

UNCONSCIOUS PROCESSING OF INCIDENTAL  
ADVERTISING: EFFECTS ON IMPLICIT MEMORY,  
ATTITUDE TOWARD THE BRAND AND  
CONSIDERATION SET

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**Abstract:**

Our study expands research on incidental ad exposure by checking whether incidental exposure to an ad increases the likelihood that a product described in the ad will be included in consideration set. In this context, measuring advertising effects based on the traditional cognitive models of information processing may undervalue the effectiveness of incidental advertising. The result suggest that ,upon exposure to incidental advertising, consumers experience priming caused by implicit memory and build a more favorable attitude toward the advertised brand regardless of the levels of attention they paid to the advertisements. Additionally, those who unconsciously processed incidental print ads did not remember seeing the ad explicitly, but they were more likely to include the brand in the consideration set than those who had no exposure. These effects were found despite subject's lack of explicit memory for the ads. Because inclusion of product in a consideration set is often a necessary condition, this research would be an important contribution to the apprehending of the effect of low involvement processing on advertising effect.

**Key words:** incidental advertising; implicit memory; attitude toward the brand, consideration set

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## 1. INTRODUCTION

Brand names and logos are omnipresent in the everyday environment. They are under our feet at the supermarket; they serve in as props in our favourite TV shows. These are just a few examples of ways in which people are continually and steadily exposed to brands in the course of their daily activities. Sometimes, these brands displays are able to capture people's attention, and as a result, people may or may not be aware that they have been exposed to brands in these contexts. Other times, however, this brand exposure is not the focal point of their attention. Actually, recent research in marketing and social psychology proposes that attitudes, choices and behaviour can be influenced as a function of incidental brand exposure (Ferraro, Chartrand and Fitzsimons, 2006). There is solid evidence now that even in the absence of recall or recognition of the exposure marketing communications can influence our behaviour (Vanhuele et al., 2005).

Ferraro, Chartrand and Fitzsimons (2005) define incidental exposure as an automatic processing of visual brand information while conscious attention is directed elsewhere. Vanhuele et al. (2005) talked about focal versus non-focal attention is fairly clear-cut in the case of visual perception. Focal vision is restricted to 1,5 to 5 degrees from the current point of focus. To define it, Shapiro (1999) suggests that while a person spotlights conscious attention on a primary task, other information that is not attended to can be processed. This nonconscious, incidental exposure often occurs without explicit memory for ad, product, or marketing stimuli and can affect persuasion.

The dissertation will contribute to advertising research and practice in several ways. In fact, an empirical examination of unconscious processing of incidental advertising would make theoretical, methodological and practical contributions. From a theoretical perspective, the objective of this study is to prove that consumers memorize information advertisement message in two ways: implicitly and explicitly and that those types of memorization are influenced simultaneously by cognitive and affective reactions. We want to discover how cognitive treatment of advertisement cue conducts to an implicit/explicit memorization. We want to know how emotion influences those types of memorization, too. We try to investigate how an incidental exposure to brand names can affect subsequent brand choices even when the consumer is not aware of the effect of prior exposure, often referred to as an 'implicit memory' perspective, and

demonstrate how this framework can offer an insight for examining brand choices made. This study will permeate to expand our knowledge of factors that influence the effects of preattentive processing of incidental advertising.

Further, we try to revise the traditional Visual-Verbal cognitive style in accordance with current cognitive science findings. In fact, one of the intentions of our study is to better understand the effect of the cognitive style of consumers in their memorization of the advertised brand. This study is the first to consider the moderating role of characteristics of the person: gender and the dimension of visualizer/ verbalizer of cognitive in studying the effects of incidental advertising on consumer consideration set.

Methodologically, the dissertation will suggest the appropriate measure (i.e., implicit memory) to detect the existence of preattentive processing and we use a new self report instrument assessing the individual differences in object imagery, spatial imagery and verbal cognitive style: the Object-Spatial Imagery and Verbal Questionnaire of Blazhenkova and Kozhevnikov (2009). Stemming from social and cognitive psychology research, the most recent implicit and explicit memory theories and attitude theoretical backgrounds are used in this study. As there is only limited empirical evidence that unconscious process can influence a consumer's response to a marketing communication, our managerial aim is to demonstrate for managers how to conceive an advertisement cue that causes those types of memorization.

## 2. INCIDENTAL ADVERTISING AND COGNITIVE ROUTE

Shapiro and MacInnis (1992) suggested that the existence of unconscious processing can be indicated by two measures: (1) no evidence for recognition of target stimuli, and (2) evidence of priming effect. To better apprehend the mechanism of unconscious processing two major constructs: implicit memory and priming. Unconscious processing would result in priming effects generated by implicit memory without the consumer consciously identifying the source from which is derived. To better comprehending the mechanism of unconscious processing one chief construct: implicit memory was checked.

## 2.1. Implicit memory and product involvement

The term implicit memory was formulated by Graf and Schacter (1985), with attributing to the phenomenon of remembering without awareness (Lee, 2001). Implicit memory is analyzed to be revealed by relief in tasks that use memory whereas explicit memory is affirmed by straight testing memory (Jacoby, 1991). Berry and Dienes (1993) affirm that in the case of incidental advertising, contextual knowledge is acquired through implicit attaining processes which concede complicated information about the stimulus environment to be without intention or awareness. They supplementary propose that incidentally acquired contextual knowledge forms a highly robust, instance based and implicit memory for context. The favour of implicit learning is that permits more information to be acquired than is possible through consciously linked channels. The capital advantage of implicit learning is that it may allow cognitive systems to memorize "more information about stimuli than can be processed through consciously controlled channels" (Lewicki et al., 1988).

Jacoby and Dallas (1981) define the facility with which a person recognise the physical characteristics of a stimulus as "perceptual fluency" and is identified to be enhanced through preceding exposures. Especially, empirical proof from implicit memory research arrays that prior exposure to a target of ten benefits task performances such as lexical decision, word completion and anagram solving that involves the identification of the perceptual features of the target (Lee and Labroo, 2004). They reported that conceptual fluency eases consideration-set membership and memory based-choice as the result of extended accessibility of the brand in memory and they lead to the apprehending of the processing fluency model by showing that conceptual fluency influence judgements, too(Lee,2002).

The level of involvement of a product can affect memory measures. Priming emerges to be more effective measure for products that are low involvement rather than high involvement. When a product does not require much elaboration for purchase, a purchase decision is more likely to be based upon such features as brand name or logo that are often more easily recalled using implicit rather than explicit memory. Zaichowsky (1985) suggests that low involvement would lead to a relative lack of information seeking behaviors while high involvement would lead

consumers to be more interested in acquiring information about the brand and product attributes. Further, when consumers are highly involved with the stimulus, they have strong motivation to process that stimulus. Therefore, their attention level will be higher than consumers with low involvement and highly involved consumers will be more likely to process the information given by the incidental advertising.

Earlier studies outlined that individuals with a high product involvement are more likely to recall and recognize the presented ad information, while those with a low product involvement are less likely to recall and recognize it (Yoo, 2005). But most of these studies were conducted in the setting of focal attentive processing where individuals are constrained to be exposed to and to process the ad information presented. Findings of Janiszewski (1990) and Shapiro (1997) show that subjects are affected by advertisements even when those ads are outside their attentional focus and they do not consciously process it so attempts at explicit memory retrieval of the recognition fail while response bias due to implicit memory retrieval still occur. Thus, showing no effect for product involvement on implicit memory is important for incidental processing because it illustrates that if priming of incidental advertising occurs, then some form of memory exists that it does not dominated by the processing level involvement in the during incidental processing. Based on the above discussion and the results of prior studies, the hypothesis is suggested:

**H1. The level of product involvement in the incidental processing condition affects negatively an individual's implicit memory performance.**

## **2.2. Gender differences and implicit memory**

Although academician in the field of neuroethics have investigated growth in neuroscience from many angles, few, if any, have paid attention to neuroscientific work on sex differences or to gender as a primary category of analysis. In the psychology literature, human males have shown relatively consistent advantages in a variety of spatial tasks (Zachariah, 2005). Despite what appears to be common knowledge among the masses, very few scholarly books have been devoted to the subject (Zachariah, 2005).

