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Enigmatic commercials: Schema distortion in television advertisements

Micheal Shane Schneweis
University of Nevada, Las Vegas

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Enigmatic commercials: Schema distortion in television advertisements

Schneweis, Micheal Shane, M.A.

University of Nevada, Las Vegas, 1992

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**Enigmatic Commercials:
Schema Distortion in Television Advertisements**

by
Micheal Shane Schneweis

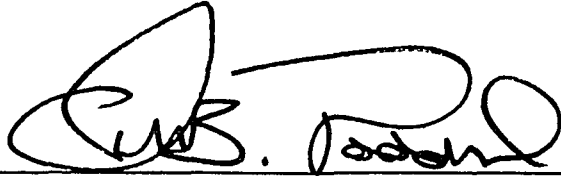
**A thesis submitted in partial fulfillment
of the requirements for the degree of**

**Master of Arts
in
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**Greenspun School of Communication
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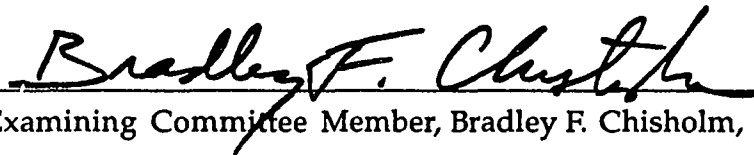
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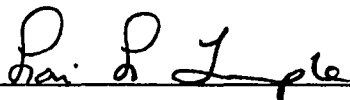
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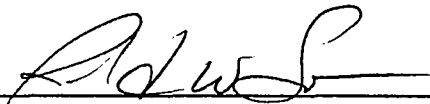
Examining Committee Member, Anthony J. Ferri, Ph.D.



Examining Committee Member, Bradley F. Chisholm, Ph.D.



Graduate Faculty Representative, Lori L. Temple, Ph.D.



Graduate Dean, Ronald W. Smith, Ph.D.

University of Nevada, Las Vegas
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Abstract of Thesis

Enigmatic Commercials: Schema Distortion in Television Advertisements

In an effort to increase attention and recall, advertisers have begun to use commercials that employ schema distortion that make the commercial seem enigmatic to the viewer. Recently, research in communication, specifically the news media, has focused on the processes of learning and recall using schema theory.

This method used 12 commercials, 6 identified as enigmatic and 6 identified as non-enigmatic. The non-enigmatic commercials were similar in style to the enigmatic. A questionnaire and an edited videotape were developed to examine three areas of schema theory as it related to television commercials: recall, emotional reaction and the ability of viewers to make inferences. A total of 43 subjects participated in the study.

No significant differences were found in the recall of the product/service or brand name between non-enigmatic and enigmatic commercials. The results indicated that enigmatic commercials do generate greater emotional reaction with significant differences in attention, curiosity

and surprise. When the endings of the enigmatic commercials were removed, the vast majority of viewers were unable to predict the product/service or brand name.

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Chapter One

Introduction

A television commercial begins with a child balancing unsteadily on a bicycle. Standing at her side is her father who is actively coaching her on the mechanics of riding a bicycle. With the assistance of a running start from her father, the little girl finally takes off, unassisted, down the sidewalk with her father running behind. However, the child begins peddling faster and the father is unable to keep up. He shouts after her "...where are you going?" The girl responds without looking back, "McDonald's!" This was the only mention of the product in either the audio or visual portions of the entire commercial.

Another commercial, for Goodyear, uses a quick-hitting approach to deliver its message. The viewer is assaulted with a barrage of entertaining, seemingly nonsensical visuals and questions that have to be read. The producer of the commercial John Ferrell, says, "The thing is totally unpredictable, and challenges the viewer" (Adweek, 1988, p. 24). The product, revealed at the end of the commercial -- mechanical service -- plays a smaller

part than do the visual and audio events in the commercial.

In an effort to increase a commercial's recall ability, effectiveness and compensate for shorter exposure, advertisers have begun to use "enigmatic" messages in television commercials. For the purposes of this study, enigmatic messages are defined as messages that are difficult to identify, understand or explain because there are no clear referents until the very end.

