amount of attention is given to the ads themselves, even if the purpose of this attention is to continually try to avoid these banners during the search.

While these previous studies are useful and valuable to our understanding of advertising, most fail to recognize or acknowledge that some processes may lead to a decrease in brand memory or choice. Even professional metrics used for paying for an ad such as CPM only consider the number of exposures without considering what could be occurring during the exposure. With mere exposure and perceptual fluency as the main explanatory mechanisms it would appear that any exposure would be a "good exposure". This may be a critical limitation in prior research on advertising avoidance, and in the way media insertions are determined and budgeted.

Mere Exposure and Perceptual Fluency- Is Any Exposure Good Exposure?

Mere exposure is the most widely cited theoretical rationale for why avoided ads might have positive outcomes. The mere exposure effect (MEE) has been the basis of hundreds of psychological studies in the past four decades and has been found to be a robust effect (Bornstein, 1989; Zajonc, 2001). The basic tenet of this effect is that exposure to a stimulus, even at a pre-attentive or pre-conscious level, will result in the stimulus being evaluated more preferentially compared to similar, but less familiar, stimuli.

In advertising, mere exposure has been used as a justification for advertising that may be seen but not explicitly processed such as billboards, brand logo placements and Internet banner ads (Matthes, Schemer and Wirth 2007; Chen 2001) and even for print ads that will be exposed while attending to other content, as is often the case in magazines (Janiszewski 1990; 1993). Indeed, most advertising placements are paid for in proportion to how many people will simply be exposed to the ad (i.e. CPM). Some argue that this exposure may be enough to induce a mere exposure effect which would lead to increased positive affect the next time the ads are encountered. However, this argument may be somewhat suspect since the boundaries and rationales for the mere exposure effect (MEE) are much less clear than advertising researchers typically assume.

In his meta-analysis of research on mere exposure, Bornstein (1989) noted the long history of studies that have found that repeated exposure to stimuli result in more positive affect toward those stimuli. He points out that an important application of this can be found in advertising, which may be conceptualized as repeated, unreinforced exposures designed to enhance attitude. In 1968, Zajonc showed that "unreinforced" exposure to novel stimuli increases liking of that stimuli. This is what has been cited in the many applications of MEE to advertising that is ignored or passively viewed. However, "unreinforced" implies that no affective response is attached to the stimuli, something that may not be the case in avoidance.

Mere exposure was defined in Bornstein's (1989) meta-analysis as occurring in experiments that make the given stimulus accessible to an individual's perception which, through repetition of this stimulus, leads to enhanced attitude. One important finding of

this meta-analysis is that stimulus recognition/awareness may actively *inhibit* the mere exposure effect (MEE). Subliminal stimuli may initiate affective responding while bypassing cognitive processes. This is what has been cited in the many applications of MEE to advertising situations, specifically at times when ads are avoided which includes when they are ignored (in literature ignored ads are often considered to be nonconsciously exposed) or passively viewed. Interestingly, most advertising avoidance literature relies on retrospective self-report of explicit instances of avoidance. While MEE is thought to be a possible outcome of avoided ads, the past studies that have measured ad avoidance or looked at antecedents to avoidance have looked at conscious recognition of avoiding ads, something which is actually considered to impede the mere exposure effect.

Other work also shows that there may be an important nonconscious aspect to the MEE. In one study, melodies were played for alcoholic Korsakoff's[2] syndrome patients, alcoholic controls and nonalcoholic controls. Alcoholics with Korsakoff's syndrome showed the same increase in preference for previously heard melodies as the control groups but were unable to recognize the melodies. In another experiment the three groups were exposed to faces and biographical information for two men (bad guy/good guy). Korsakoff's patients were able to recall virtually none of the information or to recognize either face but, nonetheless, they preferred the 'good guy' in a forced choice test. Impression ratings were also more favorable for the 'good guy' and less favorable for the 'bad guy' (Johnson, Kim and Risse, 1985).

Familiarity and the brain

[2] Korsakoff's syndrome primarily affects alcoholic's recognition memory

The findings of mere exposure working better under nonconscious conditions has led some to conceptualize it as a form of unconscious memory. In order to better specify the mechanisms correlated with the effect, PET (positron emission tomography) was used in order to identify some of the brain regions activated in an exposure and preference task. As with many of the MEE studies, subjects were shown Chinese characters as the stimulus material[3], and then asked explicit (forced choice) recognition and preference questions. It was found that recognition judgments activated different regions of the brain than preference (implicit memory) judgments. Recognition was identified with the frontopolar cortex and parietal areas and it should be noted that forced choice recognition of the previously exposed characters did not differ from chance. Preference judgments (implicit) were associated with right lateral frontal activation and were significantly higher in favor of previously exposed characters. Processing objectively novel, as compared to familiar, stimuli led to activation of the right hippocampal gyrus. This is important because the subjects were unable to distinguish novel versus previously exposed stimuli when asked in explicit questioning and, therefore, did not seem to have a conscious awareness of the distinction (Elliott and Dolan, 1998). As with Bornstein's (1989) conclusion, this seems to indicate that assuming positive exposure effects in ad avoidance studies (which have been done through explicit memory and questioning) may not be appropriate.

Other studies have shown that the brain becomes increasingly sensitive to frequently encountered and important stimuli. It was shown that there is perceptual

[3] Chinese characters have been used because they have varying levels of complexity and were often novel for the participants, making explicit recognition less likely

learning that occurs without attention, awareness or any task relevance. This was demonstrated by use of background motion on a masked screen that was so weak that it was not visible supraliminally. Though not explicitly visible, this repetitive exposure improved performance in identifying the direction of the exposed motion when tested in a supraliminal test (Watanabe, Nañez and Sasaki, 2001). It was concluded that a presented feature can sensitize the visual system merely owing to its frequency not necessarily by its relevance or salience. This may mean that perceptual learning can occur simply from exposure to something that is not explicitly visible but is still physically present. This occurs because the brain may equate frequency with ecological importance.

Perceptual fluency is a more recent explanation for why repeatedly exposed stimuli can lead to an increase in subsequent affective response. According to this theory when a stimulus has been processed before, future processing is streamlined and can produce a feeling of familiarity (Whittlesea, 1993). This easier processing is then interpreted as positive affect toward the stimulus because processing is easier than the subject anticipated it would be (Winkielman and Cacioppo, 2001). Perceptual fluency is posited to be distinctly positive in valence (Reber, Schwartz and Winkielman, 2004). Therefore, predictions derived from perceptual fluency would predict that items that had received previous exposure would be more positively evaluated than novel items that were being processed for the first time.

Prior source exposure has also been found to increase source persuasiveness and liking as compared to sources who had not been previously encountered and this too has been attributed to perceptual fluency (Weisbuch, Mackie, and Garcia-Marques, 2003).

All of this work suggests exposure can have a positive effect on consumers even when it is not consciously noticed. In fact, it is especially noted in terms of art where the more fluently something is processed the more positively subjects rate their aesthetic experience (Reber, Schwartz and Winkielman, 2004). It should be noted that the fluency process is distinctly different than recognition familiarity. Recognition is posited to be explicit, with conceptual meaning whereas perceptual fluency is implicit and about perceptual meaning (Wagner and Gabrieli, 1998). It should be noted that a possible distinction between MEE and perceptual fluency is that because perceptual fluency explanations rely on misattributional processes, the positive effect would occur at evaluation. However, because MEE is thought to be due to a drop off of negative affect, it would rely on effects at exposure.

However, motivational factors such as time-pressure and evaluation apprehension have been found to moderate the mere exposure effect (Kruglanski, Freund and Bar-Tel, 1995). Their interpretation of this finding was that repeated exposure increases the plausibility of an initial hypothesis but that motivational factors reduce reliance on that initial reaction. Thus, when one is engaged in some task, exposure to repeated stimuli may not always lead to positive affect.

Distracter Devaluation

In opposition to the MEE, recent research has found that non-attended objects (distracters) can sometimes lead to negative, rather than positive ratings. Raymond, Fenske and Tavassoli (2003) told participants to attend to either square or circle Mondrians (abstract visual patterns) and to indicate as quickly as possible when they

identified which side of the page the target stimulus appeared on. Participants then rated their affect toward the attended (target) stimulus, the ignored stimulus, or a previously unseen stimulus. The attended items and novel items were rated similarly, but the ignored stimuli were rated lower than either the novel stimulus or the attended stimulus. This shows that attentional state during initial exposure to a stimulus can modulate affective response when the stimulus is encountered again. When the stimulus is ignored during the initial exposure it can cause a more negative subsequent rating for that stimulus. This is referred to as a distracter devaluation effect.

The distracter devaluation effect is a rather novel perspective in the attention literature. The majority of work on attention and affect is about the affective quality of the stimulus and how that may attract (or discourage) attention. However, Fenske, Raymond and Kunar (2004) used previewed distracters (people were shown beforehand the stimulus that would appear that was not the target) to test if distracter devaluation would occur and found that those subjects that were shown a preview of the distracter objects actually showed significantly increased distracter devaluation. This only occurred for those that showed a benefit of preview in response time to targets. Thus, overtly knowing what not to look at gave that stimulus an even stronger negative affect association. This shows that top-down processing, such as that involved with the preview benefit may have an emotional processing component, with attention and emotion working together in the prioritization of the processing of stimuli.

Further research has begun to refine the boundaries of this effect. Work with faces shows that distracter devaluation occurs even for more complex and meaningful

stimuli than abstract patterns and that this effect can have social-emotional consequences. Distracter faces are scored significantly lower than target faces in subsequent ratings of trustworthiness (Raymond, Fenske and Westoby, 2005; Fenske et al, 2005). Ultimately it was proposed that this affective response occurs in order to help people accomplish task related goals. When visual search occurs, it is inefficient to re-search areas and attend to items that have already been found to not be what you are looking for. Thus we tag items as inhibited or negative so as not to process them again. While this is functional for goal-oriented behaviors, it suggests that ads that interrupt search efforts may receive negative mental tags.

Electrophysiological measures have been employed to further investigate distracter devaluation. Motivated attention to a stimulus is known to be tied to emotion (Lang, Bradley and Cuthbert, 1998). Usually, this is thought of in terms of the emotion-evoking properties of the stimulus. However, new work using electroencephalogram (EEG) shows that attention and emotion may have bidirectional links. Target selection efficiency predicted subsequent affective ratings for distracters, with more efficient selection of targets leading to lowered distracter ratings. On trials where distracters were inhibited more effectively (attention showed a bias toward target events) the subsequent ratings of the distracters were lower. On trials where attention was more diffuse (less effective inhibition) the distracter was rated less negatively (Kiss et al., 2007).

One possible confound of distracter devaluation work is that the participants in the studies may have recognized that they would be asked to evaluate the items being shown. This is partially due to the format of many devaluation studies, in which the

target, ignored or novel item is rated directly after the task and is then followed by the next task. Though this occurs very quickly, and the items are nonsense items (similar to mere exposure), it could be a potential issue. However, recent work asked participants to repeatedly select the letters in one font over another font. They were then asked (in what was presented as an unrelated task) to evaluate different letters. Those in the fonts previously ignored were significantly lower-rated than letters that appeared in the fonts previously selected (Veling, Holland and van Knippenberg, 2007). This finding not only expands the devaluation literature but is particularly important in how it may relate to avoidance and brand logo ads, which often use a visual element as well as sometimes using proprietary colors and fonts.

Negative Priming and Inhibition of Return

While the mere exposure effect has been the prevailing model in attempting to predict what occurs in advertising avoidance situations, the recent distracter devaluation research suggests a contradictory outcome. Similarly, negative priming and inhibition studies in psychology and visual neuroscience support the belief that advertisements that are not welcome or that distract a consumer from fulfilling an unrelated goal can actually harm a brand. This expectation of a negative effect of incidental exposure on brand liking assumes that selective attention is being employed. Specifically this outcome is predicted when one is processing information (media content, for example) or objects that are relevant to a goal while concurrently attempting to ignore goal-irrelevant information that may be distracting. This is what often occurs when people go to a medium such as the Internet specifically to find information about a topic. They may be searching a webpage

or an online news source to find some specific information. Ads that are placed on the page being searched may then represent distracting content.

Studies of negative priming demonstrate the impact of distracting content by showing an increase in response time to objects or information that were previously ignored. This is thought to be evidence for an active inhibition mechanism (Lavie and Fox, 2000). Inhibition may occur during both encoding and retrieval of the stimulus object (Tipper, 2001). If, for example, completing a task required one to ignore a red triangle, you would encode this triangle as an object that was inhibited and when the object (red triangle) is encountered again, recognition may be impaired because it will be retrieved along with the attentional state that it was encoded in (retrieve the triangle with an associated 'inhibited' tag) (Kessler and Tipper, 2004).

Recent work has linked negative priming with lowered affective ratings as well. Stimuli that were ignored (in a negative priming procedure) were not only responded to more slowly. as is typical in negative priming research, but were also rated as less pleasant than control stimuli (Griffiths and Mitchell, 2008). Negative priming has also been found to have long-term effects, such that even when the context changes, the response to the previously inhibited item will continue to be slowed (Grison, Tipper and Hewitt, 2005).

In visual neuropsychology research, this phenomenon has been called Inhibition of Return (IOR). Posner and Cohen (1984) identified IOR as inhibition of locations that had recently been attended to in visual search tasks. These areas are inhibited in order to force attention to novel locations therefore making search more efficient. More recent

work looks at inhibition as occurring both at the location and at the object level, occurring even after multiple other locations and objects have been presented (Tipper, Grison, and Kessler, 2003). Inhibition may occur because specific features of the goal-irrelevant objects are inhibited (Klein, 2000). To give an example, if you were searching in your bookcase for a specific book you would probably think about the features of the book you are looking for (e.g. red with black lettering, paperback) and then begin looking at your bookcase. During the search process you would be taking note of both the areas you had already scanned (so you don't waste time and resources looking there again) as well as noting which books you saw that were NOT your target book (e.g. other books that had a feature of the searched for book such as a red spine so that you don't waste time and resources looking at them again). Thus, you would inhibit both locations (sections or shelves in the bookcase) and the objects (books) you previously examined. This system biases (directs) one towards areas/objects that were not yet searched, making search more efficient.

An object will be most inhibited when it is encountered again in the same location where it was initially inhibited because it will most likely have both location and object-based inhibition tags attached to its representation. If an object no longer has the location based inhibition attached to it, the inhibition will be weakened (Kessler and Tipper, 2004). It is thought that these two systems evolved separately to forward the same purpose- efficiency in search, but their differences allow for a more flexible search system (Klein, 2000).

Because object-based inhibition occurs based on the features being searched for it is part of a top-down attentional process and is dependent on limited-capacity resources (Olivers and Humphreys, 2002). Top-down processing occurs when there is already a goal in mind (such as finding that specific red book) versus a bottom-up approach where something may gain attention and interest (a picture catches your eye). We are constantly engaged in some sort of bottom-up processing as we scan our environments, however inhibition primarily occurs in goal-directed searches and therefore top-down processing is most relevant to the issue of advertising avoidance. Top-down processing and selective attention can have affective consequences, showing that attention and emotion work together in the prioritization of processing of stimuli (Fenske, Raymond and Kunar, 2004; Fenske and Raymond, 2006).

There may also be a causal psychophysiological component. In studies where participants are required to view stimuli while unknowingly performing an approach or avoidance response (e.g. arm flexion or stimulating smile/frown muscles), participants will more highly rate stimuli seen while approach behaviors were occurring whereas avoidance response will provoke lower ratings of the stimulus (Chen and Bargh, 1999; Niedenthal et al, 2005). In tasks where inhibition causes non-response to some stimuli, the bodily response of inaction may be a tensed, stop-response action and may contribute to the negative affective rating of inhibited stimuli (Fenske et al, 2005).

The research reviewed above has important potential ramifications for advertising research. It suggests that avoiding ads may actually hurt both attention and attitudes toward the advertised brand when it is encountered again. This is particularly likely

when an ad is avoided in order for the receiver to concentrate on a goal-directed task. Goal-directed search could occur in a variety of advertising environments, particularly in print or Internet advertising (Dreze and Hussherr, 2003; Rodgers and Thorson, 2000; Janiszewski, 1998). Internet advertising is especially interesting to look at because often ads on the Internet are in banner form, occurring on the top or side of a page which feature other content[4]. Consumers usually go to a particular website for a reason, which would mean the banner ads on the page may be construed as distracting to that purpose. If, in fact, this leads to ignoring ads that are not part of the goal (and therefore distracting) this could mean that rather than leading to a positive affective rating at evaluation (due to perceptual fluency), it may lead to a negative, inhibited rating.

Motive and mode of the consumer are particularly important to start with in advertising, especially in the online environment (Rodgers and Thorson, 2000). More specifically, it is important to note that there may then be differences in ads that are passively seen while people are browsing the environment with no specific goal in mind (such as a passenger in a car looking out the window and seeing a billboard) and those that are avoided while a goal (such as looking for a street sign for a fast coming turn) is being pursued. Unfortunately, this has not been considered very much in previous research. The few studies in advertising and marketing that do not look at MEE in terms of very brief direct attention have instead studied it in terms of passive browsing or bottom up attention (i.e. Moore, Stammerjohan and Coulter, 2005), or have shown the brand on a screen as part of a holistic scene (i.e. Matthes, Schemer and Wirth 2007).

[4] Format has been found to matter in online ads (Burns and Lutz, 2006). The studies here will concentrate only on small, rectangular banner-style ads.

Although these manipulations do simulate realistic attentional situations they are limited to examining what happens in a non-goal situation where a person is not focused on achieving a task. However, in many situations where people encounter advertising their primary purpose is to accomplish something else.

Pagendarm and Schaumburg (2001) noted differences across past studies of memory for banner ads based on study design. Specifically, they found that studies that had people engage in aimless browsing of website content led to much higher recall and recognition scores of banner ads on those sites than those studies that employed manipulations that called for goal-directed search. After finding the same result through an experimental manipulation they hypothesized that searching for information leads people to employ cognitive schema to suppress deeper processing of web banners. This is based on the notion that many users are very familiar with basic webpage setups. By directing people to look for specific information (vs. browsing) they will already have in mind the areas they need to search. This will also induce top-down attention in terms of searching. However, they only discussed the impact that goal-directed search would potentially have on recall and recognition. No possible affective consequences for the brands being advertised were discussed.

Only one previous study has directly applied distracter devaluation to advertising research. This previous work found that there were boundary conditions for the devaluation effect. Ads that were visually similar to the target and near to the target were significantly devalued by the group that saw them compared to a group that performed the same tasks but had not been exposed to these distracter ads (Duff and Faber, 2008).

However, this study had some important limitations and did not address some of the issues of particular importance for advertising. For example, it did not determine if this devaluation affected future attention to these ads when later exposure occurred. The ads shown were also very small and unobtrusive and while there was no explicit recognition found, only the group that was exposed to the ads were asked this question. This study also only included two groups- both of which did tasks. It was posited that a top-down task is what would cause the inhibitory effects, as opposed to a bottom-up or non-goal directed task which may lead to the more positive effects commonly looked for by ad exposure researchers. However, this was not testable because both groups were given goal-directed tasks and only ad exposure was manipulated. Additionally, this work used only a single exposure to each distracter ad. Repetition has been posited to be an important factor of the mere exposure and fluency effect and therefore repetition is a necessary component of a study that is discussing an attentional framework which may include those effects.

Repetition

The mere exposure effect is posited to work best under repetition of the stimulus (Zajonc, 1968; 2001; Bornstein 1989). The idea is that with the increased numbers of repetition, the stimulus is more strongly associated with an absence of negative consequences and therefore increases the mere exposure effect (Zajonc, 2000). It has also been thought that because mere exposure studies almost exclusively employ unfamiliar objects or symbols that the effect may increase with repetition because repetition helps with the stimulus representation (Butler and Berry, 2004). If repetition

increases the positive association in mere exposure, it is possible that repetition can also strengthen the negative associations formed in distracter devaluation.

The mere exposure effect has been posited to be an affective phenomenon, and was initially used to provide evidence of implicit memory because increases in preference occurred in absence of explicit recognition of the stimulus even for repeated objects (Zajonc, 1980; 2000). In his meta-analysis of mere exposure studies, Bornstein corroborated that MEE appears to work best when the objects being rated are not explicitly recognized as having been shown before. This is important because devaluation is posited to also work without explicit recognition (e.g. Duff and Faber, 2008) yet advertising avoidance research often shows negative reactions through explicit recognition of the avoided object. It is important then to better connect the literatures by employing repetition but also ensuring that there is not explicit recognition of the ads.