The unconscious nature of the sex differences in object recognition is reinforced by a number of studies. Anooshian and Seibert (1996) have latterly addressed the offering of unconscious processes to recall of visual information using a procedure which acquired detached estimates for conscious and unconscious retrieval of visual information. They observed a significant gender difference for retrieval of unconsciously presented information, but not conscious recollection (McGivern et al, 1993). Alexander (1947) affirms that memory of men is more affected by the size of advertisement and that of women is more sensitive to the influence of repetition. He advances that there is some evidence that the memory of men is better for written material presented in various advertising media than for the details of products when presented to them for visual examination.

By highlighting the question of gender difference, we want to test the significance of this variable in the context of incidental advertising. Theories about the neurobiology of emotionally influenced memory storage should begin to actively take into account the evident influence of gender. Ferguson, Cruz and Rueda (2008) find that visual memory recall prospers through transfer-appropriate-processing with each gender developing domain specific abilities relative to current tasks that they exercise frequently. Results from this study illustrate differences in performance for gender specific tasks and commend that visual memory recall is related to task specificity. However, no such research has studied the effect of gender differences in recognition of brand name. Based on the above discussion and the results of prior studies, the third hypothesis is suggested:

**H2. The gender of consumer affects positively the memorisation of brand names. Females have greater capacity than man to retrieve from memory the name of the brand in the case of incidental exposure to advertising.**

### 2.3. Cognitive style and implicit memory

Attention for studying cognitive style in decision making is proliferated those years as research on basic cognitive styles showed that individuals use different approaches to clarify simple cognitive tasks and that individual' favouritism for these propositions are quite stable over

time and are related to both intelligence and personality. Childers and Houston (1984) have criticized the fact that relatively little attention has been given to nonverbal information processing and even less to comparisons of the effect. They proposed that in the context of advertising it is useful to examine the differential effects of pictures and words on consumer memory. In the context of incidental advertising no study have examined this differential effect on consumer memory. Based on the above discussion and the results of prior studies.

Further, Jonassen and Grabowski (1993) affirm that the dissimilarity between visualizers and verbalizers are often not great as some other cognitive styles. Indeed many bimodal users are symmetrically comfortable using either modality. They add that individuals appear to learn best when information can be readily translated into their preferred Verbal-Imagery mode of representation. Childers and Houston (1984) have criticized the fact that relatively little attention has been given to nonverbal information processing and even less to comparisons of the effect. They proposed that in the context of advertising it is useful to examine the differential effects of pictures and words on consumer memory. In the context of incidental advertising no study have examined this differential effect on consumer memory. Based on the above discussion and the results of prior studies, the following hypothesis:

**Hypothesis 3. Cognitive styles affect positively the implicit memory performances in the case of incidental advertising. They recall more accurately in the case of incidental advertising the name of the brand in the situation of incidental advertising.**

### **3. INCIDENTAL ADVERTISING AND AFFECTIVE RESPONSES**

#### **3.1. Emotional responses**

To understand the effects of incidental advertising on emotion we refer to the works of neuroscientists. In fact, Decision neuroscience offers the commitment of deepening our understanding of emotion and decision making in a number of ways. Neuroscientists like Damasio and Le Doux have shed a great deal of light on the critical roles that emotion plays in the brain (Damasio, 1994; Le Doux, 1996).

As there is a delay between the incidental advertising exposure and subsequent brand choice, memory processes ought to be important in determining the effectiveness of particular kinds of advertising. We will examine in the experimental part the critical link between emotion and memory and look how this argues strongly for a dynamic understanding of the way emotion works as we process advertising. The findings of Percy(2003) suggests that in addition to the words and visual images, we also store the emotions that are present at the time so when we recall that event, the emotions associated with it are also recalled whether we are conscious or unconscious of those feelings.

Showing that feelings “that consumers experience simultaneously during the incidental exposure to advertising and analyse how the structure affects advertising processing and effectiveness have a great standing in studying the effectiveness of incidental advertising. In fact, although it is common known that effective advertising evoke specific feelings in the target audience, it stays not well understood the ad evoked feelings play in incidental advertising processing. We think that this misunderstood of the central role of affect in persuasion processing is the reason of wasting a lot of money. One of the goals of our study is to examine the structure of the feelings that consumers experience concurrently during incidental advertising and to determine the impact of the structure of these feelings on attitude toward the brand name recall. If incidental processing does promote affect, one would expect to replicate Janiszewski (1988) finding of the relationship between placement effects and ad effect.

**H.4. Positive feelings evoked by consumer at the moment of incidental exposure to advertising affects positively the implicit memory performances.**

### **3.2. Attitude toward the brand**

Previous research in both marketing and psychology provide evidence that nonconscious processing of a stimulus creates a feeling of familiarity, resulting in positive affect toward the stimulus (Herr and Page, 2004; Janiszewski, 1990; Zajonc, 1968). The impelling evidence that people have positive affective responses toward stimuli they cannot remember having seen suggest that ads receiving contracted attention may nonetheless be effective agents of attitude change (Anand, Holbrook and Stephens, 1988; Janiszewski, 1988, 1990). As the most studies



treating the effects of incidental advertising, attitude toward the brand consists of only one component, affect, which represents the degree of favourability or unfavorability with respect to the attitude objects (Yoo, 2007). We prefer to use the unidimensional view of attitude, accordingly to the works of Janiszewski (1988, 1991). He had proposed that attitude toward the brand (Aab), an affective construct representing consumer's familiarity/unfamiliarity toward the brand itself.

Studies on the relationship between emotion and memory have focused particularly on conscious or explicit memory (Cahill and McGaugh, 1998; Phelps, 2006), giving implicit memory processes a much lower profile. In our opinion, this approach to the relationship between emotion and memory is insufficient, since most of the information cryptographed in our memory systems cannot be achieved through intentional or conscious recall. Steidal et al. (2006) found that emotion modulates implicit memory. In fact, implicit memory can take many forms, but here we focus on emotion's effects on priming. Incidental advertising may automatically activate emotional reactions (Mehrabian, 1974). Mehrabian (1974) proposes an analogical relationship between ad stimulus features and dimensions of emotions. This automatic processing mechanisms implies that emotions are formed without additional processing resources. Consistent with these suggestions, Zajonc (1980) reported that sheer prior exposure to unfamiliar stimuli produced preferences in the absence of recognition of the stimuli, and claimed such data provided evidence for independence for cognitive and affective judgements processing. Although results are not apparent or decisive on how implicit recall is influenced by the emotional content of incidentally encoded stimuli (Tapia et al., 2008). Our fifth hypothesis constitutes an extension of the false fame effect of Jacoby and Kelly (1981), Hence it may hypothesis that:

**H5. Implicit memories and emotional responses generated by incidental advertising affect positively attitude toward the advertised brand.**

### 3.3. Brand consideration set

Whether incidental advertising stimuli influence individual's behavioural responses is still unclear. Shocker et al. (1991) recommend that consumers may use more than two stages to facilitated purchase decision making. Consumer research ascertain that the decision maker goes through a mindful and contemplative process in making their product choices (Bettman, Luce and Payne, 1998; Fitzsimons et al., 2002), with the consumer decision-making process described as a series of stages requiring different levels of cognitive process. The existence of nonconscious influences indicate that choice is not provoked by thoughtful action or strongly held preferences but can be influenced by various factors without awareness. Yoo (2005) stipulate that because consumers may not be exposed to all brands, and because consumers may not encrypt all brands to which they have been exposed, the retrieval set is commonly much smaller than the universal set.

In the absence of liked brands that are attainable in memory or accessible in the environment, a brand that is perceptually noticeable in the environment and thus more readily discernable among its competitors would more likely be chosen. Under these circumstances, preattentively exposed advertising that brings on to enhance perceptual and conceptual fluency of the brand should benefit a stimulus-based brand choice. Brand awareness is a system for where the brand is just known to a level when the consumers have put the brand on a higher rank, the brand has become top of mind.

In the case where the consumer is incidentally exposed to advertising we expect that the name of brand is memorized in implicit memory, once in a store or face the brand; the consumer has a positive feeling toward the brand due to a familiarity felt by the consumer toward the brand. Brand recognition is crucial since a lot of the consumers feel that if the brand is well known it has good quality. Chris\_(1993) procure evidence that mere exposure effects remain when initial exposure to brand names and product packages are incidental and devoid of any accidental effort to process the brand information. These mere exposure effects are ascribed to stimulate a consumer to have a more positive attitude toward the brand, even when the consumer can not recollect the initial exposure. Repeatedly, Shapiro (1999) found that the likelihood that an advertised product would be included in the stimulus-based consideration set would be greater in

the preattentively processing condition than for the control group. Thus, it is expected that unconscious processing will lead to more favorable evaluations of the brand than no exposure.