These commercials do not follow the expected form of effective communication; that is, they do not present information about the product or service in a clear and concise manner. In fact, the information presented has no apparent association with the product or service being offered, making the commercial enigmatic to the viewer until the end.

While content and the product or service may vary, the structure of enigmatic commercials is standardized. As with the McDonald's' commercial, viewers are presented with information seemingly unrelated to the product or service. The product or service is always provided to the viewers at or near the end of the commercial with the timing varying with different commercials. Target information is presented anywhere from 20 seconds into the commercial to the last few seconds.

The product or service in an enigmatic commercial plays a small

part in the overall structure. According to Weyant (1987) the product receives "limited exposure." In an effort to gain viewers' attention, no information about a product or service is presented in the beginning of the commercial. Instead, viewers must become active viewers in order to comprehend the context of the commercial. It is the context, the product/service or brand name that provides the viewer with meaning in the case of commercials.

Using enigmatic commercials may be one method of gaining viewer attention and possibly enhancing recall. Advertisers have become justifiably concerned about the decline in viewer recall of advertisements on television. During the last two decades, recall of commercials dropped from 18 percent in 1965, to 7 percent in 1986 (American Demographics, 1987). Two reasons can be cited for this decline: the change from the 60 second to the 30 second spot, and the extinction of the isolated spot that has given way to blocks of three to five commercials (Horn, 1986). In addition, the proliferation of remote controls makes it more difficult to get viewers' attention for more than a few seconds because they are able to "graze" from channel to channel during commercial breaks -- making it difficult for the message in the commercial to reach the viewers' long term memory.

A commercial message delivered in the non-enigmatic manner on television is placed within a thirty-second mini-drama structured around the product or service being offered. A non-enigmatic message is delivered in a manner that results in a balance of message and the context by assembling images with compatible meanings (Cerulo, 1988). Within this context, the information presented informs the viewer about the product, its use, how it can make life easier and finally why it should be purchased.

Karen Cerulo (1988) suggests that by presenting the unexpected immediately draws attention. By presenting information in an unexpected manner, enigmatic commercials violate an accepted form of effective communication that utilizes compatible elements in a balanced message as a means of effective communication. By violating the expected form of communication, and presenting information in an unexpected manner, enigmatic commercials attempt to make viewers more active by requiring them to work hard apprehending the message while consuming relatively more information in the process (Cerulo, 1988).

Does the manner in which enigmatic commercials present information lend itself to a more effective communication process? If it is possible to get a viewer's attention and provide information by disrupting

conventional relationships among the elements of communication, can enigmatic commercials enhance clarity and effectiveness of the communication process as Cerulo argues? The purpose of the study is to explore enigmatic commercials effectiveness, recall of specific items and emotional response by viewers.

Chapter Two

Review of Literature

During the past decade research in communication, specifically the news media, has focused on the processes of learning and recall using a theoretical approach called schema theory (Graber, 1986; Stauffer, Frost & Rybolt, 1981; Wicks & Drew, 1991). After defining schema theory and its application in the realm of cognitive psychology, the theory will be applied to television commercials. Studies in this review of literature will demonstrate that schema theory is applicable to television commercials.

The review of literature for this paper will include an introduction of schema theory and studies on how schema enable people to comprehend and make inferences about information they receive. In addition, separate elements of schema such as the influence of context and how they affect recall and an individual's ability to comprehend information will be examined as well as scene schema and studies on "bizarre" images and their effect on recall and comprehension (Wollen & Margres, 1987).

Schema Theory

People comprehend information according to the knowledge they have

about the world around them. People relate incoming information to existing frameworks of their knowledge. Schank and Abelson (1977) suggest that knowledge can be described in terms of schemata, or an organized framework of knowledge. However, the identification of an organized framework in memory is not a new one, dating back to Gestalt Psychology (Koehler, 1926).

Schema theory has existed in psychological literature for some time (Bartlett, 1932; Head, 1920). Over the years, research has revealed that schema are available for both thoughts and actions, and can be used during comprehension which is an active process of interpretation. Incoming information does not necessarily trigger a schema, instead, information is held in short-term memory until it is sufficient to trigger the available schema from long term memory (Norman & Shallice, 1980). Schema can be triggered or activated by particular words or by other contextual information (Wessells, 1982).

