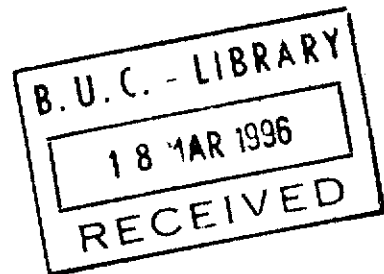


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LEBANESE AMERICAN UNIVERSITY

THE EFFECTS OF
MARKETING STIMULI
UPON ADVERTISING EFFECTIVENESS
AND INTENTION TO BUY



BY

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A PROJECT SUBMITTED IN PARTIAL FULFILLMENT
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UPON ADVERTISING EFFECTIVENESS AND INTENTION TO BUY

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*To my Parents,
Amal and Mohamad,
whose love, devotion and guidance
brightened the way for my
achievements*

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Abstract

At the end of the Twenty-first century, consumers are bombarded each day by hundreds of advertising messages intended to motivate them to buy something. However, new techniques developed by marketers do not allow individuals to become aware of much of the information delivered because it is below the threshold for conscious perception. Nonetheless, some embeds used by marketers could be consciously perceived once they are pointed out. Thus, this information presentation takes place at two different levels of consumer awareness. At the upper most level, consumers will have full conscious awareness of this information. They are paying attention and she or he should be able to remember and state the nature of the information. At the second level, subliminal information would be transmitted where the consumer is assumed to have no conscious awareness.

This research paper was conducted with the assumption that all people might be affected by marketers stimuli. Thus, there are some basic factors and drives common among the human being, i.e. sex motivation, violence, security needs, ego satisfaction...etc. As a result, marketers are continuously trying to understand what motivates people in making their purchase decision (motivational research) while seeking to explore the subconscious.

The purpose of this study was to find whether the inclusion of embed words or symbols can have any effect on consumer behavior and intention to buy. This will be followed by an investigation to find out if these can lead to any reaction (cognitive, affective or sexual) upon the consumers' feelings.

It is hoped that this effort will assist in furthering the studies aimed at improving marketing communication messages and building consumer awareness in Lebanon as to the factors that might affect buying behavior.

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CHAPTER I

INTRODUCTION

One of the problems most frequently reported by Marketers, is getting the target markets receive and remember information about their product or service. Millions can be spent developing an advertising campaign. If consumers are not appropriately exposed to the advertising message and fail to recall it, the efforts will be a waste of time.

When message is presented to the target consumers, it is obtained through the senses of vision, hearing, taste, smell, and touch. Visual images include the various television commercials seen, the words read and so forth. Similarly, information in the form of words and various noises is received through one's ears. Other types of stimuli are perceived based upon information processed through the sensory organs that register taste, smell and touch. The processing of information meant here is "the process through which consumers are exposed to information, attend it, comprehend

it, place it in memory and retrieve for later use"¹. Through this process, the raw information is transformed into something meaningful. The raw stimuli are composed of sound waves, light waves/particles, textures, and levels of temperature. The interpretation of and the meanings derived from the stimuli result from information processing.

However, there are frequencies within which human senses operate. In this range, the subject receives the information in a way he is totally aware and conscious of what is happening. Outside this range, the consumer reports no awareness of the stimuli eventhough his perceptual system has caught the information. This, indeed has occurred at a different level than the conscious perceptual level. This is known by both marketers and psychologists as the subconscious or subliminal level.

It is well known that a basic customer strategy is to determine which purchasing motives, especially those which the customer himself is consciously unaware, of, are most important. These unconscious but omnipresent -present everywhere at the same time- motives rarely involve simply the quality or price of a product. They more often relate to the prospect's ego needs, such as status, dominance, security, or recognition. If the salesman can relate his product to a prospect's unconscious needs, he has an excellent chance to make a sale.

Though rarely announced, this is performed in every human situation. Most unconscious motives involve apparently, how an individual sees other people seeing him. In short, "the most utilitarian motives in communication relate to man's

¹ John Mowen. Consumer Behavior, (New York: MacMillan 1993), p.68.

inexhaustible need to support and reinforce his ego... These could be infinite in number”².

Thus, the target aimed at by marketers in most of their advertising messages remains in that subconscious part of the mind. Studies reveal that people are exposed to hundreds of advertising messages daily, of which only a limited number is perceived consciously -at least 85% of the ad messages are blocked out from consciousness. It is understood, therefore, that a logical strategy to the marketers would be to target that part of the brain that has the greater influence on the behavior³.

In a recent national study of three major US cigarette brands, trying to evaluate flavor variations in brand perception, only 1.33 percent of smokers could distinguish among the three major brands' taste-not a statistically significant number of smokers. Yet "taste" would appear to be the basic selling point for every major cigarette brand in the world³.

It is clear, after all that most of the advertising is directed at the unconscious for it is there that preferences are usually formed. Products in markets such as the cigarettes which are either identical or very similar cannot be sold on the basis of actual differences noticed through reason or logic. Smokers, in spite of their brand loyalties, are smoking little more than brand images. “What is perceived as flavor or aroma can be influenced by the visual response to a package design”.⁴

² Wilson B. Key, Subliminal Seduction, (New Jersey: Prentice Hall, 1973), p. 74.

³ Ibid. p. 174.

⁴ Ibid. p. 175.

Automobiles, on the other hand, as a Ford marketing executive in Dearborn says, have not been marketed as a means of transportation. Vehicles, he explained, are sold for their "image of symbolic values-female substitutes, status reinforcements, virility expressions, or support for a buyer's illusions of freedom and individuality". As Key confirmed "the largest and most powerful industry in the US depends for survival upon ego images or fantasies rather than transportation realities...the real message, the one that sells, is planted securely in the viewer's unconscious."⁵

As a result, competition among consumer products has developed to the extent of being the competition between symbols and images rather than by material values and physical attributes. And the struggle for market leadership is played into the consumers' unconscious mind and without their conscious awareness.

Thus, industrial designers might include in their products subliminal meanings addressed to the subconscious. This could include the range of simple to more complex household products. Designs are worked out in relation to an exposure time, for the average reader, measured in seconds. Either the ad does its job during this quick, very brief exposure, or it is a waste of time, effort and money. Only the unconscious mind, which does not discriminate, evaluate, and make value judgments, can operate at this speed. The conscious mind, if the ad were to rely upon a cognitive thought process (i.e., exposure, attention, retention, and conscious processing), would take far too long to assimilate the information and proposal. And many readers would find the conscious message objectionable on moral or other grounds. It is clear after

⁵ Ibid. p. 83-159.

all that it is not what one consciously sees that sells, it is rather what stimulates the unconscious. As Marshall McLuhan said: "Advertising is a subliminal pill designed to massage the unconscious"⁶.

Perhaps the most effective general technique in the care and feeding of media audiences is simply to tell them what they want to hear or what they need to hear, at both the conscious and unconscious levels. Audiences idealized views of both themselves and what they wish the world were like are projected through mirror of media. The reflections absorbed by the reader projects back to him his own idealized self-image.

By the end of this century, subliminal perception -perception of the subconscious which is below the level of conscious awareness- has been tested in different areas of human behavior: dreams, memory, value norm anchor points, conscious perception, verbal behavior, emotions, drives and perceptual defenses. There is at present, no serious question that human activity could be influenced by stimulation or information of which individuals are completely unaware.

1.1 Definition of Subliminal Perception

Subliminal perception refers to the idea that stimuli presented below the level of conscious awareness may influence behavior and feelings. The different types of subliminal stimulation that have been identified are briefly presented visual stimuli,

⁶ McLuhan Marshall. Understanding media: the Extensions of Man, (New York: McGraw Hill, 1964).

accelerated speech in low-volume auditory messages, and embedding or hiding sexual imagery words in print advertisement.

The following flow charts illustrate the two views of conscious and subconscious perception:⁷

Fig 1.1 (a)

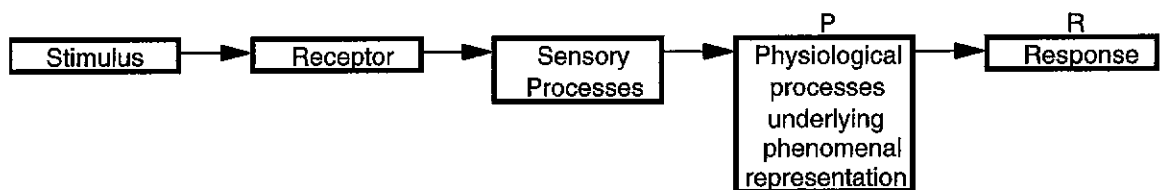
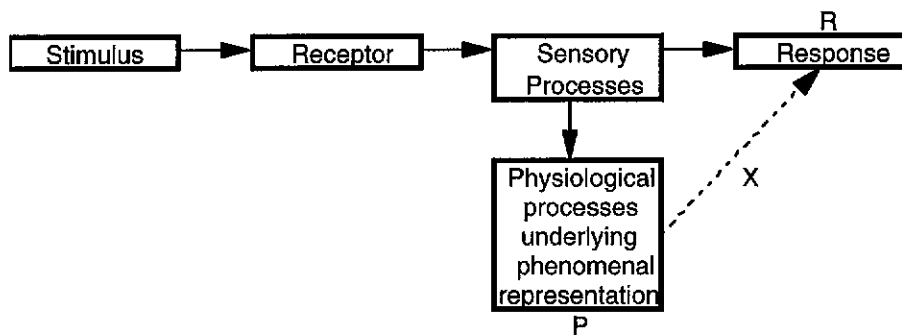


Fig 1.1 (b)



In fig 1.1 (b), stimulation initiates sensory processes which affect overt responses either directly or via perceptual processes. Fig 1.1 (b) represents the subliminal perception hypothesis, the hypothesis that are some inputs which may affect R and not P. The subject here is forced to make response without reporting any awareness of the

⁷ N. F. Dixon, Subliminal Perception (London: McGraw-Hill, 1971), p. 2-3.

stimulus. In contrast with the hypothesis in fig 1.1 (a) where response could result only from conscious awareness.

In its widest sense, *subliminal perception* could mean any or all of the following states⁸:

1. The subject responds to stimulation the energy or duration of which falls below that at which he ever reported awareness of the stimulus in some previous threshold determination.
2. He responds to a stimulus of which he responds in total unawareness.
3. He reports that he is being stimulated, but denies any awareness of what the stimulus was.
4. The subject reports awareness of the stimulus, i.e., he could describe it if asked, but denies any awareness of the fact that he responded to it.
5. He reports awareness of the stimulus, and of making a response, but claims complete ignorance of any relation between the two.
6. The subject is aware of responding to a stimulus, but unaware of that aspect of the stimulus which governs his response.

⁸ Ibid. p. 12-13.

Thus in order to avoid confusion, "unconscious perception" will be used to cover all cases when responses are governed by stimuli of which the recipient reports complete unawareness.

Also, it is essential to clarify the concept of the *threshold* -or limen- that would be used in this paper⁹:

1. The eliciting of responses by stimulation below the absolute awareness threshold, where this threshold is itself defined as the lowest level of stimulus energy at which the subject ever reports hearing (or seeing) anything of the stimulus.
2. The retrospective reporting by the subject that he neither saw nor heard anything of the stimulus.
3. The occurrence of conditional responses, without reported awareness of the stimulus, that differ qualitatively from those elicited by the same stimulus when presented above the awareness threshold (supraliminal).

What is really interesting about subliminal perception is not that people may respond to stimulation below the threshold of awareness, but that they are affected by stimuli of which they are unaware. To this, one might now add in a manner that differs qualitatively from that evoked by supraliminal stimuli.

How does one explain the effects assuming that they are real, of subliminal advertisements? Two theories have been proposed. The *incremental effects theory*

⁹ Ibid. p. 18.

states that “over many representations of a stimulus, a stimulus representation is gradually built in the person's nervous system. At some point the representation reaches a behavioral threshold and causes changes in the actions of the consumer”¹⁰. However, the cause of the changes in actions is never recognized by the consumer. The incremental effect theory assumes that numerous repetitions of the stimulus are needed.

The second theoretical approach is the *psychodynamic theory of arousal*. This theory assumes that “unconscious wishes to engage in some behavior may be activated by unconsciously presented stimuli. The activation of this unconscious wish presumably influences the actual perception of the Ad.”¹¹

The importance of this topic has led every major advertising agency in the US and its research and consultant agencies to sponsor extensive study and research into subliminal perception. However, any investigation of Subconscious communication involves first an investigation into one's own fantasy systems, self-images, illusions, personal vanities, and secret motives. Also, this theory could be justified if one goes back to the analysis of consciousness and the anatomy and physiology of the sensory inputs and their sensory systems. Indeed, the language of behavior is rather a complex system where several systems interact to lead to the final result.

¹⁰ John Mowen, Consumer Behavior, p.81

¹¹ Ibid. p.81

1.2 The need for the Study

This research is basically conducted in the area of Subliminal Perception. This topic has been a subject for a lot of controversy and to some very strange ambiguity. Where most of the researchers on this topic (60%) believe that Subliminally induced stimuli do not affect behavior, there have been hundreds of experiments reporting that Subliminal Stimulation affect dreams, memory, adaptation level, conscious perception, verbal behavior, emotional responses and drive related behavior¹².

If the hypothesis that people can be affected by Stimuli of which they are not aware is valid, then it would have profound implications not only in the field of Psychology and Psychophysiology but also on the Marketing approach, as a whole.

This study addresses two questions:

1. Is it possible that people are affected by Stimuli of which they are not aware?
Under what conditions?
2. Do sexual embeddings and symbols in print advertisements affect consumer buying behavior?

¹² N.F. Dixon, Subliminal Perception, p. 11

1.3 The Statement of the Purpose

This paper examines the evidence of the relationship between consciousness and consumer behavior. It tends to test if people can be induced to buy products without being aware of the stimulus and whether this technique could be used in marketing products or not.

1.4 Construction of the study

In the next chapter, a review of literature-an exposition of major findings presented by Advertising, Marketing and Psychology researchers concerning the stimulation by subliminal embeds. Chapter three is a presentation of the methodology used to gather and analyze the data, while chapter four is a presentation of the findings that were arrived at in this research. Finally, chapter five reports and summarizes the major findings while a list of recommendations is made.

CHAPTER II

REVIEW OF LITERATURE

It has been impossible to go shopping in the supermarket, watch TV, look at a print advertisement, hear radio jingles or even look at one of the late design packages without having our subconscious being invaded by some mysterious external objects and unknown factors.

For, much of human thought occurs in this strange and still unclear human part of the unconscious mind. "This unconscious does not simply perceive things as they are but also the meaning of these things"¹. Even more, some believe that the unconscious is the source of man's creative abilities and the base of all his innovations¹.

However, it is still unclear for modern science how this machinery works and interacts with other parts in the human processing system. All what has been said about the issue has been subject to theoretical interpretations. A large part of this study, as a matter of fact, would be based on theories in this subject, in addition to

¹ Wilson B. Key, Subliminal Seduction, p.16.

some scientific views of brain functioning and human sensory inputs. Some of what is known in these subjects would be briefly reviewed for matters of clarification.

2.1 History

Though suggested some two thousand years ago, and examined by some hundreds of experiments, this controversial hypothesis -that humans are affected by subliminal messages- still remains disputed, even today. A surprising fact that even many papers have been published on subliminal perception, the space accorded to the subject in most general textbooks is minimal to nonexistent. In the course of examining the evidence for and against perception without awareness, this paper will look at the ways how this technique is applied, the recent findings in this domain and the reasons behind this controversy. Fig 2.1 shows how belief in this hypothesis has changed over time.

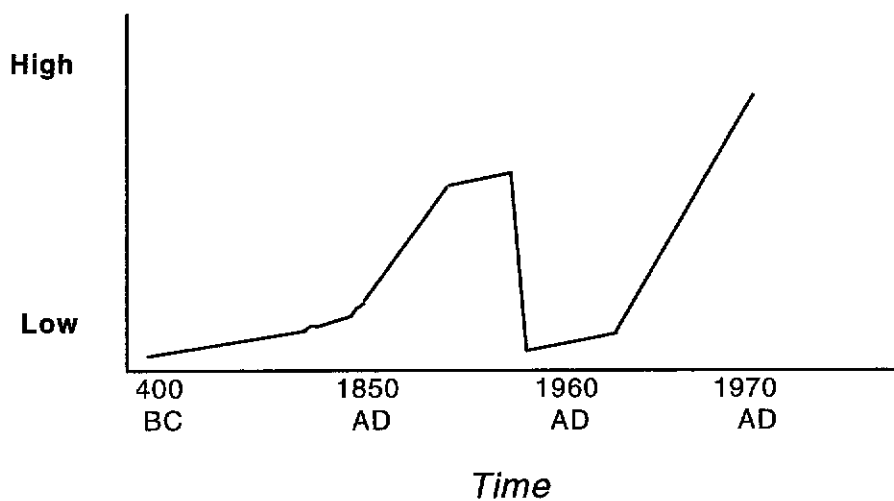


Fig 2.1 Changes in the credibility of the subliminal perception hypothesis between 400 BC and AD 1970.

The idea that people may be affected of stimuli by which they are not aware (conscious) may have originated with Democritus (400BC) who stated that "much is perceptible which is not perceived by us"².

Then followed by Plato who dealt with the notion in his work *Timaeus*. Plato stated that "a process of disturbance of our mental state, if sudden and considerable, is painful, but the return to the normal, on the contrary when sudden and considerable, pleasant; a gentle and inconsiderable process is imperceptible and its opposite perceptible. And any process which runs its course with facility is eminently perceptible"³. The importance of this idea lies in the notion that "small changes are subconscious and do not necessarily amount to a perceptible difference of feeling"³.

Aristotle more specifically discussed subliminal awareness thresholds in his *Parva Naturalia* nearly two thousand years ago and appears to have been the first to suggest that consciously unperceived stimuli could affect dreams. Aristotle, 2,250 years ago, explained in his dream theory that "Impulses occurring in the daytime, if they are not very powerful, pass unnoticed because of greater waking impulses"⁴. Also Aristotle anticipated what in the early twentieth century came to be known as the *Poetzle* effect. One of the earliest references to the possibility of subliminal perception in the waking state is made by Montaigne (1580). According to *Montaigne*, "there is always some slight difference which attracts - though this may occur imperceptibly"⁵. He illustrates

² N. F. Dixon, Subliminal Perception p.9

³ Ibid. p. 10

⁴ Wilson B. Key, Subliminal Seduction, p. 19.

⁵ Ibid. p. 19.

the point with an example from physics - the string which, because equally strong throughout, cannot break, for where will the break begin? To break everywhere at once is not in nature. Therefore there must have been an imperceptibly weaker point.