Repetition and Mood

Some work in mere exposure has shown a more generalized affective response attributed to the very act of seeing repeated objects. In a study utilizing morphing, Rhodes, Halberstadt and Brajkovich (2001) found MEE effects for both the faces they had shown to people as well as new faces that were created by morphing the previously seen faces with unseen faces. It has also been demonstrated that the MEE may lead to more diffuse positive affect and in the absence of recognition of exactly what caused the positive affect, the affect may attach itself to any stimulus. Those participants that were exposed to repeated items (5 repetitions of 5 Chinese ideographs vs. 25 non-repeated ideographs) rated not only the ideographs higher on liking but also rated novel polygons

more highly. Those who were exposed to repeated items also rated their mood as being better than those who saw 25 non-repeated items (Monahan, Murphy and Zajonc, 2000). It has also been shown that when priming with a happy face or sad face, there is an additivity of affect for those who see repeated items. This was seen as evidence that the affect generated by the simple repetition of items may not be specific only to those stimuli (Monahan, Murphy and Zajonc, 1995). It is argued that the absence of an aversive event is itself diffuse enough that it would not be attached to any particular object and therefore should enhance the individual's own affective state as well as their ratings of objects that they encounter soon after the repetition (Zajonc, 2001). It is possible that diffuse positive effects have masked item-specific inhibition in ad studies and therefore accounting for them could be important.

Perceptual fluency is posited to be a distinctly positive effect, but one with more specific effects for the previously exposed stimuli. It occurs without recognition, and has been shown to occur on a psychophysiological level (Winkielman and Cacioppo, 2001). However, Winkielman and Cacioppo also showed that there was a selective increase in positive ratings for the easy to process stimuli (subliminally primed before seeing with similar shapes), but no decrease on negative ratings. This led them to conclude it was a selectively hedonic effect. However, there was also some evidence that their results may have led to slightly more positive overall feelings as evidenced by facial EMG and self-report measures but this was not explicitly tested in terms of ratings of the stimuli which were easier or less easy to process. It is therefore critical to account for mood differences which may lead to overall inflated positive responses for those who are exposed to

repeated ads but do not do a task or could possibly account for a lack of negative effects in task groups.

Attentional Control

New work in devaluation has shown that distracters judged most negatively occurred on trials when attention is biased toward target events. When attention was less focused- more diffuse- distracters were evaluated less negatively. This was used as evidence that the specific amount and focus of attention is tied to affective evaluation (Kiss et al, 2007).

Because attention and ratings were shown to vary by individual trial, it seems plausible that there may also be individual differences in the attentional capacity of those individuals and that this may lead to some systematic differences in distracter ratings. Those individuals that are consistently able to focus their attention and exert attentional control would more likely show a stronger devaluation effect than those that are consistently less focused. Interestingly, the efficiency of target selection had no impact on ratings of targets (Kiss et al, 2007). Therefore, measuring attentional control may shed important light on individual differences in effects of exposure during goal directed tasks.

EXPERIMENT ONE- LITERATURE REVIEW

Dot-Probe Task

It is proposed that the affective response to distracters developed in order to help people accomplish task related goals. When visual search occurs, it is inefficient to re-search areas and attend to items that have already been found to not be what one is looking for. Thus we tag items as inhibited or negative so as not to process them again. While this is functional for goal-oriented behaviors, it suggests that ads that interrupt search efforts may receive negative mental tags.

In addition, it has been hypothesized that distracter devaluation may not only reduce the emotional ratings of the stimulus it may also reduce the capacity of the ignored ad to be noticed in the future (Fenske, Raymond and Kunar, 2004; Fenske and Raymond, 2006). In other words, distracting ads may be less likely to gain attention the next time they are encountered, placing them at even more of a disadvantage. This might occur because in avoiding the distracting ad, consumers tag this ad as being a non-target item to conserve attentional resources, and if this tag remains associated with an ad, people may continue to perceive this ad as not deserving of future attention. A review of the literature shows that this idea has not previously been tested.

In order to test this hypothesis and determine if a distracting ad is less likely to gain future attention, a dot-probe task was employed. The dot-probe task consists of two pictures or words presented on opposite sides of the screen. These appear for 500ms. After 500ms, a dot appears on one side of the screen and participants are instructed to respond as quickly as possible by indicating which side the dot appears on. The duration

of this time frame is so short that faster reaction times are thought to be indicative of an orienting response to the image or word the dot is replacing (Duka and Townshend, 2004). If a bias in attention toward the target image/word is predicted, then, when the dot appears behind the target picture/word, a faster reaction time would be expected (see figure 12 for dot-probe example). This has previously been shown to be a valid test of attentional allocation (e.g. Ehrman et al, 2002; Mogg, Bradley, Hyare, and Lee, 1998) and that it can be used to test for both positive (orienting) or negative (avoidance) responses via reaction time (Duka and Townshend, 2004). When an avoidance response occurs, there should be a slower reaction time when the dot appears on the same side of the screen where that target item had been.

The dot-probe task has been used to demonstrate attentional biases to emotional objects that have personal relevance or meaning as well as for more affectively neutral items such as food (Mogg, Bradley, Hyare and Lee, 1998). For example, a dot-probe task has been used to show differences in attention to smoking related stimuli between smokers, non-smokers and former smokers (Ehrman et al, 2002). It has also been used to show differences for physiological drive states. For example, increased attention for items related to eating was found for subjects who had abstained from eating compared to those who didn't (Mogg et al, 1998). Priming with an alcohol pre-dose has also been shown to affect attentional bias towards alcohol related imagery (Duka and Townshend, 2004).

Attentional Control

In looking at future attention to exposed ads, it may be important to also understand the possible differences in effects for individuals with differing abilities to engage in top-down attention. As shown in devaluation work, differences in efficiency of attentional selection per trial does cause differences in devaluation (Kiss et al, 2007). Because attention and ratings were shown to vary by individual trial it seems plausible that there may also be individual differences in the attentional capacity of those individuals and that this may lead to some systematic differences in distractor ratings.

Attentional control can be used to refer to general executive ability to maintain attention. This could be through activation of relevant items or inhibition or irrelevant items or information (Verwoerd, de Jong and Wessel, 2008). In order to be able to measure this, a scale for attentional control will be used. Attentional control has been defined as a general capacity to control attention in relation to positive as well as negative reactions and can be reliably measured by a self-reported scale (Derryberry and Reed, 2002). This scale measures individual differences in the executive system that carries out voluntary attentional responses. This directly relates to effortful control and matters for goal directed (top-down) attentional tasks.

Good attenders show smaller orienting effects and are better able to detect targets at uncued locations (Kiss et al, 2007). Those with good attentional control are able to limit attention to irrelevant information and are able to better suppress dominant attentional response tendencies (Mathews, May, Mogg and Eysenck, 1990).

The attentional report scale has been successfully used in previous studies on attentional control (Derryberry and Reed, 2002; Verwoerd, deJong and Wessel, 2008)

and has shown to be valid and reliable in non-clinical samples. This scale can be used in total to relate to a general capacity to control attention (see figure 15 for scale items). Because this scale has not been previously used in marketing or advertising literature, study one will use it in an exploratory manner in order to better provide direction on the nature of individual attentional control in this (non-clinical) population and it's possible inclusion and effects for study two.

Conditions

It was expected that for devaluation to occur, one must be involved in searching for information while secondary exposure to ads took place, while if one was exposed to ads without being engaged in a prior task, a perceptual fluency effect would be more likely. Therefore, in this study a comparison of three groups; Ads/Task (devaluation expected condition); Ads/NoTask (fluency expected condition); NoAds/Task (control condition) was done to provide a test of distracter ads on future attention. More specifically it was hypothesized that those who were previously exposed to ads while doing an unrelated task would show less attention in their dot-probe responses to the ads they had been previously exposed to (as evidenced by slower reaction times) compared to those who were exposed to the ads without a goal-directed task, or those who react to the ads without previously having seen them. Thus, two comparison groups were used. The first comparison condition enabled a novel baseline (NoAds/Task) in which participants performed the dot-probe task for brand ad logos that they had not previously been exposed to. This provided a baseline for reaction times to these brand logos.

The second comparison condition (Ads/NoTask) was exposed to ads for the same amount of time as the experimental group, but their exposure occurred under a relaxed browsing situation rather than their being involved in a goal-directed task. This allowed for a direct test of what occurs during task related exposure versus what happens when more entertainment or leisure motivations for exposure exist. This points to the important moderating effect of consumer motivations and mindsets during previous ad exposure on future attentional responses to advertisements.

Hypotheses

The dot-probe task is going to be used in this study in order to test the capacity of ads exposed under different attentional conditions to attract future attention in a competitive attention situation. While this has not been previously tested, the literature allows for some specific hypotheses to be formed.

Previous work in positive effects of exposure does show that incidental exposures can lead to increased fluency in processing the stimulus (i.e. Winkielman and Cacioppo, 2001). This perceptual fluency is what may then help these brands 'catch the eye' and be chosen in stimulus based choice (Lee, 2002).

> **H1: The group that is exposed to the ads but does not have a goal-directed task (Ads/NoTask) will show faster reaction times to previously exposed ads in the dot-probe task compared to the group that is not exposed to the ads but does have a goal-directed task (NoAds/Task)**

For devaluation, the predictions are even more clear cut than for mere exposure and fluency effects. Devaluation is thought to occur in order to help accomplish task-related goals (Fenske et al, 2005; Raymond Fenske and Westoby, 2005). An area or object would then be tagged as inhibited in order to decrease the probability of re-

attending to a non-goal object and therefore wasting resources. This is similar to predictions derived from negative priming and inhibition of return, which is though to work to bias one towards objects or areas that have not previously been tagged as goal-irrelevant (Klein, 2000).

H2: The group that is exposed to the ads and does have a goal-directed task (Ads/Task) will show slower reaction times to previously exposed ads in the dot-probe task compared to the group that is exposed to the ads but does not have a goal-directed task (Ads/NoTask)

H3: The group that is exposed to the ads and does have a goal-directed task (Ads/Task) will show slower reaction times to previously exposed ads in the dot-probe task compared to the group that was not exposed to the ads but did perform a goal-directed task (NoAds/Task)

Repetition of items has been shown to increase positive mere exposure effects (Zajonc, 1968; 2001). Additionally, repetition has been thought to increase stimulus representation (Butler and Berry, 2004) which could lead to increased fluency effects.

H4: The group exposed to the ads and does not have a goal-directed task (Ads/NoTask) will show faster reaction times to previously exposed repeated ads compared to non-repeated ads

While repetition has been shown to be important in mere exposure and perceptual fluency effects, it has not been specifically studied in distractor devaluation. It is possible that it could act to increase devaluation effects, however it is possible that it could also lessen the effect

RQ1: What will the effect of repetition of ads be on reaction times for the group that is exposed to the ads and does have a goal-directed task (Ads/Task)?

Attentional control is a potentially important variable in that it relates to effortful control of attention, something which is crucial to the understanding of devaluation

effects. However, attentional control has not yet been studied in the context of advertising.

RQ2: Will attentional control affect reaction times to exposed ads?

RQ3: What will be the role of attentional control on effects from repetition and condition?

Task Pre-Test

In order to determine the appropriate amount of time to complete the task and keep it the focus of primary attentional resources, a pre-test was conducted using 23 undergraduates from a large Midwestern university. They were randomly assigned one of the three conditions (Ads/Task, Ads/NoTask or NoAds/Task) and completed the tasks and scales to be used in the dot-probe experiment. Previous studies on distracter devaluation in advertising used either self-directed timing (i.e. Duff and Faber, 2008) or 15 seconds as the length of time participants were exposed to webpages (i.e. Duff and Faber, 2009). However, this may have been too much time, for participants and they may have begun to try to memorize content rather than responding naturally. This may be especially true for the NoTask group. This may help to explain why in a previous study the NoTask group rated the task as more difficult than the Task groups (Duff and Faber, 2009). Though devaluation effects were still found under some conditions, the devaluation effect has been found to be stronger for difficult tasks (Duff and Faber, 2008). However, the Task groups still need sufficient time to be able to be successfully complete the tasks during the allotted time. For this study, an informal pre-test among graduate students showed that 10 seconds was an appropriate amount of time to be able to answer the questions in the Task groups but it was not so much time that they were

able to study the page after answering the question. It was important to make sure that the Task groups have the ability to answer the questions and complete the task or negative effects may occur due to frustration. To be appropriate, participants in the Task groups needed to be able to correctly answer the questions and the participant's ratings for task difficulty should be higher for the Task groups than for the NoTask group. Therefore a formal pre-test was used to ensure that a 10 second exposure period was sufficient to meet these conditions given the specific webpage questions being used in the Task conditions.

Task Pre-test results

Pre-test scores indicated that the overall task difficulty ratings were not significantly different between the groups [$F(2, 20) = 2.81$, $p < .09$], though planned contrasts showed significant differences in difficulty between the Ads/Task and Ads/NoTask groups [$t(16) = -1.76$, $p < .05$] as well as between the NoAds/Task and Ads/NoTask groups [$t(15) = -2.24$, $p < .05$]. There was not a significant difference in task difficulty ratings between the two Task groups (Ads/Task and NoAds/Task) [$t(15) = .54$, $p > .5$]. Because the differences in task difficulty perception occurred between the Task and NoTask groups but not between the two Task groups, the manipulation was considered successful.

The number of questions missed on the task was coded and used to ensure that the task could be accomplished within the given time limits. There were twenty total pages viewed during the task, therefore the Task groups were asked to find the answers to twenty questions (one per page). The mean number of questions missed was 2.33 with

the number of questions missed ranging from 0-5. The Ads/Task and NoAds/Task groups did not differ on number of questions missed [t (15)= .81, p>.4, n.s.].

A second pre-test was conducted to select the brand logos to be used as ads in the study.

Logo Pre-Test

In order to be able to test distracter devaluation, brand logos created by professional logo-making software were utilized. These logos were not for existing brands. Nineteen brand logos were selected for pre-testing, with the intention of choosing eight brands to be exposed to participants during webpage tasks and eight 'foil' brands to be used as part of the testing done during the dot-probe task and brand/logo ratings in studies one and two.

For the pre-test, 23 students at a large Midwestern university participated in the logo ratings. None of the participants in the pre-test took part in any other studies or pre-tests reported here. Since the focus of study one is attention and orienting, the pretest asked participants to rate all brands on "How interesting is this logo?". Ratings were done on an 8-point scale from "Not at all interesting" to "Very interesting". The focus of study two is affective ratings, therefore all brands were also rated on "How much do you like this logo?", using an 8-point scale from "Dislike" to "Like".

Participants were randomly given one of two web addresses (rating order rotated) that contained a link to the logo pre-test. At the start of the pretest, participants were instructed to rate the logos based on just their "first gut instinct".

To meet the needs of the dot-probe task utilized in study one, logos were matched based on basic visual similarity and complexity (i.e. Ehrman et al, 2002). The dot-probe task shows people two different logos simultaneously and to be meaningful, they should not differ in potentially important ways. Therefore analyses were run on the ratings of these logo sets in order to ensure that they did not differ significantly on interest or liking. Results showed that the two logo sets did not significantly differ on either liking [$t(22)=-1.51$, $p>.15$, n.s.] or self-reported interest [$t(22)=-1.11$ $p>.25$, n.s.]. Separate analyses were also run for logos that were seen multiple times (versus their paired controls) and for logos that would be seen only once (versus their paired counterparts). There were no significant differences between logos chosen to be exposed repeatedly and their matched, unseen counterparts for either interest ratings [$t(23)=-1.59$, $p>.13$, n.s.] or for liking [$t(22)=-1.12$, $p>.2$, n.s.]. Similarly, no differences were found between logos selected to be exposed in the webpages only once and their paired, unexposed counterparts for the dot-probe task on interest ratings [$t(22)=-.09$, $p>.9$, n.s.] or liking ratings [$t(22)=-.74$, $p>.4$, n.s.]. Therefore, it was concluded that the logo sets were appropriate for use in studies one and two.

EXPERIMENT ONE- PARTICIPANTS AND PROCEDURE

Participants arrived at the study and filled out a consent form. They were then asked to complete paper and pencil questionnaires assessing their current mood state, attentional control and vision (please see figure 15 for questionnaires). It was important to ensure that participants had normal or corrected-to-normal vision and were not colorblind because the task relies on visual attention and these factors could affect responses. Participants were randomly assigned to one of three conditions (Ads/Task; Ads/NoTask; NoAds/Task) and were shown to a computer to complete the website task. The webpages with embedded ads were then shown to the participants. Webpages were taken from existing websites and test logos were placed in areas where real ads had appeared on the actual online webpage.

The Task groups were given sheets with questions indicating what information they needed to find for each page. Logos were placed in close proximity to the target information because this has been found to enhance the devaluation effect (Cutzu and Tsotsos, 2003; Duff and Faber, 2008; see figure 11 for webpage example). The NoTask group was told to look at the pages like they would any webpage that they were seeing for the first time and that they could look at whatever catches their interest. The webpages each appeared on screen for 10 seconds so that each group was exposed to the ads for the same amount of time. Previous work showed that longer amounts of time left some participants with time to answer the questions and still study the page on their own. This was evidenced in studies using longer time periods (15 seconds) by responses to task difficulty questions. Respondents in the task conditions gave very low difficulty scores,

while the NoTask group gave the highest task difficulty ratings (Duff and Faber, 2009). It has been shown that task difficulty increases the need to attend to target objects and the reduced attentional capacity for secondary tasks increases the devaluation effect for distracters (Kiss et al 2007; see Duff and Faber, 2008 for additional evidence).

The sixteen ads selected for inclusion via pre-test were brand logos created with professional logo making software but were not for real/currently existing brands. Of the eight brand logo ads used in the webpages, two ads were repeated five times, two ads were repeated three times each and four ads were repeated once. This is similar to what is used in mere exposure experiments to look at increased mere exposure effects with increased repetition. The NoAds/Task group saw the same webpages as the other two groups with the exception that they were exposed to different ads that were not be used on the dot-probe task.

The task groups gave their answers to the webpage questions immediately after exposure to each page. These answers were used as a check to ensure they had paid attention to the task. A large number of incorrect answers may indicate that the participant did not pay sufficient attention to the target information and that their attention may have been divided. Upon finishing the task or webpage exposure, all groups rated how difficult the task was and then filled out mood questionnaires (see figure 13 for web task questionnaires; see figure 15 for mood and attentional control).

Dot-probe task

Upon finishing the questionnaires, participants then performed the dot-probe task to examine attentional allocation when exposed to the test brands in the future. The study

employed a dot-probe task procedure similar to Ehrman et al (2002) and Mogg, Bradley, Hyare and Lee (1998). Participants were instructed to hit a key on the left or right side of the keyboard ('/' or 'z') as quickly as possible when they saw a red dot (the dot-probe) appear. The choice of key they hit served to indicate the location of the dot (left or right). The test administrator verbally explained and demonstrated the task. After the instructions were given, participants completed five practice trials with images that were unrelated to the brand logos. When the practice trials were completed the brand logo trials began. Participants received 32 brand logo trials.

Each trial began with a fixation cross on a white screen for 1 second. Immediately upon offset of the fixation cross, two logos appeared for 500 ms. In the conditions where people had been exposed to the test ads while viewing the website, one of the two brand logos in each dot-probe trial was a logo they had previously been exposed to and one was a visually similar logo that they had not previously been exposed to (foil logo). For each pair, one logo appeared to the left of the cross and one appeared at the right (see figure 12 for example). When the logos disappeared, a red dot appeared where one of the logos had been on the screen. The dot stayed on screen until the participant made a response or for 2 seconds, whichever occurred first. After each trial a white screen appeared for 1500 ms until the next trial began with a fixation cross. Each logo pair was presented four times. The logo exposed in the website task appeared on the left side of the screen twice and on the right side of the screen twice. For each configuration the dot-probe occurred once where the previously exposed brand logo appeared and once where the foil logo appeared. Therefore for each logo pair there were

four trials: 1) pre-exposed logo and dot-probe both on right, 2) pre-exposed logo and dot-probe both on left, 3) pre-exposed logo on right, dot-probe on left, 4) pre-exposed logo on left, dot-probe on right. Participants were randomly assigned to one of two different orders for the 32 trials. Upon finishing they were debriefed.

Apparatus and Stimuli

The dot-probe task was administered via PC in rooms that housed two people at a time with dividers between computer stations to ensure differences in conditions remained unknown to participants. Direct RT software was used in order to accurately capture reaction time to the dot-probe task to the nearest millisecond. Pictures used in the dot-probe task were all logos for fictional brands. Images were sized to 1.5" x 3" in Photoshop. Each pair contained one logo used in the website tasks and one logo that was matched for basic color and complexity but was previously unseen.[5]

Thirteen picture pairs were used in the dot-probe task. Five of the pairs contained images that are not related to the logos (i.e. flowers, faces). As in Ehrman et al. (2002), these picture pairs were used in the initial practice trials.

Conditions

Many experiments in (in)attention to advertising have a potentially serious limitation in their selection of baselines or comparison groups. Most experiments only use two conditions. In some cases they use the same task for both conditions and vary ad exposure (Burke et al, 2005; Duff and Faber, 2008), while in other studies they expose the ads to all groups and manipulate instructions (e.g. Pagendarm and Schaumberg,

[5] Note that the website logos were only previously seen for the Ads/Task and Ads/NoTask groups. The brand logos were unseen by the NoAds/Task group.

2001). In both cases this leaves no true baseline rating group. This study employs three conditions: 1) a group which performs a goal directed task while exposed to the ads; 2) a group which performs a browsing task while exposed to the ads; and 3) group which performs a goal directed task while viewing different ads, thus seeing the ads for the first time during the dot-probe reaction time measurement.