Schank and Abelson (1977) suggest that people use general and specific knowledge during the understanding process. General knowledge enables people to understand and interpret because we have some expectations about what will occur in certain situations. People use information from long-term

memory to interpret and label familiar stimuli or shared experiences (Norman & Shallice, 1980).

Schank and Abelson (1977) also suggest that people use specific knowledge to interpret and participate in events they have experienced many times. They suggest that specific knowledge about frequently experienced events allows individuals to do less processing, saving valuable mental resources for other uses. In the same manner knowledge of a specific schemata, such as television commercials, allows people to interpret the remarks that people make about them. As a viewer, an individual can infer that the product or service will be prominently mentioned or displayed in the audio and visual portions of the advertisement.

Because schema can contain tremendous amounts of information, there are events that may prevent the normal continuation of a schema. Schank and Abelson (1977) found two types of events, interferences and distractions. Interferences are states or actions that prevent the normal continuation of a schema. There are two classes of interferences, when an impending action is missing, such as an unexpected event in a story being left out, or; errors, where an action is completed with an unexpected and inappropriate result, such as a man in a restaurant ordering a hamburger and

receiving an empty pie tin. Both types of interferences can disrupt schema continuation.

The second event that can affect schemata, called distractions, are identified as unexpected states or actions that initiate new goals that in turn, can carry a receiver temporarily or permanently out of the schema.

Distractions may occur in any schema -- any number of things can distract a viewer in a commercial, such as the phone, activity in the room or eating.

Schank and Abelson (1977) noted that it is possible for some event to be both an interference and a distraction, such as a waitress dropping the soup, meaning the customer will not get to eat it, initiating a new goal of drying the customer's clothes.

If a schema is distorted, or when receivers encounter an obstacle they respond by taking corrective action, the event is called a "prescription" (Schank & Abelson, 1977). Prescriptions can include: trying to produce the missing information, giving up immediately or after a prescription(s) fails, or tolerating an error and continuing through the script (Schank & Abelson, 1977).

When responding to an obstacle or error, emotions such as frustration or anger may be expressed because of the obstacles that are encountered.

Some obstacles may cause receivers to express displeasure whereas others may cause amusement. Emotional states are all reactions to interference and may be intense enough to alter or abort the initial goal of the schema (Shank, Abelson, 1977).

Every act in any script is subject to obstacles and errors, each of which suggests its own appropriate prescriptions (Wessells, 1982). In addition, not all the items in our sensory environment are predictable enough to relate to existing schemas. Memories of an existing schema can be changed by the schemas they relate to, or lost, and others may alter the schemas to which they relate. Many of these experiences will occur frequently enough that, with repeated exposure, new schemas or new versions of old schemas representing the new experiences are formed. A sizable number of these alternative schema paths, that once were detours, now become recognized as a possible schema. Thus the number, types, and complexity of schema continue to develop (Margres, 1987; Piaget, 1929; Rumelhart, 1981).

Application To Enigmatic Commercials

Enigmatic commercials present obstacles and interferences as a part of the commercial. As a result the viewer will be required to make prescriptions and either fit the information into an existing schema or formulate new

schemas for the commercial. As a result the extra effort and possible resulting confusion will generate greater emotional responses from the viewers.

Inferences

There are certain activities in life that lend themselves to being a shared experience. Schank and Abelson (1977) suggest if someone asks for a glass of water you may assume that they will drink it. A television commercial is another example of a shared experience that people can assume follows certain schema. Television has been structured so that during the program viewers expect to see commercials. An individual need not ask what a television commercial is when someone tells them they have watched one. Experience with television commercials allows individuals to make certain inferences. For example, when someone tells another person that they watched a commercial on television, the other person can begin using their knowledge and experience about what typically happens in a commercial.