But of all nonpsychologists who have thought about the possibility of subliminal perception none has been more explicit than *Leibniz*. Indeed, he may be considered to have been the first to anticipate the "subception effect" (subliminal perception). In 1968, Leibniz stated that "there are also numberless perceptions, little noticed, which are not sufficiently distinguished to be perceived or remembered but which become known through certain consequences"⁵.

It is interesting to note that this deduction of the perceptual process influenced both subsequent philosophers and modern counterparts. Of the latter, Hebb (1958) remarks: "the notion of subliminal processes which may become liminal with further stimulation is very valuable. In fact, we cannot begin to understand behavior without it"⁶.

The work of *Sigmund Freud* and his colleagues in the early twentieth century, explored also new theories of the subconscious. Freud's dream theory formed a basis upon which one of his associates, Dr. O. Poetzle, made one of the first scientifically significant discoveries about subliminal perception. According to Poetzle, "a conscious association can, in effect, trigger a subliminal percept buried deeply in the

⁶ N.F.Dixon, *Subliminal Perception*, p. 6

⁸ Wilson B. Key, *Subliminal Seduction*, p. 20

unconscious weeks, months, or possibly years after the subliminal percept occurred"⁷. By 1919 a relationship was strongly established by Poetzle between subliminal stimuli, posthypnotic suggestion and compulsive neurosis. The conclusion was that a person will perform acts which he has been instructed or programmed to do without any knowledge of why he is doing such a thing.

Finally, in the last period extending from the mid nineteenth century up to the late fifties, many investigations yielded data which support the hypothesis.

They included, first, the finding that verbal behavior could be influenced by visual or auditory stimulation of which the recipient was unaware; second, that a consciously held percept could be affected by stimulation below the conscious threshold; third, that unperceived features in a tachistoscopic display could be recovered in subsequent dreams; and finally, that subliminal stimulation could change the conscious threshold.

A number of studies (reviewed by Adams, 1957) also provided some evidence for classical conditioning with subliminal stimuli.

However, a sharp decline in the credibility of the hypothesis has taken place in the sixties. "Seldom has anything in psychology caused such an immediate and widespread stir as the recent claim that the presentation of certain stimuli below the level of conscious awareness can influence people's behavior in a significant way" as the "American Psychologist" reported.

Indeed, there has been a lot of controversy about the subject. Theorists are sure of the influence of this technique; however, most people who had never heard of subliminals

believed the whole idea of subliminal communication was absurd, science-fiction and nonsense.

The controversy started primarily by a commercial firm which claimed that the subliminal presentation of the words "Eat Popcorn" and "Drink Coca-Cola" dramatically increased the respective sales of the products among the audiences who received the stimulation.

The experiment conducted in October 1962, was based upon the use of a tachistoscope which is simply a film projector with a high speed shutter which flashes messages every five seconds at 1/3000 th of a second. The tachistoscope was used to flash messages upon a film being transmitted through motion pictures or television. The high-speed messages were invisible to the conscious mind but significantly influencing viewers' unconscious. During a six-week test of the machine in a theater involving 45,699 persons, messages were flashed on different days: "Hungry? Eat Popcorn", and "Drink Coca-Cola". During the six weeks, popcorn sales increased 57.7 percent and Coca-Cola sales 18.1 percent. "Though all people cannot be influenced so simply, a statistically significant number of people in audience will obey the commands given subliminally."⁸

This technique was seized upon the newest of the "new look" promises of the application of psychology to advertising and marketing. Within the last 25 years, the application of signal detection theory to problems in this area, the appreciation by

⁸ Ibid. p. 22.

psychologists of data from neurophysiology and the impact of behavioral studies have been responsible for an upward turn in the credibility of subliminal perception.

2.2 Human Sensory Inputs:

Though human sensory inputs most affected by subliminal stimulation are sight and hearing, it is generally acknowledged at the end of the nineteenth century that there exists at least thirty-seven different sensory inputs into the human brain. Of these thirty seven sensory inputs, two third are involved with touching (the sensation of tactility).

This highly complex system of thirty seven inputs is continuously interacting with the brain. All these inputs are simultaneously inputting data into the brain in a constantly changing mechanism where one sense or several other become instantly predominant over the others. Thus, a change may temporarily occur favoring sight or hearing when one changes his concentration from watching TV or listening to Radio to reading a Newspaper. Also Cooking aromas may enter into the subliminal part of the message transmitted by a TV program while Dinner is being prepared in the kitchen.

All recent studies in neurology and Psychology state that these sensory inputs are at least operating on two perception levels:

- The cognitive or conscious level
- The Subconscious or unconscious level

Thus, information enters the brain on what is known as the Conscious level. Under this process, the subject is consciously aware of the information and can recall

what he has seen easily since he was aware of what was going on. Simultaneously, a much important part of the information is entered at the subconscious level of perception and some messages are driving their way into their minds without their knowledge. In other words, the subjects do not seem to know what information reached their mind.

Although both systems operate at the same time, most of the information is stored in the subconscious mind. For, the latter never stop acquiring data even though the person may be asleep or in coma. The behavior of the conscious mind is strongly affected by the unconscious. "Conscious behavior seems to be accommodating the unconscious".⁹

However, these two perceptual processes may operate independently of each other and often in contradiction with each other. Indeed, a person might consciously desire strongly something that he keeps thinking of it. At the subconscious level, that man may be terrified of something else (because of social norms or previous experiences) that keeps him from having what he wants.

All for all, the individual will act in a programmed way without knowing the real reasons behind this behavior. This leads to understand that the relation between subliminal stimuli and posthypnotic suggestions is extremely important. Subliminal stimuli and posthypnotic suggestions are very similar since both are below the normal conscious perception. They affect behavior without conscious awareness.

⁹ N.F.Dixon, Subliminal Seduction, p. 12

For example, a posthypnotic suggestion might well lead a subject to follow a command he might not consciously wish to follow, but unconsciously desire very strongly to follow. Experiments have shown that some test subjects under hypnosis will throw what they believe to be acid into another's face after a posthypnotic suggestion to do so¹⁰.

There are, however, additional arguments concerning the perceptual system. While sensory receptors can read in information at the rate of millions of bits a second, the span of consciousness is limited to two or three bits. Overt response rates fall somewhere between the two. Much recent research has shown that, when people are presented with simultaneous and competing messages having different characteristics, and/or arriving over different sensory channels, they can consciously handle only one message at a time. For the rest, some go into storage for subsequent delivery, while others, because of their irrelevance or meaninglessness, become permanently discarded (thrown out). "The selective process, to which these multi-inputs are subject, must occur prior to conscious acceptance of the message, but after that stage of sensory processing"¹¹ -somewhere between the two. However, if this selective process does not itself take place in consciousness, information at this stage must be subliminal. There must be many stimuli which, if not technically subliminal, are discriminated without awareness.

¹⁰ Wilson B. Key, Subliminal Seduction, p. 25

¹¹ Ibid. p. 29.

The extensive data from recent neurophysiological research on the arousal systems of the brain imply that it would be very surprising indeed if subliminal perception did not occur. Also findings from the application of Signal Detection Theory (SDT) methodology, a consideration of subliminal perception in terms of its parts processes, and an analysis of the organism as a communication channel of limited capacity, suggest that the probability of subliminal perception is considerably higher than some believe. The problem is that people are not aware of the stimulus, nor they are likely to have any conscious feeling of the cerebral processes which precede the response. It is clear, therefore, why the subject of subliminality is so vague and mysterious for most beings.

So few people have any conscious idea of how their perception actually works. One cannot seem to fully grasp the great speed at which information can be processed in the nervous system, the high sensitivity and capacity of one's sensory equipment and the confusing reality that all these senses operate simultaneously and continuously.

An executive from one agency in New York told about his experience with a new analgesic (headache portion) account. Their research department had come up with some interesting data on the relationship between heart-beats and suggestibility. The human heart beats at 72 pulses per minute. Music or voice timed to this rhythm has an increased ability to affect human behavior. Several experimental commercials were prepared using 72 beats per minute as pacing for drumbeats, music and voice. The test effects were amazing, according to the executive. The commercials were tested in a special theater with a random audience of housewives and husbands. Had the analgesic commercial been broadcast to the roughly 30 million people watching the

NBC evening news, 5 million would have developed headaches within three hours of viewing it.

2.2.1 The Human eyes

In light of this complex system, the role of the eyes lie as an important sensory input-if not the most important one- that transmit information at both perceptual levels. Therefore, Marketers rely heavily on visual elements in advertising, store design, and packaging. Meanings are communicated on the visual channel through a product's size, styling, brightness, and distinctiveness from competitors. All these are rich in symbolic value and cultural meanings. For example, the display of red, white and blue evokes feelings of patriotism for both Americans and French people. Such powerful cultural meanings make color a central aspect of many marketing strategies. On the other hand, the importance of the eyes was one more time demonstrated by Poetzle and his colleagues. Indeed, Poetzle's colleagues (Freud's associate) argued that the eyes make about 100,000 fixations daily, out of which only a small portion of the fixations is being consciously experienced. Subliminally perceived content is subconsciously interpreted and transformed for reproduction at a later point in time. This discovery suggested that subliminally induced stimuli performed with a delayed reaction do affect behavior: "*A conscious association can, in effect, trigger a subliminal percept burned deeply in the unconscious weeks, months or possibly years after the subliminal percept occurred.*"¹²

¹² Ibid. p. 20.

However, people do not perceive a single stimulus in isolation. They tend to view it in terms of relationships with other events, sensations or images. A number of perceptual principles describe how stimuli are perceived or organized¹³. These principles are based on work in Gestalt psychology, a school of thought that maintains that people derive meaning from the totality of a set of stimuli, rather than from any individual stimulus.

2.2.2 The Human ears

It is well known that humans hear from all directions at once. The subliminal or the hidden can be present to the hearing when it is not accessible to the eye. It is, therefore, easy to know that the eye may be influenced by lines it cannot see, and one's judgment changed by motives that are not in consciousness nor in the habitual patterns of one's nervous systems.

Some researchers suggest that by increasing the volume of popular music, thereby making the recordings even more unbearable to an older generation, rock music became even more special to the youth culture. Judgments of loudness were altered by introducing tones and harmonics at subaudible levels. These subaudible sounds, especially those in the bass range, became audible when the volume was increased. Subaudible stimuli were reached further and further by continuing to increase volume. After all, many aspects of sound may affect people's feelings and behaviors. The extent to which people may be affected should be investigated by further researches.

¹³ Michael Solomon, Consumer behavior: Buying, Having and Being. (Paramount: Massachusetts 1994), p. 67.

2.2.3. The Perception of Smell

Odors can stir emotions or create a calming feeling. They can evoke memories or relieve stress. Some of our responses to scents result from early associations with other experiences. As one marketer noted, an example “... is a baby-powder scent that is frequently used in fragrances because the smell connotes comfort, warmth and gratification”¹⁴.

Consumers' love of fragrances and their perceiving the world through their senses, has contributed to a very large industry. Fragrances are added to hundreds of household products. One estimate is that each person comes into contact with fragrances added to products thirty times a day. Procter and Gamble which doesn't sell perfume, has one of the best staffs of perfumists in the business.¹⁵

One expert of smell noted that the sense is closely linked with feelings and emotions. The olfactory nerves are connected to the part of the brain that processes emotional information. This indicates that if a female boss, wearing say Chanel No 5, fires someone from a job, the perfume is likely to have a negative impact on him forever.

To illustrate, the perfume called Jovan, contains alpha-androstenol, a pheromone. The perfume is based on the finding that insects, fish and mammals, secrete chemical attractants, called pheromones, for purposes of sexual communication.¹⁶ Since smell is directly linked to feelings, Jovan stimulates one's emotions without one's conscious

¹⁴ Cynthia Morris, “The Mystery of fragrances”, *Essence* 71, May 1988, p.71.

¹⁵ “Psychology of the senses: Nothing to Sniff At”, *Advertising Age*, Feb 27, 1984, M-40.

¹⁶ “What lies behind the sweet smell of success”, *Business Week*, Feb 27, 1984, p. 139-143

awareness. Thus, smell plays an important role in the process of subliminal stimulation¹⁷.

2.3 The Human Brain

Though the brain is continuously fed by information at different perceptual levels -at least the conscious and the subconscious levels- through the thirty seven sensory inputs, this system is even more complicated as it appears till now. Indeed, the impulses of the sensory inputs are manifested through neurons that flow in the body at the speed of 60 meters per second. The speed of the mind is, according to researchers, very much faster than light, it can go to Mars and be back in an instant whereas light takes minutes. In other words, a large number of events can occur between the time it takes a pencil to reach the floor after being dropped from the table.

On the other hand, Brain research has indicated that there appear to be two distinct modes of processing information and true differences in perceptual abilities between hemispheres. Left brain processing appears to be language based while right brain processing is graphically based and could be dominant for the expression of visual understanding. According to this analysis, the left hemisphere is specialized for language functions, but these specializations are a consequence of the left hemisphere's superior analytic skills, of which language is a manifestation. Similarly, Hansen presents a new theory of perception which proposes that the first step in perception of pictures is a right brain activity, due to the right hemisphere's superior

¹⁷ John Mowen, Consumer Behavior, (Macmillan: New York 1990), p. 71.

visuo-spatial performance. This type of activity would appear to be of greater importance in low involvement conditions. In cases where pictorial information is an important means of processing, the type of information presented may have an impact upon its effectiveness.

Under certain conditions, each hemisphere of a split-brain patient appears to function as an independent processor. "Each hemisphere has its own private sensations, perceptions, thought and ideas all of which are cut off from the corresponding experiences in the opposite hemisphere"¹⁸. In many respects, each disconnected hemisphere appears to have a separate "mind of its own". However, the coordinated eye movements, as well as each eye's projecting to both hemispheres, play an important role in establishing unity of the visual world. Further analysis has led to the idea that the left hemisphere is skilled at sequential processing in general and, therefore, is the more analytic of the two hemispheres. This analytic mode of information processing is thought to apply to all incoming information, not just to speech. Visual information, for example, would be treated in an analytic manner by being broken up and reorganized in terms of features¹⁹.

The necessity for pictorial subliminal presentations has been reinforced by findings indicating the need for comprehension of the structure of the stimulus. Repetition in right brain subliminal presentations can continue to add information until the brain has successfully collected enough information to process the stimulus. This may not be

¹⁸ Springer, S. P. and G. Deutch. Left Brain Right Brain, San Francisco: W. H. Freeman and Co. 1981, p. 62.

¹⁹ Ibid. p. 71.

the case for a stimulus requiring left brain processing where aggregation may be much more difficult. Research has indicated that the right brain tends to categorize based on form while the left brain uses function.

Thus, the need to make sense of the structure of a subliminal presentation has implications for the type of stimulus to use in the marketplace and for deciding what products would most likely benefit from such a presentation. The use of only the name of the product may not provide sufficient cues for the brain to subliminally process the stimulus while the presentation of a picture of the product may be much more efficient.

At the same time, this theoretical approach would dictate that subliminal presentations would be likely to have less impact for a new product than for a product which was familiar in the marketplace. A viewer would find it easier to form a complete picture of a known product from a subliminal presentation than to construct the entire subliminal stimulus with no prior knowledge.

Another point to be considered is the possibility that subliminal stimulation may have a greater impact when supported with the interpretation of some supraliminal stimuli. Also in the sense when they are not aware of any advertisement directed toward them as in the normal programming on television.

Finally, Mitchell and Olsen²⁰ have found empirical evidence that pictorial stimulus can have an impact upon consumers, even if the picture does not provide information

²⁰ Mitchell, A. and J. Olsen. "Are Product Attributes the Only Mediator of Advertising Effects on brand Attitudes". *Journal of Marketing research*, Aug. 1981, p. 318-32.

about attributes of the advertised product. Other researches indicate that multiple exposures to pictorial presentations may have an impact upon individual's attitudes toward the product even though the picture does not provide additional information. Also, researchers who study language and behavior suggest that the words the human voice speaks are seven, plus minus two, ahead or behind those that are waiting to be spoken and already assembled in the mind. In other words, as a person is writing a word, his mind has already prepared five to nine words ahead of what is being written. Indeed, an average person reads at around 400 words per minute. Training in techniques of rapid reading can increase the speed to perhaps 1200 words per minute. Some interesting experiments are being conducted in which people are taught to read at rates as high as 10,000 words per minute (50 pages). Several twelve-year-old children have been trained to read, comprehend and retain information at such rates. It is known that visual perception operates through neurons connecting the eye and the brain at a speed of 60 to 100 meters per second. In other words, the eye instantaneously encodes and processes the content through highly complex neural structures in the brain cerebral cortex.

What happens, according to theorists, is that all the information and meaning are recorded instantly and totally, but the mind permits only a small portion to filter into one's conscious awareness - often what one wants to see or what one can identify with. This could be the mechanism by which the brain enables some data to pass each day. This incredible high speed of the mind and the inability of individuals to

visualize this complexity, makes the whole subject of subliminal perception completely mysterious.

2.4 The Conscious mechanism

Consciousness is built around various groups of "sets", or ways of seeing, hearing or experiencing the surroundings. These are usually established by cultures and subcultures. In fact, these conditioning are established during early childhood. Sets are defined as traditional or traditionally followed ways of perceiving reality at the conscious level²¹. In addition, conscious functions support the ego - the perspectives toward oneself and the world one would like to see, as compared with the world as it may actually exist.

The conscious perception occurs within specific frequencies of both light and sound. Outside this range -the range that can be perceived by the ear and the eye- sub-threshold frequencies come into the picture. Information transmitted at this level is only perceived by the unconscious human brain.

In other words, there is a limit for both speed and intensities of light that can be consciously perceived by the eye; the frequency ranges outside it are only visible at the unconscious level. Similarly, auditory perception at the conscious level is limited to a range of sound, volume and frequencies, beyond which information is transmitted "invisibly" to the subconscious.

²¹ Wilson Bryan Key, Subliminal Seduction, p.89

The famous "silent dog whistle" is an example of sound frequencies invisible to human conscious perception, though dogs hear these high frequencies. People also can hear these frequencies but through a different mechanism: the subconscious perception.

2.5 The Subconscious

It has been well known that much of human thoughts and processing of information takes place in the unconscious mind. In this complex place, things are not perceived only as they are but also as what they represent and how they can be associated to other things. The observation has been made by many theorists that what is not consciously perceived might be well more important than what is consciously perceived. Theories of the unconscious suggest that it actually dominates human behavior, controls motivations, value systems, personal identities and related aspects. However, how this machinery works is still unclear from the scientific point of view. For the time being, a lot of controversy has surrounded the theories related to this field and the issue has remained subject to theoretical interpretations. Thus, no one can claim that Carl Jung's theory of archetypal symbolism, or Freud's theory of dream significance or Gestalt form significance are right or wrong because they are dealing with the unknown.