**H7. Attitude toward the brand affects positively the inclusion of the name of the brand in a stimulus based consideration set.**

**H8. Emotional and implicit memories affect positively the including the name of the brand in a stimulus based consideration set.**

#### 4. METHODS

An experiment was designed to test the hypotheses. The ensuing sections denote an experimental procedure. Earlier to the chief experiment, three computer magazine pages were developed for the main study and three web pages were developed for the main study and a word stem completion test was developed to appraise implicit memory.

##### 4.1. Stimuli Development

In tandem with past research on unconscious processing in advertising context, the incidental ad exposure setting can be applied to the experimental design of the present study, in which subjects are asked to fulfil their experimental goal (reading the context of a magazine page) and they do not attentively process the embedded in the incidental ads during the experimental tasks. Some pretests preceded the main experiment. The objective of each pretest is summarized in **Table 1**. Students were determined to be appropriate subjects in the study.

**Table 1. Goals of 3 Pretests**

A Monthly Double-Blind Peer Reviewed Refereed Open Access International e-Journal - Included in the International Serial Directories  
Indexed & Listed at: Ulrich's Periodicals Directory ©, U.S.A., Open J-Gate, India as well as in Cabell's Directories of Publishing Opportunities, U.S.A.

International Journal of Physical and Social Sciences

<http://www.ijmra.us>

	Objectives
<b>Pretest 1</b>	<ul style="list-style-type: none"> <li>● Choosing appropriate product categories to be used in the main experiment</li> </ul>
<b>Pretest 2</b>	<ul style="list-style-type: none"> <li>● Choosing two test product categories that are different in terms of product involvement.</li> <li>● Picking out words to be used for word completion tests in the main experiment</li> </ul>
<b>Pretest 3</b>	<ul style="list-style-type: none"> <li>● Testing the workability of incidental processing manipulation</li> </ul>

**Pretest 1** with college student (N=42) was conducted to choose appropriate product. In a paper and pencil survey (See Appendix A), two questions were asked of each student :( 1) Please list top of mind product categories when it comes to print advertising (2) Please list appropriate product categories that well fit print advertising. Some criteria were used to select the target alternatives. First, because both male and female subjects were to be used in the study, and because the variable of interest was what product subjects would personally consider buying for themselves, the target alternatives had to be gender neutral .Second, the target products need to be concrete so that they could easily be depicted pictorially in context. This criterion eliminated alternatives such clothes and makeup. Third, we should remove ceiling and floor effects so that brand that we have to select should not be a leader and not little known by consumers. We have collected 159 citations (7citations per consumer). Only products mentioned by at least two subjects in the initial pretest were to be included in the consideration set checklist. This led to a total of 22 possible product alternatives. Each product category listed by a respondent was entered in the frequency analysis. The most frequently mentioned product category was juice (20),while the least frequently mentioned product categories were MusicCD's(1),Wheel(1),Hotels Journey(1), etc.....Two products were selected as suitable **cookies** and **laptop computers**.

**Pretest2. Stimulus Material and Word Selection****Table 2. Descriptive Statistics on Product Involvement for four Product Categories**

	<b>Cookies</b>	<b>Laptops</b>	<b>Buying DVD</b>	<b>Clothes</b>
<b>Involvement</b>	0.140	0.671	0.377	0.422

As showed in table 2. based on product involvement scores, it was decided to use "Cookies" and "Laptop Computers" as target product categories for the main study since the levels of product involvement between the two product categories are significantly different. Target brands were selected on the basis of the results of pretest in which participants were asked to list as many brands as they could for different product categories. The three most frequently listed brands and those listed by fewer than 10 times in total by the participants were eliminated to avoid ceiling and floor effects. So, we ask a number of students (N=42) to list , in a laps of one minute for each, a top mind brand name of "cookies" and "laptop computers". From the category of cookies, "Sablito" is the brand that we retain because its fourth position cited. And from the category of laptop computers, "Acer" is the brand that we retained because its position cited, too. Pictures of each product were taken from internet in isolation. Two advertisements were created for each target product Acer Laptop and Sablito cookies. As Shapiro (1997) did in his experience, the measures of advertisements were 4centimetres high and 2 centimetres wide.

For word completion tests, a list of words was selected to be used in the main experiment. We gave to the subjects a list of words (35 words) in order to permit for adequate priming effects of incidental processing. The words were chosen to avoid those fragments that were too easy or too hard (producing extremely low completion rates). Words with no higher than 46percent completion rates and no lower than 15percent completion rates (Yoo, 2005). From the initial 35 words, a total of 10 words were selected and the fragments chosen for the study had a completion rate of 21percent and a median completion rate of 17percent. In the end, the feasibility of incidental processing manipulation scenario was tested, and the results showed that this

manipulation scenario would successfully generate a condition for incidental processing in the main experiment.

### Pretest 3: Feasibility of incidental processing manipulation scenario

To be sure that the manipulation of incidental processing is successful, we should be certain that subject's advertising recall rate is close to zero or smaller than that for conscious processing where subjects will be asked to consciously evaluate a magazine page and we should respect the condition subjects advertising recognition rate in the incidental below the threshold point of 25 percent affirmed by Janiszewski (1993). We led a Chi-square tests on both recall and recognition rates. The results of our experience showed that only three subjects in the incidental processing condition recalled the target advertising and five subjects in the control processing group ( $\chi^2=6.533$ ,  $p=.05$ ). Meanwhile, two out of fifteen subjects in the incidental processing condition recognized the target ad compared to 60 percent of recognition rate (9/15) in the control processing group ( $\chi^2 =4.8$ ,  $p=.05$ ). For the advertising recognition rates for the incidental processing condition (13, 33 percent) below the threshold point we set in our study. Based to these results we suggest that is appropriate to use this scenario in the main experiment.

We have to mention that we tried to lead this experimentation via internet and we have sent the questionnaire to 15 subjects and finally we found that 12 subjects had detected the presence of advertising that's why we decided finally to lead this experience in laboratory in order to control the duration of exposure and to not let the subjects the chance to detect the presence of banner advertising.

Pre-experimental Questionnaire

(Product Involvement)