Inferences can often guide the process of comprehension. Spiro (1981) discussed schema selection as being a large part of inference generation in text. When information comes in, the receiver selects the appropriate

schema based on a limited amount of information (Spiro, 1981). Even if only a small part of the schema has been initiated, the product of the comprehension process, what is understood and remembered, will be driven by the schema that has been activated (Anderson & Shrifrin, 1981).

For example, when reading a passage concerning a restaurant an individual may try to fit the incoming information into their existing framework of knowledge as it pertains to restaurants or their restaurant schema (Wessells, 1982). Another example is information provided in television commercials. Our cultural experience with the television and its content have provided norms and expectations. Viewers can assume or expect the commercials to try and inform them about a product or service in a form that is easily interpreted and identified by the viewer. In a laundry detergent commercial, the viewer can expect to see the product prominently displayed throughout the advertisement, and then the description of how well it cleans.

Einstein and Hunt (1980) examined inferences by presenting subjects with a word list and having them perform either a task emphasizing the difference between the words, a task emphasizing the similarities between the words, or both. The results indicated that when subjects engaged in a task

that emphasized distinctiveness, recognition performance was facilitated.

Diehl (1987) suggests that while this study was not directly focused on schema theory, the implication is that having a device allowing the disparate parts of the information to be tied together is detrimental to recognition performance if it leads to a neglect of item-specific processing.

Diehl (1987) suggests that subjects presented with unfamiliar pictures of dot patterns accompanied by a story not relating to the pictures will spend time attempting to force the picture into an existing schema. Another option is that subjects may create a new schema tying various parts of the picture together, or memorize the various parts without tying them together. Since they have to work at imposing or creating a schema for the picture organization, memory for location of the dots in a pattern will be superior to memory for the stories and the relationship between a picture and the accompanying story. Results of the study were consistent with theoretical predictions (Diehl, 1987).

Information is usually delivered in a understandable manner so it does not intentionally mislead those receiving the information. Non-enigmatic commercials in a commercial block present their message in an expected form, that is the product or service is clearly displayed and information about

the product is made available. Communication in non-enigmatic commercials mirrors the expected and demands less than full attention in its comprehension. Receivers tend to be passive, paying less attention to the information being conveyed (Cerulo, 1988). When information is presented in the expected or normal fashion and the appropriate schema is selected the viewer will pay less than full attention in comprehension (Baddeley, 1986; Diehl, 1987; Einstein & Hunt, 1980).

Conversely, enigmatic commercials concentrate efforts on getting the viewers' attention by presenting the unexpected which demands greater absorption in the images and as Cerulo (1988) suggests a readjustment of interpretive frameworks. By not allowing viewers to make inferences about normative orders they must process new associations, pursuing them with more energy making communication more effective or so frustrating that they give up (Cerulo, 1988).

An increase in attention has been reported by research in the news media. Wicks and Drew (1991) researched schema effects in news by presenting subjects with two sets of news stories (television, radio, newspaper) -- one set contained consistent information, another contained inconsistent information. After exposure to the information subjects

were asked to complete a questionnaire that measured consistency manipulation in the stories.

They found that subjects recalled more facts from the inconsistent information via newspaper and television than from the consistent information. Results suggest that unlike consistent information, which reinforces "schema-consistent" conditions, inconsistent information forced the subjects to concentrate more deeply about the incoming facts. When asked to reproduce the information, they tended to default to the facts that had not been assimilated into a schema (Wicks & Drew, 1991). They suggest that subjects receiving inconsistent information were forced to accommodate rather than assimilate the information which in turn led to greater recall.

Wicks' and Drew's (1991) data revealed that the use of radio resulted in reduced recall of facts compared to that of television and newspaper. However, recall of consistent information was greater than that of inconsistent information when using radio. They theorized that this resulted from the relatively poor recall of audio information on the radio.

Application To Enigmatic Commercials

Because enigmatic commercials do not present information in a form

that can be easily assimilated in the viewers' existing commercial schema, viewers will work harder and pay more attention in order to comprehend the message. In addition, viewers will attempt to force the commercial into an existing schema, create a new one or abort the information altogether. By working to create a new schema or fit the information into an existing schema viewers will neglect the item-specific information contained at the end of the commercial -- the product/service or brand name.