However, the existence of the unconscious in the human brain has been empirically demonstrated in 1957 by Dr. Wilder Penfield²². During brain surgery, while their

²² Ibid. p. 47

cerebral cortex (the outer layer of the brain) was being probed, Penfield's patients recalled events, scenes, sounds, aromas and other perceptions which has been long buried and consciously forgotten. This first empirical demonstration which illustrated what theorists have been arguing about long ago, had become a "scientific" reality, though far not well understood. On the other hand, Theorists have argued that this unconscious is affected by three types of emotional experiences:²³

- Experiences that conflict with cultural taboos (prohibitions): directly or indirectly involving sex and death.
- Experiences relative to personal neurosis (nervous disorder) or psychosis (mental disturbances): range from fearful responses to serious delusions (false beliefs) of persecution (oppression) or even paranoia(mental derangement).
- Experiences acquired from recent painful or anxiety-producing situations.

Subliminal stimuli have been demonstrated to affect all three types of experiences and activate autonomous bodily functions such as blood pressure, respiration or other processes that function automatically. Thus, it would be logical that the stronger the emotional implication, the higher the impact of subliminal stimulation is likely to be.

In terms of motivating behavior, subliminal stimuli work best when it can relate unconscious memory traces to consciously occurring drive systems. For example, a cigarette ad may show a couple on a walk in the garden on a beautiful evening. Suppose that embedded in the trees are the words sex which is aimed at the

²³ Wilson Bryan Key, Subliminal Seduction, p. 85

unconscious. The sex establishes the possibility of the reader to unconsciously identify with one of the models, relating drive-oriented behavior with the cigarette brand.

Although Experiments have demonstrated that humans can receive, process and transmit information without any conscious appearance at any stage of this passage through the nervous system and that the unconscious can operate independently of the conscious mechanism and frequently in opposition to the latter, researchers have found that there exists in the human perceptual system a mechanism by which humans defend themselves from perception that threatens the individual. In this way, the subjects defend themselves from perceptual damage. It appears, as a result, that this "perceptual defense" renders the unconscious messages ineffective for some persons under certain conditions. Under these circumstances, the logical conclusion that would result implies that these messages cannot have the same effects on every person exposed to them and thus could not have the same effects on the same person in different situations.

2.5.1. Symbolization abilities and Archetypal symbols

Deeply related to the subconscious is Archetypal symbolism. Archetypal symbolism refers to symbols that have appeared in many places, at many times, with an inexplicable similarity of meaning. Carl Jung²⁴, the Swiss Psychoanalyst, believed these symbols originated from images already present within all men in the depths of the unconscious. He further described archetypes as systems involving both images

²⁴ Jung, C. G. Analytical Psychology: Its theory and Practice (New York: Vintage Books, 1968)

and emotions inherited with the brain structure. They are a type of symbol with a much more profound and deeper meaning and significance to human behavior. They are, in Jung's theory, "the support for instinctive adaptation and the source of most powerful instinctive prejudices". Freud called these archetypes primitive fantasies.

Examples of archetypal symbolism include such images as the genitalia (phallic and vaginal symbolism), the moon, the family, love, water, birth, rebirth, fire, sun etc... Specific symbols related closely to these archetypal concepts would likely result in similar responses among both modern and primitive man at the unconscious level.

Indeed, everything perceived by humans is symbolic, functional or both. Symbolic means that it operates within the unconscious either verbally or nonverbally. Symbolic meanings appear to form the basis upon which perception becomes deeply meaningful. Several theorists claim that certain archetypal symbolic meanings are inherent within the human brain. There are symbolic denominators that are commonly present in each culture. There are, of course, the origin of life and procreation, and the end of life or death. According to these theorists, all lie around sex, love or death.

Key claims that common phallic symbolism include arrows, automobiles, rockets, pencils, cigars and cigarettes, candles, snakes, trees, cannons, pens etc... Vaginal symbols are developed from any round or elliptical shape such as lips, eyes, the oval feminine face surrounded by hair, apples, pears, oranges, cherries, eggs etc... The union of male and female can be again represented by a key inserted into a lock, a beer

glass foaming at the top as it is being filled from a bottle, without reaching an end to these possibilities. Death symbolism could be manifested through acts of violence, police actions, wars, religious guilt, fear, aggression and thousand of different ways.

Apparently, man has an innate need to symbolize, a need he is almost completely unaware. Indeed human symbolizing appears to be an automatic and inherent mind process. As mentioned earlier, the human nervous system is capable of assimilating symbolic content at incredible speeds. Conscious processing, however, occurs at a much lower speed. The conscious mind discriminates, analyzes, decides, resists, accommodates or accepts. The unconscious, on the other hand, appears to simply store information that influence conscious behavior at later stages and to which science is still unaware. After all, Advertising is faced by resistance at the conscious level, whereas there is little or sometimes no resistance at the unconscious level. To this latter level, marketing appeals are usually directed.

2.5.2. Verbal stimuli

Words have demonstrated to possess subliminal power and unconscious implications. Words such as shot (shit), pints (penis), cult (cunt) which slightly differ in one letter or two, can evoke emotional reactions in the subconscious perception without the person being aware. The word tastes very much used in advertising reflects by changing one letter, the word testes. A large number of experiments have shown that these emotional loaded words can evoke physiological signs of emotional disturbance.

Thus, strong emotional relationships could be built by embedding strong subliminal devices in media with delayed-action stimuli where consumers make the emotional associations that result in the buying behavior.

2.6. Subliminal Stimulation

It might be helpful to think of information presentation taking place at several levels of consumer awareness. At the uppermost level would be information presentation of which the consumer has full conscious awareness. The material is not hidden and, assuming the consumer is paying attention, she or he should be able to remember and state the nature of the information.

At the opposite end would be subliminal information for which the consumer is assumed to have no conscious awareness. The common way of presenting this subliminal information is by flashing it on a screen so quickly that it cannot be consciously noticed (as it is below the sensory perception threshold), or through the incorporation of low-volume presentations masked by music or sounds. These presentations would not allow individuals to become aware of the information even if they want to because it is below the threshold for conscious perception. Other techniques would be the implantation of subliminal embeds in visual material. The main difference with the previous methods is that embeds could be consciously perceived once they are pointed out.

Key (1973) has dealt with explaining the impact of subliminal stimulation from a rather Freudian approach. He has helped to popularize the notion of subliminal perception and reports of its use continue to appear. For instance, the use of

subliminal techniques in offices and retail outlets have been reported²⁵. None of these reports have explained how subliminal perception operates, only what it does. Though people may not know how it works, a recent study indicates that “a large proportion of the population is now aware of the concept and believe it to be in a widespread, frequent and successful use in selling products”²⁶. They also tend to believe it is an unacceptable, unethical and harmful advertising technique.

While there has been some theoretical development in the area of psychology, little of this theory has carried over to advertising studies. Despite the difficulty of measurement in a marketing context, the majority of results have indicated that subliminal perception has no impact in an advertising or a marketing situation and thus it is not effective in changing attitudes or behavior. In support of this position are many studies showing no impact of subliminal presentation on responses. From this has come the conclusion that “... subliminal directives have not been shown to have the power ascribed to them by advocates of subliminal advertising”. As quoted in Weiner, “you can demonstrate the basic phenomenon of subliminal perception. But you can’t use it to make people buy things.”²⁷

Nonetheless, some other researchers believe that subliminal stimuli exert a significant influence upon behavior related to fantasy production. Though all people cannot be influenced so simply, a statistically significant number of people in any audience will

²⁵ Financial Post Magazine, September 27, 1980, p.6

²⁶ Zano Eric, David Pincus and Joseph Lamp. “Public Perception of subliminal advertising”. Journal of Advertising, 12, No1, 1983, p. 43.

²⁷ Weiner, A. “The World Beyond Words”, Financial Post Magazine, Sept 1973, p.18.

obey the commands given subliminally, apparently, as there is no deep conflict about the command within their mind. For example, a person who really hated the product say "Cleos", would not likely respond to subliminal messages commanding him to "buy Cleos". However, the conscious content might say "Buy Cleos", which the viewer rejects at the conscious level. The subliminal message might read, "Buy Virility with Cleos" or the like. An illustration of the most important studies performed in this field supporting or contradicting the concept of subliminality will follow in a later section.

2.6.1. Subliminal Embeds

Most studies reported have used subliminal presentations below the threshold for perception generally through the flashing of material on a screen. Over the years, however, the definition of a subliminal presentation has expanded to include the hiding of words and/ or pictures in the background of ads (Key, 1973) and within other visual material (e.g., Bagley & Dunlap, 1979; Kelly, 1979). These subliminal stimuli, though invisible to conscious perception, are perceived instantly at the unconscious level by virtually everyone who perceives them even for an instant. They are usually clearly visible once pointed out, but otherwise remain unnoticed by those who view the presented material. Their subliminal aspect comes not from presentation below the threshold (as it is the case with other subliminal stimulations) but rather from the fact that they are not recognized at the conscious level for what they are. They are presented visually and are often interpreted by viewers as part of a shadow, reflection or other image common to the pictorial presentation. Again, it is assumed

that attitude and behavior are affected via nonconscious perception of the material. Figures 2-2 , represent examples of how sex (symbolic) embeds could be used in an advertising context.

The writings of Key on subliminal perception have emphasized the supposed use of embeds in advertising. His assertions, though lacking scientific evidence, have attracted the public's imagination and tendency to believe that embeds are being used at least sometimes in advertising²⁸. The public's concern has reached the point that several states have enacted laws to control the supposed use of embeds in advertising²⁹. Academic research on embed effects has produced mixed findings. "A weakness of much of this research has been the use of only one or two effectiveness measures (e.g., attitude change, change in behavioral intent) and the limited embed variations involved (i.e., use of only one form of embedded word or picture)."³⁰

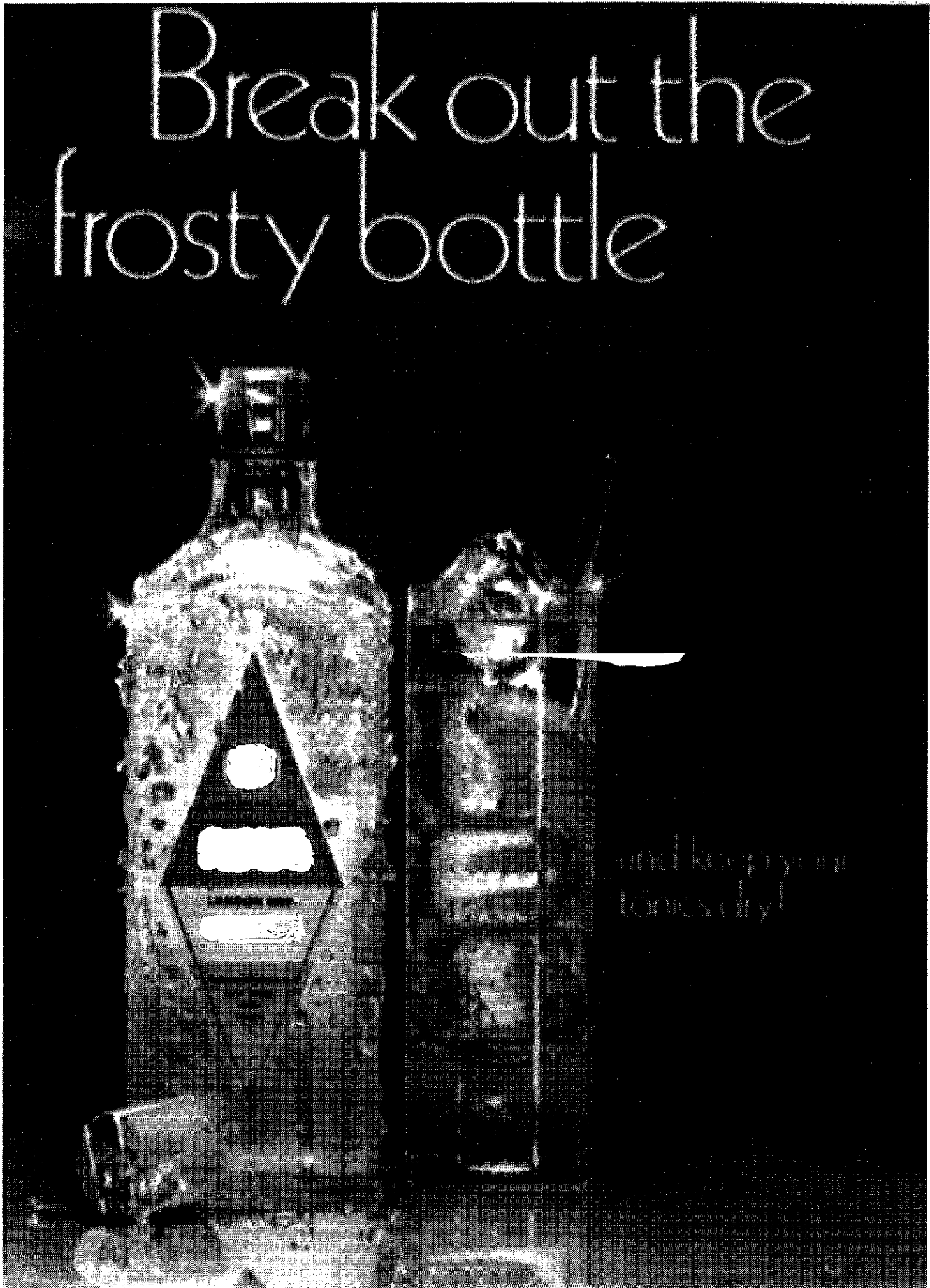
Key states that high-speed photography and airbrushing are among the techniques whereby tricky appeals to subconscious sex drives are hidden. None of them is visible to the naked eye. According to him, "... a concealed word or symbol usually invisible to consciousness appears instantly perceivable at the unconscious

²⁸ Zanot et al., 1983.

²⁹ Psarras, C. "Before you rush into the article, relax and enjoy the nice headline." The Wall Street Journal 1986, Sec. 2

³⁰ Rosen, D.L. and Surendra N. Singh, "An investigation of Subliminal embeds on Multiple Measures of Advertising Effectiveness", Psychology and Marketing 9 (2), 1992, p. 158.

Figure 2-3: A Sample Advertisement representing subliminal sexual appeals in the ice cubes



level”³¹. He refers to stimuli that are embedded in the visual field of the viewer but are, in effect, masked by distortions. A frequently used distortion, is for example, the inducement of anamorphosis in the visual field. The result is a figure that retains some semblance of its original form but is distorted to the extent that it is not easily recognized. Another method is simply to use the context of the visual field to focus attention on something other than the embed itself. However, in either case, once detected by the viewer, the embedded stimuli can be seen on repeated observation.

Also, Computerized new techniques allow the implantation of embedded words in the print advertisements to motivate purchasing behavior. In print advertisements, these could be found in clouds, ice cubes, water or anywhere else. They could be also photographed at say 1/150th of a second. A double exposure can then be made at 1/1000th of a second in which only the word sex is photographed as a faint expression across some portion of the original picture.

Since most embedding occurs in the background of advertisements and not in the figure or focal points of ads, the likelihood that they will be attended to or consciously perceived would seem to be small. As Kahneman³² states, “looking behavior is never random... In the absence of a specific task set, the control of fixation is handled by enduring dispositions and standard routines of ‘spontaneous looking’. These routines, many of which are probably innate, tend to select stimuli that are ecologically likely to be significant”. Among those properties Kahneman suggests that might attract attention, are physical properties such as novelty. Since embeds are designed

³¹ W. B. Key, Subliminal Seduction (New Jersey: Prentice Hall, 1973), p. 109.

specifically not to attract attention (i.e., they form part of the background of an ad), it seems unlikely they would be attended to. This is further supported by Kahneman when he states that, "there seems to be a strong tendency to look where one thinks... Eye movements of this kind represent a general orientation toward the object of thought". As Moore states, "under typical circumstances, the ad's most noticeable characteristics will receive the lion's share of perceptual activity, if they receive any attention at all". Thus the case for an individual attending to an embed seems to be weak. This, however, does not preclude the possibility that effects can result from unattended stimuli.

With competing stimuli available, some would be attended to and others not. In this situation Kahneman suggests that attended stimuli have a much higher probability of eliciting and controlling responses and are more likely to be stored in memory. He further states that full interpretation of weak stimuli is unlikely and the lack of such interpretation renders further processing unlikely. The fate of such unattended stimuli has been addressed by several researchers with some difference in conclusions.

Broadbent's filter theory and Triesman's filter-attenuation theory both address the processing of unaddressed stimuli. Broadbent suggests that unattended stimuli are held in storage while attended stimuli are processed³³. Unattended stimuli might be processed if a shift in the filter mechanism occurs in a short time. In Triesman's view, parallel processing is hypothesized. She suggests that the effect of of unattended stimuli is reduced but not eradicated. These theories suggest that embedded stimuli

³² Kahneman, D. Attention and Effort, (New Jersey: Prentice Hall, 1973).

might be processed in a weak form or are more likely to be processed if the individual's receptivity to sexual imagery was very high.

The one departure from the notion of differential processing of attended and unattended stimuli is presented in the theory developed by Deutsch and Deutsch who suggest that attention has no effect on whether or not a stimulus will be processed. They assume that "all messages" reach the same processing mechanisms³⁴. The theory does suggest, however, that the momentary relevance of a stimulus will control awareness of and response to the stimulus. Norman reformulated this theory hypothesizing two types of input. He suggested that the combination of sensory inputs and pertinence inputs determines perception. Thus stimuli embedded in an ad would provide sensory inputs but might have low pertinence weighting. This combination would result in less relative importance and thus focus attention and processing on other aspects of the visual field. However, the possibility that embedded stimuli would be processed still exists.

Thus, the theoretical literature would lead to the conclusion that embedding, if effective, should have only a small effect on views of advertisements containing embeds. A review of the limited empirical research on sexual embedding in advertising yields conflicting results though most studies report negative results.

³³ Broadbent, D.E. (1958), Perception and Communication (New York: Pergamon)

³⁴ Deutsch, J.A. and D. Deutsch. "Attention: Some theoretical considerations", Psychological Review, 70 (1963), pp. 80-90.

2.6.1.1. Research on Embeds

Kelley³⁵, and Kelley and Kessler (1978) concluded that embeds were not effective in increasing ad recall. It should be noted, however, that Kelly did not use matched ads so the potential for confounding of ads and versions did exist. Caccavale, Wanty and Edell³⁶, using matched ads, produced what they describe as inconclusive results but suggest that use of pictorial stimuli, rather than verbal, might produce different results. Bagley and Dunlap³⁷ concluded that significantly more subjects who received ads with sexual embeds provided responses suggesting sexual stimulation.