Measures

Participants were assigned to be in one of the three *conditions:* Ads/Task, Ads/NoTask or NoAds/Task. It is expected that the Ads/Task group will show devaluation effects due to utilization of top-down attention during the ad exposure, the Ads/NoTask group should show positive exposure effects due to employing passive, bottom-up attention during ad exposure and the NoAds/Task group should serve as a control group as they will rate all ads without having been previously exposed to them. *Repetition*, a within subjects variable, was manipulated by showing ads once, three times or five times. For the ad exposure groups two ads were shown five times, two ads were shown three times and four ads were shown once. Each webpage contained one test ad and therefore participants were exposed to a total of 20 webpages. *Perceived intrusiveness* of the ads was measured by a scale developed specifically to measure perceived advertising intrusiveness (Li, Edwards and Lee, 2002). It consists of rating each ad on seven items (distracting, disturbing, forced, interfering, intrusive, invasive and obtrusive). Each attribute was assessed along a seven-point scale anchored by 'strongly agree' to 'strongly disagree'.

Attentional control was measured via a scale that has been successfully used in previous studies (Derryberry and Reed, 2001; Verwoerd, deJong and Wessel, 2008) and has shown to be valid and reliable in non-clinical samples. This scale has twenty items (nine of which are reverse coded) and uses a four-point scale anchored from 1=almost never to 4=almost always (see figure 15 for scale items).

Mood was measured using the mood scales employed in Monahan, Murphy and Zajonc, 2000. This involved two 10-point scales in response to the question, "What is your current mood?", one anchored by 'Happy'-'Sad' and the other by 'Upbeat'-'Depressed'.

Other measures were included in order to better understand respondents' self-reported experience of the task. *Task difficulty* was measured by asking how difficult they thought the task was on a seven-point scale anchored 'Not at all difficult'-'Very difficult' (see table 1 for scale reliabilities for experiment one)

Subjects

Participants in the first study were 68 undergraduates from a large Midwestern university who had not participated in any pre-test. They completed the study in exchange for course extra credit. Two participants were eliminated due to self-reported problems with vision. Additionally, one participant had a large number of blank answers for the website task and one participant only hit one key for all trials of the dot-probe task. Each of these participants was dropped from the study and their data was not used. All results are from the remaining 64 participants (Ads/Task, N=21; Ads/NoTask, N=21; NoAds/Task, N=22).

EXPERIMENT ONE- RESULTS

An analysis of background data showed that the participants read online newspapers an average of 3.2 times each week, ranging from 0-12 times per week. This online news reading behavior was not different between groups [$F(2, 61)=.68$, $p> .5$]. Participants also reported that they spend an average of 16.5 hours online each week (excluding going online to use e-mail; range 4-60). This reported Internet use did not differ between groups [$F(2, 61)= .061$, $p>.9$].

Mood was assessed twice for all participants; once before the task and again after completing the website activity (but before the dot-probe task). Previous work has indicated that being exposed to repeated items may increase positive mood and that increase in mood leads to diffuse positive rating effects (Monahan, Murphy and Zajonc, 2000). Therefore mood was measure here to rule out this potential rival explanation. No mood differences were present in this study. After completing the website activity, the three groups did not significantly differ on their mood [$F(2, 60) = 1.59$, $p>.2$, n.s.]. Additionally, mood after completing the task was not significantly different than mood before the task [$F(2,59) = 1.30$, $p>.8$, n.s.] for any group. Therefore mood did not significantly change due to seeing repeated ads in either task or non-task groups, and the findings here are not due to differences in mood between any of the groups.

Task difficulty ratings were assessed to ensure that the manipulation worked as intended. There were significant differences between groups [$F(2, 61)= 5.26$, $p< .01$] on ratings of difficulty. Specifically, planned contrasts revealed that there were significant differences between the Ads/Task and Ads/NoTask group [$t(61)=-3.19$, $p< .01$] as well

as between the NoAds/Task and Ads/NoTask group [t (61)=-2.11, p< .05]. Thus, as expected, people who had a task to find questions on each web page rated their participation to be more difficult than those who just looked at the webpages. There was not a significant difference between the two Task groups [t (61)=-1.1, p> .25, n.s.]. There was also no difference between Task groups in number of questions that they did not answer correctly [t (41)= .32, p>.7, n.s.). The average number of questions missed was 3.54 with a range of 0-6. Therefore, the manipulation appears to have worked as intended.

Analysis

For responses to the dot-probe reaction times under 200ms and over 1500ms were considered outliers (Mogg et al, 1998) and likely due to factors such as inattention, pressing the button in anticipation or some other factor that would not reflect a meaningful reaction score. Seven such scores were identified as outliers, and data from trials with these errors was excluded. In addition, trials in which the participant pressed the incorrect button (corresponding with the side of the screen that the dot did not appear on were excluded. Errors were found in 29 trials and were discarded. These excluded trials accounted for 1.42% of all trials. All results reported here are from the remaining trials.

Difference scores were calculated for each participant. These difference scores were calculated by subtracting reaction times when the dot-probe appeared behind the test ads (those previously appearing in the webpages in the Ad conditions) from the reaction times when the dot-probe appeared behind the unexposed ad. The unexposed

ads were similar in appearance to the matched exposed ads but did not appear on any of the webpages (i.e. Ehrman et al, 2002; Mogg et al, 1998). Difference scores in this study are considered to reflect orienting (positive difference) or avoidance (negative difference) (Duka and Townshend, 2004). The NoAds group had previously never been exposed to either the test ad or its matched foil and therefore should have very low difference scores. These difference scores can also serve as baselines for the Ad exposure groups.

Analysis Strategy

To test the hypotheses H1-H3, data was run as an ANOVA with condition (Ads/Task, Ads/NoTask or NoAds/Task) as a between-subjects independent variable and reaction time difference scores for the ads as the dependent variable.

To look at repetition for hypothesis four (H4) and research question one (RQ1), a repeated-measures ANOVA was run with condition (Ads/Task, Ads/NoTask or NoAds/Task) as a between-subjects independent variable and repetition of exposed ads (five, three, or one exposures) as a within-subjects variable. Reaction time difference scores for ads at each level of repetition served as the dependent variable.

For research question two (RQ2) data was run as an ANOVA with attentional control (high or low) and condition as between-subjects factors and reaction times for exposed ads as the dependent variable. Research question three (RQ3) employed a repeated-measures ANOVA with attentional control and condition as between-subjects factors and reaction time difference scores for ads repeated once, three or five times as the within-subjects dependent variable.

H1: The group that is exposed to the ads but does not have a goal-directed task (Ads/NoTask) will show faster reaction times to previously exposed ads in the dot-probe task compared to the group that is not exposed to the ads but does have a goal-directed task (NoAds/Task)

There was a significant overall main effect of reaction time by condition [F (2, 61)= 5.06, $p < .01$; $\eta^2 = .14$]. However, the difference between the Ads/NoTask ($M_{RTDifference}$= 21.20) and NoAds/Task groups ($M_{RTDifference}$= 11.35) was not significant (SE=7.65, $p > .2$) though means were in the predicted direction in that the Ads/NoTask group (fluency) had higher reaction time difference scores than did the NoAds/Task group (control). However, H1 was not supported.

H2: The group that is exposed to the ads and does have a goal-directed task (Ads/Task) will show slower reaction times to previously exposed ads in the dot-probe task compared to the group that is exposed to the ads but does not have a goal-directed task (Ads/NoTask)

Pairwise comparisons showed a significant difference between the Ads/NoTask group ($M_{RTDifference}$= 21.20) and the Ads/Task group ($M_{RTDifference}$= -3.26) (SE=7.74, $p < .002$). This difference was in the predicted direction with the Ads/Task (devaluation) group showing lower means than the Ads/NoTask (fluency) group (see table 2 for means) and therefore H2 was supported.

H3: The group that is exposed to the ads and does have a goal-directed task (Ads/Task) will show slower reaction times to previously exposed ads in the dot-probe task compared to the group that was not exposed to the ads but did perform a goal-directed task (NoAds/Task)

As stated in the results for hypothesis one, there was a significant main effect of condition on reaction time differences [F (2, 61)= 5.06, $p < .01$]. Planned contrasts revealed a significant difference between Ads/Task ($M_{RTDifference}$= -3.26) and NoAds/Task

($M_{RTDifference}$= 11.35) group [SE=7.65, p< .05, one-tailed]. Means were in the predicted direction, the Ads/Task (devaluation) group had lower reaction time differences than did the NoAds/Task (control) group. Hypothesis 3 is supported.

H4: The group that is exposed to the ads and does not have a goal-directed task (Ads/NoTask) will show faster reaction times to previously exposed repeated ads compared to non-repeated ads

There was not a significant main effect of repetition on reaction time differences [F (2, 122) =2.51, p< .09] for the Ads/NoTask group. There was also no interaction between repetition and condition [F (2, 122)= .09, p> .9]. See table 3 for means.

However, planned contrasts revealed significant differences between Ads/Task and Ads/NoTask groups for ads that were repeated generally (meaning repeated three or five times) versus those shown only once [t (61)= 2.31, p< .05]. Planned contrasts were also conducted separately for each specific number of repetitions. The contrasts revealed that there were no significant differences between groups for ads repeated three times but there were significant reaction time differences between Ads/Task and Ads/NoTask groups for ads repeated five times [t (61)= 2.19, p< .05]. There were no other significant differences, though planned contrasts also revealed a marginal difference for ads shown only once [t (61)= 1.97, p< .06]. Therefore this hypothesis is partially supported.

RQ1: What will the effect of repetition of ads be on reaction times for the group that is exposed to the ads and does have a goal-directed task (Ads/Task)?

There was not a significant main effect of repetition on reaction time differences [F (2, 61) =2.51, p< .09]. There was also no interaction between repetition and condition [F (2, 60) = .09, p> .9]. However, as reported in results for hypothesis four, planned

contrasts revealed significant differences between Ads/Task (devaluation) and Ads/NoTask (fluency) groups for ads that were repeated generally [t (61)= 2.31, p< .05]. Planned contrasts revealed that there were no significant differences between groups for ads repeated three times but there were significant reaction time differences between Ads/Task and Ads/NoTask groups for ads repeated five times [t (61)= 2.19, p< .05]. However, planned contrasts also revealed a marginal difference for ads shown only once [t (61)= 1.97, p< .06]. While means show that the Ads/Task group has lower reaction time means to ads that were previously shown, the amount of repetition of the ad does not appear to have a consistent effect on reaction time differences between groups (see figure 3).

RQ2: Will attentional control affect reaction times to exposed ads?

A median split was performed on attentional control scores (four-point scale; higher numbers indicate low control). The mean score on the attentional control scale for participants with high attentional control was M=2.45 and low control M=3.00. The mean scores for these groups were significantly different from each other, [t (62) = -10.40, p< .001].

Due to the limited number of participants, cell size was small (10 or 11 participants). Therefore, in order to increase the power to detect differences, significance will be reported for results at p< .10. There was not a significant interaction between attentional control and condition on reaction time differences for all exposed ads [F (2, 58)=2.09, p>.13, n.s.]. However, there was a significant interaction between attentional control and condition on reaction time differences for ads that were repeatedly exposed

[F (2, 58)=2.77, p<.08]. See table 4 for means. Therefore it may be important to look at the role of attentional control by condition and repetition.

RQ3: What will be the role of attentional control on effects from repetition and condition?

Results showed a significant three-way interaction between condition, attentional control and repetition [F (4, 116)= 2.18, p< .08]. See table 5 for means; also see figure 4. Results indicate that there is an effect of attentional control on repetition and condition, such that for those with low attentional control ads that are repeated show faster reaction time effects when there is no goal-directed task during exposure. However, when there is a goal-directed task at exposure, only ads shown once show slower reaction times. For those high in attentional control there is a very different pattern of results. Ads that are shown once appear to differ little in reaction times by condition. However, ads that are repeated three or five times show no facilitative effects of being exposed in the NoTask group but show slowed reaction times when exposed under goal-directed task.

EXPERIMENT ONE- DISCUSSION

This study represents the first known test of devaluation on future attention for a non-target stimulus. Previous work in perceptual fluency and mere exposure has failed to note the differences that a goal-directed task may have on attention and what future ramifications this can have for attention to subsequent exposure to brands. Study one looked at the role of exposure motivation on the processing and attention to brands in non-focal ads. More specifically this experiment looked at future attentional allocation of exposed ads under two differing task conditions. Devaluation has been proposed to occur when one is involved in a goal-directed task using most of one's attentional resources. Devaluation initially occurs in order to lower the likelihood of attending to an exposed item when it is re-encountered (in order to not waste attentional resources on an object that has already been deemed not part of the goal object). The negative tag associated with the non-goal object may, however, remain beyond the time of the initial search. As a result, it may influence attention to the tagged object at a later point in time. This expectation had not previously been explicitly tested in either the psychology or communication literature. Work in perceptual fluency proposes the opposite outcome will occur in a non-task situation. More specifically, it states that when an object is previously exposed it will be more easily processed in the future. A dot-probe task was used to examine what happens in subsequent exposure after one has been in both task and no-task situations.

This experiment showed that one's goal at the time of exposure does make a difference for future interactions with an exposed ad. Particularly, the group that was

exposed to the ads while engaged in a goal-directed task (employing top-down attention) showed slower reaction times to the previously exposed ads compared with participants who were exposed to the same ads for the same amount of time but did not have a task. Similarly, the task group exposed to the ads had slower reaction times when compared with participants who performed the same task but was not previously exposed to the ads.

Together, these findings provide evidence that if exposure to a brand logo or ad occurs when one is engaged in an unrelated task, it can harm attention to that brand logo in subsequent exposures. This decreased attentional response could have very negative ramifications when considering that many consumers are exposed to ads without anticipating an immediate or direct response. The next interaction with the brand logo is often on a cluttered store shelf. It is possible that if initial exposure occurs in a task situation, it could negatively influence noticing the brand on the shelf. Given the brief time consumers spend in front of store shelves before making a purchase decision, this could adversely impact sales. Future work should look at the length of time a negative tag may last and if lowered attentional responses can occur in a cluttered store shelf environment.

Results for the group that was exposed to the ads but did not have a goal-directed task were less clear-cut. They were significantly faster at responding to previously exposed ads than was the group that was exposed while engaged in a task. However, they were not significantly faster at responding to the exposed logo ads than the group that had not previously been exposed to the ads (though means did show some degree of faster reaction times). Therefore, while distracter devaluation clearly seems to occur

when exposure occurs in an unrelated task environment, it is not clear if perceptual fluency is the outcome of exposure to ads while not engaged in a task. While directionally correct, the results from study one do not support mere exposure or perceptual fluency hypotheses.

Repetition has also been posited to enhance the effects of exposure. In the case of mere exposure it has been said to increase positive effects (i.e Zajonc, 1968; 2000). For devaluation there has not been any specific past research or theoretical predictions about possible effects of repetition. In this study a distracter effect was found for ads that were repeated five times. This finding, however, is confounded by a distracter effect that approached significance for one exposure, but had non-significant effects at three exposures. Therefore no meaningful pattern of effects for repetition were found. It should be pointed out that the repetition occurred all within one viewing session (massed exposure). This is the same thing that is done in many mere exposure experiments, but suffers somewhat from external validity

Along with examining future attention via the dot probe task, a secondary purpose for study one was to pre-test the scales for attentional control and perceived intrusiveness to ensure that they would be useful measures with this population. Both the pre-test and experiment one confirmed that the scales show good reliability and provide the ability separate participants to high and low groups on attentional control and perceived ad intrusiveness.

Previous studies in devaluation have shown differences in this effect based on amount of attention paid to the task (Duff and Faber, 2009) and on trial by trial

differences in focus on the goal object (Kiss et al, 2007). Attentional control is a form of inhibitory (executive) control (Derryberry and Reed, 2001). In this study there were no specific hypotheses about the effect of attentional control on devaluation. It does, however, make sense to have attentional control matter for devaluation. Devaluation is dependent on top-down attention and occurs when an object is deemed irrelevant to the goal object. Attentional control would be related to the ability to focus on the task of attending to the goal object. Therefore, attentional control should plausibly have effects on devaluation.

Though there were not enough participants to fully look at the effects of attentional control in study one, there was still some evidence that differences in this variable for participants led to differing effects of exposure on the various groups. Particularly there were differences of effects of repetition by condition with participants who had high attentional control showing devaluation effects for brand logo ads repeated three times and five times but not for ads seen only once. This may suggest that for those with high attentional control, repeated exposure may be necessary to sufficiently tag ads as inhibited and for devaluation to occur. However, for people with low attentional control, a single exposure in a task situation may create devaluation, but additional exposures make the ad seem more familiar and may work to negate the devaluation effect because they are less focused on the task. Interestingly, this was reversed for participants with low attentional control, where devaluation occurred only for ads shown once, but not for ads that were repeated.

In the Ads/NoTask group there were no positive attentional effects for participants with high attentional control, but means did show faster reaction times with more frequent exposure for those who have low attentional control. This would seem to suggest that for those with high attentional control devaluation is enhanced by repetition, but mere exposure does not occur for those people. On the other hand, for those with low attentional control, once is sufficient for a distractor effect, but future exposures make the ad more noticed, creating more of a mere exposure effect even in a task situation. In the task situation, repetition enhances the mere exposure effects for ads. In order to better explore the effect of attentional control on ad exposure, repetition and motivational task, a second study was conducted.

Experiment two was conducted with the same repetition pattern and basic exposure manipulation as study one. However, rather than looking at future attention, study two examined affective effects on the brand as well as further exploring the possibility that other variables may moderate the effect of repetition.

EXPERIMENT TWO- LITERATURE REVIEW

Study one showed that exposure to brands that were not part of a top-down attentional goal led to participants showing lowered future attention to these brands. Additionally, study one also provided a preliminary examination of the possibility that individual differences in attentional control may lead to differing effects of these goals. Potentially this could have ramifications not only for devaluation but also for other outcomes that may be dependent on attention or motivational goals. Therefore it is crucial to be able to better study this variable. The role of repetition was shown to have different results than expected. Therefore repetition and attentional control were chosen for further exploration in study 2. Both were examined to see their impact on a more typical mere exposure and devaluation measure, namely, liking. A measure that has not yet been studied in terms of devaluation, but is of great interest in advertising, trial intent, was also examined in study two.

Study two was designed to look at the effect of repetition on the distracter effect as well as to better determine exactly what causes the distracter effect. New work in devaluation has shown that distracters judged most negatively occurred on trials when attention is biased toward target events. When attention was less focused (more diffuse) distracters were evaluated less negatively. This was used as evidence that the specific amount and focus of attention is tied to affective evaluation (Kiss et al, 2007).

It seems plausible that there may also be individual differences in attentional capacity and that this may lead to some systematic differences in distracter ratings. Those individuals that are consistently able to focus their attention and exert that control

would more likely show a stronger devaluation effect than those that are consistently less focused.

Study one indicated that attentional control may be a potentially important variable for understanding devaluation in advertising, but due to low numbers of participants, a more definitive conclusion could not be reached. Study two is designed to try to provide a more definitive answer. The same scale for attentional control was used in study one was also used in study two (Derryberry and Reed, 2001). This scale measures individual differences in the executive system that carries out voluntary attentional responses. This directly relates to effortful control and matters for goal directed (top-down) attentional tasks.

While attentional control may help to shed light on individual differences that may lead to differing devaluation effects it is also important to study devaluation in context of the literature on avoidance. The majority of the literature on avoidance has looked at the antecedents to avoidance. However, these studies have also primarily been based on retrospective self-report. Therefore it is important to study previously found avoidance antecedents to see if they also predict devaluation effects. This may be particularly important in helping to dissociate devaluation from the previous studies of avoidance, which have primarily focused on explicit, conscious avoidance.

Antecedents to avoidance- Perceived Intrusiveness

As noted previously, Speck and Elliot (1997) found that search hindrance is a significant predictor of ad avoidance in all media. A similar variable, perceived goal impediment, was found recently to be the most significant antecedent explaining ad

avoidance on the Internet (Cho and Cheon, 2004). Edwards, Li and Lee (2002) also found that perceived intrusiveness leads viewers to avoid ads. Though there are myriad other possibilities of why consumers avoid ads, interruption is the most widely studied in the literature and the process of avoidance will be discussed in terms of interruption. However, it is important to keep in mind that other predictors could lead to very different outcomes (and models).

Figure 18 contains the models of advertising avoidance created thus far. The most striking element about all of these models is that advertising avoidance is the endpoint. In other words, the majority of research uses advertising avoidance as a dependent variable and does not look to see if in turn, it may affect more distal variables. If advertising avoidance has effects of its own, then there may be feedback effects (such as lowered future attention) or cumulative effects. Therefore it seems imperative that advertising avoidance be considered in terms of the possible implications and effects that it can lead to, and not just what causes it.

Variables such as consumer goal or motivations and the medium that the ad is placed in need to be more fully explicated and considered in studies that look at avoidance (Elliot and Speck, 1998). There have been some studies that look at exposure in terms of attention and have found links between that exposure and a behavior (e.g. adolescent smoking; Botvin, Goldberg, Botvin and Dusenbury, 1993). This may also be true of avoidance. Risky products elicit attention (Lang, 2006). Perhaps ads that feature risky products are then more difficult to immediately avoid and therefore are attended to and processed. It may be this 'unwilling' attention, or inability to avoid that leads to

message disparagement for some audience members. Indeed, those that have an easier time focusing on a task would seem to be less likely to have a problem with the ads intruding and may lead to less message disparagement.