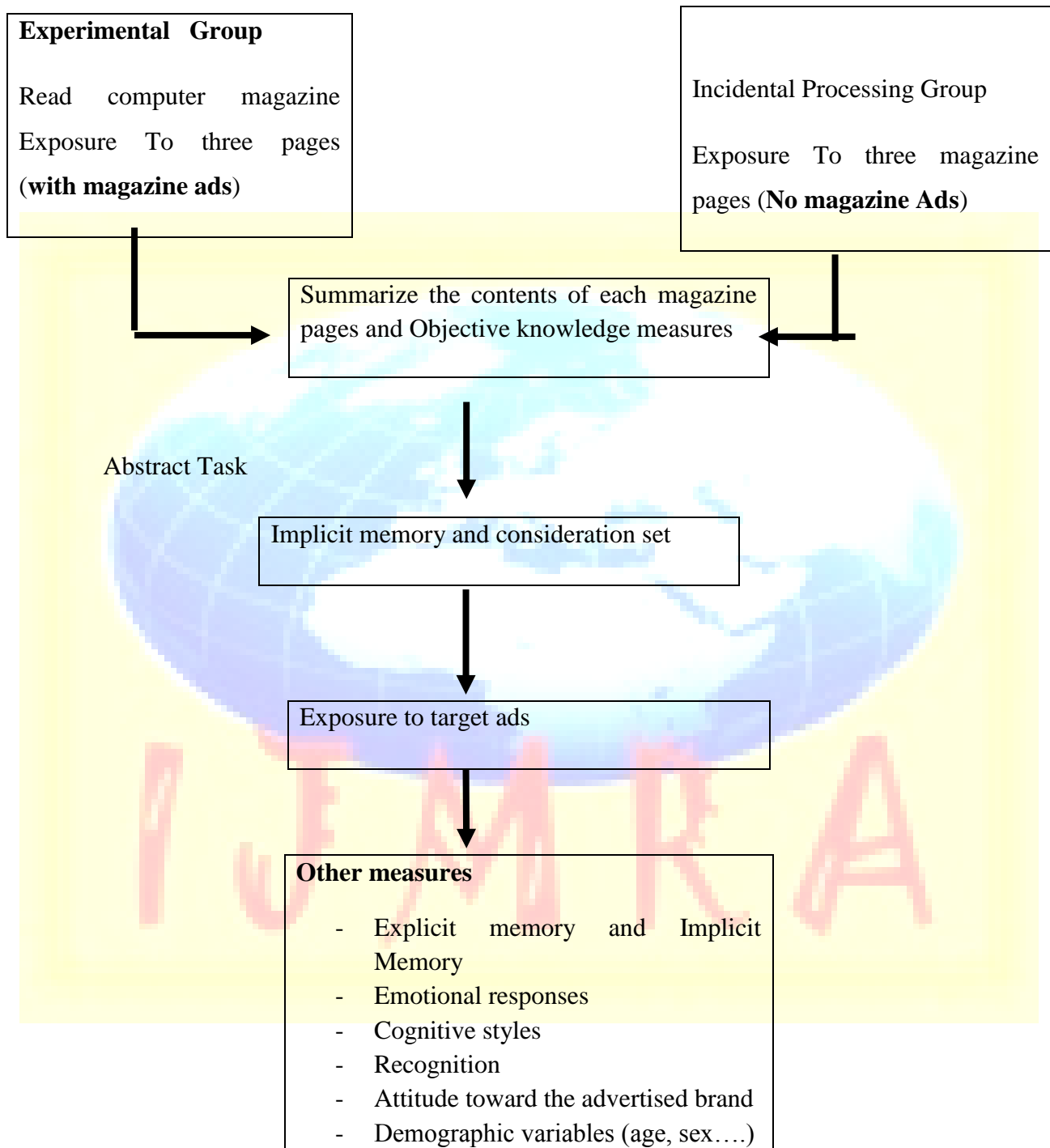


Figure 1. Experimental Procedure

#### 4.2. Procedure

Two versions of the magazine were developed. The first contained the advertisements placed in the bottom at the right. The ads occupied a visual field ranging from approximately 2 degrees to 16.5 degrees when viewed from the left-hand margin of the right column and 17.3 degrees when viewed from the right hand-margin of the right column. The highlighted text that appeared in the right-hand column next to each product depiction in the target ads took approximately 15seconds to read.

The placement manipulation was used to vary the hemisphere in which the advertisement was placed initially, and hence test the cooperative interference hypothesis. A computer professional have helped us in dressing our computer magazine. For every experiment, a control group was included to increase confidence in claims that observed differences in treatment group performance were the result of interference.

#### 4.3. Manipulation check measures

Eight objective knowledge questions were developed based on the contents of magazine pages. By those questions we want to know how subjects understood the contents of the magazine pages, by requesting them to choose appropriate answers from alternatives in multiple choice questions. To measure advertising recall, subjects were asked to cite all of the brand names from the banner ads they were exposed to during the experiment (free recall). The presence or absence of a brand name from the test (or target) ad on the subject's list was coded as a dichotomous variable (yes=1 and no=0). Recall and recognition were measured for the purposes of the manipulation check. Subject's familiarity with the banner advertisements was assessed by a single nine point item anchored by "very familiar" and "not at all familiar". We operationalise gender as dichotomous variable; participants indicate if they are (1) male or (2) female. The suggested hypothesis proposed the four chief dependant variables to measure in the experiment: implicit memory, emotional responses, attitude toward the advertised brand and consideration set (**Dependant measures**).

**4.3.1. Emotional responses measures:** emotional responses measures were assessed by SAM (self assessment Manikin), a nonverbal measurement of emotional response. The SAM measures



the three P (pleasure), A (arousal) and D (dominance), the three dimensions of emotional responses Mehrabian and Russell (1974). It is a non-verbal pictorial assessment technique that directly measures the pleasure, arousal and dominance associated with a person's affective reaction to a wide variety of stimuli. It represents a promising solution to the problems that have been associated with measuring emotional response to advertising (Morris et al., 1993).

**4.3.2. Verbaliser-Visualiser dimension of cognitive style measurement:** For this study, we use the OSIVQ scale developed by Blazhenkova and Kohzevnikov (2009). They developed a new scale based on a new theoretical model of visual-verbal cognitive style that discerns three separate dimensions: object imagery, spatial imagery and verbal as opposed to the traditional bipolar Visual-Verbal cognitive style model that distinguishes between two opposing dimensions: Visual and Verbal. The results of the confirmatory factor analysis displayed that the overall fit of the new three-factor model is significantly greater than that of the traditional Visual-Verbal two-factor model.

A pretest was conducted where 30 participants were tested individually. They were administered the OSIVQ items with the following instructions: "This is a questionnaire about the way you think". Please, read the following statements and rate each of them on a 5-point scale. Circle "5" to indicate that you absolutely agree that the statement describes you and circle "1" to indicate that you totally disagree with the statement. Circle "3" if you are not sure, but try to make a choice. It is very important that you answer all items in the questionnaire. There was no time limit for the completion of the questionnaire. With SPSS 16 we proceed to an item analysis. The obtained alpha score is 0.602, an acceptable value for a research instrument. We notice that items 1,3,8,9, 10, 15, 21, 24, 25,28,32,37,38,41,42 are troublesome. They had a low item total correlation and alpha would increase if we were to remove those items. In fact, their deletion would increase alpha. It is necessary to delete the cited items to improve the reliability score of this scale.

**4.3.3. Implicit memory measure:** Implicit memory was evaluated by the word stem completion tests. To abstain priming recognition of the stimulus, implicit memory was determined first. One of the methodological limitations in using a word completion test is that both conscious and unconscious processing may contribute to subject's overall performance on the test. The PDP

uses two different tasks. In an exclusion task, subjects are instructed to complete word stems with words that are not presented in the advertisement. Thus in the exclusion task, an increased likelihood of completing word stems with exposed words would occur only if conscious memory retrieval failed (1-C) and if memory retrieval by unconscious processing lead to a correct response. He translated this discussion into a simple equation that describes performance for exclusion tasks provide a way to estimate the separate contributions of conscious and unconscious processing. He stated formally:

$$\text{Exclusion task performance} = (1-C) U \quad (1)$$

Similarly for the inclusion task

$$\text{Inclusion task performance} = C + (1-C) U \quad (2)$$

Using equations 1 and 2, C and U can be obtained easily by simple algebra

$$C = \text{Inclusion Task Performance} - \text{Exclusion Task Performance} \quad (3)$$

$$U = \text{Exclusion Task Performance} / (1-C) \quad (4)$$

Where performance is measured by the proportion of correctly completed words in the word completion test.

**4.3.4. Product involvement measure:** Product involvement was measured by Zaichkowsky (1994) revised Personal Involvement Inventory (PII) which comprises five 7-point semantic differential items (useless/useful, uninterested/interested, worthless/valuable, unwanted/wanted, undesirable/desirable). In fact, the reliability of the scale over time was checked over two subject populations for an average test-retest correlation of 0.90. This instrument is simple and applicable across products, brand decisions and advertisements stimuli (Sridhar, 2007). Zaichkowsky measure can be a sufficient tool for researchers who need a short measure with high criterion validity and who can tolerate a slight decrease in reliability

**4.3.5. Attitude toward brand measure:** Attitude toward the brand was measured by three 9-point semantic differential scales. The items were anchored by “positive/negative,” “good/bad,” and “favorable/unfavorable” (Mackenzie, Lutz and Belch, 1986). The scores of the items were averaged to generate an index score of Ab (.94).

**Table 3. Internal Reliability of attitude toward brand measure****Reliability Statistics**

Cronbach's Alpha	N of Items
0,973	5

**4.3.6. Consideration set measure:** As Shapiro et al. (1997) did we use the verbal checklist of brand names. This verbal checklist includes the brand names of ten product alternatives in each category. All ten brand names were real ones, to delete potential confounding effects from prior knowledge or attitude toward the existing brands. We present the brand names in an arbitrary order and no information other than brand names was administered. Two stimulus based consideration set checklists were developed, based on the two product categories used in the experiment. We present just the brand names with no other information. We pose the ensuing question to each subject enumerated "Check the names of the brands that you would be interested in trying. Please checkmark as many or as few names as you wish". This technique is similar to used by Yoo (2005). The consideration set size was also calculated by the tallying number of checked brand names and the presence or absence of the target brand names was .