Context

Context is important to schema theory. An individual's visual environment is perceived in an organized manner that depends upon the environmental context. Environmental context activates and determines the role of the appropriate schemas as well as the recognition of objects (Palmer, 1975).

Enigmatic commercials do not provide the commercial's context, product/service or brand name, which challenges the viewer with information not fitting their expectations, requiring them to work harder to comprehend the message (Wessells, 1982). An analogy can be drawn between the aforementioned McDonald's' advertisement discussed in the introduction and the following prose passage:

The procedure is actually quite simple. First you arrange things into different groups. Of course, one pile may be sufficient depending on how much there is to do. If you have to go somewhere else due to lack of facilities that is the next step, otherwise you are pretty well set. It is important not to overdo things. That is, it is better to do too few things at once than too many. In the short run, this may not seem important but complications can easily arise. A mistake can be expensive as well. At first the whole procedure will seem complicated. Soon, however, it will become just another facet of life. It is difficult to foresee any end to the necessity for this task in the immediate future, but then one can never tell. After the procedure is completed one arranges the materials into different groups again. Then they can be put in their appropriate places. Eventually they will be used once more and the whole cycle will then have to be repeated. However, that is part of life. (Bransford & Johnson, 1973, p. 400) ¹

This passage, like the McDonald's commercial, is difficult to comprehend because the context has not been established and it is difficult to apply the appropriate schema. However, once you know the context of the passage -- washing clothes -- you can fit each statement into your existing framework or the appropriate schema (Wessells, 1982). In the McDonald's' commercial and other enigmatic commercial's, disclosure of the context does not guarantee that the appropriate schema will be applied, in fact, it may require new a addition to an individuals' existing schema or repeated commercial exposure.

¹ Passage from Wessells, M. G. (1982). Cognitive Psychology. New York: Harper & Row, Publishers, Inc., 317.

Another important demonstration of the importance of context was performed by Mandler and Johnson (1976) using text and pictures. Their recognition test suggested that when a schema is activated in an organized condition, spatial composition information may not be attended to. Subjects were presented with pictures that were either organized such that the objects created real-world scenes, or the same objects were rearranged so as not to create a coherent scene. When presented with a coherent picture having all the objects in their expected place, their exact placement is not heeded. When the objects are not coherent no schema is available and attention may be focused more on spatial composition because there are no meaningful relationships among the objects. The objects are not in a predictable relation to each other, therefore more attention is paid to their exact location (Mandler & Johnson, 1976).

Context plays an important role in recall of information. Thorndyke (1977) suggested that when we attempt to recall previously comprehended material, many times we are unable to distinguish between material that was actually presented and that which represents the schema in our memory. He supported his hypotheses by comparing recognition performance on three different sets of sentences originating from the same story presented in a

normal and in a scrambled order. The first story was presented in a normal story structure with the context presented at the beginning. In the second story the context passage was moved from the beginning of the passage to the end. This movement disrupted the normal organization that readers expect to find. In the third story the context passage was removed, taking with it the structural elements readers look for when trying to comprehend the story.

He asked subjects to recall the story verbatim and to rate comprehensibility of the story on a scale of one to ten. The passages presented in the normal fashion were rated as highly comprehensible, whereas the story with the context presented at the end received lower ratings. Not surprisingly, the passages with no context received the lowest ratings. Thus, the comprehensibility of a story depends on the extent to which the story conforms to the typical story organization that readers expect. Thorndyke's finding supports the view that readers use a story schema to guide comprehension. In addition, his findings suggests that subjects presented sentences in a scrambled order are less likely to falsely recognize sentences that were inferences than subjects who read the sentence in a normal order (Thorndyke, 1977). Palmer (1975) suggested that context determines the role of schemas as well as the recognition of objects and supported this notion by

asking subjects to identify a picture of a single item, such as a fork, which became the target of the test. Subjects were then given a “context” picture of a scene, then the scene was replaced with pictures of the item. They were then asked to name the target item. He theorized that the context picture would trigger the appropriate schema and accuracy for naming the target item would be affected by that schema.