Kilbourne, Ridley and Painton (1985), found that the use of sexual embeds produced greater believability when sexual embeds were present than when they were not. This result was not consistent across products however, and was shown to be true only for Chivas Regal and not for Marlboro Lights (i.e. for liquor and not for cigarettes). Those who saw the version with the embeds indicated a greater willingness to try the product than those who saw the ad without the embeds. They conclude that the use of sexual embeds in magazine advertisements does influence viewers' evaluations of the ads.

In research on subliminal embedding, individuals have been exposed to stimuli for periods of time too brief (or too low in the case of auditory stimulation) for conscious awareness, but yet able to register in an individual's subconscious and affect

³⁵ Kelley, J.S. "Subliminal Embeds in Print Advertising: A challenge to Advertising Ethics" *Journal of Advertising* 8 (3, 1979), pp. 20-24.

³⁶ Caccavale J.G., T.C. Wanty and J.A. Edell. "Subliminal Implants in Advertisements: An Experiment" *Association for consumer Research Proceedings* 9, 1979, pp. 418-23.

subsequent behavior. Indeed, a range of stimulation possibilities that can have a measurable effect on some aspects of behavior seem to exist. Studies by Hovsepian and Quatman³⁸, Gable et al indicate the lack of impact of subliminal presentation on subject's responses. In their study, Gable et al.³⁹ made their own embed and nonembed versions of ad illustrations for four products. Subjects presented with paired versions (embed and nonembed) were asked to indicate the photo of the pair they preferred for each of four products involved. Significant differences were found for three of the products, with the nonembed version preferred for the food and beer photos and the embed version preferred for the pen photo. Given the negative results for two products, the authors concluded that embeds do not have an effect and that the only positive result was due to chance. According to Moore, there is no evidence that such stimulation can directly influence goal-directed behavior. In addition, he concluded that subliminal directives have not shown the power ascribed to them by advocates of subliminal advertising⁴⁰.

Of particular importance is the procedure of embedding of sexual images or words in advertisements. This procedure has been best popularized by Key who claimed that these embeds influence consumers to buy (and find more satisfaction with) the brands so advertised. However, Key provides no empirical evidence beyond his opinion that

³⁷ Bagley, C.G. and B.J. Dunlap. "Subliminally Embedded Ads: A turn on?". Southern Marketing Association Proceedings 1980, pp. 296-298.

³⁸ Hovsepian, W. & G. Qualman. "Effects of Subliminal Stimulation on Masculinity-Femininity Ratings of a Male Model", Perceptual and Motor skills, 46 (1, Feb. 1978), pp. 155-161.

³⁹ Gable, M., Wilkens, H.T., Harris, L. Feinberg, R.. An evaluation of subliminally embedded sexual stimuli in graphics. Journal of Advertising, 1987, pp. 26-31.

these effects of embedded stimuli exist. Indeed, according to a recent review of literature on subliminal perception, Key's assertions should be regarded as "a hypothesis awaiting empirical investigation."

Thus, the empirical research on sexual embedding is inconclusive but suggests ineffectiveness.

2.6.1.2. Theoretical Support

i. Low-Involvement Information Processing: Theoretical support for embed effects is offered by the theory of low-involvement information processing. The theory of low-involvement information processing is recognized as having had significant effect on theoretical development and research in advertising and consumer behavior. Low-involvement processing as stated by Krugman⁴¹, involves the consumer 's passive acquisition of information. It is implied in this process that the consumer may not be consciously aware of all material presented. Yet, ultimately, the effect on behavior is expected. Krugman refers to the process as involving consumer use of "... peripheral seeing- i.e., seeing without 'looking at' and without being aware that seeing has occurred"⁴².

Although this acquisition of information usually occurs without the individual being consciously aware of it (hence, a lack of recall of the information), the

⁴⁰ Moore, T.E. "Subliminal Advertising: What you see is what you get", Journal of Marketing 46 (Spring1982) pp. 38-47.

⁴¹ H. E. Krugman, "The impact of television advertising: Learning without involvement." Public Opinion Quarterly, 1965, p. 349-356.

information nonetheless may have an impact on his or her attitudes and purchase behavior. Although it may, on the face of it, seem illogical that people's attitudes and behaviors could be affected by the unconscious acquisition of information, there is evidence showing that under certain conditions, attitudes may be formed even before one becomes consciously aware of the stimulus object.

Zajonc⁴³ and his associates have shown that the "overt affective responses may be unrelated to prior cognitive outcomes which result from stimulus exposure". For example, subjects reveal clear preferences for exposed stimuli over novel stimuli even though in recognition tests they could not discriminate between exposed stimuli and novel stimuli. Embed effects may operate in a similar fashion.

ii. Sex and Death Motives. Frequently, the embed material is either of a sexual nature or refers to death. The emphasis on such material comes from Freudian theory. Freud emphasized the individual's repressed sexual desires as well as the subconscious death wish as important aspects of human personality and motivation. Sex and death presentations would supposedly appeal to the "id", that aspect of the personality that strives for gratification and is the reservoir of life and death instincts. The importance of sexual symbolism of some products for marketing and advertising has also been noted by motivational theorists like Ernest Dichter. As a matter of fact, the advertiser could address at a low-awareness level a motivation for purchase

⁴² H.E. Krugman. "Memory without Recall, exposure without perception". Journal of advertising research, 17, 1977, p. 10

through the use of embeds that could not be addressed (or not as directly addressed) at a high-awareness level.

The emphasis on sexual symbolism has been remarkable in many advertisements. Despite its application across a wide variety of products, the association between sex and use of some products would appear to be much stronger than for others. For instance, a stronger association would be expected between sex and cologne than between sex and soft-drinks. Thus, even without deep subconscious references to sex, embed presentations that refer to sex may be able to enhance the thought processes already associated with some products.

The motivating nature of an embedded death symbol may seem obscure. Whether or not one actually possesses some subconscious death wish as Freud suggested, it is clear that one is intrigued by death and danger and that they are more strongly associated with some products than with others. This suggests that death-related embeds might be able to produce some attitudinal response, perhaps positive, perhaps negative. Writers like Key claim that the effect on sales of such sex or death embed presentations is positive. However, this phenomenon is awaiting for more empirical investigation.

⁴³ Wison, W.R., & Zajonc, R. B. "Affective discrimination of stimuli that cannot be recognized". *Science*, 1980, p. 557.

2.6.2. Some illustrations of subliminal stimuli

Some psychology studies⁴⁴ have shown the effects of subliminal perception on the affective responses. However, in the marketing/ advertising literature, results have been generally negative, though there have been reports that subliminal presentations can affect subject self-perception of thirst⁴⁵ and subject rankings of a competitive set of product brands.

There have been several studies which have shown an impact from subliminal stimulation. In these studies, positive results have been achieved through the use of visual stimuli of a graphic rather than verbal nature. Klein et al.⁴⁶, for instance, used sexually neutral drawings of people and had them reproduced and described by the subjects. Subliminal presentations of genitals were made and were found to affect the drawings and descriptions given. This is a different type of task than those found in the unsuccessful studies. The successful studies tended not to rely on the additional process of converting words into meaning and then measuring impact. Rather, the visual stimuli had meaning without the need of the additional step. The use of words has also been shown to have an impact under special circumstances.

⁴⁴ Rosen Dennis L. & Surendra N. Singh. "An investigation of Subliminal Embed Effect on Multiple Measures of Advertising Effectiveness". *Psychology & Marketing*. 1992, p.157-173.

⁴⁵ Hawkins D., "The effects of Subliminal Stimulation on Drive Level and Brand Preference", *Journal of Marketing Research*, 14 (Nov. 1977), pp. 322-326.

⁴⁶ Klein, G.S., D.P. Spence, R.R. Holt, & S. Gourevitch. "Cognition Without Awareness: Subliminal influences Upon Conscious Thought", *Journal of Abnormal and Social Psychology* 57, 1958, pp. 255-266.

McNulty, Dockrill and Levy⁴⁷ concluded after using word lists that individuals must be aware of the structure of a stimulus before any meaning can be perceived. This emphasis on structure rather than language may indicate why studies using words have generally been unsuccessful while those relying on a more Gestalt view have tended to be positive in results. It may be easier for the brain to derive meaning from a partial picture than from a partial word. Bricker et al. found that repeated exposure increased the impact of the stimulus. This may again point to the need to gain enough information to correctly picture the whole stimulus. This type of structural research is in contrast to the motivational reasoning of Key. This indicates that Subliminal perception need not be considered some type of black magic but rather may be successfully investigated in a scientific manner. There is ample evidence that weak stimuli that are not reportable can be demonstrated to influence behavior. In one of these studies by Bevan⁴⁸ and his associates, subjects were asked to judge the intensity of weak electric shocks delivered to their wrists. Between trials subliminal levels of shock were also administered. Careful control procedures ensured that these stimuli were not detected. The effect of these stimuli was to elevate the judged intensities of the detectable shocks. A control group that received no subliminal stimulation routinely estimated their shocks to be less intense than the experimental group. A similar effect was found for judgments of the perceived loudness of tones. Apparently

⁴⁷ McNulty, J.A., F.J. Dockrill, & B.A. Levy. "The Subliminal Perception of Stimulus Meaning," American Journal of Psychology, 1967, p. 28-40.

⁴⁸ Bevan W. "Subliminal Stimulation: A pervasive problem for Psychology", Psychological Bulletin, 1964, p. 89-99.

the subliminal stimuli trigger physiological activity that affects the perception of similar supraliminal stimuli.

Many studies that provided other sorts of illustrations, showed that taboo or emotionally loaded words have higher recognition thresholds than do neutral words. That is, it takes a longer exposure duration for "whore" to be identified than for "shore". Indeed, perception is treated as a multiprocess chain of events that begins with stimulus inputs and terminates with conscious recognition of an object or an event. However, not all input is subjected to the same sequence of mental processing. Stimuli are relatively filtered, transformed and attended to according to a variety of factors that are independent of the particular input. Some stimuli may initiate mental activity of one sort or another without being available to conscious reflection or report. In the case of taboo items, some kind of defensive selectivity operates to bias the processing of emotionally charged input - such selectivity having its impact prior to a conscious recognition of the input⁴⁹.

The preceding examples testify the validity of subliminal perception as a phenomenon. The important question is whether the subliminal effects obtained justify the claims made for subliminal advertising. Thus, in order to support such a proposition its enduring and powerful effects on the buying preferences should be considered.

⁴⁹ Timothy E. Moore, pp. 40.

Could subliminally presented stimuli have a marketing application?

Some of the few laboratory studies that addressed the issue will be reviewed.

2.6.2.1. Practical difficulties

There are some constraints associated with presenting subliminal stimuli in a typical marketing context⁵⁰:

- One problem has to do with individual differences in threshold. There is no particular stimulus intensity or duration that can guarantee subliminality for all viewers. In order to preclude detection by those with relatively low thresholds, the stimulus would have to be so weak that it would not reach viewers with higher thresholds at all.
- Lack of control over position and distance from the screen would further complicate matters.
- Finally, supraliminal material (i.e., the film or commercial in progress) would almost certainly wash out any potential effects of a subliminal stimulus. Nevertheless, it could be argued that if 1% of 10 million viewers are influenced by a subliminal ad that completely misses the other 99%, the subsequent behavior of that 1% might make the exercise cost effective.

⁵⁰ Ibid. p. 41.

Moore⁵¹ has stated that the effects of subliminal stimulation can be looked upon within two fields, the strong claim and the weak claim. The difference between the two is the type of behavioral response attributed to subliminal presentation. The strong claim predicts direct behavioral consequences of subliminal perception while the weak claim requires only a positive affective reaction. Moore's position appears to be that any response that might be measured, short of some physical action (as purchasing), is not evidence for the efficacy of subliminal stimulation.

2.6.2.2. Evidence for the strong claim

The strong claim for subliminal advertising assumes specific behavioral consequences as a result of a subliminal directive. A study by Zuckerman⁵¹ requiring student nurses to write stories describing the contents of a series of pictures that were projected onto a screen in front of them is pertinent to this issue. Unknown to the subjects, the instructions "write more" and "don't write" were tachistoscopically superimposed on the pictures at successive points during the presentations. A control group was treated in a similar fashion but received blank slides in place of those containing the subliminal directives.

During each condition, pictures were presented for 10 trials each. After each trial, subjects wrote a description of what they had seen. Zuckerman found that nurses in the experimental group wrote more during the condition where "write more" was projected. Furthermore, he noted a slight drop in output under the "don't write" message, and interpreted this as evidence that the subliminal instructions were

⁵¹ Zuckerman, M., "The Effects of Subliminal and Supraliminal Suggestions on Verbal Productivity", *Journal of Abnormal and Social Personality*, 1960, pp. 404-411.

effective. Zuckerman has little to say by way of explaining the finding, but submits that “the subject’s operant behavior is supposedly brought under control by suggestive cues of which is not aware”.

Dixon⁵², commenting on Zuckerman’s results, speculates that “it may be impossible to resist instructions which are not consciously experienced”. Several researchers have investigated and described some of the cognitive processes that may mediate acceptance of advertising claims.

However, the meaning of a stimulus does not reside in the stimulus itself. Meaning is constructed by the receiver in active, complex and often specialized ways. With respect to advertising the selectivity of attention and the active control over subsequent processing of the input means that stimulation is not a sufficient condition for any response at all. To attribute to a subliminal stimulus a strong influence is not justified by any theoretical rationale.

2.6.2.3. Evidence involving the weak claim

Under the weak claim, subliminal stimulation produces some affective reaction at minimum. In a study involving the weak claim, Byrne⁵³ flashed the word “beef” for successive five millisecond intervals during a sixteen-minute movie. Experimental and Control subjects did not differ in their verbal references to beef, as measured by word association tests. Nor did experimental subjects report a higher

⁵² N.F. Dixon, Subliminal Perception, p.177.

⁵³ D. Byrne. “The Effects of Subliminal Food Stimulus on Verbal Responses”, Journal of Applied Psychology, 1959, p.249-251.

preference for beef sandwiches, when given a list of five alternatives. Experimental subjects did, however, rate themselves as hungrier than control subjects. Byrne offered no explanation for this finding. In a similar study, Hawkins⁵⁴ flashed the word "coke" for 2.7 millisecond-intervals during the presentation of other supraliminal material. Subjective thirst ratings were higher for the "coke" group than for a control group that received a nonsense syllable. Hawkins concludes that "a simple subliminal stimulus can serve to arouse basic drive such as thirst".

2.6.2.4. Recent findings

Both Byrne and Hawkins demonstrated that drive levels could be increased using subliminal stimuli, but in neither case did subjects express increased desire for the object to which they were exposed

Dozens of experiments have demonstrated that the subliminal stimulation may lead people to change the position (anchor point) from which an individual evaluates the world around him. Anchor points refer to the position between two opposed concepts from which an individual evaluates loud or soft, good or bad, strong and weak and so on. The subliminal stimulus have the possibility of moving the anchor point between two such concepts in any direction desired. However, Humans are commonly tied up by culture toward certain predefined anchor points. For example, people will tend to agree on a general principle of what is cold or hot, large or small,

⁵⁴ Hawkins, D., "The Effects of Subliminal Stimulation on Drive Level and Brand Preference", Journal of Marketing Research, 1970, p. 324.

strong or weak in a culture where there is strong unconscious tendency toward accepting what is commonly accepted.

Some Researchers believe that Anchor points could be controlled and moved around by certain subliminal stimuli. They can be even manipulated upward or downward to serve a certain objective. A political candidate would appear more trustworthy, honest and sincere than his actual appearance when anchor points are moved around. In fact, Rock music is an example of how media changed significantly the meaning of loud and soft for marketing purposes.

Indeed, by increasing the volume of popular music, while becoming unbearable for an older generation (manipulating the anchor points between loud and soft between the age groups), rock music is becoming even more appealing to the new generations. In fact, judgments of loudness and softness were changed by introducing tones and harmonics at subaudible levels. These subaudible levels, especially those in the bass range, became audible when the volume was increased. Volume increase expands the frequency range which can be heard at both the conscious and unconscious levels.

2.6.3. Subliminal Psychodynamic Activation

In the 1960's, Lloyd Silverman⁵⁵ pioneered a scientific method for activating unconscious drives derivatives, the Subliminal Psychodynamic Activation (SPA) method.

⁵⁵ Silverman. L.H., "A Study of the Effects of Subliminally presented aggressive stimuli on the production of pathological thinking in a non-psychiatric population." Journal of Nervous and Mental Disease. 141, 1965, p.443-445.

This method usually involves tachistoscopic presentations of written verbal messages below the subject's level of conscious perception. The key subliminal message presented - MOMMY AND I ARE ONE- represents symbiotic-like oneness. The choice of this message was based on Psychoanalytic theory which states that adults have unconscious fantasies of achieving a state of oneness with another person (usually the mother). The wish for oneness is assumed to be derived from the oneness an infant experiences with the mother during the symbiotic period of development.

Indeed, Hudesman et al.⁵⁶ found significantly higher mathematics scores following the subliminal tachistoscopic exposure of "MOMMY AND I ARE ONE" than "PEOPLE ARE WALKING ON THE STREET". Indeed, 24 students who participated in a summer session mathematics enrichment program, viewed subliminally presented messages. After 20 sessions experimental students had higher mathematics scores than controls. The Subliminal Psychodynamic Activation message "MOMMY AND I ARE ONE" affects the widely felt need for closeness with the mother figure. There was evidence that students in the experimental group retained more course information and averaged between 10-17% higher on re-examination than did the control group.

Actually, Research with SPA method has led to improvements in subjects' functioning in variety of areas, including but not limited to weight control, school grades, and feelings of general anxiety.

⁵⁶ Hudesman, Page and Rautiainen. "Subliminal Psychodynamic Activation method and annihilation anxiety: preliminary findings." *Perceptual and motor skills*, 74, 1992, pp. 219.

According to Psychoanalytic theory, Psychopathology is associated with the arousal of conflictual unconscious libidinal and aggressive fantasies; however, this concept has been challenging to be demonstrated scientifically.

Many SPA experiments have demonstrated enhanced functioning for subjects in a variety of situations. Subjects lost weight (Martin 1975), stopped smoking (Palmatier & Bornstein, 1980), improved school grades (Arian and Siller, 1982) and experienced less general anxiety (Silverman and Grabowski, 1982). Recently, Hurvish⁵⁷ proposed that the SPA method could be used to further the understanding of annihilation anxiety. Annihilation anxiety is the fear of being overwhelmed or annihilated and reflects fears of disintegration of the ego and of the self. This could be manifested in fears of being overwhelmed, of disintegration, of loss of needed support, of inability to cope, of concern over survival, and of catastrophic mentality. If a person feels that the self is in danger of annihilation, perhaps the gratification of a fantasy of oneness with another person would help strengthen the person's self sufficiency so there may be benefit from psychotherapy. Alternatively, the SPA method might help identify those individuals who require other types of assistance. In general, the less clear the sense of self, the more vulnerable one is likely to be to threats against the self that does exist. A strongly differentiated sense of self would be expected to protect against annihilation anxiety.