**5. RESULTS**

**5.1. Objective knowledge test:** Both control and incidental processing group subjects pursued the equivalent instructions during the experiment. They were requested to read the contents of two magazine pages and summarize them. So, the objective knowledge stores can be used as a baseline performance level, concluding a majority of attentional resources are being dedicated to reading the content of the magazine page stimuli; the control group has no advertising to deviate their attention. To be sure that the preattentive processing group did not allocate attentional resources to the advertising and thus embedding the allegation processing would be found if statistically equivalent scores on the objective knowledge tests between the control group and the incidental processing group. Eight multiple choice questions were used to assess subject's objective knowledge, the scores of objective knowledge for the control group ranged from 1 to 6,

where as those of the incidental processing group ranged from 3 to 6. The scores for both control and incidental processing group ranged were compared using ANOVA test.

Results sustain the equivalence of the objective knowledge store for the content of two magazine pages among the incidental processing group (Mean=3, 82, S.D. =1,921) and control group (Mean=4.12, S.D. =1, 842). This permits us to be sure that subjects in the incidental processing group did not deviate their attention to the target ads and mainly concentrate on the content of the magazine page when completing the processing task.

**Table 4. Results of ANOVA: Control versus Incidental Processing Groups on Objective Knowledge Scores**

	N	S.D	df	F	p
<b>Control</b>	40	1.842	1	.746	.383
<b>Incidental</b>	110	1.921			

## 5.2. Advertising Recall, Recognition and Familiarity tests

To measure the advertising recall we proceed to free recall by respondents, they were in fact asked to list as many as they desire all the brand names they were exposed during the experiment. The absence or the presence of the target brand was coded as dichotomous variable (yes=1 and no=0).

Shapiro et al. (1997) suggest that incidental exposure assumes that respondents would not produce explicit memories for the target ads they were exposed to during the experiment. To be sure that ads were processed in unconscious manner, the subjects should have ad recall and recognition rates equivalent to those for the control group. We expect a greater familiarity due to the cognitive elaboration and priming. Without explicit memory for having seen the target ads this easy access to a memory is misattributed to an increase in familiarity. In fact, paradigm of incidental advertising of Janiszewski (1993) suggest that when exposure to the target ads leaves a memory trace for the semantic information, subjects more easily access to ad information in

ensuing occasion. In our data we examined first the evidence of effects of product involvement on the recall and recognition responses among the subjects in incidental processing group. We examined the data to examine the effects of the independent variables of product involvement and cognitive style on the recall and recognition responses among the subjects in the incidental processing group.

To be sure that the manipulation of involvement was successful with subjects we conduct a paired t-test. Subjects affirm that “**Laptops**” (M=7.69, SD=1.75) was a more involving product category than “**cookies**” (M=2.13, S.D.=0.9,  $t_{df=309}=41.35$ ,  $p \leq 0.05$ ), our results indicate that the manipulation of product involvement was successful and laptop was determined to be high involving product category while cookies was assigned as low involving product category.

**Table5. Descriptive Statistics on Manipulation Check measures: Ad recall, Ad Recognition and Familiarity**

	Ad recall		Ad recognition		Familiarity	
	Cookies	laptops	Cookies	laptops	Cookies	laptops
<b>control</b>	0%	0%	15.8%	5.3%	1.53	3.51
<b>Incidental exposure</b>	5.1%	5.2%	2.6%	26.8%	4.85	5.53

The manipulation on product involvement was successful so we conducted another analyses on ad recall and recognition. Based on the results of the table 6., 5.1% percent of the subjects recalled the “Cookies” banner ad while 5.2 recalled the “laptop” banner ad. Meanwhile, 26,8% recognized the” laptop” banner ad, where as 2.6% recognised the “cookies” banner ad. The results of paired t effects proved that involvement had a significant effect on ad recognition <sub>cookies</sub> ( $t_{df=359}=76.081$ ,  $p \leq 0.05$ ) and a significant effect also on ad recognition <sub>laptop</sub> ( $t_{df=359}=77.595$ ,  $p \leq 0.05$ ).

**Table 6. Results of Paired Samples Test: Involvement on Recall of the Brand Name**

	Mean	Std. Deviation	t	df	Sig
Involvement Cookies- Recall Cookies	2.152	.53688	76.081	359	.00
Involvement Laptop- Recall Laptop	2.152	.5264	77.595	359	.00

The results proved that in the case of high involving product (Laptops), the more subjects are likely to recall the banner advertising as a result of incidental advertising. To compare recognition rates across the control and the incidental processing group, we lead two chi-square tests. We have to say that recognition rates were statistically equivalent across the two groups for both products (“Cookies”,  $X^2_{df=1} = 2.70$ ,  $p=0.1$ ); (“Laptops”,  $X^2_{df=1} = 4.94$ ,  $p=.026$ ). Likewise, differences of proportion tests were conducted. Our results affirmed that the recognition rates for the low involving product were no greater than that expected by chance ( $t_{df=359}=4.086$ ,  $p<.01$ ) whereas the recognition rate for the high involving product were significantly greater than those expected by chance ( $t_{df=359}=11.5$ ,  $p=0$ ). In addition, the familiarity scores for the target ads were compared between the control and preattentive processing groups. Our results showed that subjects in the incidental exposure processing had greater familiarity with target ads than those in the control group for both products: **Cookies** ( $M_{incidental}=4.85$ ,  $S.D.=1.61$  vs.  $M_{control}=4.12$ ,  $S.D.=1.52$ ;  $F() = 8.802$ ,  $p=0.03$ ) **Laptops** ( $M_{incidental}=5.53$ ,  $S.D. = 1.32$  vs.  $M_{control}=4.16$ ,  $S.D. = 1.53$ ,  $F=44, 04$ ,  $p<0.1$ ).

In sum, the objective knowledge, ad recall and recognition as well as the familiarity data provide strong proof that levels of attention devoted to the target ads with a low involvement product were minimized in the case of incidental processing condition through the manipulation. However ad recall and recognition rates for the laptop ad (high involving product) are higher than threshold point for the preattentive processing and additionally the ad recognition rate is significantly greater than that expected by chance. Thus, this indicates that subject experienced

conscious processing of the print advertising than preattentive processing for ‘the laptop’ banner ad. Accordingly therefore single data for the ‘cookies’ was used for further analysis.

## 6. Hypothesis testing

**Hypothesis 1.** Incidental processed advertising is more likely to generate implicit memory than that expected by chance. We choose to adopt the same method of Lee (2002) as she measures implicit memory performances by calculating the target completion rate which means the number of correct answers in the word completion list. The results of independent samples t-test showed that target word completion rate were significantly greater for subjects in the preattentive condition ( $t_{df=358}=6.813, p<.05$ ). For the hypothesis test the word completion rate for the control group was compared to that for incidental processing group. The results showed that subjects in the preattentive processing group ( $M=.44, S.D. =.14$ ) completed more target words than the control group ( $M=0.3, S.D=.12, F=46.41, p<.05$ ) thus H1 supported.

**Table 7. Results of ANOVA: Control versus Preattentive Processing Groups on Target Word**

	N	Mean	S.D	df	F	p
<b>Control</b>	50	0.3	0.12	1	46.41	.00
<b>Incidental</b>	310	0.44	0.14			

**Hypothesis 2.** Expects that positive feelings (Pleasure) evoked by the consumer at the moment of incidental exposure to advertising affect positively the implicit memory performance. For the hypothesis testing, a regression analysis was conducted. The index score of the pleasure evoked by the consumer at the moment of incidental advertising for ‘Acer laptops’ was entered as an independent variable while the scores of recall of the brand name was entered as dependant variable. As shown in the table 8., the feeling of pleasure evoked by the consumer at the moment

of exposure had no effect on implicit memory performance ( $B=.008$ ,  $S.E=.007$ ,  $Beta=.059$ ,  $t=-1.031$ ,  $p<.05$ ). Furthermore, R-Square indicates that only minimal variation of .03percent of implicit memory was explained by the feeling of pleasure evoked by the consumer at the moment of exposure to incidental advertising.

**Table 8. Results of Regression Analysis: Pleasure evoked by the consumer on implicit Memory**

Model	Unstandardized coefficients		Standardized coefficients	t	Sig
	B	S.E.	Beta		
Constant	.399	.046		8.761	.000
Pleasure	.008	.007	.059	1.031	.303
R square =.003		F=1.063		p=.30	

**Hypothesis 3.** Predicted that subject's implicit memory performance in an incidental processing condition would not be affected by the level of product involvement. For the hypothesis testing, we conducted a regression analysis. We entered the score of product involvement for "Laptop computers" as independent variable, while the target word completion rate (implicit memory) as dependant variable .As shown in the Table 9. , the subject's product involvement had an effect on implicit memory ( $B=-.045$ ,  $S.E=.016$ ,  $Beta=-.147$ ,  $t=-2.819$ ,  $p<.05$ ). Furthermore, R-square indicates that medium variation (.022) of implicit memory was explained by the subject's product involvement. Thus H3 was rejected.