Other antecedents to avoidance that have been studied include credibility, interactivity and risk taking propensity, perceived ad clutter and irritation and perceived goal impediment (including search hindrance and distraction). Ad clutter in general (quantity, intrusiveness and competition of ads) and the role of congruence and cognitive intensity have also been shown to lead to avoidance (Jin and Villegas, 2007; Cho and Cheon, 2004; Ha, 1996; Edwards, Li and Lee, 2002). Intrusiveness may be a key higher order component since it has been shown to occur when perception of other antecedents (e.g. perceived clutter, goal impediment) are present. Therefore measuring perceived intrusiveness should be a good indicator as to whether these previously found antecedents to avoidance are occurring and if this may be an alternative explanation to distracter devaluation.

Intrusiveness has been the most studied of the variables that lead to ad avoidance. Intrusiveness has been defined as "a psychological reaction to ads that interferes with consumers' ongoing cognitive processes" (Li, Edwards and Lee, p.39, 2002). Consumers are more likely to engage in avoidance when an ad is perceived as intrusive. Intrusiveness can be exacerbated by time constraints or when consumer goals are interrupted by ads, such as when search is hindered. Intrusiveness has been thought to be the mechanism by which ads can cause annoyance or other negative emotional reactions (Li, Edwards and Lee, 2002; Edwards, Li and Lee, 2002).

A scale was designed specifically to measure perceived advertising intrusiveness and therefore predict advertising avoidance. The perceived intrusiveness scale consists of seven items (distracting, disturbing, forced, interfering, intrusive, invasive and obtrusive) each measured on a seven-point scale anchored by 'strongly agree' to 'strongly disagree' (Li, Edwards and Lee, 2002). Previous studies of perceived intrusiveness have been limited to examining explicit instances of avoidance. Therefore, it is important to test if perceived intrusiveness occurs in avoidance situation that do not involve conscious recognition (and punishment) of the ads. If this does, then annoyance might serve as a rival hypothesis to a distracter devaluation explanation for the results of prior studies. If perceived intrusiveness does not impact distracter devaluation, it may be that the literature on avoidance needs to be expanded such that antecedents to avoidance are categorized differently for conscious and nonconscious instances of avoidance.

As predicted in the literature, the greater the perceived intrusiveness, the more avoidance that should occur and this should lead to more negative ratings for the avoided ads should occur. Past research has looked at intrusiveness as a general measure for all ads seen (i.e. Li, Edwards and Lee, 2002) or as a measure of a specific ad's intrusiveness when only one ad is seen (Edwards, Li and Lee, 2002).

It should be noted that the previously unseen ads being rated should not show a negative effect if this is purely an avoidance effect (not a mood or task effect). People who are able to focus more specifically and consistently on the task may actually be less likely to rate the ads as intrusive because they were more efficient in attentional control. This is particularly true in goal-directed situations leading to distractor devaluation.

Because participants high in attentional control may be less aware of the distracting items, this may cause them to rate them as less intrusive. However, these people should have inhibited them more strongly and therefore may rate the distracters more negatively. Therefore it is important to look at perceptions of intrusiveness in conjunction with the scores in attentional control, in order to more fully understand distracter devaluation effects.

One final contribution of study two is a change in number of conditions. Study one used the conditions of Ads/Task (devaluation), Ads/NoTask (fluency) and NoAds/Task (control for devaluation group). While these three groups enabled more comparisons than previous work in devaluation which only compared two groups (i.e. Duff and Faber, 2008), it was still less than ideal. For full and complete comparisons, a fourth group should also be included. This would be a NoAds/NoTask group. This group was added to the condition manipulation in study two in order to provide a proper NoAds baseline for the Ads/NoTask condition. Including this condition was not possible in study one due to a limited number of available participants.

Hypotheses

The conditions or motivations for avoidance may moderate the outcome of advertising exposure. As discussed earlier, the majority of previous work examining effects of exposure on affective evaluations of ads have hypothesized mere exposure or fluency effects. These studies have generally been designed in such a way as to permit bottom-up processing to occur and, as predicted, have tended to find positive affective ratings for the exposed brands. Therefore, it would seem likely that when participants are

exposed to brands on a webpage without having any direct top-down task (are told to look at the page like they would any new webpage and to look at whatever interests them) that these brands would show effects similar to previous work. In other words, such a situation should produce positive affective ratings for the exposed brands.

H1a: The group that is exposed to the ads but does not have a goal-directed task (Ads/NoTask) will have higher ad liking ratings for exposed ads compared to the group that does not have a task and is not exposed to the ads (NoAds/NoTask)

Studies looking at mere exposure and perceptual fluency in terms of incidental exposure have also shown that incidental exposure leads to a higher likelihood of an exposed product being chosen for inclusion on a list of items to buy (Shapiro, MacInnis and Heckler, 1997). Therefore it would seem likely that trial intent ratings would also be higher for brands exposed on webpages without a goal-directed task.

H1b: The group that is exposed to the ads but does not have a goal-directed task (Ads/NoTask) will have higher trial ratings for exposed ads compared to the group that does not have a task and is not exposed to the ads (NoAds/NoTask)

Repetition has previously been shown to increase liking in mere exposure studies (e.g. Zajonc, 2001; 1968). It also seems that this effect would extend to behavioral intent as well. Therefore,

H2a: The group that is exposed to the ads but does not have a goal-directed task (Ads/NoTask) will show higher brand logo liking ratings for repeatedly exposed ads compared to ads exposed once

H2b: The group that is exposed to the ads but does not have a goal-directed task (Ads/NoTask) will show higher trial intent ratings for repeatedly exposed ads compared to ads exposed once

Hypothesis three addresses the group that is exposed to the ads but has to find information that is on the webpage that the ads appear on (Ads/Task). This is the situation that produces distractor devaluation. Therefore this group should show lowered ratings for brand logo ad liking. The Ads/Task group should also show lowered trial intent because ignoring has been shown to lower ratings of trustworthiness (Raymond, Fenske and Westoby, 2005). This should be true both when compared to people who see the ads in a NoTask context and to those who do the task without being exposed to the ads.

H3a: The group that is exposed to the ads while engaged in a goal-directed task (Ads/Task) will show lower brand logo ad liking ratings for exposed ads compared to the group that is exposed to the ads and does not perform a goal-directed task (Ads/NoTask)

H3b: The group that is exposed to the ads while engaged in a goal-directed task (Ads/Task) will show lower trial intent ratings for exposed ads compared to the group that was exposed to the ads and did not perform a goal-directed task (Ads/NoTask)

Hypothesis four also addresses the distracter devaluation group, the group that is exposed to the ads while having to find information that is on the webpage (Ads/Task) compared to other groups. Along with lower brand ad liking, the Ads/Task group should also show lowered trial intent because ignoring has been shown to lower ratings of trustworthiness (Raymond, Fenske and Westoby, 2005). Thus, this group should have lower trial intent for exposed ads compared to those who do the task without being exposed to the ads or those exposed to the ads without doing a task.

H4a: The group that is exposed to the ads while engaged in a goal-directed task (Ads/Task) will show lower liking ratings for exposed brand logo ads compared to the group that was not exposed to the ads and performed a goal-

directed task (NoAds/Task)

H4b: The group that is exposed to the brand logo ads while engaged in a goal-directed task (Ads/Task) will show lower trial intent ratings for exposed brands compared to the group that was not exposed to the logo ads and performed a goal-directed task (NoAds/Task)

RQ1: What will be the effect repetition of ads on ad liking and trial intent for the group that is exposed to the ads and does a goal-directed task (Ads/Task)?

Recent work in distractor devaluation has shown that distractors are judged most negatively on trials when attention is biased toward target events. When attention was less focused- more diffuse- distracters were evaluated less negatively (Kiss et al, 2007). Because attention and ratings were also shown to vary by individual trial, it seems plausible that there may be differences in the attentional capacity of individuals and that this may lead to differences in distracter ad ratings. Those individuals that are consistently able to focus their attention and exert attentional control would more likely show a stronger devaluation effect than those that are consistently less focused.

H5a: Within the group that is exposed to the ads while engaged in a goal-directed task (Ads/Task) those who have high attentional control (compared to those with low attentional control) will show lower liking ratings for previously exposed brand logo ads

H5b: Within the group that is exposed to the ads while engaged in a goal-directed task (Ads/Task) who have high attentional control (compared to those with low attentional control) will show lower trial ratings for previously exposed brands

RQ2: In the group that is exposed to the ads while engaged in a goal-directed task (Ads/Task) will those high in attentional control show different effects of repetition on liking and trial intent compared to those with low attentional control?

Interestingly, while the efficiency of target selection had an impact on ratings of distractors, it had no impact on ratings of targets (Kiss et al, 2007). Therefore, measuring attentional control may shed important light on individual differences in effects of exposure for the groups that are exposed to the ads without being given an explicit attentional goal.

RQ3: Within the group that is exposed to the ads and does not have a goal-directed task (Ads/NoTask) what will be the effect of high attentional control (compared to those with low attentional control) on brand logo ad liking and trial intent ratings for exposed ads?

RQ4: Will those high in attentional control show different effects of repetition on liking and trial intent compared to those with low attentional control in the group that is exposed to the ads and does not do a goal-directed task (Ads/NoTask)?

Participants who are high in attentional control should be able to better concentrate on a goal-directed task and should more strongly inhibit non-goal (distracting) items. Because these items are less likely to be allowed to interfere for these high control individuals, they should be perceived as less intrusive in the task. However, because they are inhibited more effectively, this should also lead to lowered affective ratings.

H6: High attentional control (compared to low attentional control) will lead to lower perceived intrusiveness ratings

Previous work in antecedents to avoidance have primarily relied on self-report of past, conscious avoidance experiences. This past literature has found an important role for perceived intrusiveness in the avoidance of exposed ads. However, this has been primarily studied as a general measure for all ads encountered as opposed to specific ads that are avoided (Li, Edwards and Lee, 2002; Morimoto and Chang, 2009). Because this

has been found to be important in past work on ad avoidance, it should be studied here in order to help connect or differentiate the types of avoidance. However, because it has been used as a general measure in the past and because it has only been found in retrospective self-report or for ads that were consciously noted, it is not possible to know how it may operate in the avoidance being studied in this experiment:

RQ5: What will be the effects of high perceived intrusiveness (compared to low perceived intrusiveness) for logo ad liking and trial intent?

EXPERIMENT TWO- PARTICIPANTS AND PROCEDURES

Participants in study two were 197 undergraduates from a large Midwestern university who had not participated in any pre-test or in study one. They completed the study in exchange for course extra credit. Responses from a few participants were dropped because of various concerns. Four participants reported that they had problems with vision. An additional two participants had a large number of incorrect/blank answers for the website task, suggesting that they may not have sufficiently attended to the task that they were given. One participant reported an extreme dislike for all advertising and indicated that he would never look at an online news website without using ad-blocking software. Finally, two participants repeatedly talked during the task and the administrator noted that they had compared answers. The data from all nine of these participants were excluded from the analyses. All results reported here are from the remaining 188 participants. The breakdown of conditions is: NoAds/Task N=47; Ads/Task N=46; Ads/NoTask N=47; NoAds/NoTask N=48).

The participants reported that they read online newspapers an average of 2.95 times each week. This did not differ significantly by condition, [$F(3, 183)=2.31$, $p<.08$, n.s.]. Participants spent an average of 15.73 hours online each week (excluding e-mail), this also did not differ significantly by condition, [$F(3, 183)=2.53$, $p<.06$]. However, both variables approached significance and internet use has been shown to matter in the devaluation effect in past work (Duff and Faber, 2008). Both variables may make a difference in attention to online news environments. Thus, a conservative approach

seemed appropriate here so analyses were conducted with both internet use and reading online newspapers included as covariates.

Procedure

Participants arrived at the study and filled out a consent form. In a procedure similar to study one, they were then asked to complete paper and pencil questionnaires assessing their current mood state, attentional control and vision (please see appendices 5-7 for questionnaires). Participants were randomly assigned to one of four conditions (Ads/Task; Ads/NoTask; NoAds/Task; NotAds/NoTask) and were shown to a computer to complete the website task. The webpages with embedded ads were then shown to the participants. Order of the webpages (and tasks) was varied to ensure no order effects. All webpage tasks and stimuli were identical to study one.

After completing the task, participants were directed to an online survey where they saw sixteen brand logos, eight of which were utilized as exposed logos for webpages in the previous task and eight of which were foil logos, previously unseen by any participant. Participants were randomly assigned to one of two rating orders, to ensure that any effects found here were not due to the order in which the brand logo ads were rated.

Each logo was rated on two 8-point scales anchored by either Dislike-Like or Definitely would not try-Definitely would try. Previous work on devaluation has found significant effects of devaluation, however the differences in means were rather small and tended toward the midpoint (i.e. Duff and Faber, 2008). This is not surprising for stimuli which are previously unknown by the participants and contain little meaning (brand logo

ads for unknown brands). Because this effect may be small in terms of differences in means and because it also is posited to occur without explicit memory of the exposure, the previous 7-point scale was changed to be an 8-point scale. Utilizing a scale without a midpoint forces participants to choose to be either more negative or positive in terms of their liking and trial intent ratings, something which may be crucial as we tease out negative and positive exposure effects. Before the rating task began, respondents were instructed to not evaluate or judge the brands, but to simply rate them based on their "initial gut reaction".

Measures

Participants were assigned to be in one of the four *conditions:* Ads/Task (devaluation), Ads/NoTask (fluency), NoAds/Task (devaluation control) or NoAds/NoTask (fluency control). *Repetition*, a within-subjects variable, was manipulated by showing ads either once, three times or five times. Each participant saw one page with a target ad (or other ad for controls) therefore each participant saw 20 webpages. *Perceived intrusiveness* of the ads was measured by a scale developed specifically to measure perceived advertising intrusiveness (Li, Edwards and Lee, 2002). This scale consists of seven items (distracting, disturbing, forced, interfering, intrusive, invasive and obtrusive) each measured on a seven-point scale anchored by 'strongly agree' to 'strongly disagree'. Scores on the seven items were summed to form the perceived intrusiveness scale. A low score indicates low perceived intrusiveness of ads, while a higher score indicates greater perceived intrusiveness of ads.

Attentional control was measured via the same scale used in study 1. This scale has twenty items, nine of which are reverse coded. See figure 15 for scale items.

Mood was measured by answering the question "What is your current mood?" on two scales, adopted from the mood scales employed in Monahan, Murphy and Zajonc, 2000. The responses were measured by two 10-point scales, one anchored by 'Happy'-'Sad' and the other by 'Upbeat'-'Depressed'.

Other measures were included in order to better understand respondents' self-reported experience of the task. *Task difficulty* was measured by asking how difficult they thought the task was on a seven-point scale anchored 'Not at all difficult'-'Very difficult'. *Task focus* was measured on a nine-point scale anchored 'Focused completely on the task'-'Not at all focused on the task'.

The primary dependent variables for study two were brand logo liking and trial intent. *Ad liking* was measured by the question "Based on your initial reaction how much do you like this logo?" (Dislike Very Much- Like Very Much; 8-point scale). *Trial intent* was measured by the question "How likely would you be to try a brand that used this logo?" (Would Not Try- Definitely Would Try; 8-point scale). Once again, 8-point scales were used to force respondents to select the direction to which they leaned.

Manipulation Check

Task difficulty ratings were significantly different between groups [$F(3, 183)=8.50$, $p<.001$], (see table 7 for means). As expected, those in conditions that required them to complete an assigned task rated the experiment as more difficult than those without assigned tasks to complete. Furthermore, among those who had to

complete a task there was no significant difference on difficulty rating between people who were and were not exposed to ads. Pairwise comparisons revealed that significant differences occurred only between difficulty ratings from groups that performed the task versus those that did not ($M_{adsTask}$=3.36, $M_{noAdsTask}$=3.70, $M_{adsNoTask}$=2.60, $M_{noAdsNoTask}$=2.52). Task difficulty ratings from the Ads/Task group were significantly higher versus Ads/NoTask (SE=.281, p<.001) and NoAds/NoTask (SE=.283, p<.005) but as expected, were not significantly different than the other group that performed a goal-directed task NoAds/Task (SE=.284, p>.2, n.s.). Similarly the groups that did not perform a task were similar in task difficulty ratings, Ads/NoTask versus NoAds/NoTask (SE=.281, p>.8, n.s.) but had significantly lower difficulty ratings than the group that did not see the ads but did perform a task, NoAds/Task (SE=.281, p<.001).

Additionally, there was no difference between the groups assigned a task (Ads/Task and NoAds/Task) on the number of questions missed in the task [t (91)=1.24, p>.2, n.s.]. The average number of questions missed was 3.67 ($M_{adsTask}$=3.52, $M_{noAdsTask}$=4.11) with a range of 0-7. Therefore the manipulation appears to have worked as intended.

Mood

To ensure that any differences found in the study were not just due to mood differences, mood was assessed for participants before and after the task and ratings completion. Previous work has shown that exposure to repeated items may result in diffuse positive mood which leads to increases in positive ratings for stimuli (Monahan, Murphy and Zajonc, 2000). However, as was the case with study one, no mood effects

were found. Groups were similar in mood before the exposure, [F (3, 183)=1.44, p>.2, n.s.]. Similarly, there were no significant differences by groups in mood from before the exposure to after the exposure [F (3, 183)= 1.76, p>.15, n.s.]. Therefore any differences in ad ratings are not related to changes in mood due to exposure.

Analysis

Analyses were conducted to test each of the previously stated hypotheses. This was done via ANOVA analyses with specific hypotheses examined via planned comparisons. Because the hypotheses are directional, one-tailed tests will be used for the specific comparisons. Internet use and online newspaper reading were used as covariates.

For hypotheses H1a, H1b, H3a, H3a, H4a and H4b, a MANCOVA was run with condition (Ads/Task, Ads/NoTask, NoAds/Task or NoAds/NoTask) as a between-subjects variable. Dependent variables were liking and trial ratings for both exposed and unexposed "foil" ads.

For H2a, H2b a repeated-measures MANOVA was run only on the NoTask groups in order to look at the group exposed to ads without a task and its baseline group that was not exposed to the ads. The between-subjects variable was condition (Ads/NoTask or NoAds/NoTask) and the within subjects variable was level of repetition of exposure of the ad being rated (0, 1, 3 or 5 times).

For RQ1 a repeated-measures MANOVA was run only on the Task groups. The between-subjects variable was condition (Ads/Task or NoAds/Task) and the within subjects variable was level of repetition of exposure of the ad being rated (0, 1, 3 or 5 times).

Hypotheses H5a, H5b and RQ3 were analyzed by running a repeated measures ANOVA within the condition with exposure level as the within-subjects dependent variable (ratings for unexposed vs. exposed ads) and attentional control (low or high) as the between subjects independent variable.

RQ2 and RQ4 were analyzed with repeated-measures ANOVA looking at the differences within group (Task or NoTask) between test group and control group. Condition was a between-subjects variable (Ads or NoAds), as was attentional control (low or high). The within-subjects dependent variable was repetition (0, 1, 3, or 5 times).

Hypothesis six (H6) tested perceived intrusiveness and attentional control by a t-test with attentional control (low or high) as the between-subjects variable and perceived intrusiveness ratings as the dependent variable.

RQ5 was tested with t-tests for liking and trial scores for ads as the dependent variables and perceived intrusiveness of the ads (low or high) as the between-subjects variable.

EXPERIMENT TWO- RESULTS

H1a: The group that is exposed to the ads but does not have a goal-directed task (Ads/NoTask) will have higher ad liking ratings for exposed ads compared to the group that does not have a task and is not exposed to the ads (NoAds/NoTask)

Results of the MANCOVA showed a significant overall effect of condition on liking ratings for exposed brand logo ads [$F (5, 181)= 4.59$, $p<.001$; $\eta^2=.113$]. There was not a significant main effect of condition for liking ratings of previously unexposed, "foil" ads [$F (5, 181)= .78$, $p>.5$, n.s.]. To test hypothesis 1a, planned contrasts were utilized. The contrast showed a significant difference in the predicted direction for brand liking ratings with higher liking ratings for the Ads/NoTask (fluency) group than for the NoAds/NoTask (control) group (brand logo ad liking $M_{adsNoTask}=4.84$, $M_{NoadsNoTask}=4.54$; SE= .157, $p<.05$; see table 8 for means) Therefore H1a was supported.

H1b: The group that is exposed to the ads but does not have a goal-directed task (Ads/NoTask) will have higher trial intent ratings for exposed ads compared to the group that does not have a task and is not exposed to the ads (NoAds/NoTask)

Results of the MANCOVA showed a significant overall effect of condition on trial intent ratings for exposed ads [$F (5, 181)= 3.29$, $p<.01$; $\eta^2=.083$]. There was not a significant main effect of condition for trial intent ratings of previously unexposed, "foil" ads [$F (5, 181)= 1.07$, $p>.3$, n.s.]. Planned contrasts revealed a significant difference in the predicted direction between the trial intent rating for exposed ads for the Ads/Task (devaluation) and NoAds/NoTask (control) groups, $M_{adsNoTask}=5.19$, $M_{NoAdsNoTask}=4.85$; SE=.190, $p<.05$. Therefore H1b was supported.