Subjects were tested under three different conditions. First, the context picture was appropriate for the target and naming of the target was good. In the second, the context was a blank slide and naming of the target was significantly lowered. In the third, the context was inappropriate and naming of the target item was reduced further. In this final context condition, subjects named an object that fit the context as often as they named the target item.

Palmer (1975) suggests the context pictures activate schema that aid in identification of the target. When a subject activates the wrong schema, that schema mislead the subjects. However, when the context contradicted the target, subjects frequently responded to the context as strongly as to the target.

Application To Enigmatic Commercials

By not providing the product/service or brand name until the end of the commercial message, enigmatic commercials do not provide viewers

with the structural elements they look for when trying to comprehend the commercial. This challenges the viewers with information not fitting the expected, requiring them to work harder to comprehend the message.

Scene Schema

Schema theory has been expanded to include visual scene schemas (Mandler, 1984; Reese, 1977; Tversky & Hemenway, 1984). A scene refers to visual information in the environment and a scene schema has been identified as a set of objects, and the essential expected relation of those objects (Biederman, 1981; Mandler & Ritchey, 1977). Scene schemas, like other types of schema may be common in memory and depending upon context, the scene schemas may be called upon for use (Tversky & Hemenway, 1983).

There is often more in a scene than just the objects and their static relations. Baggett (1975) investigated the role of schemas in the memory for picture stories. He had subjects view a series of pictures depicting an event and then tested their memory of that event immediately, or after a time delay. Subjects were also tested for recognition of the actual pictures shown and their memory for the event in the story. They were asked to determine whether or not a given picture fit the event of the story. They were not asked whether they had seen that particular picture before. During immediate

testing subjects performed well for the recognition of actual pictures and event pictures, while that of single pictures declined greatly. Baggett (1975) argued that subjects recalled the visual event in a schematic form, retaining the form but losing memory for individual actions or scenes within the sequence. The results suggest that the involvement of a pictorial-event schema includes not only items and their relations, but the action-oriented meaning of their relations.

Single-items were more swiftly identified than the scenes with which they are typically associated, because identification of a object is not as difficult for the subject as identification of a complex scene. In addition, smaller scene schemas can be held within larger ones - a schema for a classroom is likely to possess schemas for desks, books and even pencils (Freidman, 1979). Once the larger scene schema is activated it is possible that the individual object schemas within are activated automatically (Antes & Mann 1984; Freidman, 1979).

The presentation of a normal scene is assumed to activate a scene schema. This schema then helps the subjects to remember the association scene. However, since our experience with schemas are rarely unorganized or jumbled, jumbled scenes usually fail to activate scene schemas. Freidman

(1979) explored the notion that if a scene schema is activated, distracters that fit into the structure of a schema are activated and should prove difficult for the subjects. He explored these ideas using frames, which are similar to scene schemas, and found unexpected items are not assumed by a frame and that to recognize these items the subjects are able to recognize deletions, changes and switches of these items. Subjects performed better recognizing changes, deletions, or switches involving unexpected items than they did with expected items. Results were similar to Mandler's (1984) theory of scene schemas. Mandler used scenes that were either jumbled or coherent and Freidman used items that were either expected or unexpected.

Scene schemas have been discussed in a static sense, inferred action has also been considered (Baggett, 1975; Freyd, 1983; Mandler, 1984). Researchers have suggested that the descriptions of scene schemas as static representations may be inaccurate. Baggett (1975) and Freyd (1983) investigated the dynamic nature of visual representation.

Application To Enigmatic Commercials

Scene schemas are mental representations of familiar objects in their typical relations. As schemas, they are general in nature, and span a large

range of categories. They also serve to organize perceptions of our visual environment, and to aid recall of visual information. However, with time, recall of scenes becomes more schematic, and non-schematic features are lost. Due to the limited exposure, and apparently irrelevant to most of the information provided in a enigmatic commercials, the product/service and brand name would become a non-schematic feature. With repeated exposure to uncommon information, new schemas may be formed (Margres, 1987).

Bizarre Images

A "bizarre" image seems to draw people's attention. A "bizarre" image can be made by simply altering the order of images while retaining the image components, such as changing the scene of a "teacher grading a paper at a desk," to a "teacher balancing a desk on a paper" (McDaniel & Einstein, 1986).