**Table 9. Results of Regression Analysis: Product involvement<sub>cookies</sub> on Implicit Memory**

Model	Unstandardized	Standardized	t	Sig
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	coefficients		coefficients		
	B	S.E.	Beta		
<b>Constant</b>	.524	.036	-147	14.57	.071
<b>Involvement cookies</b>	-.045	.016		-2.81	.028
R square =.032		F=2.49		p<.05	

Furthermore, R-square indicates that medium variation (.032) of implicit memory was explained by the subject's product involvement. Thus H3 is rejected.

**Hypothesis 4.** Expects that the gender of consumer affects positively the memorisation of brand names. We try to test the relationships of gender and recall of the name of advertised brand. Females have greater capacity than man to retrieve from memory the name of the brand in the case of incidental exposure to advertising. To test this hypothesis, we proceed to a comparison of scores of recall of the brand name between males and females. As shown in the Table 10., the female consumer ( $M_{\text{female}}=.05$ , S.D. =.22) have greater capacity than man to retrieve from memory the name of the brand in the case of incidental advertising ( $M_{\text{male}}=.04$ , S.D. =.193).

**Table 10. Results of ANOVA: Males and Females Processing Groups on recall of the Brand Name Scores**

Individual gender	Mean	N	Std. Deviation
male	.04	182	.193
female	.05	178	.220
total	.04	360	.206

Additionally, we lead a two tailed difference of mean test that indicate that gender of individuals affects positively the recall of the brand name in the case of two products (cookies and laptops) (see the table 11)

**Table 11. Results of Paired Sample tests Female vs. Male processing groups on Recall of the Brand Names**

	Mean	Std. Deviation	t	df	Sig(2-tailed)
Individual gender -ad cookies recall	.450	.536	15.932	359	.000
Individual gender-l ad laptop recall	.450	.576	14.823	359	.000

**Hypothesis 5.** Expects that cognitive styles affect positively the implicit memory performances of each participant. Females and males differ in their verbal reports of visual image. Females have superiority in visual-item memory. Ensuing to that we emphasize that they recall more accurately the brand name in the case of incidental advertising. Before testing the hypothesis and analyzing the collected data, the internal reliability consistency of this scale.

For each participant, the item rating from each factor were averaged to create object, spatial and verbal scale scores (M=4.03, S.D=.39 for the object scale, M=3.22, S.D=.60 for spatial scale, M=3.16, S.D=.82 for the verbal scale). As showed in the results, the participants tended to rate themselves higher on Object imagery than on Spatial imagery or Verbal dimensions. This trend is consistent with the findings of Blajenkova et al. (2006) that people rate themselves higher on Object imagery than on either Spatial or verbal scales. The internal reliability for the object scale, Cronbach's  $\alpha = .645$ , for the spatial scale Cronbach's  $\alpha = .61$ , for the verbal scale Cronbach's  $\alpha = .60$ , all three are below .60 minimum recommended coefficients.

The initial Principal Components analysis revealed eight factors with eigenvalues above 1. Only three factors had eigenvalues markedly higher (6.68, 4.48, 3.75) than the others and these first three factors explained 49.72% of the variance (22.28%, 14.94%, 12.50%). None of the other factors met the recommendations. Most of the items very weakly loaded on the remaining factors and therefore were not considered further. The first factor was identified as object imagery factor, since all of the items designed to assess object imagery experiences were positively loaded to this

factor. The second factor was identified as spatial imagery factor, since all of the items designed to assess object imagery preferences loaded positively on the second factor where as most of other items did not load negatively on this factor. Finally, the third factor was identified as verbal factor, since all of the items designed to assess verbal preferences.

**Table 12. Principal Component loadings, after Varimax rotation for the OSIVQ items**

Items	Object factor 1	Spatial factor2	Verbal factor3
1.I have difficulty expressing myself in writing	.087	-.787	<b>.90</b>
	.048	-.822	<b>.918</b>
2. My verbal abilities would make a career in language arts relatively easy for me.	-.054	<b>.910</b>	-.034
		.	
3.Architecture interests me more than painting	<b>.97</b>	.117	.325
	-.028	<b>.628</b>	-.365
4. My images are very colourful and bright	<b>.838</b>	-.008	-.035
5. prefer schematic diagrams and sketches when reading a textbook instead of colourful and pictorial illustrations	<b>.675</b>	-.026	.54
6. When reading fiction, I usually form a clear and detailed mental picture of a scene or room that has been described	<b>.801</b>	-.092	-.35
	.101	<b>.628</b>	.22
7 If I were asked to choose among			

engineering professions, or visual arts, I would choose visual arts	-0.099	-0.016	.054
8. I have a photographic memory	.022	<b>.771</b>	-.248
9. I can easily imagine and mentally rotate three-dimensional geometric figures	<b>.801</b>	-.092	-.046
10 My verbal skills are excellent	-.020	-.065	<b>.969</b>
11. When thinking about an abstract concept (or building), I imagine an abstract schematic building in my mind or its blueprint rather than a specific concrete building.	<b>.824</b>	.427	.03
	.076	-.065	<b>885</b>
12. When entering a familiar store to get a specific item, I can easily picture the exact location of the target item, the shelf it stands on, how it is arranged and the surrounding articles.	<b>.657</b>	-.771	-.244
	<b>.800</b>	-.016	.022
13. Putting together furniture kits (e.g. a TV stand or a chair) is much easier for me when I have detailed verbal instructions than when I only have a diagram or picture.	.053	<b>.628</b>	.022
	<b>.839</b>	-.034	.018
14. My images are very vivid and photographic.	-.054	<b>.628</b>	.022

15. If someone were to give me two-digit numbers to add (e.g. 43 and 32) I would simply do the adding	-.24 <b>.705</b>	<b>.60</b> -.065	-.02 -.40
16. My mental images of different objects very much resemble the size, shape and colour of actual objects that I have seen	<b>.877</b> .041	-.010 -.092	.018 <b>.835</b>
17. When I imagine the face of a friend, I have a perfectly clear and bright image.	-.118	.003	<b>.824</b>
18. I have excellent abilities in technical graphics	.053 <b>.706</b>	-.065 .03	<b>.877</b> -.296
19. I can easily remember a great deal of visual details that someone else might never notice. For example, I would just automatically take some things in, like what colour is a shirt someone wears or what colour are his/her shoes.	<b>.85</b> .076	-.016 <b>910</b>	-.822 .022
20. I can easily sketch a blueprint for a building I am familiar with.	<b>.910</b>	-.008.	.054
21. in school, i had no problems with geometry			
22. Sometimes my images are so vivid and persistent that it is difficult to ignore them			
23. I can close my eyes and easily picture a scene that I have experienced			
24. I have better than average fluency in using words			

25. I would rather have a verbal description of an object or person than a picture			
26. I enjoy being able to rephrase my thoughts in many ways for variety's sake in both writing and speaking.			
27. I remember everything visually. I can recount what people wore to a dinner and I can talk about the way they sat and the way they looked probably in more detail than I could discuss what they said.			
28. My visual images are in my head all the time. They are just right there			
29. My graphic abilities would make a career in architecture relatively easy for me			
30. When I hear a radio announcer or a DJ I've never actually seen, I usually find myself picturing what he or she might look like			
Eigen values 3.75		6.68	4.48
Percent of Variance Explained 12.53		22.28	14.94
Cronbach's coefficient alpha .60		.645	.61

To test hypothesis 5, a multiple regression analysis was conducted. Subject's word completion rates of the target words (implicit memory) as dependant variable and scores for cognitive styles were entered as independent variables.

**Table 7.10. Results of Regression Analysis: Cognitive styles (object, spatial and verbal) on implicit memory**

Model	Unstandardized coefficient		Standardized coefficients	t	Sig
	B	S.E	Beta		
Constant	.392	.121		3.23	.001
Object factor	.002	.027	.004	.073	.942
Spatial factor	.012	.018	.040	.68	.497
Verbal factor	-.004	.013	-.016	-.279	.041
R square=.002		F=.209		p<.05	

**Regression model: Implicit memory=.392+.002 (object) + .012 (Spatial)-.004(verbal)**

As shown in table 7.10, just one of the three cognitive styles had significant effect on implicit memory (object factor: B=.002, S.E.=.027, Beta=.004, t=.073,p=.942) which is spatial factor: B=.012, S.E.=.018, Beta=.040, t=.068, p=.479; verbal factor :B=-.004,S.E.=.013, Beta=-.016).So we conclude that differences of cognitive styles of participants had no effect in their implicit memory performances. Thus H5 is supported.