H2a: The group that is exposed to the ads but does not have a goal-directed task (Ads/NoTask) will show higher brand logo liking ratings for repeatedly

exposed ads compared to ads exposed once

A repeated-measures ANOVA was run within the NoTask groups (Ads/NoTask and NoAds/NoTask), with ad logo liking scores for previously unexposed ads, ads exposed one time, ads exposed three times and ads exposed five times as the dependent measures. Repetition was found to have a significant effect, [F (3, 91)= 9.72, p<.001]. The interaction between condition and repetition was also significant [F (3, 91)=3.28, p<.03, η^2=.10]. Contrasts showed a significant interaction in the predicted direction for condition x repetition for ads shown one time versus those shown zero times [F(3,91)=6.2, p<.02]. However, though the means were in the predicted direction, the interaction was not significant for ads repeated three times versus zero times [F (3, 91)=3.46, p<.07] or those shown five times versus zero times [F (3,91)=1.83, p>.15]. Therefore H2a is partially supported.

H2b: The group that is exposed to the ads but does not have a goal-directed task (Ads/NoTask) will show higher trial intent ratings for repeatedly exposed ads compared to ads exposed once

A repeated-measures ANOVA was run within the NoTask groups (Ads/NoTask and NoAds/NoTask), with trial intent scores for previously unexposed ads, ads exposed one time, ads exposed three times and ads exposed five times as the dependent measures. Repetition was found to have a significant main effect, [F (3, 91)= 7.35, p<.001]. However, the interaction between condition and repetition was not significant [F (3, 91)=2.04, p>.1], see table 9 for means. There were no other significant differences in repetition. Therefore H2b is not supported.

H3a: The group that is exposed to the ads when engaged in a goal-directed task (Ads/Task) will show lower brand logo ad liking ratings for exposed ads

compared to the group that is exposed to the ads and does not perform a goal-directed task (Ads/NoTask)

As noted in H1a, there was a significant main effect of condition on liking ratings for exposed ads [F (5, 181)= 4.59, p<.001]. To specifically test H3a, planned contrasts were conducted. The planned contrast did reveal a significant difference of liking ratings for exposed ads in the predicted direction, with the Ads/Task (devaluation) group showing lower liking ratings than the Ads/NoTask (fluency) group, $M_{adsTask}$=4.21, $M_{adsNoTask}$=4.84; SE=.160, p<.001. H3a was supported.

H3b: The group that is exposed to the ads when engaged in a goal-directed task (Ads/Task) will show lower trial intent ratings for exposed ads compared to the group that was exposed to the ads and did not perform a goal-directed task (Ads/NoTask)

As noted in H1b, there was a significant main effect of condition on trial intent ratings for seen ads [F (5, 181)= 3.29, p<.01]. To specifically test H3b, planned contrasts were conducted. The planned contrast did reveal a significant difference of trial intent ratings in the predicted direction, $M_{adsTask}$=4.57, $M_{adsNoTask}$=5.19; SE=.193, p<.004. H3b was supported.

H4a: The group that is exposed to the ads while engaged in a goal-directed task (Ads/Task) will show lower liking ratings for exposed brand logo ads compared to the group that was not exposed to the ads and performed a goal-directed task (NoAds/Task)

To specifically test H4a, planned contrasts between Ads/Task and NoAds/Task groups were conducted. The planned contrast did reveal a significant difference of liking ratings in the predicted direction, with the Ads/Task (devaluation) group showing lower

liking ratings than the NoAds/Task (control) group, $M_{adsTask}$=4.21, $M_{NoAdsTask}$=4.63; SE=.160, p<.02. H4a was supported.

H4b: The group that is exposed to the brand logo ads while engaged in a goal-directed task (Ads/Task) will show lower trial intent ratings for exposed brands compared to the group that was not exposed to the logo ads and performed a goal-directed task (NoAds/Task)

To specifically test H4b, planned contrasts between Ads/Task and NoAds/Task groups were conducted. The planned contrast revealed a significant difference of trial intent ratings in the predicted direction, $M_{adsTask}$=4.57, $M_{NoAdsTask}$=4.91; SE=.193, p<.05. H4b was supported.

RQ1: What will be the effect of repetition of ads on ad liking and trial intent for the group that is exposed to the ads and does a goal-directed task (Ads/Task)?

A repeated-measures ANOVA was run within the Task groups (Ads/Task and NoAds/Task), with brand ad logo liking scores for previously unexposed ads (exposed zero times), ads exposed one time, ads exposed three times and ads exposed five times as the dependent measures. Repetition was found to have a significant main effect, [F (3,89)= 11.70, p<.001]. There was also a significant interaction of repetition and condition [F (3, 89)=4.28, p<.008, η^2=.13]. Means are reported in table 10a. Contrasts showed significant interactions of repetition and condition for the ads shown once versus zero times [F (1, 91)=8.04, p<.007], for ads shown three times versus zero [F (1, 91)=6.78, p<.02] and ads shown five times versus zero [F (1,91)= 4.35, p<.05].

A repeated-measures ANOVA was also run within the Task groups, with trial intent scores for previously unexposed ads, ads exposed one time, ads exposed three times and ads exposed five times as the dependent measures. Repetition was found to

have a significant main effect, [F (3, 89)= 8.48, p<.001] Means are reported in table 10b. There was not a significant interaction of repetition and condition [F (3, 89)=1.67, p>.15].

H5a: Within the group that is exposed to the ads while engaged in a goal-directed task (Ads/Task) those who have high attentional control (compared to those with low attentional control) will show lower liking ratings for previously exposed brand logo ads

The attentional control scale (Derryberry and Reed, 2001) was used to assess individual differences in attentional control. A median split was performed to separate low from high attentional control. The groups were shown to significantly differ from each other in attentional control (t (185)= -17.17, p<.001; $M_{highctrl}$=4.11, $M_{lowctrl}$=3.39).

Within the Ads/Task group a repeated-measures ANOVA was run with ad liking scores for unexposed versus exposed ads (exposure level) as a within-subjects variable and attentional control as a between-subjects variable. Results showed a significant main effect of level of exposure (unexposed versus exposed); [F (1, 44)=32.27, p<.001; η^2=.423]. There was also a significant interaction of the level of exposure (unexposed or exposed) and attentional control [F (1, 44)=4.667, p<.04]. Those with high control exhibited much steeper devaluation of exposed ads compared to unexposed ads than did those with low attentional control. See table 11 for means.

H5b: Within the group that is exposed to the ads while engaged in a goal-directed task (Ads/Task) those who have high attentional control (compared to those with low attentional control) will show lower trial ratings for previously exposed brands

Within the Ads/Task group a repeated-measures ANOVA was run with trial intent scores for unexposed versus exposed ads as a within-subjects variable and attentional

control as a between-subjects variable. Results showed a significant main effect of level of exposure (unexposed versus exposed); [F (1, 44)=16.703, p<.001; η^2=.275]. However, unlike ad liking ratings, there was not a significant interaction of the level of exposure (unexposed or exposed) and attentional control [F (1, 44)=.014, p>.9]. Those with high control and those with low control showed similar lowered ratings of trial intent for exposed ads compared to unexposed ads.

RQ2: In the group that is exposed to the ads while engaged in a goal-directed task (Ads/Task) will those high in attentional control show different effects of repetition on liking and trial intent compared to those with low attentional control?

Between the Task groups (Ads/Task and NoAds/Task) a repeated-measures ANOVA was run with brand ad liking scores for unexposed versus ads exposed one, three and five times as a within-subjects variable. Results showed a significant three way interaction between level of exposure (unexposed, exposed once, three or five times) and attentional control (high vs. low control) and condition (Ads/Task vs. NoAds/Task), [F (3,87)= 3.00, p<.04, η^2=.094] see table 12 for means. Contrasts showed that for ads shown one time versus zero times, there was not a significant interaction of condition by attentional control [F (1, 89)=.221, p>.3] nor was there for ads shown five versus zero times [F (1, 89)= 2.81, p>.09]. However, there was a significant interaction for ads shown three times versus zero times [F (1, 89)= 5.55, p<.03], see figure 9.

A repeated measures ANOVA was also run on trial intent ratings (within subjects variable: exposure level: 0, 1, 3, or 5 times; between-subjects variables: attentional control and condition). There was not a significant interaction of exposure level, condition and attentional control on trial intent [F (3, 87)=1.19, p>.3].

RQ3: Within the group that is exposed to the ads and does not have a goal-directed task (Ads/NoTask) what will be the effect of high attentional control (compared to those with low attentional control) on brand logo ad liking and trial intent ratings for exposed ads?

Within the Ads/NoTask group a repeated-measures ANOVA was run with ad logo liking scores for unexposed versus exposed ads as a within-subjects variable and attentional control as a between-subjects variable. Results showed no significant main effect of level of exposure (unexposed versus exposed); [$F(1, 45)=3.72$, $p<.06$]. There was also not a significant interaction of the level of exposure (unexposed or exposed) and attentional control [$F(1, 45)=3.64$, $p<.07$]. Those with high control and those with low control showed similar increased ratings of ad liking for exposed ads compared to unexposed ads.

Within the Ads/No Task group a repeated-measures ANOVA was also run with trial intent scores for unexposed versus exposed ads as a within-subjects variable and attentional control as a between-subjects variable. Results showed no significant main effect of level of exposure (unexposed versus exposed); [$F(1, 45)=.49$, $p>.4$]. However, there was a significant interaction of the level of exposure (unexposed or exposed) and attentional control [$F(1, 45)=4.32$, $p<.05$, $\eta^2=.09$]. For ads that were exposed, those that were low in attentional control gave higher trial intent ratings.

RQ4: Will those high in attentional control show different effects of repetition on liking and trial intent compared to those with low attentional control in the group that is exposed to the ads and does not do a goal-directed task (Ads/NoTask)?

A repeated-measures ANOVA was run on ad logo liking ratings in the NoTask groups (within subjects variable: exposure level: 0, 1, 3, or 5 times; between-subjects

variable: attentional control and condition). There was a significant two-way interaction of repetition and condition [F (3, 89)=3.40, p<.03], however, there was not a significant three way interaction between attentional control, repetition and condition for either brand logo liking, [F (3, 89)=1.07, p>.3] or for trial intent, [F (3, 89)=.74, p>.5].

H6: High attentional control (compared to low attentional control) will lead to lower perceived intrusiveness ratings

Overall perceived intrusiveness of the ads was used as the dependent variable for participants high versus low in attentional control. Overall ratings of perceived intrusiveness of the ads across conditions were not significantly different by attentional control, t(186)= .56, p>.5; $M_{HighCtrl}$=3.08, $M_{LowCtrl}$=3.18 H6 was not supported.

RQ5: What will be the effects of high perceived intrusiveness (compared to low perceived intrusiveness) for logo ad liking and trial intent?

T-tests were run for all data using a median split for perceived intrusiveness. Results indicated a significant difference on scores for brand ad logo liking, with those who perceived the ads as less intrusive, rating the ads generally (both exposed and unexposed) higher in liking, $M_{LowIntrusive}$= 4.71, $M_{HighIntrusive}$= 4.53; t(186)=1.73, p<.05. However, when the ads were separated into liking scores for exposed ads versus liking scores for unexposed ads, the ads that were exposed were not rated significantly different [F(1,179)=.92, p>.4]. Only the ads that were not exposed were rated lower for those who perceived the ads as highly intrusive [F(1,179)=4.67, p<.04]. There was also no significant interaction of condition with perceived intrusiveness on liking ratings for all of the ads generally, exposed or unexposed ads (p's>.3).

T-tests were run on trial intent for all data using a median split for perceived intrusiveness. There was no significant effect for trial intent, $t(186)=1.04$, $p>.2$. There was also no interaction between perceived intrusiveness ratings and condition on trial intent for the ads generally, seen or unseen ads, (p's$>.25$). Therefore it does not appear that high perceived intrusiveness leads to lowered ad liking scores in this study.

EXPERIMENT TWO- DISCUSSION

Experiment two was conducted to further test the theories of devaluation and perceptual fluency, including looking at affective changes as well as trial intent, incorporating the conditions under which the same stimuli exposed for the same amount of time may have very different effects. Additionally, study two also looked at some possible moderating variables. These included ad repetition, as well as attentional control, and an 'antecedent' to conscious avoidance, perceived intrusiveness. Study two included four conditions, Ads/Task (devaluation), NoAds/Task (devaluation control), Ads/NoTask (fluency) and added a baseline for the Ads/NoTask, NoAds/NoTask group that was not included in study one.

In looking at liking of brand logo ads that appeared on webpages, it was shown that task and exposure are both important variables. Although the Ads/Task and Ads/NoTask groups were exposed to the same brand logo ads for the same length of time, one group had a goal-directed task (top-down attention) while the other group employed bottom-up attention. These groups showed significant differences from each other, as well as from their respective exposure baseline groups (NoAds/Task and NoAds/NoTask). The group without an explicit, goal-directed task showed higher liking and trial ratings compared to its baseline group. This is what is often predicted in literature based on mere exposure. The group that was exposed to ads while engaged in a goal-directed task showed lower ad liking and trial ratings than both its exposure comparison group (NoAds/Task) and the task comparison group (Ads/NoTask). This is what would be predicted by the distracter devaluation hypothesis. This demonstrates that

the attentional goal occurring at the time of exposure can lead to very different affective evaluations of a brand logo as well as differences in product trial intent.

Mere exposure research has often found that increasing the numbers of repetitions of the exposure will increase subsequent affective ratings for that stimulus. In this study, for the exposure groups, ads were either not exposed, shown once, three times or five times (exposure level: 0, 1, 3, 5). In the Ads/NoTask (fluency) group (compared to NoAds/NoTask ratings) only those ads that were shown once were rated significantly higher in liking. Ads that were shown three times showed a marginally significant difference ($p<.07$) and ads that were shown five times were not significantly different between the groups. This is different than what would be predicted by studies that find that repetition increases positive ratings (Zajonc, 1968; 2001). However, most studies that have previously found positive exposure effects have exposed people to just the stimulus (with no other surrounding stimuli) for very brief amounts of time. Positive exposure effects are also stronger under nonconscious conditions (Bornstein, 1989). It is possible in this case that because the repetitions were not in subconscious exposures that they were consciously noted by participants at higher levels of repetition, negating the positive effects of exposure (see General Discussion for more details about this).

A different pattern emerged for repetition of the ads for the Ads/Task (devaluation) group. This group (compared to the NoAds/Task group) showed lowered liking at one, three, and five times repeated, though differences from baseline lessened with increased repetition. Because this study was the first to explore the effects of ad repetition on lowered brand liking ratings for ads exposed while engaged in a top-down

task, this finding should be treated as tentative. It remains to be seen if a five times repeated ad is more or less devalued when those repetitions occur at different times or under differing attentional conditions.

This study also looked at the possible effects of attentional control. Attentional control was measured in study one, but unfortunately, due to a low number of participants, it was not possible to do conclusive tests in that experiment. Because this scale assesses individual differences in executive control of attention, it was hypothesized that it could be important in understanding how different individuals may respond to ads exposed during a top-down attentional task. It was found that this individual difference did affect ratings of ad logo liking. Those participants in the Ads/Task group, who were high in their ability to control their attention, devalued the ads more so than those participants who were low in attentional control. However, attentional control did not appear to make a difference in trial intent ratings. Future research should further look at the role of the devaluation process and individual differences as it pertains to different measures of ad effectiveness.

Attentional control differences between participants in the Ads/Task condition (compared to NoAds/Task) also had differing effects on liking ratings per repetition. Number of repetitions (0, 1, 3, 5) of an ad showed not only the previously mentioned effect of lower brand liking ratings for the participants high in attentional control, but the lowest point for brand liking ratings occurred when the brand logo ad was exposed once for those low in attentional control whereas the lowest ad liking point (strongest devaluation) for those high in attentional control was for ads exposed three times and

differences from baseline were largest for ads repeated three and five times. Although attentional control has not previously been studied in advertising, these results point to the importance of looking at this variable as it relates to attention and exposure. Future studies could use this variable to examine differences in audience in various exposure situations. For example would ads exposed under multitasking or simultaneous media use (divided attention) be different for those with high versus low attentional control? Do people with high versus low attentional control expose themselves to different types of content, such as more or less arousing content, or media with many cuts or zooms? These would certainly be important for advertisers and theorists to know going forward.

Also important to keep in mind is that no effects of individual differences were found for participants in the Ads/NoTask condition. This is important because it does show that the attentional control variable is something which is tapped into when there is a top-down (executive) attentional task employed, but not necessarily under bottom-up attentional conditions.

Finally, in an effort to better clarify the relationship between devaluation as an instance of cognitive ad avoidance and the current literature on avoidance, which has focused largely on retrospective self-reports of conscious ad avoidance, a previously found antecedent to avoidance, perceived intrusiveness was examined. Across all conditions combined (Ads/Task, Ads/NoTask, NoAds/Task, NoAds/NoTask), high perceived intrusiveness led to lower ad liking ratings. However, this was only true for ALL ads that were rated- both exposed and unexposed. In fact, when the ads were separately analyzed the higher intrusiveness perceptions only led to lower ad evaluations

for the unexposed 'foil' ads that had not been exposed to any group. There was also no interaction of perceived intrusiveness with condition. More importantly, perceived intrusiveness was not connected to lowered ad liking or trial when looking just at the Ads/Task group. For this group, which may be seen as the active ad avoidance group, perceived intrusiveness did not lead to any differences in ad liking and trial intent ratings. Thus, it would appear that in the case of nonconscious avoidance, perceived intrusiveness does not serve as an antecedent to avoidance, and thus it is not an alternative explanation for devaluation. This highlights the necessity of advertising researchers more fully developing the models of ad exposure and avoidance that currently exist. Both conscious and nonconscious avoidance can occur and these appear to have both different antecedents and consequences.

GENERAL DISCUSSION

Exposure is a crucial element to advertising effects, yet factors related to exposure are rarely considered in advertising research. Because of this, most models of advertising effects are built on findings that were obtained under conditions of full direct attention to the ads being studied. The existing studies in the advertising literature that have looked at the effects of exposure under less than full attention, typically do so under a framework of mere exposure or incidental exposure. Often these studies find positive effects and use those findings to generalize to what happens to any ads that are encountered under conditions of divided or selective attention (e.g. Matthes, Schemer and Wirth 2007; Shapiro, MacInnis and Heckler, 1997; Baker, 1999; Chen 2001). However, these studies may be seriously limiting our understanding of the full range of effects that occur when incidental ad exposure occurs. Indeed, both researchers who would use these studies to build theory, and practitioners who may use these studies as a rationale to continue practices such as paying per ad exposure (i.e. CPM), assume that any unattended ad will have either positive or no effect on the brand being advertised. The studies conducted here, however, show that past work in exposure may be starting with incorrect assumptions stemming from a lack of consideration of differences in the consumer's attentional goals and states at the time of ad exposure. Failure to consider these factors this could lead to a biased and incorrect view of effects of ad exposure and avoidance.

While previous research on incidental or secondary attention to ads often found positive effects, it is clear from looking at their methodology that the "tasks" employed in these studies during exposure are activities that employ bottom-up or passive attention

(e.g. Moore, Stammerjohan and Coulter, 2005). Other studies in product placement which tend to find positive exposure effects similarly employ directions to attend to a scene holistically in which the brand is a part of that scene (e.g. Matthes, Schemer and Wirth, 2007). Even mere exposure research in psychology employs direct attention to stimuli that are shown very quickly (e.g. Zajonc, 1968; 2001; Wagner and Gabrieli, 1998). These studies have been very valuable for gaining a better understanding of what happens to ads under those specific conditions. However, none of those studies explores what happens when incidental attention takes place when people are engaged in top-down processing of the primary content. While it is obviously beneficial to advertisers to understand how to best obtain positive effects for their paid placements, they should also be aware that there are situations where incidental exposure could actually hurt their brand. The studies reported here were conducted to see if such negative impact may occur and when those boundary conditions exist. Specifically, they looked at exposure outcomes in terms of affect, trial intent and subsequent ad attention. Additionally, the studies reported here also examined a potentially important individual difference variable, attentional control, as well as looked at perceived intrusiveness which is widely accepted in the literature as a key antecedent to avoidance, to see how they affect exposure outcomes in different goal conditions.

In the first study, a dot-probe task was employed to gauge the ability of a brand logo to capture attention. This task has been found to be a reliable gauge of attention to stimuli and in this case, served to show what might happen in terms of future attention to a brand that has been encountered under different attentional conditions.

Study one showed that consumers' attentional goal at time of exposure can produce vastly differing effects, facilitating or inhibiting future attention to the brand logo. This finding should be of interest to those concerned with the repeated effects of exposure. The attentional state at initial exposure affected the ability of the logo to capture attention at the next exposure, this in turn could possibly have future compound effects on attention to the brand. In light of the findings of the second study, an important component may be conscious recognition of the ads. While ads repeated even five times were still recognized at levels below chance by the Ads/Task group, the percentages were increasing with repetition. Future work should look at attentional effects when they occur in different domains and across time.