⁵⁷ Hurvish, M.S., "The Assessment of Annihilation Anxiety.", Lloyd Silverman memorial talk: Division 39, APA Convention, 1987, New York City.

2.6.4. Subaudible messages

The eye is capable of receiving far more information in a short period of time than does the ear. Thus most studies of subliminal perception have involved visual stimulation because the investigator can attempt to determine what particular features of a display are responsible for various sorts of neural activity that may occur below the level of conscious awareness. In contrast, studies addressing auditory reception have been concerned primarily with signal detection-determining the presence versus absence of a weak signal. Because auditory information is, temporally extended, it is particularly vulnerable to loss through lack of attention or auditory masking.

This probably accounts for the total absence of published studies investigating possible effects of subaudible messages. While the eye is sensitive primarily to spatial information, the ear is basically a processor of temporal information, especially in the case of speech perception. The difference is an important one. A great deal of information can be presented simultaneously in a visual display. An auditory stimulus is more extended in time; information arrives in consecutive bits. A speech stimulus may be thought of as a sound pattern whose acoustic features fluctuate over time. Consequently, there is no procedure for creating tachistoscopic-like auditory stimuli. Controlling the exposure duration of a visual stimulus does not change the stimulus itself; it merely limits the time available for processing it.

If speech is compressed or telescoped in time, the signal itself is changed. While the speech stream (flow) can be subjected to a surprising amount of mutilation (disfiguring) without intelligibility being affected, there is a limit to the amount of distortion that can be tolerated without a loss in comprehension. Information is

transmitted at the rate of about 150 words per minute in normal speech. Studies⁵⁸ have shown that comprehension declines fairly rapidly at rates beyond 300 words per minute. This is due to first signal degradation. When playback speed is increased, component frequencies and pitch are both altered. The intelligibility of the signal consequently suffers. Secondly, channel capacity is taxed when a critical word rate is reached. Speech comprehension requires the continuous registration, encoding and storage of information. These operations take time. When the word rate is too fast, not all the input can be processed as it is received. The result is that some speech information is lost. Reducing the volume of accelerated speech will only compound these difficulties. Mass media accounts of subaudible messages report presentation rates of greater than 2,300 words per minute. The message is simply repeated 8- or 9,000 times an hour. Because of the fast rate, what may once have been a message is rendered an unintelligible scratching sound lacking support of having an influence on behavior.

Indeed, weak auditory stimuli are very susceptible to auditory masking. Moreover, there is some experimental evidence that attentional focus can effectively prevent weak auditory stimuli from receiving any processing at all⁵⁹. Studies in dichotic listening reveal that very little of the content of an unattended message is processed

⁵⁸ Foulke, E. and I.G. Sticht. "A Review of Research on Intelligibility and Comprehension of Accelerated Speech", *Psychological Bulletin*, 72, 1969, p. 50-62.

⁵⁹ Eriksen, C.W. and H.J. Johnson, "Storage and Decay Characteristics of Non-attended Auditory Stimuli", *Journal of Experimental Psychology*, 68, 1964, p.28-36.

when attention is focused on another concurrent message⁶⁰. Moreover the unattended stimuli used in these investigations are by no means subliminal in strength.

Speech's sounds are different in principle from other auditory inputs⁶¹. Because of speech's temporal dimension, a certain minimal amount of attention may be essential for comprehension. Thus, neither accelerating the message nor reducing its volume seems to provide appropriate analogs to the methods used in the visual modality.

While psychologists now agree that the phenomenon of visual subliminal stimulation is real, disagreement continues over the effects of such stimulation as well as its existence in other sensory modalities, notably the auditory.

Some were accused (of which the "heavy metal" band), of embedding subliminal messages in their music. These embedded messages were alleged to have been instrumental in the suicide and suicide attempt of two men. Since the defendants in this litigation stand to lose millions of dollars in damage claims, they are predictably trying many tactics to win this case. Among these tactics is a well orchestrated media campaign to discredit auditory subliminal perception simply for purposes of legal advantages⁶².

2.6.4.1. Methods of auditory subliminal presentation

Historically, the most common method of auditory subliminal presentation has been a simple reduction of sound amplitude to the point that subjects could not identify the presence or absence of the sound at better than chance accuracy.

⁶⁰ Kahneman, D., Attention and Effort, p.54.

⁶¹ Liberman, A.M., F.S. Cooper, D.P. Shankweiler and M. Studdert-Kennedy, "Perception of the Speech Code", Psychological Review, 74, 1967, p.431-461.

Some investigators report minimal differences (- 5 dB) in their stimulation levels relative to threshold, while others report stimulus / threshold differences as high as - 30 dB (Shifren 1981). Taking into consideration that an 8.3 dB increase in the amplitude of sound will be perceived as a doubling of loudness.

A second method consists of making the signal with music or white noise. This is typically accomplished through the simultaneous presentation of speech and noise, which can be recorded onto magnetic tape by mixing the two sound tracks together. Ideally the peak amplitude of the message signal should never exceed the amplitude of the masking signal.

A third method of producing an auditory subliminal stimulus is to use a subliminal processing device. This technique uses an analog circuit to maintain a signal to noise ratio between the masking sound and the stimulus signal. The auditory subliminal stimulus which has been processed by a mixer, adjusts the level of the speech signal relative to the level of the masking sound.

Subaudible effects can be planted at low-volume intensities, at various speed harmonics, or at either high or low frequencies-all of which are unheard by conscious perception.

The above presented literature was an elaborate review of the research pertinent to subliminal stimulation. The following chapter will be a description of the design and methodology to be applied in gathering and analyzing data in this study.

⁶² Wilson B. Key, Subliminal Seduction, p.31.

CHAPTER III

RESEARCH DESIGN AND METHODOLOGY

3.1 The basic approach

This study was conducted to determine the effects, if any, of Advertising messages in the form of embeds transmitted below the level of conscious awareness on consumer attitudes or preferences when other variables have been controlled for possible causal effects. For example, the researcher assumed invariance for certain variables; that is, do not expect them to vary appreciably. Indeed, environment temperature may affect the reaction of the subject in the experiment, but it was assumed (without checking on or controlling this assumption) that all are the same for this variable. In other cases, the researcher assumed that some variables are irrelevant for the study. For example, the mood may vary among subjects, however, it was assumed that this does not have any effect on the products.

Although Key claims that embeds help to sell products, the purpose here was to determine if embeds can have any effect, positive or negative, as measured at the various levels of advertising effectiveness. Moreover, since Key's emphasis, and the public's fascination, has been with sex and death embeds, I have chosen to address the impact of sex embeds on intention to purchase behavior. The study was also designed

to investigate the manner in which any effects vary across categories of feelings and attitudes. Based on the above discussion, the following hypotheses were derived for testing:

H1: The inclusion of embed material, either words or pictures, referring to sex in print advertising will have significant impact on one or more measures of the advertisement's effectiveness.

H2: The impact of sex embed material in print advertising which is not recognized at the conscious level, leads to a favorable reaction.

More specifically:

H2a: Sex-related embeds will produce positive effects and will not be recognized consciously.

H3: Marketing stimuli that are embedded in advertisements implying a sexual appeal do affect consumer behavior and intention to purchase decisions.

3.1.1.Method

Embeds in print can be words, symbols, or a combination of both. There may be differences in the "efficiency" (if any) of each of three modes, but the present experimental design was not developed to test this. There was no available research indicating that any of the three modes would be more influential.

Thus, stimuli were developed representing two types of embeds: sex (the word sex), body (naked figure of a woman) as well as a control presentation without embeds. The embed stimuli provided the sex emphasis most commonly referred to by Key in his books.

This experiment is different from other studies in that a real sunglasses' advertisement was randomly chosen from a magazine. By taking a real advertisement, any differences that may result from biases in preparing a new advertisement are controlled. In addition, Embedding was undertaken on one of the two similar sets of photographs. One copy for the experimental category was embedded by a professional designer using computer graphics and more specifically Photoshop 3.0 and Freehand 5.0 computer softwares. Direct review of the embed material and the advertisements insured that there were no noticeable differences in the photos other than embedding. Thus, in the experiment the only factor that could influence the respondent's choice was the embed material.

Pretesting was conducted with approximately 20 students to insure that the embeds in the test ads were not noticeable when first presented but were clearly visible when pointed out to these same subjects, thus meeting the definition of embeds.

To determine the attitudinal effect of sexual embeds, four scales were developed. The scales and the items composing each were cognitive (trustworthy, informative and believable), affective (appealing, attractive and impressive), conative (try product, buy product and seek out product) and sexual (sensual, erotic and

exciting). The first three scales were similar to those used by Baker and Churchill¹ and the last was developed for the present study.

3.2 Sources of Information

In order to test the hypotheses stated and answer the questions addressed in chapter I, an experimental design conducted on university students was prepared. The Lebanese American University -Beirut- (LAU) was considered as the sample frame for this study. The reason that only one university was selected is to keep the consistency of students and to control for extraneous variables, which would help achieve the aim of the study.

The experiment was designed to provide information regarding the effect of inserting marketing stimuli implying sexual appeals upon behavior and feelings. This, in reference to the literature review presented in chapter II, was based on the assumption that these stimuli help having a positive effect on consumer purchasing of goods.

Different scales for measuring advertising effectiveness were developed. Each scale was being measured through a set of questions that were designed to build each specific measure. A sample of questionnaire and a copy of the advertisement could be referred to in Appendix A and B respectively.

¹ Baker M.J. and G.A. Churchill, "The impact of physical Attractive Models on Advertising Evaluations", *Journal of Marketing Research*, 14 (Nov 1977), p. 538.

3.3 Sample and data collection

The subjects were selected according to a randomized design. 52 students randomly selected were exposed to one of the two conditions (advertisements) and thus each group consisted of 26 subjects. The sample was selected taking into consideration that certain factors should be controlled to attain and keep the validity of the study findings. Also, the subjects were similar in terms of education (MS and BA/BS degree) and in terms of age to ensure that the effects are due solely to the stimuli.

3.3.1. Experimental Design

A laboratory experiment was conducted in the Library at LAU. The respondent sat for the experiment directly after looking at the advertisement of either the control or the experimental condition and were requested to fill in the questionnaire. Then, the questionnaires were checked to ensure that there are no missing answers reported. Subjects were told that this research is being conducted to measure the effectiveness of the advertisement and the real objective of the research was not mentioned. The reasons for indicating that this was an advertising project were two-fold. The first is that it would be a realistic research project in which the subjects would be asked to participate. The second was that it would not specifically call attention to the real purpose of the study as might occur if it were announced that sexually oriented embeds were present and this possibly precondition the evaluation of each respondent. Subjects appearing individually for the study, were exposed to one of the two advertisements. Subjects were told to look at the ad for as long as they desired and then to answer a set of questions.

3.4 Research variables

A major concern when researching the area of embed effect is selection of the appropriate dependent measures. Advertisers commonly use one or more of a variety of techniques to determine the effectiveness of an advertisement. These techniques are based on the ability of the ad to attract and hold attention; its ability to change attitudes toward the product, the person using the product, and the ad itself; the ability of the consumer to remember the ad or product 24 hours later (known as DAR or day-after recall); and the impact of the ad on behavioral buying intention.

Although change in behavior may be the ultimate goal, it is generally recognized that such change is unlikely to occur from the single exposure that is often involved in ad testing. Past studies of embed effects have tended to be limited in the number of measures used. Given the debate in advertising concerning the appropriateness of the various measures used and the effects that embeds are likely to have, it seems very important that measures at several levels of potential effects be taken. The lack of significant findings in some studies or for some products may reflect this lack of measurement at multiple levels of potential effects.

Four major variables were included in the experimental design. These are:

(1) Conative scale; (2) Cognitive scale; (3) Affective scale; and (4) Sexual scale.

3.4.1 Conative factor

This variable measures the attitudes of consumers as to trying the product, buying the product and seeking out the product. This scale is similar to the one used

by Baker and Churchill 1977² and which was measured by variables such as intention to buy, recommend the product, seek the advice of a friend, try product and seek out product. Subjects were asked to indicate on a five-measure likert scale the degree to which they strongly agree (by using the lower end of scale or (1)), agree, are neutral, disagree or strongly disagree (by using the upper end of scale or (5)) with these variables when they are in a purchase decision.

3.4.2 Affective factor

This variable measures the attitudes of consumers towards the advertisement as being appealing, attractive and impressive. Some psychology studies have shown the effects of subliminal perceptions on the affective responses (e.g., Bach & Klein, 1957; Kunst-Wilson & Zajonc, 1980; Zajonc, 1980). However, in the marketing/advertising literature, results have been generally negative, though there have been reports that subliminal presentations can affect subject self-perception of thirst (Hawkins, 1970) and subject rankings of a competitive set of product brands (Cuperfain & Clarke, 1985). This scale is similar to the one used by Baker and Churchill 1977 and which was measured by variables describing the advertisement to be appealing, interesting, impressive, attractive, clear and distinctive.

Subjects were asked to indicate on a five-measure likert scale the degree to which they strongly agree (by using the lower end of scale or (1)), agree, are neutral, disagree or strongly disagree (by using the upper end of scale or (5)) with these variables when they look at the advertisement. Some others were measured in semantic-differential format. The seven-point bipolar adjectives used for the affective component were

² Ibid. p. 538.

Interesting-Dull, Appealing-Unappealing, impressive-Unimpressive, attractive-unattractive, Clear-confusing, and distinctive-ordinary. Subjects were requested to indicate on the scale which adjective tends to describe better the advertisement.

3.4.3 Cognitive factor

This variable measures the attitudes of consumers towards the advertisement as being trustworthy, informative and believable. This scale is similar to the one used by Baker and Churchill 1977³ and which was measured by variables describing how subjects find the advertisement to be convincing, influential, believable, informative and eye-catching.

Subjects were asked to indicate on a five-measure likert scale the degree to which they strongly agree (by using the lower end of scale or (1)), agree, are neutral, disagree or strongly disagree (by using the upper end of scale or (5)) with these variables when they look at the advertisement. Some others were measured in semantic-differential format. The seven-point bipolar adjectives used for the cognitive component were believable-Unbelievable, informative-uninformative, eye-catching-not-eye-catching. Subjects were requested to indicate on the scale which adjective tends to describe better the advertisement.

3.4.4 Sexual factor

This variable measures the attitudes of consumers towards the advertisement as being sensual, erotic and exciting. This scale is similar to the one used by Kilbourne, Painton and Ridley in 1985 and which was measured by variables

³ Ibid. p.538

describing how subjects might feel when they look at the advertisement as stimulated, fearful, excited, satisfied, cool, uneasy, warm, romance, calm, quiet, sexy and agitated. Subjects were asked to indicate on a five-measure likert scale the degree to which they strongly agree (by using the lower end of scale or (1)), agree, are neutral, disagree or strongly disagree (by using the upper end of scale or (5)) with these variables when they look at the advertisement.

3.4.5. Overall reaction toward the ad

This variable intends to measure the reaction that the advertisement has implied on consumer. This was measured through a seven-point bipolar semantic differential scale whereby both favorable-unfavorable adjectives were being used.

3.4.6. Monetary value of the product

This variable tends to measure the value subjects assign to the product under the different experimental condition. This variable is based on the assumption that those subjects with a favorable reaction toward the ad will assign higher values for the product. This was measured through a seven-point bipolar semantic differential scale whereby both High price-low price descriptions were being used.

3.4.7. Demographic Variables

Single item questions were used to get information about respondents' gender, age, educational level and specialization. The levels of education consisted of four categories: Grade school or less, High school graduate, Some college graduate, university graduate and holder of a graduate degree. As to specialization, four

categories were used: Business administration, fine arts, computer science and biology.

A list of the variables used along with a description (label, formula, or link) of each could be referred to in Appendix C.

3.5 Data Analysis

The data gathered from the experiment and from the questionnaires filled out were analyzed by means of statistical package STATISTICA version 4.5. The facilities used and the type of analysis performed were as follows:

1. A descriptive analysis was performed to study the various aspects related to the general feelings and attitudes of subjects, and study the various aspects related to intention to buy and purchase decisions in general. To do this, the frequency, correlation, crosstabulation, and ANOVA tools were used.
2. A Pearson correlation analysis, one way ANOVA was used to test for the variance in subjects' responses concerning the sexual influence at the different conative, affective and cognitive scales.
3. A regression analysis was conducted to establish equations that would help identify the variables that are most likely to be associated with the measure of advertisement and product liking, attitudes and intention to buy.

Having identified the design and methodology of this research, the variables included and the analysis tools used, it is important to list the findings and the implications of the study and to evaluate them in the light of the hypotheses to be tested. This what the following chapter will present.

CHAPTER IV

RESEARCH ANALYSIS AND FINDINGS

Consumer behavior and buying are special cases of decision-making. A point of emphasis in this study is that human behavior can be caused. A customer's concept is not static; it evolves in response to new experiences, new stimuli and new information - including the stimuli and information brought to him/ her by the selling company or through advertisements.

Keeping in mind that an "attitude is an idea charged with emotion that predisposes a set of actions to a specific group of stimuli"¹, and conducting an experimental design where certain marketing stimuli were embedded in an advertisement, this research emphasized upon the effect of these stimuli on the three essential components of an attitude: the cognitive (idea), the affective (emotional), and the behavioral (predisposition to act in a particular way). The behavioral component is demonstrated by such actions as seeking or avoiding certain people or situations, purchasing a particular product, and so on.

¹ Robert P. Vectrio, "Organizational Behavior, (Orlando: the Dryden Press, 1991), p. 108.

In chapter one, the research questions were listed as follows:

1. Is it possible that people are affected by Stimuli of which they are not aware?

Under what conditions?

2. Do sexual embeddings and symbols in print advertisements affect consumer behavior toward purchasing?

Through data collection and using data analysis techniques, the aim of this chapter is to answer these questions and to interpret the findings.

First, the researcher starts with a description of the study group. This is followed by a presentation of the analytical findings which consist of a series of bivariate crosstabulations, one-way ANOVA analyses, Chi-square analyses as well as t-tests and regression analyses. The most important findings are summarized at the end of the chapter.