**Hypothesis 6.** Implicit memories and emotional responses generated by incidental advertising affect positively attitude toward the advertised brand but before testing the hypothesis,

the equivalent form reliability of the self assessment Manikin measures of emotional responses was first assessed by comparing them with the traditional Mehrabian and Russell's (1972) 18 emotional measure items, since the SAM is new measure and it is never been applied to incidental processing.

First, the internal consistency reliability for the three dimensions emotional responses showed that the pleasure factor had an alpha =.924, if we eliminate the item (satisfied/unsatisfied) the internal reliability of this factor increase (.925), while the Dominance factor had an alpha =.99 and finally arousal factor had an alpha.99. All alpha coefficients were within acceptable standards (Nunnally, 1978). Then, the Mehrabian and Russell's (1974) 18 items were factor analyzed, Using SPSS with principal components analysis and direct oblimin rotation. The rotated factor pattern consists of three factors for the incidental processing data and the explained variance for the initial solution is .3852. The Eigen values for all three factors were greater than 1, we notice that no item was cross-loaded on the extracted factors with the loadings above .50. Items combined with these loadings of .50 or higher were utilised to define the three factors pleasure, arousal and dominance. Inter-factor correlations are small (.052) for pleasure and arousal, (.115) for arousal and dominance, (.014) for pleasure and dominance. Therefore, a three-factor, seventeen item solution revealed the most particular and meaningful dimensions of emotional responses resulting from the unconscious processing of incidental advertising. The next table provides the pattern matrix from the principal component analysis.

**Table 12. Results of Exploratory Factor Analysis Mehrabian and Russell's (1974) Emotional Response Scales for Preattentive Processing**

Emotional responses to preattentive processed advertising			
Items	Pleasure	Arousal	Dominance
Happy/Unhappy	.865	.058	.035
Pleased/Annoyed	.892	.056	.007
Contented/Melancholic	.891	.007	-.017
Hopeful/Despairing	.860	.023	-.011



Relaxed/Bored	<b>.885</b>	.099	.050
Stimulated/Relaxed	-.051	<b>-.988</b>	-.121
Excited/calm	-.040	<b>-.944</b>	-.117
Frenzied/Sluggish	-.046	<b>-.996</b>	-.125
Jittery/Dull	-.046	<b>-.996</b>	-.123
Wide awake/Sleepy	-.040	<b>-.994</b>	-.112
Aroused/ Unaroused <sup>22</sup>	-.086	<b>-.977</b>	-.080
Influential/Influenced	.012	.098	<b>.983</b>
In-control/Cared for	.015	.105	<b>.987</b>
Dominant/Submissive	.019	.112	<b>.988</b>
Autonomous/guided	.016	.108	<b>.986</b>
Controlling/Controlled	.019	.120	<b>.980</b>
Important/awed	0.03	.130	<b>.983</b>
Eigen values		5	6
5.817			
Percent of Variance Explained		77.21	98.169
96.94			
Cronbach's coefficient alpha		.925	.99
.99			

In order to check the equivalent form reliability of the SAM, the correlation tests between Mehrabian and Russell's items and the SAM were operated. Yoo(2005) claims that ancient studies found strong correlations between scores obtained using the SAM and those obtained from Mehrabian and Russell's semantic differential. Anyhow, this study found relatively low correlation coefficients (Pleasure: Pearson's  $r=.50$ ,  $p<.05$ , arousal: Pearson's  $r=.213$ ,  $p<.05$ , and dominance: Pearson's  $r=.182$ ,  $p<.05$ ), implying the SAM would not be appropriate for assessing subject's emotional responses to incidental processing advertising. Accordingly, the traditional

Mehrabian and Russell’s semantic differential items, rather than the SAM, were used for further analyses. To test hypothesis 6, a multiple regression analysis was conducted. Subject’s word completion rates of the target words (implicit memory) and scores for emotional responses were entered as independent variables.

**Table 13. Results of Regression Analysis: Implicit Memory and Emotional Responses on Attitude toward the advertised brand**

Model	Unstandardized coefficient		Standardized coefficients	t	Sig
	B	S.E	Beta		
Constant	1.87	.426	-	4.40	.00
Implicit memory	5.85	.369	.674	15.84	.00
Pleasure	-.037	.048	-.033	-.722	.44
Arousal	-.002	.029	-.002	-.052	.958
Dominance	.015	.035	.019	.438	.00
R square=.452		F=62.77		p<.05	

Regression Model Aab= 1.87+ 5.85(Implicit memory)-.037(Pleasure)-0.02(arousal)+.015(dominance)

As shown in the table 13, subject’s implicit memory (B=5.85, S.E. =3.69, Beta=0.674, t=15.84, p<.05) and one dimension of emotional responses (Dominance: B=.015, S.E.=0.35, Beta=.019, t=.438, p<.05) had significant effect on attitude toward the brand. Moreover, the R-Square for the regression model is .452 and this indicates that 45.2 percent of the variation of

attitude toward the advertised brand in the preattentive processing condition is explained by subject's implicit memory and emotional responses. Among the four independent variables, the standardized coefficient indicates that 'implicit memory' ( $B=.674$ ) is the strongest predictor of Attitude toward the brand followed by Dominance ( $B=.019$ ). Thus H6 is supported.

**Hypothesis 7.** predicts that attitude toward the advertised brand affects positively the inclusion of the brand name in a stimulus based consideration set. To test this hypothesis we proceed to a regression analysis. The index score of attitude toward the brand was entered as independent variable while the scores of stimulus based set was entered as dependant variable. As shown in the table 14 attitude toward the brand had positive effect in the inclusion of the advertised brand in stimulus based consideration set ( $B=.002$ ,  $S.E=.009$ ,  $Beta=.014$ ,  $t=.239$ ,  $p\leq.05$ ). Furthermore, Rsquare indicates that only minimal variation of 1.4% of stimulus based set was explained by attitude toward the brand in the case of incidental exposure to advertising.

**Table14. Results of Regression Analysis: attitude toward the brand consumer on stimulus based set**

Model	Unstandardized coefficients		Standardized coefficients	t	Sig
	B	S.E.	Beta		
Constant	.044	.049		.888	.375
Attitude toward the brand	.002	.009	.014	.239	.000
R square = .014		F=.057		p=.000	

**Hypothesis 8.** Expects that implicit memories and emotional responses affect positively the including of the name of the brand in a stimulus based consideration set. For the hypothesis testing we lead a regression analysis .We entered the stimulus based consideration set as dependant variable and implicit memories and emotional responses as independent variables.

**Table 15. Results of Regression Analysis: Implicit memory and emotional responses on Including the name of the brand in Stimulus based set (N=310)**

Model	Unstandardized coefficient		Standardized coefficients	t	Sig
	B	S.E	Beta		
Constant	-.19	.426		-1.81	.071
Implicit memory	.20	.091	.124	2.204	.028
Pleasure	.007	.012	.032	.564	.573
Arousal	.014	.007	.114	1.99	.046
Dominance	.015	.035	.068	1.198	.232
R square=.032		F=2.49		p<.05	

Regression Model: Including the name in stimulus based set=-.19+.20(Implicit Memory)+.007(Pleasure)+.014 (arousal)+.010(dominance)

As shown in table 15., subject's implicit memory (B=.20, S.E. =.091, beta=.124, t=2.20, p<.05) and one dimension of emotional responses Arousal (B=.014, S.E. =.007, beta=.114, t=1.99, p<.05) had significant effect in including the name of the brand in consideration set. Thus hypothesis 7 is supported. Further, the R-Square for the regression model is .032, and this indicates that 3.2percent of the variation of including the name of the brand in stimulus based consideration in the preattentive condition is explained by subject's implicit memory and emotional responses. Among the four independent variables, the standardised coefficient indicates that 'implicit memory' (beta=.124) is the strongest predictor of the attitude toward the brand followed by Arousal (beta=.114).