When all normal or all bizarre images are developed by an individual, the recall of both often does not differ. However, if bizarre and normal images are mixed together, the recall of bizarre images is enhanced, compared to that of the normal images.

To test bizarre images they gave subjects a series of sentences that described scenes -- some normal and some bizarre. Subjects form mental images of events provided in the sentences and rate the clarity of their

images. If sentences included a mix of bizarre and normal sentences, recall of the bizarre sentence was higher than that of the normal. If the sentences were not mixed there were no significant differences in recall.

Thus it is clear that recall is influenced by the schematic characteristics of a subject's mental imagery. The distortion of a schematic image sets it apart from other images in memory. The more distorted the image, the more distinct and accessible the image. Bizarre images tend to involve considerable distortion (distinctiveness) and as such are very accessible. It is the enhanced accessibility of bizarre images when compared to normal images in mixed lists that result in their superior recall over the normal images. The more integrated the image is, the more items from within it that can be recalled (Margres, 1987).

Margres (1987) argues that distorting schematic images should enhance access to those images. It would follow that if the integration of bizarre images in memory can be enhanced then retrieval from the images should be enhanced, but predictions about distinctiveness and integration of images have yet to be tested (Margres, 1987). However, it has been established that the more frequent the items within schematic images are depicted, the

better their integration. Research in the area suggests that bizarre images are only effective in enhancing recall when used in conjunction with normal images (Margres, 1987).

His research also suggests that a bizarre image requires more work to comprehend than a normal image. The more elaboration that is required for the image the more distinct it becomes, and the longer it takes to form. Elaboration of an image often disrupts the original schematic organization, thereby decreasing image integration. In this fashion elaboration tends to increase distinctiveness, but decrease integration. The more schematic the final image is, the more integrated its components will be (Margres, 1987).

The accuracy of the recall of schemata is distorted over time. A scene stored or associated with a schema will become more schematic, and lose its details and non-schematic attributes. Relations and details in the scene that are bizarre will be lost over time and coherence of that scene as a whole suffers (Reese, 1977).

According to Wollen and Margres (1987) once the image is elaborated on and completed it has two qualities - distinctiveness (distortion) and integration. Distortion results from elaborations, and integration results from the organizational and schematic characteristics of the image. The more

integrated the image, the more items can be retrieved.

When bizarre images are presented alone, they tend to be distinct, but poorly integrated. Normal images are well integrated, but not very distinct. With the trade off between the bizarre and normal images the recall of both does not differ. However, when both are mixed the distinctiveness of bizarre images is enhanced at the expense of the distinctiveness of the normal images. Because of the increase in distinctiveness of bizarre images there is an increase in image access, thus increasing recall (Wollen & Margres, 1987).

Application To Enigmatic Commercials

The distortions and elaborations of bizarre images distinguish them from normal images when both are mixed together. Subjects rely upon those informative areas to recall an image. Enigmatic commercials often use these distortions that become effective informative areas for recall.

Chapter Three

Statement of the Problem and Hypotheses

The review of literature suggests that schema enable us to comprehend and make inferences about information we receive. In addition, schema act as references to events or materials that we may have experienced many times. By closely associating incoming information with that of schema in stored memory, we are able to make inferences about that information and tend to give it less attention than information for which there is no readily available schema.

The context in which the information is presented has a strong influence on our ability to access the appropriate schema. If information is not presented in the appropriate context, we tend to pay more attention to it in an effort to comprehend the message or event. This occurs because the information no longer fits easily into an existing schema and does not readily allow for inferences and research suggests that comprehension of the information as a whole suffers. Thus, enigmatic commercials sacrifice comprehension for attention. By placing the contextual information of the advertisement at the end, viewers cannot easily make inferences. As a result

they must pay more attention in order to comprehend the message.