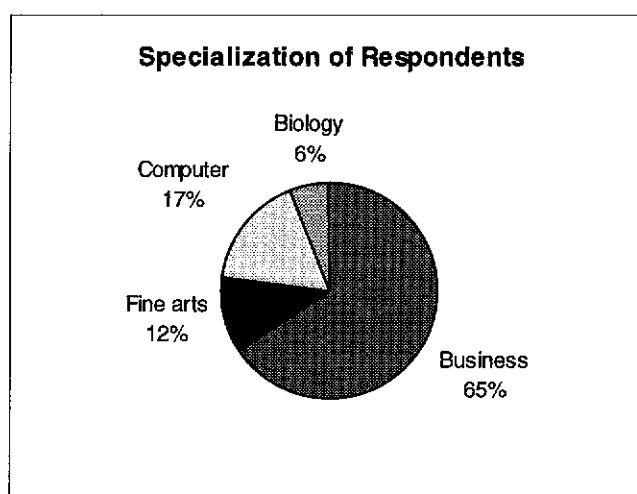
4.1- Profile of respondents

Of the 52 subjects that sat for the experiment, 32.69 % were females and 67.31% were males. They represented a variety of university students from different majors (e.g. Fine arts, Biology, Business (management, marketing, economics, finance and accounting) and computer science). As to the age of the respondents 25% of the sample was below 20, 55% was in the range of 20-23, and 20% was in the range of 23 and 26 years of age. Tables I and II show a profile of the respondents selected for the experiment.

Table I: Frequency Distribution: specialization of respondents

Value	Frequency	Percentage (%)
Business	34	65.38
Fine arts	6	11.54
Computer Science	9	17.31
Biology	3	5.77

Fig. 4-1



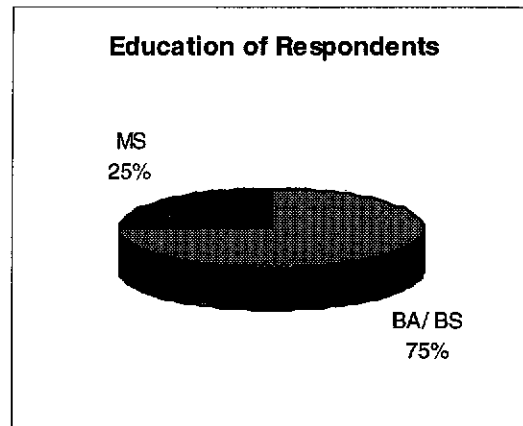
Figures 4-1 and 4-2 represent the percentages of respondents regarding their specialization and educational level respectively.

As noted in chapter III, the factors or aspects that are most likely to be affected with stimuli embedded in advertisements were grouped into four component categories: conative, cognitive, sexual and affective. The major objective hitherto is to study the effect of certain marketing stimuli put in ads upon these components, and in turn derive their effect upon buying behavior. Moreover, the relationships among the

Table II: Frequency Distribution: Educational level of respondents

Value	Frequency	Percentage (%)
BA/ BS	39	75.00
MS	13	25.00

Fig. 4-2



four components and to what extent the conative component is likely to be affected by the other three will be examined. This, in fact, what the following section will present.

4.2- Effect of Marketing Stimuli embedded in ads upon the component of advertising effectiveness

As mentioned earlier, the behavior of customers is likely to be influenced by certain external stimuli that might affect their cognition, feelings, and decision to buy a certain product. The following will be a presentation of the findings reached regarding the effects upon each of the components in study. To start with, a t-test was conducted to study the effect of treatment used (experimental vs. control) upon the subjects' feelings, CONATV, SEXUAL, COGNTV, and AFFECTV characteristics. The results are shown in table III. As could be noticed, significance at $\alpha = 0.05$ was reported for the feelings variable only. Such a result is not strange if one takes into consideration the factor of time and the role it can play in developing concepts and affecting behavior.

4.2.1. Effects of treatment upon feelings

At a significance level $\alpha = 0.05$, the feelings variable showed significant variability along the control-experiment treatment groups. The p-level was calculated to be 0.0320, implying significant variability along the two groups.

The interpretation of this result could be attributed to the reasoning that “feelings” is a kind of experience that could be instantly influenced by certain stimuli. They reflect the immediate reaction of subjects towards these stimuli. “I feel it ugly”, “I see it nice”, “I find it appealing” are examples of statements that were mentioned and written down by the responding subjects. Such a result could be well supported by referring to the results of the frequency distribution analysis.

TableIII: t-test through experimental and control

Group1: Experimental group
Group2: Control group

Variable	Mean Expermnt	Mean Control	t-value	df	p
FEELINGS	2.000000*	2.461538*	-2.20564	50*	0.032034*
CONATV	2.861538	2.584615	1.71157	50	0.093173
SEXUAL	2.939103	3.003205	-0.73288	50	0.467053
COGNTV	3.015385	2.715385	1.23544	50	0.22244
AFECTV	2.945055	2.752747	0.6536	50	0.516364

Variable	Std.Dev. Expermnt	Std. Dev. Control	F-ratio Variancs	p Variancs
FEELINGS	0.748331*	0.760567*	1.032967*	0.936015*
CONATV	0.600718	0.565468	1.12856	0.764742
SEXUAL	0.291126	0.33787	1.346905	0.461867
COGNTV	0.991037	0.742263	1.782643	0.155263
AFECTV	1.022264	1.098093	1.153858	0.723287

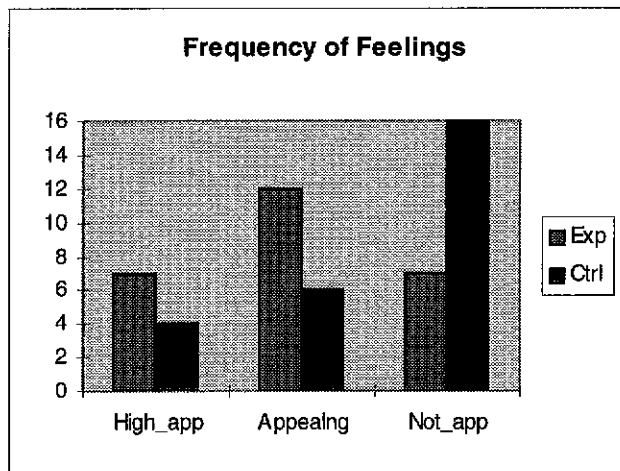
These results are displayed in tables IV (a) and IV (b). Under the experimental treatment, about 27% of the subjects viewed the advertisement as highly appealing, compared to 15% from the control group, also 46.15% in the experimental treatment group found it appealing compared to 23.07% from the control treatment group. Finally, only 26.9% of the subjects in the experimental group found the advertisement not appealing compared to 61.5% in the control group.

Table IV (a): Feelings - Frequency distribution (Control group)

Summary Frequency Table				
Value	Count	Cumul. Count	Percent	Cumul. Percent
high_app	4	4	15.3846	15.3846
appealing	6	10	23.0769	38.4615
not_app	16	26	61.5385	100.0000
Missing	0	26	0.0000	100.0000

Table IV (b): Feelings - Frequency distribution (Experimental group)

Summary Frequency Table				
Value	Count	Cumul. Count	Percent	Cumul. Percent
high_app	7	7	26.9231	26.9231
appealing	12	19	46.1539	73.0769
not_app	7	26	26.9231	100.0000
Missing	0	26	0.0000	100.0000

Fig. 4-3

4.2.2. Effect of treatment upon CONATV component

The CONATV component represents the tendency of the subject to show interest in the product, ask about it, buy it, recommend it for others and so on. As it is well known, the consumer behavior is affected by many factors (demographic, economic, psychological ...etc), and is predisposed by a process known as consumer decision making process. This, of course, justifies the result reached. The CONATV factor cannot be affected instantly. Usually, any consumer passes through a process starting from awareness, followed by interest, mental evaluation, trial, and finishing with adoption. The decision to make a purchase or to recommend the product for others takes time. Environmental factors as well as the customer's need for the product, and the frequent exposure to the ads used by the organization, all help influence the purchase decision. This explains why significant variability in CONATV along the two treatment groups was not reached at a significance level of $\alpha = 0.05$.

An interesting finding is that at a significance level of $\alpha = 0.1$, the CONATV component should show significant variability along the treatment groups. As a starting point, the research believed that the CONATV factor could be affected by the treatment posed. An ANOVA test was performed, and the results are displayed in Table V. As could be noticed, at a significance level, $\alpha = 0.1$, the CONATV component could show variability along the treatment groups. This implies that embedding marketing stimuli would most probably affect consumer behavior and his/her intention to buy.

Table V: One-way ANOVA:the effects of the treatment on the conative component

Design: One-way ANOVA
 Dependent: CONATV
 Between: EXP_CONT
 Within: none

Summary of all Effects						
Effect	df Effect	MS Effect	df Error	MS Error	F	P-Level
1	1	0.996923	50	0.340308	2.929476	0.093173

Further variability testing using crosstabulation analysis was conducted on the elements of the CONATV component. The results showed variability in the variable Seek_Advice along the experimental and control treatment groups. These results are listed in Table VI, and they show that at a significance level, $\alpha = 0.05$, the Chi-square = 14.54 and the p-level = 0.0068. This means that significant variability was traced, which in turn implies that embedding marketing stimuli in the ad can result in

differences among subjects regarding their tendency to seek advice regarding the purchase of the product.

Table VI: Crosstabulation Analysis: SEEK_ADV by EXP_CONT

Expected Frequencies			
Pearson Chi-square: 14.1540, df = 4, p= 0.006828			
SEEK_ADV	EXP_CONT Expermnt	EXP_CONT Control	Row Totals
strg_agr	4.5	4.5	9
agree	12	12	24
neutral	5	5	10
disagree	3.5	3.5	7
strg_dis	1.0	1.0	2
All Grps	26	26	52

4.2.3 Effect of treatment upon Sexual component:

While analyzing the sexual component and the lack of significant variability in this factor, one comes to a broader concept that affects one's reaction towards sex-related stimuli. This concept is mainly the community culture. The culture here raises people with a tendency to deny the effect of sexual-related items upon them. When asked, people rather tend to show that they are away from being affected by these issues rather than to sincerely express their real reactions. This, in fact, explains the lack of variability in the sexual component in general. As a matter of fact, the findings showed that three subjects only reported sex-related expressions upon seeing the ad in the experimental group.

Applying the tests for variability upon the elements of the sexual components, one could find that a significant variability was traced along the experimental and the

control groups in the variable representing uneasiness; "Uneasy". A Crosstabulation analysis was conducted, and as the results in Table VII show, at a significance level of 0.05, the Chi-square was calculated to be 11.8324 and the p-level = 0.0186, indicating significant variability. This result led to the conclusion that at least one element of the sexual component showed variability along the two treatment groups.

Also, another crosstabulation analysis was conducted to examine the variability of whether subjects found anything "unusual" in the ad or not along the experimental and control groups. The results are shown in Table VIII, and they reveal

Table VII: Crosstabulation Analysis: Uneasy by EXP_CONT

Summary Frequency Table
Table: EXP_CONT (2) x FEELINGS (3)

UNEASY	EXP_CONT Expermnt	EXP_CONT Control	Row Totals
strg_agr	4	1	5
agree	8	2	10
neutral	3	4	7
disagree	9	8	17
strg_dis	2	11	13
All Grps	26	26	52

Expected Frequencies			
Pearson Chi-square: 11.8324, df = 4, p= 0.018656			
UNEASY	EXP_CONT Expermnt	EXP_CONT Control	Row Totals
strg_agr	2.5	2.5	5
agree	5	5	10
neutral	3.5	3.5	7
disagree	8.5	8.5	17
strg_dis	6.5	6.5	13
All Grps	26	26	52

Fig. 4-4

that at a significance level, $\alpha = 0.05$, the Chi-square came to be = 5.042 and the p-level = 0.0247. This means that there is a variability in whether something unusual about the ad could be found by subjects along the two treatments.

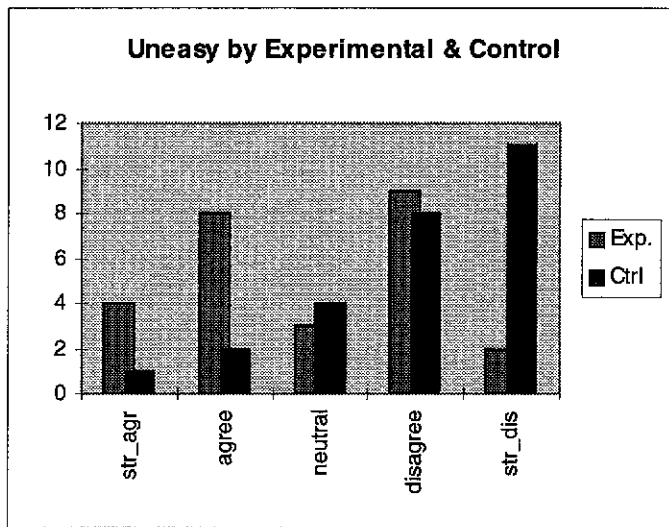
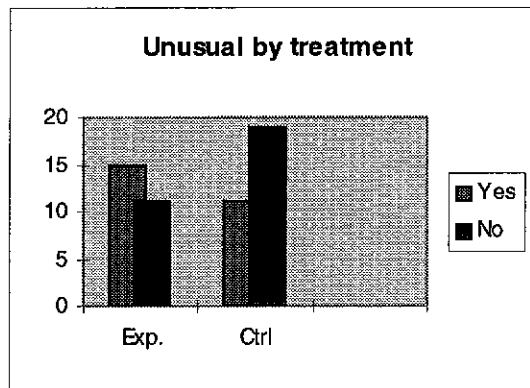


Table VIII: Crosstabulation Analysis: UNUSUAL by EXP_CONT

Summary Frequency Table Table: EXP_CONT(2) x FEELNG15 (2)			
EXP_CONT	FEELNG15 yes	FEELNG15 no	Row Totals
Expermnt	15	11	26
Control	7	19	26
All Grps	22	30	52

Expected Frequencies Pearson Chi-square: 5.04242, df = 1, p= 0.024741			
EXP_CONT	FEELNG15 yes	FEELNG15 no	Row Totals
Expermnt	11	15	26
Control	11	15	26
All Grps	22	30	52

Fig. 4-5

In fact, as the results of the frequency distribution could show, 57.6% of the subjects in the experimental group reported finding something unusual, compared to only 26.9% of the control group subjects who could find something unusual in the ad. Figure 4-5 represents the chart of respondents who found something unusual in comparison between both control and experimental groups.

4.2.4. Effect of Treatment upon the COGNTV component:

It could be well agreed upon that the idea a person might develop, retain in memory, and retrieve later on about a certain product is highly likely to be affected by a certain kind of external kind of stimuli. The results of the t-test analysis show that there is no significant variability in the COGNTV component along the two treatment groups.

In fact, this result could be attributed to the reasoning derived from the concept of cognition itself. There can be little doubt that understanding things in the surrounding environment requires considerable mental (cognitive) effort. Making sense of what is seen, understanding its features, identifying them, and relating them

to what's already available in mind - all these activities require detailed thought and careful analysis. In the experiment conducted for this research, subjects in both the control and experimental groups had one time exposure only to the ad after which they were asked to answer the questions given to them. This means the subjects did not have enough time to build a clear cognitive framework about what they saw, which was the basic reason beyond this lack of variability.

4.2.5. Effect of treatment upon AFFECTV component

Finally, the t-test analysis was used to test the variability of the Affective component along the treatment groups. The results showed that at a significance level of $\alpha = 0.05$, there is no significant variability in the AFFECTV component along the experimental and control groups.

Moods as it is well known, fluctuate rapidly -and often widely- during the course of a single day. These shifts are temporary. "Superimposed on such temporary shifts in affective state are more lasting tendencies to experience positive or negative feelings (affect)"². Based on this, one can say that a short, one-time exposure to the ad won't be adequate for the development of an affect within subjects. This could be considered as the reason for why variability did not show in the AFFECTV component along the experimental-control treatment groups.

² Ibid, p. 210.

4.3. Relationships among the four component variables and with other variables

The research was conducted based on the assumption that the marketing stimuli embedded in an advertisement are likely to have an effect upon the consumer behavior and his/ her decision to buy the product. This, as was mentioned in the previous section, was found significant at a significance level of $\alpha = 0.1$, and one of the CONATV components, SEEK_ADV, was found significant at $\alpha = 0.05$. Another assumption is that COGNTV, SEXUAL and AFFECTV are most likely to have an association with the COGNTV component and to have an association among each other.

4.3.1. Relationships among the four component variables

To study this type of relationship, a correlation analysis was conducted. The results are shown in Table IX.

Table IX: Correlation analysis: CONATV, SEXUAL, COGNTV, AFFECTV

Variable	CONATV	SEXUAL	COGNTV	AFFECTV
CONATV	1.00	0.28*	0.67*	0.68*
SEXUAL	0.28*	1.00	0.26	0.36*
COGNTV	0.67*	0.26	1.00	0.74*
AFFECTV	0.68*	0.36*	0.74*	1.00

*Significance at p-level < 0.05.

As the results show, strong and direct relationships exist between CONATV on one hand and SEXUAL (0.26), COGNTV (0.67) and AFFECTV (0.68), on the other hand. These interesting findings lead to the conclusion that if the SEXUAL,

COGNTV, and AFFECTV component factors are affected by the marketing stimuli embedded in the ad, this will be reflected in the CONATV factor getting positively affected. The SEXUAL component will lead the subject to feel a certain drive towards satisfying a certain aroused need or fulfilling an inner wish. The positive correlation with the COGNTV component also implies that if the stimuli embedded in the advertisement called the attention of the subject, then this means that the idea related to the product has entered the subject's memory, and could be retrieved later. This in turn implies that the subject would most probably consider the product for purchasing or showing more interest in it through recommending it, trying it, or asking others about it. Finally, a lasting tendency or attitude about the ad and the features it portrays about the product is most probably associated to the subject's CONATV component aspect. A positively established affect will most likely lead a person to consider buying the product since the product itself is thought of as a way to originate pleasurable and positive feelings. It is worth mentioning that the correlation of CONATV with COGNTV and AFFECTV components is stronger than that with SEXUAL.

Moreover, a positive and a significant relationship (0.74) was found between the COGNTV component and the AFFECTV component. The more the COGNTV component gets positively affected by the stimuli embedded in the ad, the higher would be the possibility that a lasting tendency of positive affect would develop. Finally, a direct and a significant correlation (0.36) was found between the two component variables: AFFECTV and SEXUAL. The more the SEXUAL component elements get affected by the embedded stimuli, the more would the aroused needs and drives give way to less temporary states of positive affects to develop.

Besides, ANOVA tests were conducted to examine the variability of each component variable along the other component variables. The significant results obtained are listed in Table X .

Table X: Results of the One-Way variance Analysis

Variable	F-ratio	P-level
CONATV by COGNTV	7.96580	0.00005
CONATV by AFFECTV	12.38000	0.00000
COGNTV by AFFECTV	17.80600	0.00000

*Significance at p-level < 0.05.

The results reported in Table X show that there is a significant variability in the CONATV component along the COGNTV component. Differences in the cognitive frameworks built by subjects will be accompanied with different tendencies in the purchasing behavior of these subjects. Moreover, differences in the ideas perceived about the ad and differences in understanding it, retaining its features, and then retrieving them were found to be associated to differences in the affects developed about the Ad. Finally, the CONATV component showed variability along the AFFECTV component. Positive tendencies (Affects) developed by the stimuli embedded in the ad are mostly likely associated with higher tendencies to buy the product or show interest in it.