#### 8.4. Additional Analysis

We expect that incidental processing is more likely to generate favourable attitude toward the advertised brand than that expected by chance. In order to test our hypothesis, Attitude toward

the brand, Attitude toward the scores for control and incidental processing for Laptops were compared. As we see in the table 16, the incidental processing group had more favourable attitude toward the target brand ( $M= 5.10$ ;  $S.D. =1.40$ ) than did the control group ( $M=3.42$ ;  $S.D=0.59$ ). A two tailed difference of mean test indicates that Attitude toward the brand scores among experimental subjects are significantly greater than those expected by chance.

**Table 16. Results of ANOVA: Control versus Incidental Processing Groups on Attitude toward the Advertised brand**

	N	Mean	S.D.	df	F	sig
<b>Control</b>	50	3.42	0.59	1	1.63	0.125
<b>Incidental</b>	310	5.10	1.40			

We expect that a brand name from the unconscious processing of incidental advertising is more likely to be included in a stimulus based consideration than that of the control group. To test the hypothesis, we proceed to a comparison of the proportions of the target brand chosen between experimental and control groups. The results of chi-square tests showed that subjects in the experimental processing groups ( $M= 0.05$ ,  $S.D=0.228$ ) were likely more to include the target brand (laptop brand) in the consideration set than was the control group ( $M=0.02$ ,  $S.D=0.141$ ,  $X^2_{df=1}=1.1$ ,  $p<0.05$ ). A two tailed difference of proportion test proved that the likelihood of including the brand name is presented in the advertising in a consideration set was significantly greater than that by chance ( $t_{df=359}=38.57$ ,  $p<0.05$ )

In the objective of examining the relative influences of implicit memory performance, emotional responses and attitude toward the brand, emotional responses and attitude toward the brand on the consideration set formation, supplementary statistical analysis was performed. Since the inclusion of the target brand (Sablito Cookies) was coded as dichotomous variable (Yes=1 or No=0) in a consideration set, a binary logistic regression was used.

**Table 17. Results of Logistic Regression Analysis: Implicit Memory, Emotional Responses and Attitude toward the brand (N=310).**

	<b>B</b>	<b>S.E.</b>	<b>Wald</b>	<b>df</b>	<b>Sig</b>
<b>Constant</b>	-9.07	0.259	12.267	1	.000
<b>Implicit memory</b>	3.45	0.228	2.283	1	0.131
<b>Pleasure</b>	0.208	0.231	0.810	1	0.368
<b>Arousal</b>	0.299	0.149	4.029	1	0.045
<b>Dominance</b>	0.217	0.192	1.28	1	0.258
<b>Attitude brand</b>	0.154	0.263	0.344	1	0.557

Binary Logistic Regression Model:  $\ln [p/ (1-p)] = \alpha + B1 (\text{implicit memory}) + B2 (\text{Pleasure}) + B3 (\text{Arousal}) + B4 (\text{Dominance}) + B5 (\text{Ab})$ .

As shown in table 17, only Arousal had significantly positive effects on the inclusion of target brand in a consideration set. The results indicate that, when respondents feel a pleasant emotion they are more likely to include the target brand in a consideration set. This result is coherent with the theoretical findings. The goal of the chief of study was to test eight hypotheses. The results demonstrated that three of eight hypotheses were rejected. Along with limitations and contributions, the detailed discussion relating to the results of the main study will be presented in the next chapter.

## 9. Implications

First, this study shows that implicit memory measures can complement the limitations of the current measures of incidental ad effectiveness based on explicit memory (e.g. recall and

recognition). Specifically when incidental ad are avoided or ignored, implicit memory measures based on unconscious retrieval are more appropriate for incidental advertising effectiveness.

Our study confers to the field in many ways. First, we proposed a new conceptual model that supports researchers and practioners with an overall theoretical framework to appraise the effectiveness of incidental advertising. Inconsistent with anterior incidental ad effects model , not only this model combines various antecedents appearing in classical ad processing models, but also it includes preattentive processing in the print environment furnish a theoretical framework to examine the effects of such processing. Thus as more consumers intentionally avoid incidental advertising, the importance of the model will be improved. . Our findings imply that incidental advertising may be more beneficial for brands that need to increase their familiarity or have low involvement level products.

From a media seller's point of view, the results of this research may be useful to persuade clients to buy incidental media spots, especially when the clients doubt an effectiveness of incidental advertising. Additionally, in terms of pricing, the practical implication for print advertisers is that emphasis should be emplaced in the impression rather than media, which may underestimate the effectiveness of print advertising.

## 10. Limitations

Our research provides useful insights on consumer's preattentive processing of incidental advertising, the limitations should be cited. Like any experimental of advertising effects, the anterior results and discussions are limited by the nature of our stimuli, subjects and instruments.

First, the study takes place in a computer lab, and the setting forces participants to pay full attention to the print magazine pages and disregard everything in the surrounding area. Although this design ensures incidental processing, it also might prevent subjects from diverting their attention to other things involuntarily, such as they may do when they read magazine in a natural settings. This study does not include every experimental condition that could test the hemispheric

processing of incidental cues. Instead, in all conditions stimuli appear in the peripheral vision (left-hand). Therefore, additional studies should manipulate the location of the stimuli fully.

Secondly, incidental print ad banners cannot represent the full hue cycle of print advertising. For this cause, the results of this study should be understood within the context of banner ads, not other print advertising formats.

Third, although the choice of student objects appeared appropriate for the study, available samples can restrict the findings to the general population. Nevertheless, the goal of the study was to analyze preattentive processing within the context of print advertising and there is no reason to accredit that the relationships we discovered should not hold for other segments of consumer population. Reflection of this study using the general advertising population would be beneficial to amplify our apprehension of preattentive processing of incidental advertising

Finally, to evaluate subject implicit memory we used word fragment completion tests. Researchers battled that implicit memory tests provoke different patterns of priming when the test forms differ, such as in the comparison of word fragment completion and picture fragment naming. Actually, words create more priming than do pictures in the former case but pictures produce more priming than do words in the terminal (Yoo, 2005). Thus, the word fragment completion tests in this study are anticipated to assess the effects of primed words rather than primed pictures in the banner ads on implicit memory. We have studied only the effects of verbal ad claims, including brand names but not ad features were contemplated in the word fragment completion tests of this research. However most incidental advertising include not only verbal claims but also modifying pictorial claims. Hence, in this research, due to the restraints of using word fragment completion tests, the effects of pictorial claims on preattentive processing could not be appraised. Future research should study the independent effects of verbal and pictorial ad claims in incidental advertising through using multiple implicit memory tests.

## 11. Future Research



The present work advances a new conceptual model of how incidental advertising work. This model will aid to answer to elucidate the unique problems relating to incidental advertising by combining varying constructs and variables drawn from anterior literature. Greenwald and Leavitt (1984) claimed that there are more than one level of focal attention. As a result, in order to build a more exhaustive model of how incidental ad works, it is acclaimed to address and explore progressive levels (low, medium, and high) of focal attention in future model.

Future research should strive to expand our knowledge on preattentive processing. First, the link between involvement and preattentive processing of incidental processing should be further investigated. Although, this study affirms that that preattentive processing happens only when both enduring and situational involvement are low investigating this aspect using other product categories is essential to ascertain the claim. Furthermore, other factors affecting preattentive processing of incidental advertising should be appraised in the future research. Our metanalysis demonstrated that the modality of the ad information (pictorial versus verbal), ad placement (left vs. right) and preattentive ressource availability all temperate the effects of preattentive processing in incidental print ads (Janiszewski, 1988, 1990, 1993).

Though, to date the effects of varying print ad features such as size, colour and visual vs. auditory ad information on preattentive processing of incidental processing are still in question. Hence, echo of this study using other product categories and manoeuvring various ad-related (e.g. size, colour, location, number of repetition, pictorial vs. verbal representation) would be of huge importance because it would supply tangible ideas for researchers and practioners when preattentive processing of incidental advertising is assumed to happen. The measures of incidental advertising should be modified accordingly as certain conditions or products are more promotive to preattentive processing.

Due to the nature of incidental advertising, consumer's weak performances on explicit memory are anticipated. Additionally, a fragile link between this level of processing and behavioural responses commend that using traditional measures of incidental advertising effectiveness would understate the value of incidental advertising. The attenuate effects of preattentive processing should be appraised by implicit memory performance and implicit memory and attitude changes. Thus research efforts should be assigned not only to advance a

suitable to understand implicit memory of incidental advertising. Examining implicit memory may supplement disadvantages of adjusting exclusively on explicit memory and would give more insights into the effectiveness of incidental advertising.

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