It is interesting that most advertising literature does not use possible future attentional effects as a dependent variable. This is somewhat surprising considering the nature of advertising and brand choice. Often consumers are exposed to a brand logo or ad and do not act on it at the exact time of exposure. Instead, in many cases, they will then see the brand on a store shelf in competition for attention with many other brands and logos. Better understanding how exposure may affect this attention and eventual choice process should be of utmost importance to practitioners and researchers alike. The findings for what can happen for affect as well as attention at subsequent exposure should be explored more in future work. Varying attentional state at time of exposure and re-exposure would help to shed light on this question. In essence, the dot-probe task changed the distracter into a target and it was under these conditions, lowered effects

were found. How might changing the attentional task across exposures change the effects?

The results of study one also show that the dot-probe task is a test that should be utilized by future advertising and marketing researchers. While mere exposure and perceptual fluency studies have been common in those areas, a review of the literature did not show any studies that used a dot-probe task in that context. Reaction time tasks have been used in media research to show when there is available attentional resources (i.e. Lang, 2000) or to show implicit attitudes (i.e. IAT; Brunel, Tietje and Greenwald, 2004). The specifics of the dot-probe task make it ideal for advertising and marketing researchers, interested in these types of responses to determine if there are any lasting effects that may manifest themselves in terms of future attentional allocation and how a brand may perform when it is competing for attention. This study showed that the dot-probe paradigm may be an illuminating test for researchers interested in exploring effects when there is competition for attention.

Additionally, study one enabled a preliminary look at the individual differences variable of attentional control. This variable is valuable for advertising researchers because it shows attention of the consumer in terms of a trait which may affect state attention. Because this variable deals with executive control, it may also be important in a number of attention, self-regulatory and involvement studies as well as work that would look at possible target markets that may vary systematically on that trait. This would enable more targeted recommendations for a media strategy that would take into account the attentional state of the consumer when engaging with the particular medium or

placement as well as the possibility that the specific target market may be high or low on trait attentional control.

In study one, attentional control was shown to interact with condition (Ads/Task, Ads/NoTask or NoAds/Task) and repetition. For those with high attentional control, devaluation effects were strongest for ads that were repeatedly exposed. However, for those with low attentional control, devaluation effects were strongest for ads that were shown only once. This should be extremely important for advertising researchers going forward. Repetition is something which is a defining part of advertising and some even posit that repetition is the most important factor for advertising (Ehrenberg, 2000).

However, one important limitation of study one was that due to a limited number of potential participants, there were only three conditions (Ads/Task, Ads/NoTask and NoAds/Task). Ideally, four groups would have been employed as this would enable comparisons utilizing baselines for both of the ad exposure groups. Additionally, the low number of participants led to lower power when dividing participants in each group to compare effects based on state attentional control. Therefore it was crucial to study this variable in greater depth in study two. Future work on devaluation may want to employ all four conditions to replicate and extend this finding.

While study one looked at future attentional ramifications of the consumer's processing goal at time of ad exposure, study two examined two different outcome variables, liking and trial intent. Baselines for both of the ad exposure groups (Ads/Task and Ads/NoTask) were included in the design for study two by including two groups that were not exposed to the test ads (NoAds/Task and NoAds/NoTask). One of these groups

was given a goal task while the other was not. Furthermore, this study also measured perceptions of ad intrusiveness, something that has been posited to be a crucial antecedent to advertising avoidance.

Findings from study two are important for understanding the role of the processing goal at time of exposure on future liking for a brand logo advertisement. Validation was provided for the numerous past studies that have found positive effects of exposure. However, as noted previously, these past studies have utilized bottom-up, passive attention or attention to a holistic scene. Negative affective tags for ad avoidance are unlikely in this situation. A careful reading of one recent study that purported to use top-down attention and found positive exposure effects of banner ads on websites reveals that it did not actually direct participants to use top-down attention. Instead, participants were directed to "look at the site as you would if you came across it while using the web" (Moore, Stammerjohan and Coulter, 2005). To fully understand the impact of task goal during exposure, this study involved both top-down and bottom-up attention conditions. Examining both conditions would also be useful in future studies of exposure affects.

In the studies conducted and reported in this dissertation, and similar to previous studies, positive effects were indeed found for liking ratings for participants who employed passive, bottom-up attention while being exposed to the brand logo ads. However, those participants that were engaged in a goal-directed task while exposed to the logo ads, showed decreases in affective ratings of the brand logos. This finding of differences in future liking of the ad depending on task at time of exposure is novel in the advertising literature. However, there may be other work that has remained unpublished

due to the notorious 'bottom-drawer' effect. This is possible because previously the expectation has been that exposure under less than full attention should lead to positive effects. Therefore it may have previously been difficult to locate a place in the literature that could explain findings for manipulations of attention that led to negative effects.

Another important outcome variable is trial intent. Trial intent has been used previously in advertising studies that look at mere exposure with the idea that exposure leads to decreased risk perception and therefore makes consumers feel more positively about approaching and trying the brand (Baker, 1999). In devaluation research, however, it has been found that distracter faces were rated as less trustworthy (Raymond, Fenske and Westoby, 2005). Thus if the same is true for brand logos, then a distracter effect for ads may decrease trial. Study two showed that attentional state at the time of initial ad logo exposure does have some important effects on trial intent of the product. This impact is moderated by task goal, increasing trial intent when there is a bottom-up task and decreasing trial intent for those exposed during a top-down task. This would be especially important to consider in conjunction with study one's finding of lowered ability of the brand logo to attract future attention in a top-down task situation. Brand logos that are able to overcome the initial problem of lowered future attention, particularly in competitive situations, may still face a problem of overcoming lower levels of liking and trial intent.

Study two further explored and expanded on the role of the individual differences variable of attentional control that was initially explored in study one. The role of attentional control was shown to be important in understanding ad exposure effects.

Those participants in the Ads/Task group that were high in attentional control showed stronger devaluation of ads in liking ratings. Additionally, those high in attentional control appeared to have a different threshold for repetition and effects on devaluation- a finding which should be explored more in future work.

Particularly worthy of future study is how attentional control may relate to different age groups and target markets that may be particularly important to advertisers. These trait differences in consumer groups may lead to differing effects of attentional state and exposure effects, having ramifications for future attention, liking and trial of brands. This would be particularly important for understanding of how brands are chosen in cluttered environments such as on a crowded store shelf or during times in which an ad may be competing for attention with other stimuli.

This study also showed significant differences of attentional control on self-reported task focus, with those high in control reporting more focus on the task [$F(1, 183)=6.69$, $p<.01$]. Interestingly, recent work in multitasking has shown that those who are heavy media multitaskers tend to be worse at task-switching than low media multitaskers (Ophir, Nass and Wagner, 2009). This is thought to be due to the heavy media multitaskers employing attentional breadth and being less selective when filtering information. It is possible that attentional control could be a key variable in explaining the effects of ads that are exposed under multitasking and may also be able to predict which participants are more likely to engage in multitasking. Indeed, in an attentional task, it was found that high media multitaskers were less able to ignore non-target objects (Ophir, Nass and Wagner, 2009). This seems similar to the finding in the present studies

that those participants high in attentional control report more focus on tasks as well as increased affective devaluation effects.

The role of practicing attentional control may be key. Is it something which a person can improve at? What would the role of attentional control be in looking at working memory load in attentional tasks? Attentional control did have effects on devaluation for ad liking but within the Ads/Task group it did not show differences for trial intent. Could working memory and resource depletion interact here to produce these results? It is possible that those high in control employed more working memory and resources on the task (they do self-report more focus on the task) and that this led to increased impulsivity due to resource depletion, effectively cancelling out expected effects on trial intent.

Related to heavy media multitaskers use and attentional control may also be holistic and systematic processing differences. These differences in perceiving scenes as a whole versus focusing on specific items can be primed, or can be caused by individual differences or cultural factors (Masuda and Nisbett, 2001). Devaluation effects may be different for people who perceive the ad as part of a whole (visual scene), rather than as a non-goal item to be inhibited.

Age and/or task familiarity may be another important variable to study. These studies both used a fairly youthful sample. However, top-down attention and executive control would fluctuate with age. A recent study reported at the Oct 19, 2009 meeting of the Society for Neuroscience, reported a study in older adults, with low internet experience, in which they were initially given an fMRI scan while performing web

searches for answers to questions. Over the next two weeks they practiced searching the web for answers to different topics. In the follow-up scan, it was shown that there was increased activation in areas important for working memory and decision making (Moody and Small, 2009). This task was similar to the one employed in the Ads/Task group and points to the possible differences in devaluation for people with differing levels of experience with the medium as well as for those with different levels of development of working memory. This may be of particular importance since visual working memory was recently shown to be crucial for the devaluation effect (Goolsby, Shapiro and Raymond, 2009). Visual versus verbal processors may also show differences in devaluation effects and may also help pave the way for exploring the effect in different modalities. Currently, only visual distractor devaluation work has been conducted, but it may occur in other modalities as well. For example, could there also be cases of auditory devaluation?

Study two also addressed a key variable in previous work on advertising avoidance- perceived intrusiveness. This variable has been found in several studies to be an antecedent of avoidance (i.e. Edwards, Li and Lee, 2001; Li, Edwards and Lee, 2002; Morimoto and Chang, 2006). However, a key limitation of previous studies on avoidance is that they have looked at avoidance in terms of retrospective consumer self-reports (i.e. Cho and Cheon, 2004; Li, Edwards and Lee, 2002; Speck and Elliot, 1997). They have simply asked consumers to indicate why they avoid ads, leaving the consumers to report instances of avoidance that occurred consciously and that are salient in memory. Study two measured perceived intrusiveness and found that while it reduced liking ratings for

all ads, this didn't differ by condition. Thus, people who perceived ads as intrusive gave lower ratings whether they had actually seen the ad or not. Perceived intrusiveness did not differentially affect ads seen while engaged in a task from those seen without a task or those not seen. As a result, the distracter devaluation effect is not due to perceived intrusiveness. This should not be particularly surprising since the devaluation effect is posited to occur without conscious awareness of the ads being ignored.

In order to further ensure that devaluation did not occur due to a conscious, purposeful 'punishing' of ads that participants were exposed to, recognition was assessed. After all ratings had been collected each brand logo ad (as well as all foils) were presented. For each brand logo ad, participants were asked "Did this ad appear on a webpage?". There was a forced choice answer of 'yes' or 'no'. For each participant, 'yes' was coded as '1' and 'no' was coded as '0'. Scores were then computed for ads seen 0, 1, 3, and 5 times as well as scores for ads that were exposed versus unexposed. For unexposed (foil) ads, there was no differences in recognition between conditions [$F(3, 181)=.465$, $p>.7$], with recognition averaging 21.2% (see table 15 for means). However, for exposed ads, there were significant differences between groups [$F(3, 181)=20.62$, $p<.001$; $\eta^2=.255$]. This was driven by differences between the Ads/NoTask (fluency) group (60.46% recognition) and every other condition (Ads/Task (devaluation)=34.07%; NoAds/Task (devaluation control)=27%; NoAds/NoTask (fluency control)=21.35%; all pairwise comparison p's<.001). This is not entirely surprising seeing as how this group did not have a task during ad exposure and had more

free attentional resources to notice the ads. Previous work has shown that this does impact recognition (Pagendarm and Schaumberg, 2001).

Interestingly, for the Ads/NoTask (fluency) group (means table 17), ads exposed one time were correctly recognized at 39.9% which was significantly below chance, $t(46)=-2.68$, $p<.01$. But the ads that were exposed three times ($M_{Rec}=60.6\%$) and five times ($M_{Rec}=80.9\%$) were recognized at rates significantly above chance (p's <.05). This may also help to explain the surprising finding in study two of repetition not leading to increased positive ratings for the Ads/NoTask group. In fact, for each level of repetition above 0, the positive effect decreased.). It may be that as exposure becomes more conscious the mere exposure effect disappears. This would be consistent with the findings of a meta-analysis of mere exposure studies showing that conscious recognition inhibits the mere exposure effect (Bornstein, 1989).

More crucial to this study is the performance of the Ads/Task group (means table 16). This group did not have significantly different recognition from its baseline group, NoAds/Task, who were not exposed to the ads ($p>.19$, n.s.). The Ads/Task group also showed significantly lower than chance (50%) recognition of the exposed ads ($t(45)=-4.48$, $p<.001$). This difference remained significantly below chance even for ads that were repeatedly exposed. Therefore, the exposed ads appear to have been rated lower, without conscious awareness of the exposure. This is an important distinction between this current work and previous advertising avoidance research.

The avoidance literature should be broadened to better account for instances of avoidance that are not necessarily conscious. The definition of avoidance includes

anything that reduces exposure to an ad (Speck and Elliot, 1997). The work focusing specifically on avoidance has thus far only looked at instances of self-report or have required participants to consciously take action against an ad to avoid it (i.e. closing a pop-up window). This may be limiting our understanding of the full range of effects of exposure, avoidance and attention to advertisements. The studies reported here should open up several avenues for future research as well as illuminate the need to more fully consider the consumer and their mindset at ad exposure.

Overall these two studies show that there is still a large amount of work to be done in understanding the effects of consumer processing goals at time of ad exposure. A simple manipulation of task at ad exposure showed important effects on capacity of brand logo ads to capture future attention as well as on ad liking and trial intent ratings. Many advertising exposure situations occur when the audience may be engaged in some other task requiring the majority of their attentional capacity. Some of these situations will require searching behavior while others may just occupy limited attentional resources. It is important to understand how these different exposure context situations can influence the outcomes of ad exposure.

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TABLES

Table 1: Scale reliability for experiment one

Mood (time one)	α=.80
Attentional Control	α=.78
Perceived Intrusiveness	α=.91
Mood (time two)	α=.88

Table 2: Means for reaction time differences by condition for exposed and unexposed ads.

Dependent Variable: ExposedAdsRTDiff

condition	Mean	Std. Deviation	N
AdsTask	-3.2560	23.78938	21
AdsNoTask	21.2024	32.03775	21
NoAdsTask	11.3542	17.61425	22
Total	9.7917	26.64451	64

Table 3: Reaction time means for ads repeated one, three and five times

Descriptive Statistics

	condition	Mean	Std. Deviation	N
RPT1DIFF	AdsTask	-8.3869	43.31694	21
	AdsNoTask	10.8810	24.51522	21
	NoAdsTask	3.5057	23.42737	22
	Total	2.0234	32.13180	64
RPT3DIFF	AdsTask	-4.0357	60.91497	21
	AdsNoTask	19.5833	42.87805	21
	NoAdsTask	9.8182	45.32148	22
	Total	8.4766	50.40091	64
RPT5DIFF	AdsTask	2.6548	54.92509	21
	AdsNoTask	33.1429	51.23522	21
	NoAdsTask	20.7386	23.65293	22
	Total	18.8750	46.19857	64

Table 4: Attentional Control and Reaction Time

Dependent Variable:RPTDIFF

condition	CntrlSplit	Mean	Std. Deviation	N
AdsTask	high control	-16.2875	62.95603	10
	low control	13.4886	22.83387	11
	Total	-.6905	47.71227	21
AdsNoTask	high control	17.3864	34.27342	11
	low control	36.2375	42.30090	10
	Total	26.3631	38.54374	21
NoAdsTask	high control	25.5682	17.73612	11
	low control	4.9886	27.29048	11
	Total	15.2784	24.80663	22
Total	high control	9.6758	44.26339	32
	low control	17.6758	33.20255	32
	Total	13.6758	39.02286	64

Table 5: Attentional control and repetition

	condition	CntrlSplit	Mean	Std. Deviation	N
RPT1DIFF	AdsTask	high control	13.8250	47.44629	10
		low control	-28.5795	28.01419	11
		Total	-8.3869	43.31694	21
	AdsNoTask	high control	6.5227	18.97275	11
		low control	15.6750	29.77976	10
		Total	10.8810	24.51522	21
	NoAdsTask	high control	4.9773	29.37377	11
		low control	2.0341	16.88149	11
		Total	3.5057	23.42737	22
	Total	high control	8.2734	32.60200	32
		low control	-4.2266	30.89781	32
		Total	2.0234	32.13180	64
RPT3DIFF	AdsTask	high control	-14.3750	79.02586	10
		low control	5.3636	39.95753	11
		Total	-4.0357	60.91497	21
	AdsNoTask	high control	14.2500	49.24137	11
		low control	25.4500	36.31093	10
		Total	19.5833	42.87805	21
	NoAdsTask	high control	25.9091	42.07260	11
		low control	-6.2727	44.42697	11
		Total	9.8182	45.32148	22
	Total	high control	9.3125	58.76772	32
		low control	7.6406	41.32020	32
		Total	8.4766	50.40091	64
RPT5DIFF	AdsTask	high control	-18.2000	61.27135	10
		low control	21.6136	42.71378	11

	Total	2.6548	54.92509	21
AdsNoTask	high control	20.5227	29.65646	11
	low control	47.0250	66.68900	10
	Total	33.1429	51.23522	21
NoAdsTask	high control	25.2273	24.63114	11
	low control	16.2500	22.88777	11
	Total	20.7386	23.65293	22
Total	high control	10.0391	44.12976	32
	low control	27.7109	47.21063	32
	Total	18.8750	46.19857	64

Table 6: Scale reliability for experiment two

Mood (time one)	α=.90
Attentional Control	α=.75
Perceived Intusiveness	α=.91
Mood (time two)	α=.88

Table 7: Task difficulty scores by group

NoAds/Task	3.70
Ads/Task	3.35
Ads/NoTask	2.59
NoAds/NoTask	2.52

Table 8: Means for exposed and unexposed ads by condition

	NEWCOND	Mean	Std. Deviation	N
SEENLIKE	NoAdsTask	4.6312	.74753	47
	AdsTask	4.2074	.69690	45
	AdsNoTask	4.8404	.76432	47
	NoAdsNoTask	4.5434	.85122	48
	Total	4.5593	.79496	187
SEENTRY	NoAdsTask	4.9131	.85426	47
	AdsTask	4.5648	1.00376	45
	AdsNoTask	5.1915	.97305	47
	NoAdsNoTask	4.8507	.87332	48
	Total	4.8832	.94591	187
UNSENLIK	NoAdsTask	4.6356	.61505	47
	AdsTask	4.6583	.88845	45
	AdsNoTask	4.6862	.72601	47
	NoAdsNoTask	4.7552	.89099	48
	Total	4.6845	.78313	187
UNSENTRY	NoAdsTask	4.9947	.72652	47
	AdsTask	4.8778	1.09508	45
	AdsNoTask	5.1436	.88349	47
	NoAdsNoTask	5.0911	.89426	48
	Total	5.0287	.90525	187

Table 9a: Means for repetition and liking scores for NoTask groups

	NEWCOND	Mean	Std. Deviation	N
UNSENLIK	AdsNoTask	4.6862	.72601	47
	NoAdsNoTask	4.7552	.89099	48
	Total	4.7211	.80998	95
RPT1LIKE	AdsNoTask	4.7660	.87291	47
	NoAdsNoTask	4.4010	1.00364	48
	Total	4.5816	.95402	95
RPT3LIKE	AdsNoTask	4.4894	1.10576	47
	NoAdsNoTask	4.1979	1.21050	48
	Total	4.3421	1.16295	95
RPT5LIKE	AdsNoTask	5.2660	1.18803	47
	NoAdsNoTask	5.0312	1.27332	48
	Total	5.1474	1.23097	95

Table 9b: Means for repetition and trial scores for NoTask groups

	NEWCOND	Mean	Std. Deviation	N
UNSENTRY	AdsNoTask	5.1436	.88349	47
	NoAdsNoTask	5.0911	.89426	48
	Total	5.1171	.88460	95
RPT1TRY	AdsNoTask	5.1383	1.08449	47
	NoAdsNoTask	4.8021	.99327	48
	Total	4.9684	1.04757	95
RPT3TRY	AdsNoTask	4.9149	1.29933	47
	NoAdsNoTask	4.5417	1.11008	48
	Total	4.7263	1.21552	95
RPT5TRY	AdsNoTask	5.5213	1.25956	47
	NoAdsNoTask	5.2083	1.32422	48
	Total	5.3632	1.29533	95

Table 10a: Means for repetition and liking scores for Task groups

	NEWCOND	Mean	Std. Deviation	N
UNSENLIK	NoAdsTask	4.6356	.61505	47
	AdsTask	4.6386	.88867	46
	Total	4.6371	.75857	93
RPT1LIKE	NoAdsTask	4.6383	1.01592	47
	AdsTask	4.1630	.82700	46
	Total	4.4032	.95271	93
RPT3LIKE	NoAdsTask	4.3830	.88596	47
	AdsTask	3.9565	.94178	46
	Total	4.1720	.93395	93
RPT5LIKE	NoAdsTask	4.8723	1.10566	47
	AdsTask	4.4457	.95002	46
	Total	4.6613	1.04819	93