4.3.2. Relationships Between the Four Component Variable & Other Variables.

Again here, a correlation analysis was conducted to study the relationship between each of the four component variables and the other variables. The results are shown in Tables XI(a), XI(b), XI(c), and XI(d).

Table XI(a): Correlation Analysis: CONATV with other variables

Variable	EXCITED	CONVINCE	INFLUENT	APPEALNG	ATTRACTV	UNFAVB	DISTNCTV	PRICE
CONATV	0.52*	0.53*	0.53*	0.31*	0.50*	0.61*	0.38*	0.17

*Significance at p-level < 0.05.

As the results show, CONATV has a positive and a significant correlation with all the variables listed except price. This means that as the subject gets more excited by the embedded stimuli, his/ her tendency to get involved in the purchasing decision process would be higher. Moreover, the more the subject finds the ad convincing and feels it influential, the more would the idea generated by the ad be understood, retained and possibly retrieved later, and the more would be the probability to consider the product for purchasing. Subjects describing the ad as being appealing and attractive are more likely inclined to show interest in recommending, seeking for, and purchasing the product. Finally, the more favorable and distinctive the product is perceived through the ad stimuli, the more would the probability be that the purchasing decision made by the subject be positively affected.

Table XI(b): Correlation Analysis: SEXUAL with other variables

Variable	INFLUENT	ATTRACTV	UNFAVB	PRICE
SEXUAL	0.29*	0.38*	0.39*	0.36*

*Significance at p-level < 0.05.

The results of the correlation analysis show significant relations between the SEXUAL component and all the listed variables. The interpretation here is simple and straightforward. As the subject perceives the ad as more influential, the more would be the possibility that he/ she will feel driven by certain kinds of stimuli related to the

SEXUAL component. The same interpretation applies to finding the ad attractive and favorable. An interesting relationship was found to exist between the SEXUAL component and the price that the subject would associate to the product. The more the subject finds the ad sexually appealing and exciting, the higher would be the price value that he/ she would associate to the product.

Table XI(c): Correlation Analysis: COGNTV with other variables

Variable	EXCITED	APPEALNG	BUY	RECOMMND	TRY	ATTRACTV	UNFAVB	DISTINTV
COGNTV	0.50*	0.44*	0.55*	0.49*	0.53*	0.54*	0.75*	0.31*

*Significance at p-level < 0.05.

Direct and highly significant relationships were found between the COGNTV component and the other listed variables. The more the subject gets excited by the marketing stimuli embedded in the ad, the more would the cognitive framework formed in his/ her mind about the product be stronger and more effective. Likewise, the more the subject finds the ad appealing and attractive, the more would positive affects about the product be likely to be developed, and in turn the more would the idea be recognized, retained, and possibly retrieved. Moreover, the more idea generated by the ad is taken and understood by the subject, the more likely would he/ she have the technology to try, buy, and recommend the product. Finally, the more the subject finds the ad favorable and distinctive, the more positively would this affect his/ her cognition about the product.

Table XI(d): Correlation Analysis: AFFECTV with other variables

Variable	EXCITED	CONVINCE	BUY	RECOMMND	INFLUENT	TRY	UNFAVB	DISTINTV
AFFECTV	0.57*	0.57*	0.47*	0.46*	0.61*	0.50*	0.81*	0.59*

*Significance at p-level < 0.05.

Finally, the results of this correlation analysis showed significant and direct relationships with all the listed variables. As could be derived, more excitedness is more associated with more positive affects developed by the subject about the product. Moreover, the more convincing and influential the ad is perceived by the subject, the more the probability that positive affects about the product would be developed. Also, positive affects will increase the tendency of the subject to try, buy, or recommend the product. Finally, the more favorable and distinctive the ad is found by the subject, the more positive would the state (affect) be.

Furthermore, a crosstabulation analysis was conducted, and the results reported in Table XII showed significant variability in the COGNTV, CONATV and AFFECTV component variables along the UNFAVB variable. The significance level is $\alpha = 0.05$.

Table XII: Crosstabulation Analysis: COGNTV, CONATV and AFFECTV by UNFAVB

Variable	Chi-square	P-level
CONATV by UNFAVB	34.8971	0.0004
COGNTV by UNFAVB	53.4310	0.0005
AFFECTV by UNFAVB	67.5591	0.0001

*Significance at p-level < 0.05.

Such significant results imply that there is an association between each of the three listed component variables and the way the subject perceives the ad as favorable or unfavorable. This perception has an effect upon the variability reported by subjects regarding their inclination to buy, the possibility that a cognitive framework about the

idea presented in the ad would be developed in their mind, and the development of a positive affect towards the product.

4.4. Other Significant Findings

While conducting the crosstabulation analysis to examine the variability of certain factors along other variables, interesting significant findings were traced. One of these showed the variability of the component factors along price, and the other showed the variability of the SEXUAL component along the major of the subject.

The first set of results is presented in Table XIII. As could be noticed, at a significance level of $\alpha = 0.05$, significant variability was traced in the SEXUAL, and AFFECTV components along price.

Table XIII: Crosstabulation Analysis: SEXUAL, COGNTV and AFFECTV by PRICE

Variable	Chi-square	P-level
SEXUAL by PRICE	20.7414	0.0230
AFFECTV by PRICE	47.5612	0.0042

*Significance at p-level < 0.05.

These results mean that subjects with different drives generated by the ad stimuli and subjects with different affects developed by the ad are likely to associate different price values for the product.

The second set of results is displayed in Table XIV. At a significance level of 0.05, the SEXUAL component showed variability along the subjects' reported majors.

Table XIV: Crosstabulation Analysis: SEXUAL_R by majors

Summary Table: Expected Frequencies Pearson Chi-square:16.3310, df = 8, p = 0.037915						
SEXUAL_R	MAJOR marketng	MAJOR business	MAJOR fine arts	MAJOR comp_scn	MAJOR biology	Row Totals
G_1:2	0.4039	1.5577	0.3462	0.5192	0.1731	3.0000
G_2:3	5.9231	22.8462	5.0769	7.6154	2.5385	44.0000
G_3:4	0.6731	2.5962	0.5769	0.8654	0.2885	5.0000
All grps	7.0000	27.0000	6.0000	9.0000	3.0000	52.0000

*Significance at p-level < 0.05.

This variability could be attributed to the reasoning that subjects belonging to liberal arts and fine arts are more expected to get involved in analytical matters requiring imagination and thinking of irregular situations than those in the computer science and biology majors where subjects have to deal with facts and figures most of the time.

4.5. Building Regression Equations

In an attempt to answer the hypotheses stated previously, it was necessary to build regression equations to determine the factors that are most likely to be associated with the reaction toward the ad and the CONATV component (intention to buy). To start with, some regression equations were built for each factor to determine the variables affecting its variability. The dependent variable is the variable which variation is likely to be explained. The independent or predictor variable is the variable used to explain variation in the dependent variable. The regression models that will be analyzed are divided into two sets. The first set consists of equations

representing the whole sample size (n = 52 subjects), whereas the second set consists of regression models based on the 26 subjects who received the treatment. This separation is due to the fact that some research variables will be analyzed in relation to the treatment obtained.

In order to analyze the factor that would be most likely associated with the CONATV factor, a regression analysis was conducted taking the CONATV component as the dependent variable and the other scales SEXUAL, COGNTV, and AFFECTV as the independent variables. The results are shown in Table XV.

Table XV: Regression Analysis with CONATV being the Dependent Variable (n=52)

R =	0.723788	F(3,48) =	17.604
R ² =	0.523870	p <	0.0000
Adjusted R ² =	0.494112	Std. Error of estimate =	0.42269

CASENAME	BETA	ST.ERR.	B	ST. ERR.	T_48_	P_LEVEL
Intercpt			1.111966	0.577244	1.926337	0.059995
SEXUAL	0.048686	0.106802	0.092166	0.202183	0.455855	0.650550
COGNTV	0.371608	0.148344	0.250948	0.100177	2.505039	0.015691
AFFECTV	0.385179	0.153638	0.216999	0.086556	2.507050	0.015613

$$\text{CONATV} = 1.11196 + 0.25095 \text{ COGNTV} + 0.216999 \text{ AFFECTV}$$

(0.0157)
(0.0156)

R² = 0.524

F(3,48) = 17.604

p < 0.0000

At a significance level of α = 0.05, the F-ratio of the above reported regression equation is 17.604 and the p_level < 0.05. R², the coefficient of determination, is 0.524. This means that 52.4% of the variability in the CONATV variable could be explained by the included variables: COGNTV and AFFECTV.

COGNTV has a positive correlation coefficient with CONATV. This direct relationship implies that the more the advertisement could affect the cognitive processes of the subject, the more he/ she will have the tendency to buy the product, seek advice about it, recommend it and so on. The basic point here is that the development of a cognitive framework regarding the ad will lead, as previously mentioned, to recognizing the stimulus, encoding it, storing it, and retrieving it. This means that the subject will most likely keep it in mind, and thus the conative component will be positively affected.

Coming to AFFECTV, the significantly positive and direct relationship between this component and CONATV implies that the more one finds the ad attractive, nice and interesting, the more will be one's inclination to develop a positive consumer behavior. This will be reflected in trying the product, buying it, asking a friend about it, etc...

As could be noticed in the reported results, the sexual component was not included in the equation. This could be attributed to the fact that the sexual component in general lacked variability. Subjects showed either neutrality or disagreement with the factors pertinent to sexuality. However, as will be recognized in the next regression equation, some elements of the sexual factor could be considered as determinants of CONATV. Also, referring to the correlation analysis conducted and listed in table XVII, it could be recognized that the sexual component is significantly and positively correlated to CONATV. Comparing the correlation coefficients of

SEXUAL to those of COGNTV and AFFECTV, one could notice the very low correlation that the SEXUAL component has. This implies that the SEXUAL component did not appear in the regression equation because of the statistically weak relationship it has with CONATV in the presence of other variables.

On the first regression equation, it was found that COGNTV and AFFECTV

Table XVI: Regression Analysis with CONATV being the Dependent Variable (n=52)

R =	0.28390	F(1,50) =	4.38330			
R ² =	0.08059	p <	0.04139			
Adjusted R ² =	0.06221	Std. Error of estimate =	0.57551			
CASENAME	BETA	ST.ERR.	B	ST. ERR.	T_50_	P_LEVEL
Intercept			1.126251	0.766872	1.46863	0.148197
SEXUAL	0.283901	0.135602	0.537443	0.256704	2.093626	0.041385

are significant determinants for the variability of CONATV. Referring to the correlation analysis results, it was found that the sexual component is positively and significantly correlated to the CONATV factor. Comparing the correlation coefficients of COGNTV and AFFECTV with CONATV to that of SEXUAL with CONATV, stronger coefficients were reported for the first two as compared to the third. To find out whether SEXUAL component could be considered as a determining factor for the variability in CONATV, a simple regression equation was built with CONATV being the dependent and SEXUAL being the only independent variable. The results listed in Table XVI showing that SEXUAL component could contribute in explaining the CONATV component variability. The equation comes as follows:

$$\text{CONATV} = 1.1262 + 0.5374 \text{ SEXUAL} \\ (0.041385)$$

$$R^2 = 0.0805$$

$$\text{Adjusted } R^2 = 0.062$$

$$F(1, 50) = 4.3833$$

$$p < 0.04138$$

At $\alpha = 0.05$, $F(1,50) = 4.3833$ with a p-level = $0.04138 < \alpha = 0.05$.

This means that the equation statistically significant (although not strong). Moreover, the SEXUAL component is a significant predictor, since t-significant = $0.041385 < 0.05$.

As for its interpretation, as the sexual component increases by one unit, the CONATV factor will also increase by a level of 0.5374. This positive relationship implies that ads embedded with sexual stimuli can have a positive effect upon buying intention and consumer behavior.

The equation cannot be considered as statistically strong, but still it is significant, and the relationship it shows between CONATV and SEXUAL could be considered as significant. At $\alpha = 0.05$, $F(1,50)$ was calculated to be 0.0414. Also $R^2 = 0.08$, meaning that 8% of the variability in the CONATV variable could be attributed to the sexual component.

All this implies that the more the sexual component (anxiety, uneasiness, excitedness,...) is affected upon seeing the ad, the more will the buying behavior and interest in the product be positively affected. American psychologists, in trying to answer the question concerning what motivates people and affects their behavior,

believe that they are driven. If all behavior is motivated, then it could be implied that people are expected to be driven by inner and outer stimuli. "In such a way the weak stimuli which are present must have acquired the capacity to arouse the drive, often now called anxiety"³. It has been assumed that these two forms of stimulation arouse an inner state of excitement which has usually been called drive.

Such a drive represented in the sexual component will, most probably, lead the person to think of getting the product or at least gathering information about it as ways for wish fulfillment or ego enhancement.

Another regression equation was developed taking UNFAVB_R as the dependent and SEXUAL, COGNTV, and AFFECTV as the independent variables as shown in Table XVII.

TableXVII:Regression Analysis with UNFAVB_R being the Dependent Variable (n=52)

R =	0.84782	F(3,48) =	40.899
R ² =	0.718802	p <	0.00000
Adjusted R ² =	0.70123	Std. Error of estimate =	0.91226

CASENAME	BETA	ST.ERR.	B	ST. ERR.	T_48	P_LEVEL
Intercpt			-3.12164	1.245805	-2.50572	0.015665
SEXUAL	0.11431	0.082077	0.60771	0.436351	1.39271	0.170125
COGNTV	0.343861	0.114002	0.65212	0.216202	3.01627	0.004084
AFFECTV	0.513126	0.118071	0.81183	0.186804	4.34592	0.000072

$$3.12164 + 0.65212 \text{ COGNTV} + 0.81183 \text{ AFFECTV}$$

(0.004084) (0.000072)

The equation is highly significant since at a significance level, $\alpha = 0.05$,

³ Joan M. Whitehead, *Personality and Learning*, (London: Hodder and Stoughton, 1982), p.117.

$F(3,84) = 40.899$ and $p < 0.0000$. Moreover, $R^2 = 0.7188$; this means that about 72% of the variability in UNFAVB_R could be explained by the COGNTV and the AFFECTV components.

UNFAVB_R, the extent to which a subject finds the advertisement a favorable one, has a significant and a positive correlation coefficient with COGNTV. This means a direct relationship: other things being equal, as the COGNTV elements get more positively affected by the ad, the subject's favorableness of the advertisement will increase. To recall, the cognitive factor of a human being is the set of processes through which information about others is sorted or categorized, converted to a form that can be entered into memory, actually stored in memory systems, and later retrieved and used. Now, if the cognitive framework was actually developed through experience with some aspect of the external world (in this case, the advertisement into which the stimuli are embedded), then this will exert powerful effect on attention (the stimuli are noticed), encoding (information is converted to a form that can be entered into memory), storage (the information is actually entered into memory), and retrieval (the information is recalled at later times). This will consequently lead to the formation of a favorable attitude towards the ad.

As for the AFFECTV component, the reported results show that a significant and a direct relationship exists between the variable and UNFAVB_R. The interpretation is simple and straightforward. The more interesting and attractive the ad is perceived by the subject, the more it will contribute in the formation of a favorable attitude towards the advertisement.

In order to find out whether the components of the SEXUAL factor could be associated to the CONATV factor, a regression analysis was conducted and the results are shown in Table XVIII.

Table XVIII: Regression Analysis with CONATV being the Dependent Variable (n=52)

R =	0.67443	F(7,44) =	5.24480
R ² =	0.45486	p <	0.00021
Adjusted R ² =	0.36814	Std. Error of estimate =	0.4724

CASENAME	BETA	ST.ERR.	B	ST. ERR.	T_44_	P_LEVEL
Intercpt			1.115883	0.587265	1.90013	0.063981
EXCITED	0.465111	0.117944	0.266357	0.067543	3.9435	0.000284
UNEASY	-0.12361	0.126326	-0.055661	0.056886	-0.97846	0.333194
WARM	0.168283	0.124568	0.096591	0.0715	1.35093	0.183625
ROMANCE	-0.226080	0.134604	-0.113688	0.067688	-1.67959	0.100125
CALMNESS	0.306062	0.12826	0.172080	0.072113	2.38626	0.021388
QUIET_R	0.086548	0.123317	0.057059	0.081299	0.70184	0.486477
SEXY	0.240916	0.118518	0.149911	0.073749	2.03273	0.048142

$$\text{CONATV} = 1.1159 + 0.2664 \text{ EXCITED} + 0.1721 \text{ CALMNESS} + 0.1499 \text{ SEXY}$$

$$(0.0002) \quad (0.0214) \quad (0.04814)$$

$$R^2 = 0.45486$$

$$F(7,44) = 5.2448 \quad p < 0.00021$$

Significance of the equation:

The above reported equation shows that the CONATV is a factor of Excitedness, Calmness and Sexy. This means that some elements of the Sexual component explain the variability in the CONATV component. The equation could be considered as significant R², the coefficient of determination, is = 0.4548. This means that 45.5% of the variability in the CONATV component could be attributed to elements in the sexual component: Excitedness, Calmness, and Sexy. At a

significance level of $\alpha = 0.05$, $F(7,44) = 5.245$ and the p-level = 0.00021, implying that the resulting regression equation is significant in determining the variability of the CONATV component.

As for the included variables, excitedness, calmness, and sexy all are significant in explaining the CONATV variability. At a significance level of $\alpha = 0.05$, the t-significance is 0.0002, 0.0214, and 0.0481 respectively.

Interpretation of the equations:

The equation shows that more than one element from the sexual component are likely to be associated to the dependent variable CONATV. Excitedness has a positive correlation coefficient with CONATV. This means that there is a direct relationship between the two variables. As the subject gets more excited upon viewing and seeing the ad, the more likely he/ she will have the tendency to buy, advise others, ask about, and so on. This could be attributed to the reasoning that a person getting excited because of a certain thing will find it appealing and will not forget it easily. This could be reflected in more interest in the product, a desire to ask and know about it, and most probably a tendency to buy it.

Calmness is another element of the sexual component. Like Excitedness, it has a positive and a direct relationship with CONATV. As the feeling of being calm increases upon seeing the ad, the subject will feel a living world far from stress and tension. This will, most probably, lead him/ her to have a certain kind of appeal

towards the product, and, in turn, to have the tendency to buy it or recommend buying it.

Finally, a positive relationship exists between Sexy and the Conative component. The more sexy the ad will be perceived by the subject, the more attracted he/ she will be to the product and thus the higher the probability that he/ she will tend to buy it.