Table 10b: Means for repetition and trial scores for Task groups

	NEWCOND	Mean	Std. Deviation	N
UNSENTRY	NoAdsTask	4.9947	.72652	47
	AdsTask	4.8723	1.08349	46
	Total	4.9341	.91756	93
RPT1TRY	NoAdsTask	4.8989	1.10417	47
	AdsTask	4.4457	1.14372	46
	Total	4.6747	1.14076	93
RPT3TRY	NoAdsTask	4.6702	.97399	47
	AdsTask	4.4348	1.25436	46
	Total	4.5538	1.12158	93
RPT5TRY	NoAdsTask	5.1702	1.22153	47
	AdsTask	4.7174	1.13848	46
	Total	4.9462	1.19660	93

Table 11a: Means for high versus low attentional control ad liking in Ads/Task

	Att Cntrl Split	Mean	Std. Deviation	N
UNSENLIK	low control	4.5435	.76185	23
	high control	4.7337	1.00800	23
	Total	4.6386	.88867	46
SEENLIKE	low control	4.2645	.70202	23
	high control	4.1123	.70738	23
	Total	4.1884	.70107	46

Table 11b: Means for high versus low attentional control trial intent in Ads/Task

	Att Cntrl Split	Mean	Std. Deviation	N
UNSENTRY	low control	4.8967	1.13546	23
	high control	4.8478	1.05391	23
	Total	4.8723	1.08349	46
SEENTRY	low control	4.5471	1.11742	23
	high control	4.5181	.92931	23
	Total	4.5326	1.01630	46

Table 12a: Liking means for Repetition x Att ctrl x Task groups only

	NEWCOND	Att Cntrl Split	Mean	Std. Deviation	N
UNSENLIK	NoAdsTask	low control	4.6406	.63129	24
		high control	4.6304	.61177	23
		Total	4.6356	.61505	47
	AdsTask	low control	4.5435	.76185	23
		high control	4.7337	1.00800	23
		Total	4.6386	.88867	46
	Total	low control	4.5931	.69228	47
		high control	4.6821	.82610	46
		Total	4.6371	.75857	93
RPT1LIKE	NoAdsTask	low control	4.7083	1.11235	24
		high control	4.5652	.92385	23
		Total	4.6383	1.01592	47
	AdsTask	low control	4.0543	.79757	23
		high control	4.2717	.85915	23
		Total	4.1630	.82700	46
	Total	low control	4.3883	1.01592	47
		high control	4.4185	.89451	46
		Total	4.4032	.95271	93
RPT3LIKE	NoAdsTask	low control	4.3958	.97779	24
		high control	4.3696	.80081	23
		Total	4.3830	.88596	47
	AdsTask	low control	4.2391	.89022	23
		high control	3.6739	.92452	23
		Total	3.9565	.94178	46
	Total	low control	4.3191	.92915	47
		high control	4.0217	.92470	46

		Total	4.1720	.93395	93
RPT5LIKE	NoAdsTask	low control	4.6875	1.18700	24
		high control	5.0652	1.00345	23
		Total	4.8723	1.10566	47
	AdsTask	low control	4.5000	.97701	23
		high control	4.3913	.94094	23
		Total	4.4457	.95002	46
	Total	low control	4.5957	1.08166	47
		high control	4.7283	1.02038	46
		Total	4.6613	1.04819	93

Table 12b: Trial means for Repetition x Att ctrl x Task groups only

Descriptive Statistics

	NEWCOND	Att Cntrl Split	Mean	Std. Deviation	N
UNSENTRY	NoAdsTask	low control	5.0781	.72776	24
		high control	4.9076	.73103	23
		Total	4.9947	.72652	47
	AdsTask	low control	4.8967	1.13546	23
		high control	4.8478	1.05391	23
		Total	4.8723	1.08349	46
	Total	low control	4.9894	.94331	47
		high control	4.8777	.89733	46
		Total	4.9341	.91756	93
RPT1TRY	NoAdsTask	low control	5.0625	1.08910	24
		high control	4.7283	1.11781	23
		Total	4.8989	1.10417	47
	AdsTask	low control	4.2935	1.32213	23
		high control	4.5978	.93766	23
		Total	4.4457	1.14372	46
	Total	low control	4.6862	1.25701	47
		high control	4.6630	1.02228	46
		Total	4.6747	1.14076	93
RPT3TRY	NoAdsTask	low control	4.7917	.94313	24
		high control	4.5435	1.01032	23
		Total	4.6702	.97399	47
	AdsTask	low control	4.5435	1.35607	23
		high control	4.3261	1.16393	23
		Total	4.4348	1.25436	46
	Total	low control	4.6702	1.15757	47
		high control	4.4348	1.08325	46

		Total	4.5538	1.12158	93
RPT5TRY	NoAdsTask	low control	5.1250	1.33718	24
		high control	5.2174	1.11626	23
		Total	5.1702	1.22153	47
	AdsTask	low control	4.8043	1.21299	23
		high control	4.6304	1.07890	23
		Total	4.7174	1.13848	46
	Total	low control	4.9681	1.27435	47
		high control	4.9239	1.12530	46
		Total	4.9462	1.19660	93

Table 13a: Means for high versus low attentional control liking in Ads/NoTask

Descriptive Statistics

	Att Cntrl Split	Mean	Std. Deviation	N
UNSENLIK	low control	4.7120	.68199	23
	high control	4.6615	.77974	24
	Total	4.6862	.72601	47
SEENLIKE	low control	5.0254	.72450	23
	high control	4.6632	.77416	24
	Total	4.8404	.76432	47

Table 13b: Means for high versus low attentional control trial in Ads/NoTask

	Att Cntrl Split	Mean	Std. Deviation	N
UNSENTRY	low control	5.2065	.90971	23
	high control	5.0833	.87280	24
	Total	5.1436	.88349	47
SEENTRY	low control	5.4094	.99237	23
	high control	4.9826	.92665	24
	Total	5.1915	.97305	47

Table 14a: Liking means for Repetition x Att Ctrl x NoTask groups

	NEWCOND	Att Cntrl Split	Mean	Std. Deviation	N
UNSENLIK	AdsNoTask	low control	4.7120	.68199	23
		high control	4.6615	.77974	24
		Total	4.6862	.72601	47
	NoAdsNoTask	low control	4.8958	.66825	24
		high control	4.6146	1.06508	24
		Total	4.7552	.89099	48
	Total	low control	4.8059	.67406	47
		high control	4.6380	.92370	48
		Total	4.7211	.80998	95
RPT1LIKE	AdsNoTask	low control	4.9457	.85266	23
		high control	4.5938	.87481	24
		Total	4.7660	.87291	47
	NoAdsNoTask	low control	4.4792	.98609	24
		high control	4.3229	1.03598	24
		Total	4.4010	1.00364	48
	Total	low control	4.7074	.94311	47
		high control	4.4583	.95835	48
		Total	4.5816	.95402	95
RPT3LIKE	AdsNoTask	low control	4.7391	1.08575	23
		high control	4.2500	1.09346	24
		Total	4.4894	1.10576	47
	NoAdsNoTask	low control	4.3542	1.05788	24
		high control	4.0417	1.35066	24
		Total	4.1979	1.21050	48
	Total	low control	4.5426	1.07759	47
		high control	4.1458	1.22021	48
		Total	4.3421	1.16295	95

RPT5LIKE	AdsNoTask	low control	5.3913	1.20564	23
		high control	5.1458	1.18394	24
		Total	5.2660	1.18803	47
	NoAdsNoTask	low control	5.0417	1.17877	24
		high control	5.0208	1.38689	24
		Total	5.0312	1.27332	48
	Total	low control	5.2128	1.19211	47
		high control	5.0833	1.27719	48
		Total	5.1474	1.23097	95

Table 14b: Trial means for Repetition x Att Ctrl x NoTask groups

	NEWCOND	Att Cntrl Split	Mean	Std. Deviation	N
UNSENTRY	AdsNoTask	low control	5.2065	.90971	23
		high control	5.0833	.87280	24
		Total	5.1436	.88349	47
	NoAdsNoTask	low control	5.2813	.75474	24
		high control	4.9010	.99454	24
		Total	5.0911	.89426	48
	Total	low control	5.2447	.82585	47
		high control	4.9922	.93021	48
		Total	5.1171	.88460	95
RPT1TRY	AdsNoTask	low control	5.3587	1.01642	23
		high control	4.9271	1.12646	24
		Total	5.1383	1.08449	47
	NoAdsNoTask	low control	4.9792	1.04235	24
		high control	4.6250	.92959	24
		Total	4.8021	.99327	48
	Total	low control	5.1649	1.03640	47
		high control	4.7760	1.03302	48
		Total	4.9684	1.04757	95
RPT3TRY	AdsNoTask	low control	5.1522	1.29189	23
		high control	4.6875	1.29222	24
		Total	4.9149	1.29933	47
	NoAdsNoTask	low control	4.7083	1.07255	24
		high control	4.3750	1.14446	24
		Total	4.5417	1.11008	48
	Total	low control	4.9255	1.19318	47
		high control	4.5313	1.21780	48

		Total	4.7263	1.21552	95
RPT5TRY	AdsNoTask	low control	5.7174	1.30407	23
		high control	5.3333	1.21285	24
		Total	5.5213	1.25956	47
	NoAdsNoTask	low control	5.3750	1.13492	24
		high control	5.0417	1.49577	24
		Total	5.2083	1.32422	48
	Total	low control	5.5426	1.21954	47
		high control	5.1875	1.35515	48
		Total	5.3632	1.29533	95

Table 15: Ad recognition by exposure for each condition

	Unexposed Ads	Exposed Ads
NoAds/Task	.2420	.2695
Ads/Task	.2174	.3388
Ads/NoTask	.1995	.6046
NoAds/NoTask	.1901	.2135

Table 16: Ads/Task ad recognition rates

Unexposed (foil) Ads	.2174
Exposed Ads overall	.3388
Ads repeated one time	.3967
Ads repeated three times	.2283
Ads repeated five times	.3913

Table 17: Ads/NoTask ad recognition

Unexposed (foil) Ads	.1995
Exposed Ads overall	.6046
Ads repeated one time	.3989
Ads repeated three times	.6064
Ads repeated five times	.8085

FIGURES

Figure 1: Reaction time difference scores for exposed ads

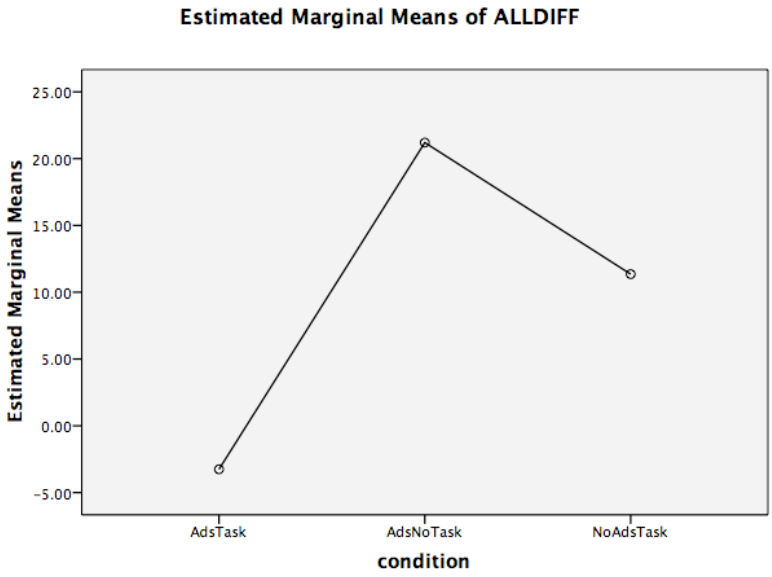


Figure 2: Reaction times for ads repeated one, three and five times

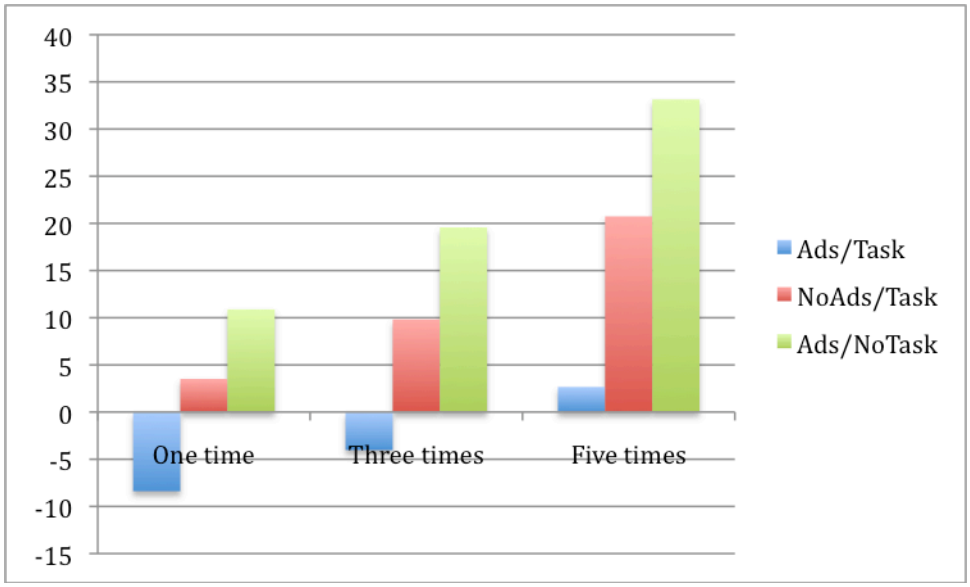


Figure 3: Att Ctrl x Condition interaction for repeated ads

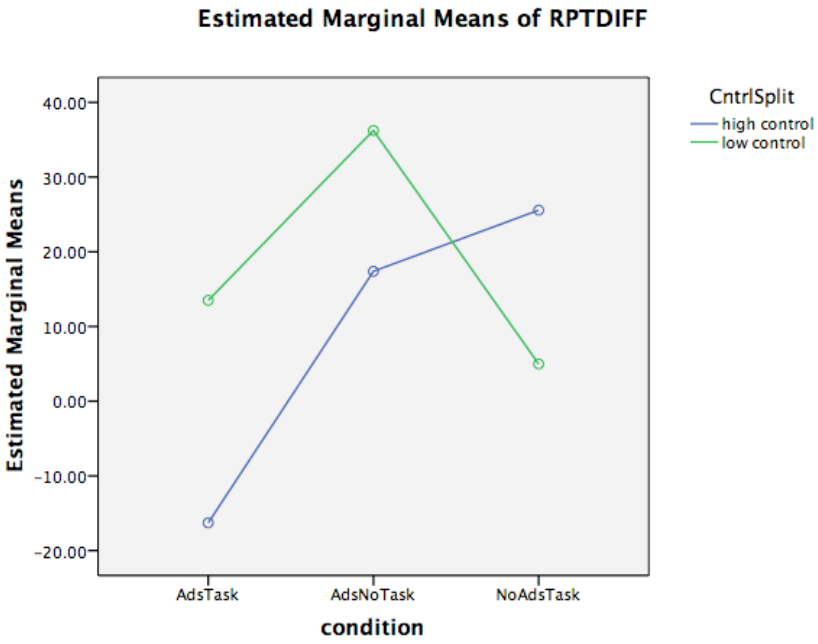
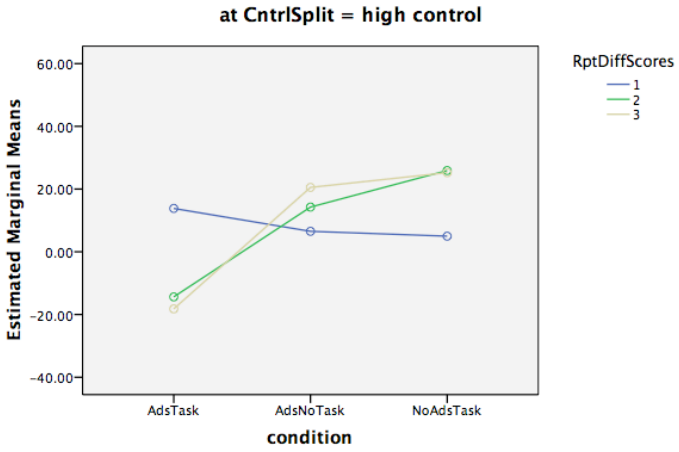