Table XIX: Regression Analysis with BUY being the Dependent Variable (n=52)

R =	0.57219	F(3,48) =	7.78850
R ² =	0.327407	p <	0.00025
Adjusted R ² =	0.285370	Std. Error of estimate =	0.80016

CASENAME	BETA	ST.ERR.	B	ST. ERR.	T_48_	P_LEVEL
Intercpt			2.390319	1.092722	2.18749	0.033609
SEXUAL	-0.147957	0.126938	-0.446107	0.382733	-1.16558	0.249542
COGNTV	0.442724	0.176313	0.476178	0.189635	2.51102	0.015459
AFFECTV	0.193162	0.182605	0.173323	0.16385	1.05782	0.295434

$$\text{BUY} = 2.390319 + 0.4762 \text{ COGNTV} + 0.1733 \text{ AFFECTV}$$

(0.0154)

(0.2954)

$$R^2 = 0.3274$$

$$F(3,48) = 7.78$$

$$p < 0.00025$$

Coming to the elements of the CONATV component, regression equations were built for some of them including BUY (i.e. intention to buy), and SEEK_ST (i.e. seeking the product and looking for it). The results are listed in table XIX and table XX.

As for BUY, the COGNTV component was the only variable that entered the equation. The positive correlation coefficient implies that the COGNTV component

has a direct relationship with the CONATV factor. The better the cognitive framework is formed through the stimuli embedded in the ad, the higher would be the probability to retain the ad features in one's memory, retrieve them later on, and have the tendency to buy the product get higher.

Regarding the SEEK_ST variable, the results of the regression analysis shows that the SEEK_ST variability is explained by two independent variables that entered the

Table XX: Regression Analysis with SEEK_ST being the Dependent Variable (n=52)

R =	0.63018	F(3,48) =	10.54
R ² =	0.397131	p <	0.00002
Adjusted R ² =	0.359452	Std. Error of estimate =	0.83923

CASENAME	BETA	ST.ERR.	B	ST. ERR.	T_48_	P_LEVEL
Intercpt			-1.44867	1.146080	-1.26402	0.212328
SEXUAL	0.256878	0.120179	0.85803	0.401422	2.13747	0.037681
COGNTV	0.339147	0.166924	0.40410	0.198895	2.03174	0.047735
AFECTV	0.193901	0.172881	0.19275	0.171851	1.12159	0.267618

$$\text{SEEK_ST} = -1.44867 + 0.85803 \text{ SEXUAL} + 0.40410 \text{ COGNTV}$$

equation: the sexual component and the cognitive component. The more the sexual and the cognitive features get affected by the ad features, the higher would be the probability that the subject will seek out the product in the relevant stores. This is because the subject's attention was caught, the idea entered his/ her memory, and he/ she is apt to retrieve it (cognitive). Also, since the sexual component elements were affected, the subject is believed to be driven by a certain need and seeks to satisfy it.

Experimental group**Table XXI:** Regression Analysis with SEEK_S being the Dependent Variable (n=26)

R =	0.68700	F(3,22) =	6.5548
R ² =	0.47197	p <	0.00247
Adjusted R ² =	0.39996	Std. Error of estimate =	0.86204

CASENAME	BETA	ST.ERR.	B	ST. ERR.	T_22_	P_LEVEL
Intercpt			-3.25099	1.93372	-1.68121	0.106866
SEXUAL	0.417089	0.175904	1.59437	0.672414	2.37111	0.026913
COGNTV	0.346175	0.337169	0.38873	0.378616	1.02671	0.315712
AFACTV	0.134514	0.355496	0.14644	0.387001	0.37839	0.708771

$$\text{SEEK_ST} = -3.25099 + 1.59437 \text{ SEXUAL}$$

An interesting finding was reached by running a regression analysis to build a regression equation for the SEEK_ST variable based on the experiment group treatment. With $n = 26$, and at $\alpha = 0.05$, the R^2 , coefficient of determination, has become higher = 47.2% compared to the previous one $R^2 = 39.7\%$. This means that the equation's predictability of the variability of the CONATV factor is higher when only the experimental group is considered. Also, here, only the sexual component factor has entered. This means that as far as the experimental group is concerned, the more the sexual component elements are affected, the more would the subject be inclined to go and seek for the product to get it and satisfy his/ her need.

CHAPTER V

CONCLUSION & RECOMMENDATIONS

We live in a world overflowing with sensations. Whenever we turn, we are bombarded by messages formed of colors, sounds and odors. Some of these occur naturally, while others come from people; like the person putting a certain perfume. Marketers certainly contribute to this bombardment. Consumers are never far from advertisements, product packages, radio and television commercials, and billboards that clamor for their attention. Each of us copes with this bombardment by paying attention to some stimuli and tuning out others. When we do make a decision on a purchase, such as a candy bar, we are responding not only to these influences but to our interpretations of them.

If people are not properly exposed to marketing messages, the whole advertising budgets could be useless. For this reason, marketers have developed some interesting ways in which they develop products and communications that appeal to the senses. The techniques and marketing practices that make messages more likely to be noticed is known to be as the subliminal persuasion, which includes techniques

designed to influence consumers through images and sounds of which they are not aware.

Subliminal perception is a topic that has captivated the public for over thirty years, despite the fact that there is virtually no proof that this process has any effect on consumer behavior.

Given these circumstances, the compelling need for this study was to find out whether embedding sexual stimuli in print advertisements, is successful in motivating people towards building an intention to buy or making some decision to buy.

5.1. Major conclusions

In order to answer the questions addressed by the study, an experiment was conducted. The sample used was made up of 52 participants selected as all students in the same university. In selecting this sample, certain factors were controlled -namely, educational level, age and laboratory settings- to attain and keep the validity of the study findings.

The major conclusions for the experiment was that the feelings variable showed variability along the control-experiment treatment groups. Significant variability was also traced along the experimental and the control groups in the variable representing uneasiness. This led to the conclusion that at least one element of the sexual component showed variability along the two treatment groups. Another interesting finding was that the conative component showed variability along the treatment groups at $\alpha = 0.1$ while there has been no significant variability in the

cognitive and affective components. This implies that embedding marketing stimuli would most probably affect consumer behavior and his/ her intention to buy.

Further variability was reported in the elements of the conative component. The results showed variability in the variable seek_Advice along the experimental and control groups, meaning that embedding marketing stimuli in the ad can result in differences among subjects regarding their tendency to seek advice regarding the purchase of the product.

While the sexual component showed variability along the subjects' reported majors, strong and direct relationships were reported between conative on one hand and sexual, cognitive and affective, on the other. These interesting findings lead to the conclusion that if the sexual, cognitive, and affective component factors are affected by some marketing stimuli, this will also be reflected in the conative factor getting positively affected.

Finally, regression analysis was conducted and significant models were built to determine the factors that are most likely to be associated to the measures of reaction and intention to buy. The equations built were the following:

Equation 1

$$\text{UNFAVB_R} = -3.1216 + 0.65212 \text{ COGNTV} + 0.81183 \text{ AFFECTV}$$

(0.004084) (0.000072)

$$R^2 = 71.88\% \quad F(3,48) = 40.899 \quad P < 0.00000$$

Equation 2

$$\text{CONATV} = 1.1262 + 0.5374 \text{ SEXUAL}$$

(0.041385)

$$R^2 = 8.05\% \quad F(1,50) = 4.3833$$

Equation 3

$$\text{CONATV} = 1.11196 + 0.25095 \text{ COGNTV} + 0.21699 \text{ AFFECTV}$$

(0.0157) (0.0156)

R² = 52.4% F(3,48) = 17.604 P < 0.00000

Equation 4

$$\text{CONATV} = 1.1159 + 0.2664 \text{ EXCITED} + 0.1721 \text{ CALMNESS} + 0.1499 \text{ SEXY}$$

(0.0002) (0.0214) (0.04814)

R² = 45.49% F(7,44) = 5.245 P < 0.00021

Equation 5

$$\text{BUY} = 2.39032 + 0.4762 \text{ COGNTV} + 0.1733 \text{ AFFECTV}$$

(0.0154) (0.2954)

R² = 32.74% F(3,48) = 7.78 P < 0.00025

Equation 6

$$\text{SEEK_ST} = -1.4487 + 0.85803 \text{ SEXUAL} + 0.4041 \text{ COGNTV}$$

(0.03768) (0.0477)

R² = 39.71% F(3,48) = 10.54 P < 0.00002

Equation 7:
Treatment

$$\text{SEEK_ST} = -3.2509 + 1.59437 \text{ SEXUAL}$$

(0.0269)

R² = 47.19% F(3,22) = 6.5548 P < 0.00247

5.2. Limitations of the study

As in any research work, this research study had certain limitations. The first one to be mentioned here is that the sample selected to conduct the experiment represented a homogeneous type of subjects. All the participants are students in the same university, thus coming from the same educational domain. Thus, they all have either a Bachelor of Science or a Masters of Science degree. As it was mentioned earlier, such aspects were controlled for the purpose of not including factors other than those intended to be measured within the frame of the experiment.

Another limitation is that the original advertisement was controlled (from marketing stimuli) as much as it has been possible. This is due to the fact that the ad was taken from a magazine in order not to have any biases in developing an advertisement that might not look as a real advertisement.

Furthermore, subjects were only exposed once to the advertisement even though it is necessary to have frequent exposures to obtain the results intended from the stimuli.

Also, the results obtained are pertinent to the product sunglasses only which has been the subject of the advertisement. It is clear that some variability would result with different products. The assumption, therefore, is that subjects would have invoked different reactions with different products through similar stimuli.

Finally, subjects were not told about the real purpose of the study. This was done in order to avoid the effect of any external control on how the subject would react to the ad. Thus, the researcher believes that different reactions would have resulted if subjects were told about the objective of the study.

5.3 Recommendations

Though there is often conflicts between the goal to succeed in the marketplace and the desire to conduct business ethically, some corporations are focusing on teaching and reinforcing ethical behavior (may be it is another marketing technique). They try to follow the American Marketing Association's code of Ethics in many areas of marketing practice some of which are as follows¹:

- Avoidance of false or misleading advertising
- Rejection of high-pressure or misleading sales tactics.

Whether intentionally or not, some marketers do violate their bond of trust with consumers. Sometimes the minds of consumers are being manipulated.

Based on the results reported in Chapter IV, and the above mentioned limitations, the following points should be marked:

- There are wide individual differences in threshold levels. In order for a message to avoid conscious detection by consumers who have a low threshold, it would have to be so weak that it would not reach those who have a high threshold.
- Advertisers lack control over consumers' distance and position from the ad.
- The consumer must be paying absolute attention to the stimulus, for appropriate capture.

¹ American Marketing Association, Code of Ethics, rev. ed. (Chicago: American Marketing Association, 1985).

5.4. Recommended future research

Ultimately, a further research is recommended that would:

1. Examine the effects of embedding stimuli through more than one exposure.
2. Study the effects of print ad stimuli on different product categories
3. Study the effects of death masks and symbols embedded in ads on consumer behavior.
4. *Test the hypothesis:* Embedding marketing stimuli in print advertisements will influence the stages of the decision making process of customers in intention to buy and their effects on sales.

As a final word, as technology progresses, the techniques available for marketers to invade the subconscious become more efficient. Though there is frequently an inconsistency between marketing and ethics, marketers should react at the beginning of the Twenty-first century in a more ethical manner, thus allowing consumers to make their choice without being manipulated by some unrealized factors.



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APPENDICES

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APPENDIX A

A SAMPLE QUESTIONNAIRE

ADVERTISING RESEARCH

We are conducting a research on Advertising effectiveness in the master's program of Business studies at LAU. Your responses will be completely confidential and will be used for statistical purposes. Your cooperation would be highly appreciated. Thank you.

Please look carefully at the advertisement in page 3. Here are some statements which describe how people might feel about this advertisement. Please indicate your agreement or disagreement. For each statement circle the appropriate number to indicate whether you:

- 1- Strongly agree
- 2 - Agree
- 3 - Neutral
- 4 - Disagree
- 5 - Strongly disagree

	STRONGLY AGREE	AGREE	NEUTRAL	DISAGREE	STRONGLY DISAGREE
1 - When I look at the advertisement I feel:					
a- Stimulated.....	1	2	3	4	5
b- Fearful	1	2	3	4	5
c- Excited	1	2	3	4	5
d- Satisfied	1	2	3	4	5
e- Cool	1	2	3	4	5
2 - In the present moment I feel a sense of:					
a- Uneasiness	1	2	3	4	5
b- Warm	1	2	3	4	5
c- Romance	1	2	3	4	5
d- Calmness	1	2	3	4	5
e- Quiet	1	2	3	4	5
3 - I find the advertisement to be:					
a- Convincing	1	2	3	4	5
b- Sexy	1	2	3	4	5
c- Influential	1	2	3	4	5
d- Agitating	1	2	3	4	5
e- Appealing	1	2	3	4	5
4 - If I am in a purchase decision,					
a- I would rather buy the product	1	2	3	4	5
b- I would recommend it to a friend	1	2	3	4	5
c- I would seek the advice of a friend.....	1	2	3	4	5
d- I would easily think of trying the product.....	1	2	3	4	5
e- I would actively seek out this product in a store.....	1	2	3	4	5

5- On each of the scales below, please check the space that you feel best describes the advertisement in page 3.

Interesting	: _ : _ : _ : _ : _ : _ : _ : _	Dull
Unappealing	: _ : _ : _ : _ : _ : _ : _ : _	Appealing
Unbelievable	: _ : _ : _ : _ : _ : _ : _ : _	Believable
Impressive	: _ : _ : _ : _ : _ : _ : _ : _	Unimpressive
Attractive	: _ : _ : _ : _ : _ : _ : _ : _	Unattractive
Uninformative	: _ : _ : _ : _ : _ : _ : _ : _	Informative
Clear	: _ : _ : _ : _ : _ : _ : _ : _	Confusing
Not-eye-catching	: _ : _ : _ : _ : _ : _ : _ : _	Eye-catching

6- What is the overall reaction to this advertisement?

Unfavorable : _ : _ : _ : _ : _ : _ : _ : _ Favorable

7- With regard to the product itself, how do you feel this product compares to similar products put out by other manufacturers?

Distinctive : _ : _ : _ : _ : _ : _ : _ : _ Ordinary

8- What monetary value do you assign to the product?

High Price : _ : _ : _ : _ : _ : _ : _ : _ Low Price

9 - Now please look back at the advertisement and just let your feelings come to the surface as your eyes move over the page. Try to put briefly, whatever these feelings seemed to be, into words no matter how absurd these words might appear:

.....

10 - Do you find anything unusual about the ad?

yes No
 (if yes, please tell about it)

11- What is your education level?

Grade school or less []	University graduate(BS) []
High school graduate []	Graduate Degree(MS) []
Some College []	

12- What is your specialization or emphasis (major)?

13 - Please indicate your sex.

Male Female

14 - Please indicate your date of birth.....

15 - Please use the space below for any additional comments you may wish to make:

.....

Thank You for your Cooperation!

APPENDIX B

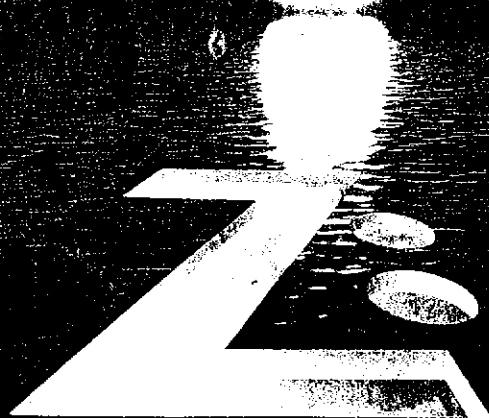
A SAMPLE ADVERTISEMENT



SUNGLASSES FOR A BRAVE NEW WORLD



...SUNGLASSES FOR A BRAVE NEW WORLD



APPENDIX C

LIST OF VARIABLES

List of Variables

1. EXP_CONT	Experimental or Control Group
2. STIMULAT	The subject feels stimulated
3. FEARFUL	The subject feels fearful
4. EXCITED	The subject feels excited
5. SATISFID	The subject feels satisfied
6. COOL_R	The subject feels cool (revised)
7. UNEASY	The subject feels uneasy
8. WARM	The subject feels warm
9. ROMANCE	The subject feels a sense of romance
10. CALMNESS	The subject feels a sense of calmness
11. QUIET_R	The subject feels a sense of quite (revised)
12. CONVINC	The subject feels finds the ad to be convincing
13. SEXY	The subject finds the ad to be sexy
14. INFLUENT	The subject finds the ad to be influential
15. AGITATNG	The subject finds the ad to be agitating
16. APPEALNG	The subject finds the ad to be appealing
17. BUY	The subject would rather buy the product
18. RECOMMND	The subject would rather recommend it to a friend
19. SEEK_ADV	The subject would rather seek the advice of a friend
20. TRY	The subject would easily think of trying the product
21. SEEK_STR	The subject would actively seek out this product in a store
22. INTEREST	The subject finds the ad to be interesting_dull
23. UNAPEL_R	The subject finds the ad to be unappealing_appealing (revised)
24. UNBELV_R	The subject finds the ad to be unbelievable_believable (revised)
25. IMPRESSV	The subject finds the ad to be impressive_unimpressive
26. ATTRACTV	The subject finds the ad to be attractive_unattractive
27. UNINFV_R	The subject finds the ad to be uninformative_informative (revised)
28. CLEAR	The subject finds the ad to be clear_confusing
29. NOTEYE_R	The subject finds the ad to be not-eye-catching_eye-catching (revised)
30. UNFAVB_R	The overall reaction to this advertisement. unfavorable_favorable (revised).
31. DISTNCTV	how much the product compares to similar products put out by other manufacturers as distinctive_ordinary
32. PRICE	what monetary value is assigned to the product. Highprice_lowprice
33. FEELNG9	Did respondent comment on question 9 YES_NO
34. FEELNG10	Do you find anything unusual about the ad?
35. EDUCLEVL	Education level
36. MAJOR	The specialization or emphasis of respondents.
37. GENDER	Gender of respondents.
38. AGE	Age of respondents.
39. FEELNG15	any comment on your feeling: YES_NO
40. FEELINGS	The feelings and comments on the ad by the respondent as highly appealing or appealing or not appealing
41. CONATV	$=(v17+v18+v19+v20+v21)/5$; Connative: Intention to buy
42. CONATV_R	Conative: Intention to buy (revised)
43. SEXUAL	$=(v2+v3+v4+v5+v6+v7+v8+v9+v10+v11+v13+v15)/12$; Sexual Component

44. SEXUAL_R	Sexual revised
45. COGNTV	$= (v12 + v14 + v24 + v27 + v29) / 5$; Cognitive
46. COGNTV_R	Cognitive revised
47. AFECTV	$= (v16 + v22 + v23 + v25 + v26 + v28 + v31) / 7$; Affective
48. AFECTV_R	Affective revised