Figure 4: Repetition and attentional control



Repetition Difference Scores: 1=one time; 2=three times; 3=five times

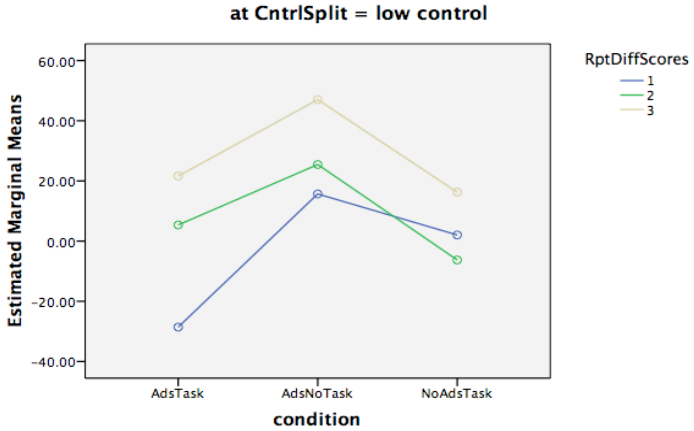


Figure 5a: Liking scores for exposed ads

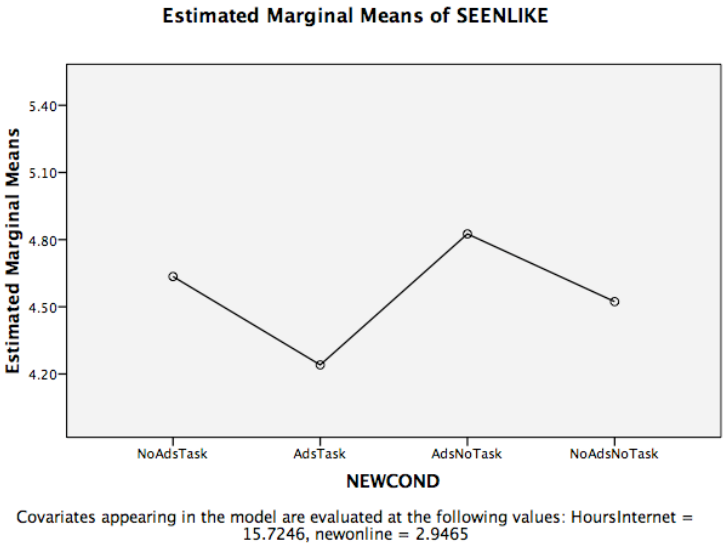


Figure 5b: Trial scores for exposed ads

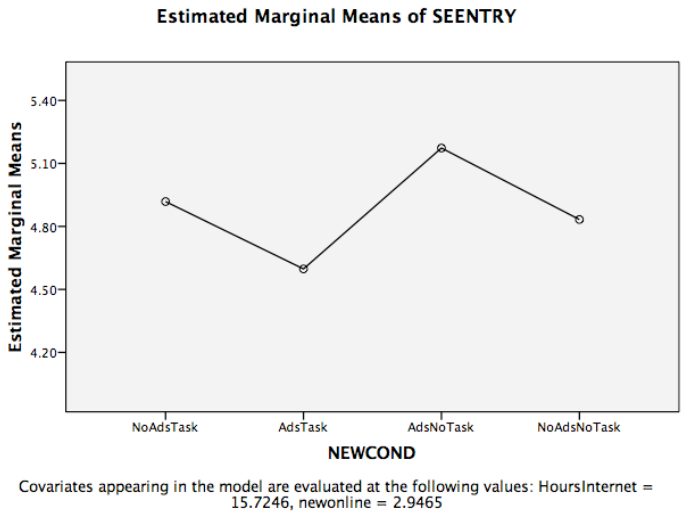


Figure 6a: Liking scores for unexposed ads

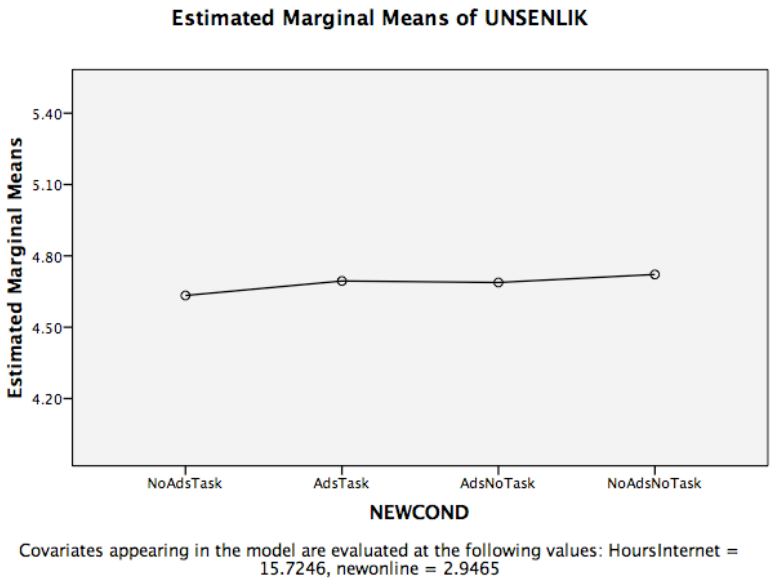


Figure 6b: Trial scores for unexposed ads

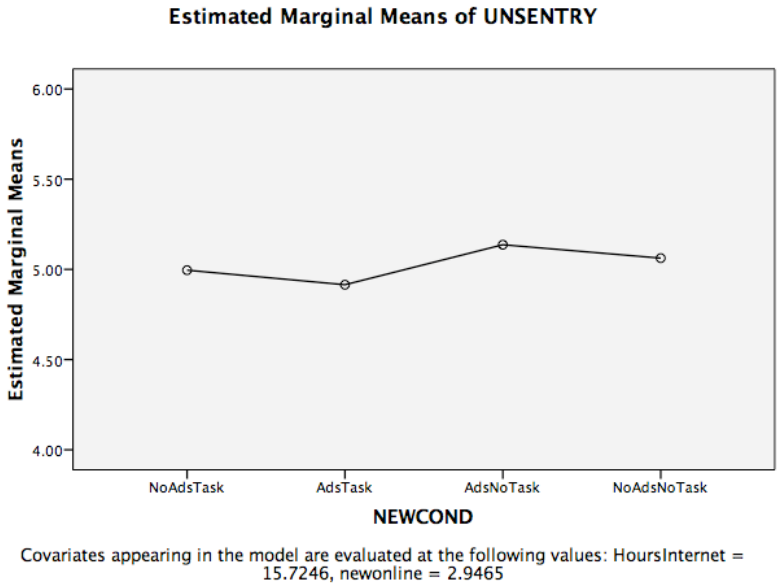
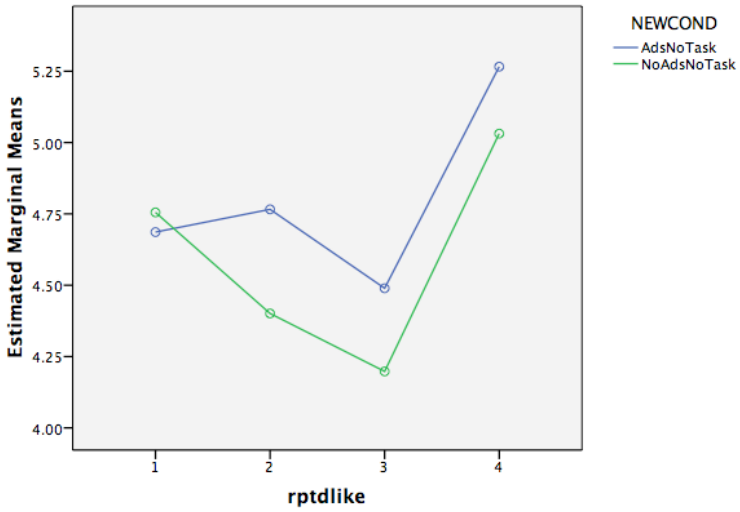
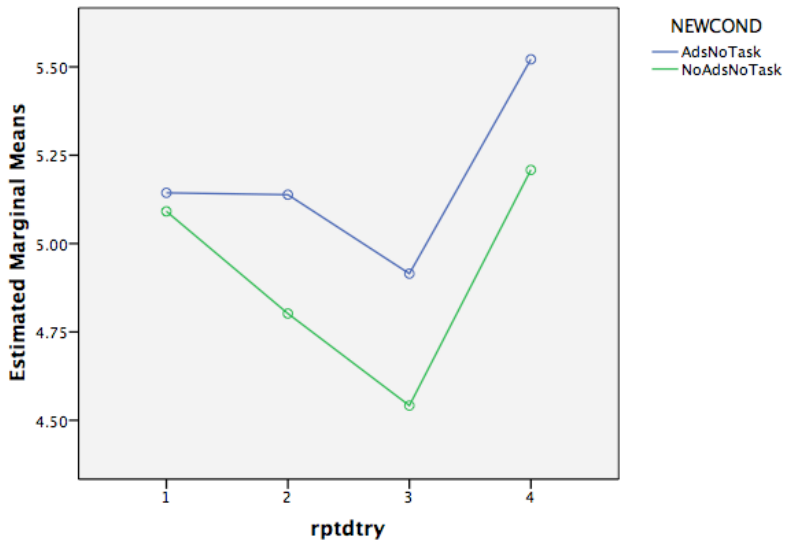


Figure 7a: Repeated ad liking for NoTask groups



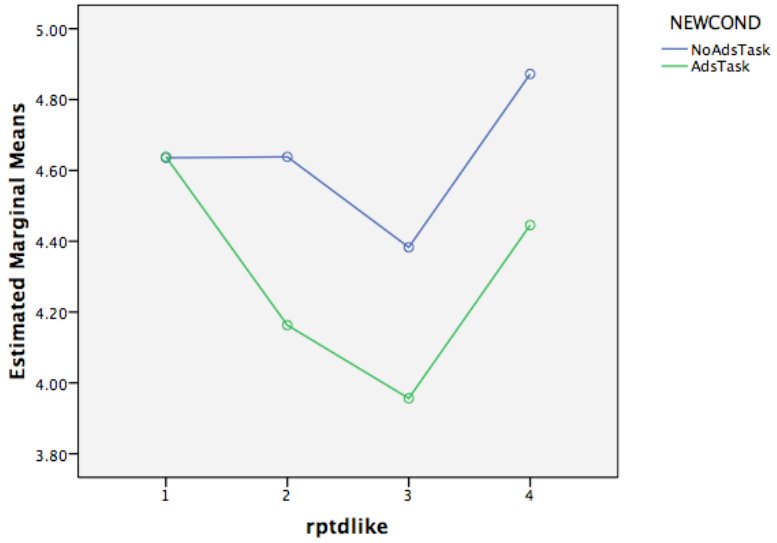
1=exposed 0 times; 2=exposed once; 3=exposed three times; 4=exposed five times

Figure 7b: Repeated ad trial intent for NoTask groups



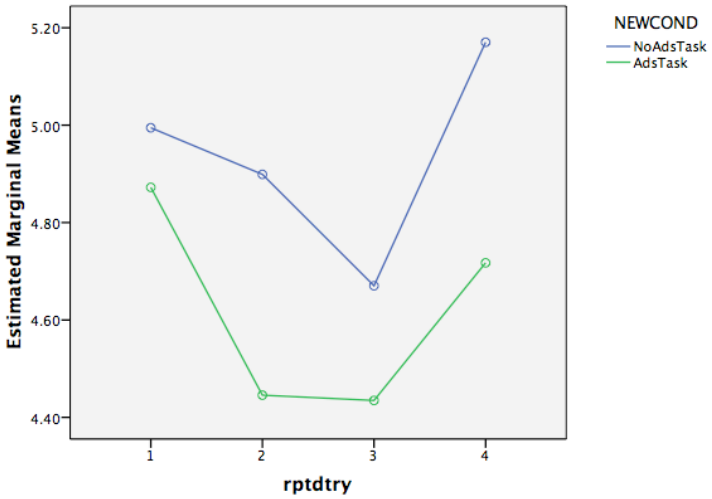
1=exposed 0 times; 2=exposed once; 3=exposed three times; 4=exposed five times

Figure 8a: Repeated ad liking for Task groups



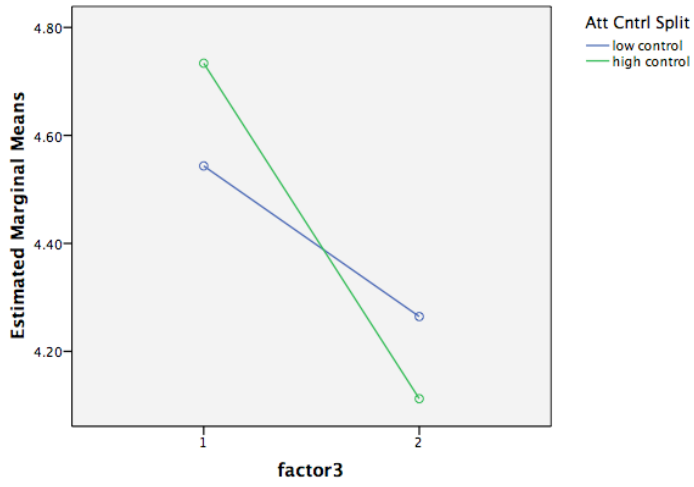
1=exposed 0 times; 2=exposed once; 3=exposed three times; 4=exposed five times

Figure 8b: Repeated ad trial intent for Task groups



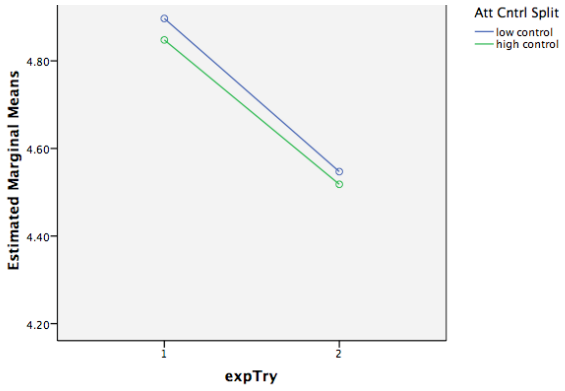
1=exposed 0 times; 2=exposed once; 3=exposed three times; 4=exposed five times

Figure 9a: Attentional control ad liking for unexposed and exposed ads



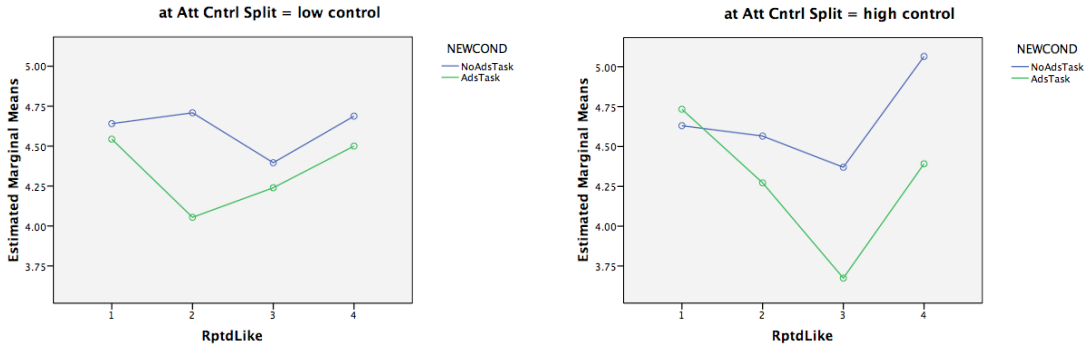
Ads/Task liking scores for: 1= unexposed; 2=exposed logo ads

Figure 9b: Attentional control trial intent for unexposed and exposed brands



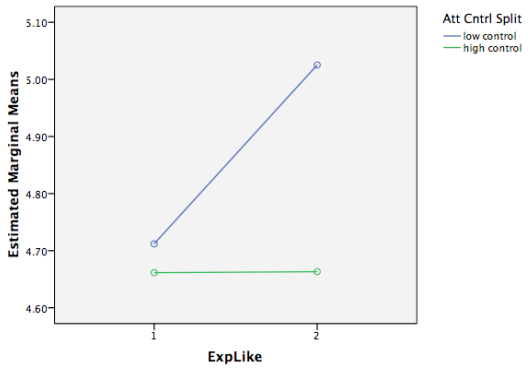
Ads/Task trial scores for: 1= unexposed; 2=exposed logo ads

Figure 10: Attentional Control x Task groups x Repetition (ad liking scores)



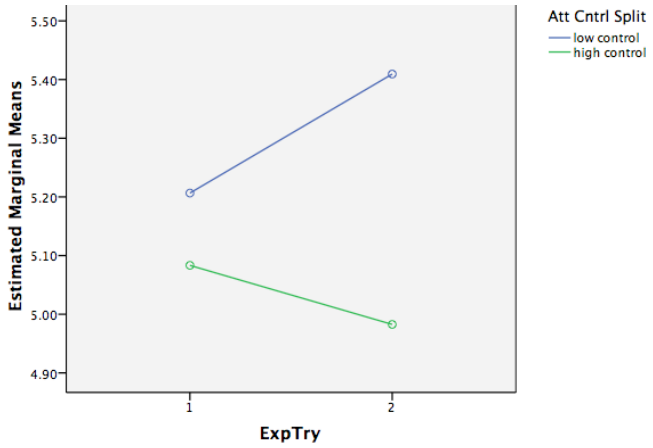
1=exposed 0 times; 2=exposed once; 3=exposed three times; 4=exposed five times

Figure 10a: Attentional Control and unexposed and exposed ads in Ads/NoTask



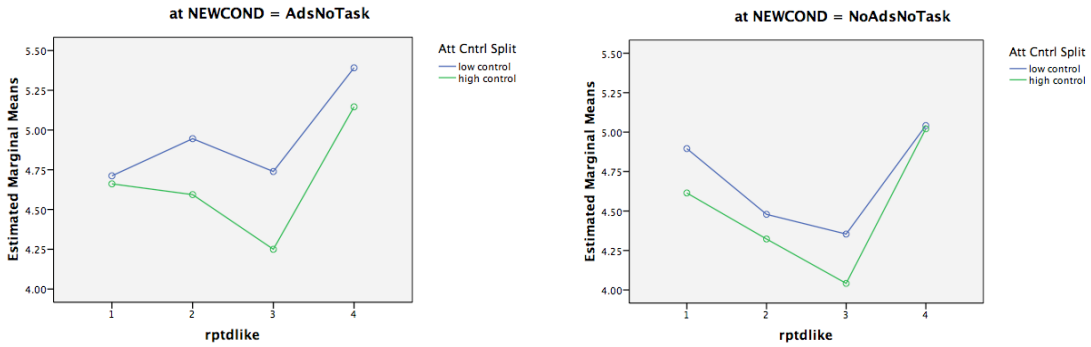
Ads/NoTask liking scores for: 1= unexposed; 2=exposed logo ads

Figure 10b: Attentional Control and unexposed and exposed ads in Ads/NoTask



Ads/NoTask trial scores for: 1= unexposed; 2=exposed logo ads

Figure 10c: Attentional Control x Repetition x NoTask groups (liking)

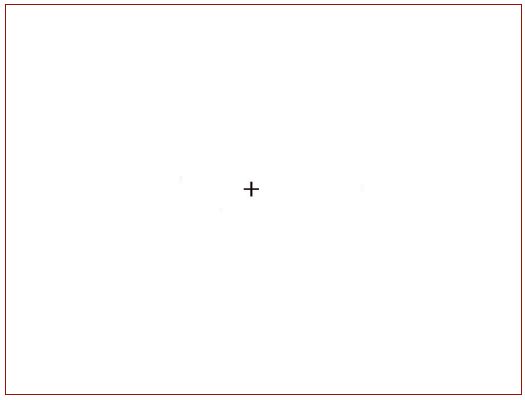


1=exposed 0 times; 2=exposed once; 3=exposed three times; 4=exposed five times

Figure 11: Webpage example

Figure 12: Dot-probe task example:

Fixation cross: 1000ms



Brand logos: 500ms

Dot-probe: response or 2000ms

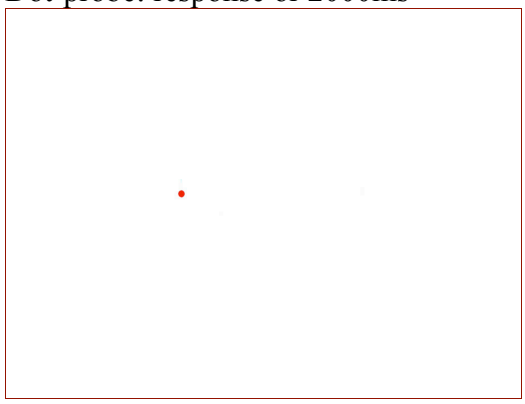


Figure 13: Task groups website questionnaire

ID Number _____

Do you have *normal*/*corrected to normal* (with glasses/contacts) vision? Y N

Are you colorblind? Y N

How many hours per week do you use the Internet (not including e-mail)? _____

Please click to begin the automated powerpoint- each page will be presented automatically for a limited amount of time and you will need to find the answer to each question during that time. If you cannot find the answer- just keep going and leave it blank

Page 1:
The blog with the donkey and elephant logo is called 'Filed Under _____'

Page 2:
Bottom half of text- What is the name of the teacher who created the P.E. class?
_____

Page 3:
Top half text- What is the name of the neighbor in the article?_____

Page 4:
Top- What section is this article in (highlighted under the 'news' tab)?
_____

Page 5:
Top of page- What is the red (circle logo) button for? _____

Page 6:
What is the name of the Zipcar in the photo caption? _____

Page 7:
Bottom text- what county was the jail bracelet from?_____

Page 8:
Sidebox- What is the web address where you can buy tickets? _____

Page 9:
Who is the author of the article?_____

Page 2:
How many comments have been left?_____

Page 11:
Top half of page- What date was this article published? _____

Page 12:
Top half- What is the temperature right now? _____

Page 13:
Top half- What is the first option under 'sign in to E-mail?? _____

Page 14:
Top half- How old is the suspected robber? _____

Page 15:
In article text- What does the 'Z' stand for?_____

Page 16:
Bottom half text- Where in Brooklyn does Joe live? _____

Page 17:
In the Recent blog posts box- What sport is the top listed blog about?
_____

Page 18:
In article text- What high school is this about? _____

Page 19:
What is the name of the boy in the photo? _____

Page 20:
How many pictures accompany this article? _____

How difficult did you think this task was?
Not at all difficult 1 2 3 4 5 6 7 Very difficult

If there is another person in your room, please wait for them to complete this task. Please let the researcher know when everyone in the room is finished with this task.

Figure 14: NoTask groups website questionnaire

ID Number _____

Do you have *normal*/*corrected to normal* (with glasses/contacts) vision? Y N

Are you colorblind? Y N

How many hours per week do you use the Internet (not including e-mail)? _____

Please go to the automated PPT and let it play. You can look at anything you would like on each page, just look at each page as you would any new webpage. When the PPT is finished playing, answer the following question:

How difficult did you think this task was?

Not at all difficult 1 2 3 4 5 6 7 Very difficult

If there is another person in your room, please wait for them to complete this task.

Please let the researcher know when everyone in the room is finished with this task.

Figure 15: Initial Questionnaire with Attentional Control Scale

What is your current mood?

Sad 1…..2…..3…..4…..5…..6…..7…..8…..9…..10 Happy

Depressed 1…..2…..3…..4…..5…..6…..7…..8…..9…..10 Upbeat

Here are some different ways that people can feel about working and concentrating. Please indicate how strongly each statement applies to you.

1 = Never/Rarely 2 = Sometimes 3 = Often 4 = Always

1. It's very hard for me to concentrate on a difficult task	1	2	3	4
2. When I need to concentrate and solve a problem, I have trouble focusing my attention.	1	2	3	4
3. When I am working hard on something, I still get distracted by events around me.	1	2	3	4
4. My concentration is good even if there is music in the room around me.	1	2	3	4
5. When concentrating, I can focus my attention so that I become unaware of what's going on in the room around me.	1	2	3	4
6. When I am reading or studying, I am easily distracted if there are people talking in the same room.	1	2	3	4
7. When trying to focus my attention on something, I have difficulty blocking out distracting thoughts.	1	2	3	4
8. I have a hard time concentrating when I'm excited about something.	1	2	3	4
9. When concentrating I ignore feelings of hunger or thirst.	1	2	3	4
10. I can quickly switch from one task to another.	1	2	3	4
11. It takes me a while to get really involved in a new task.	1	2	3	4

12. It is difficult for me to coordinate my attention between the listening and writing required when taking notes during lectures.	1	2	3	4
13. I can become interested in a new topic very quickly when I need to.	1	2	3	4
14. It is easy for me to read or write while I'm also talking on the phone.	1	2	3	4
15. I have trouble carrying on two conversations at once.	1	2	3	4
16. I have a hard time coming up with new ideas quickly	1	2	3	4
17. After being interrupted or distracted, I can easily shift my attention back to what I was doing before.	1	2	3	4
18. When a distracting thought comes to mind, it is easy for me to shift my attention away from it.	1	2	3	4
19. It is easy for me to alternate between two different tasks.	1	2	3	4
20. It is hard for me to break from one way of thinking about something and look at it from another point of view.	1	2	3	4

How many times a week do you read a newspaper offline (paper copy) _____?

How many times a week do you read a newspaper on the internet _____?

Figure 16: Perceived intrusiveness scale

The ads on the webpages were:

	Strongly Disagree						*Strongly Agree*
Distracting	1	2	3	4	5	6	7
Disturbing	1	2	3	4	5	6	7
Forced	1	2	3	4	5	6	7
Interfering	1	2	3	4	5	6	7
Intrusive	1	2	3	4	5	6	7
Invasive	1	2	3	4	5	6	7
Obtrusive	1	2	3	4	5	6	7

Figure 17: Study two post-website question examples:

Brand logo advertisement liking and trial:

How Much do you like this logo?
Dislike 1 2 3 4 5 6 7 8 Like

How likely would you be to try a product that used this Logo?
Would Not Try 1 2 3 4 5 6 7 8 Definitely Would Try

Task Focus Measure:

For the webpage task were you?
Not at all focused 1 2 3 4 5 6 7 Completely focused on task

Please look at each logo and answer whether or not it appeared on a webpage:

Did this brand appear on a webpage? Yes No

Figure 18: Advertising avoidance models