Research on visual scene schema, indicates that because of the complexity of sets of objects in a scene, subjects may have difficulty recalling specific information. However, if the scene is presented in an unorganized fashion, viewers tend to pay more attention and recall of the changes or deletion of items is enhanced. Enigmatic commercials disorganize the scene by not providing the context. Thus, viewers are required to develop another scene schema or fit the disorganized scene into an existing schema -- to the neglect of item-specific information such as the product or service or does it become salient because it receives more attention.

In addition, enigmatic commercial messages often alter the order of images while retaining the image components -- creating "bizarre" images. Research suggests that recall of bizarre images is only enhanced when used with normal images. When both are used together bizarre images are enhanced at the expense of normal images. However, less is recalled from the scene as a whole. For example, a commercial for a carpet begins with a infant in a walker. The infant proceeds to travel around the house and eventually up on the walls at an incredible rate of speed. This bizarre image

sets itself apart from others in the viewer's memory and the viewer is unlikely to recall the product or service.

Another hindrance to the recall of the product, service or brand name is the manner in which enigmatic commercials present information relating the product or service to viewers. Research on viewer preference in schema and advertising research suggests there is a superiority of visual information over audio information when that information is received using both channels. However, when there is a conflict between the audio and visual portions of the advertisement, studies suggest that viewers focus on the visual portion at the expense of the audio (Dhawan & Pellegrino, 1977; Paivio, 1975; Smith & Magee, 1980).

Due to an expected increase in viewer attention enigmatic commercials should be more effective in enhancing short-term recall of details. Enigmatic commercials not only place most of the information in the visual portion of the advertisement but their design disrupts the conventional or expected structure of an advertisement. The disruptions make the viewer pay more attention in order to comprehend the message. Research supports ideas that suggest the presentation of a distorted message in a television commercial will increase viewers' attention by presenting an unfamiliar

schema which requires viewers to reinterpret frameworks of knowledge.

Schema theory and previous research suggest that subjects will have greater recall of specific events in enigmatic commercials than specific events in non-enigmatic commercials. However, the recall of the product/service and brand name in non-enigmatic commercials will be superior to that of enigmatic commercials due to the limited exposure afforded them in enigmatic commercials. The product/service and brand name would be seen as a non-schematic feature and lost. A first-time viewer would be preoccupied with developing a new schema for the commercial and the considerable amount of information presented, will likely dismiss the product/service and brand name as irrelevant. The information presented at the beginning of the commercial appears relevant to information that follows it and, for the first-time viewer, the only unrelated or irrelevant information presented is the product/service and brand name that receive little exposure.

In addition, the first-time viewer would be unable to make an accurate inference about what the product/service or brand name were in an enigmatic commercial if the last segment of the enigmatic commercial containing this information was removed. Based on the studies from the review of literature, a number of hypotheses are proposed.

Hypotheses

- H1 - Enigmatic commercials will generate better recall of specific events (non-brand in the audio and visual portions) of the commercial than specific events in traditional or non-enigmatic commercial.
- H2 - Traditional commercials will generate greater recall of the product/service or brand than enigmatic commercials.
- H3 - Viewers previously exposed to enigmatic commercials will show no greater recall of the product/service or brand than viewers not exposed.
- H4 - Enigmatic commercials will generate greater emotional levels (frustration, anger, humor) than a non-enigmatic commercials.
- H5 - Viewers not receiving the ending of the enigmatic commercial will be unable to to predict the product/service or brand name.

Chapter Four

Method

Because this study focused on manipulation of schema and its effects on recall of television advertisements, 12 commercials -- six enigmatic commercials and six non-enigmatic commercials were used.

The six enigmatic commercials that were used included:

1. *Health Plan of Nevada - a health care plan commercial using a rowing crew to demonstrate the efficiency of the health plan;
2. Prudential - an insurance commercial that uses time lapse film of weather patterns and their effect on a tree in a meadow, demonstrating the consistency of the firm;
3. Marines - this commercial for the military depicts medieval chess pieces in battle;
4. Timex - this watch commercial uses humor in the form of an old woman who breaks everything she looks at, except the watch;
5. TV Guide - uses a parody of a talk show featuring accountants who dress like clowns to demonstrate the need for the magazine in order to know what is on television;
6. Miller's Outpost - uses an old woman knitting a sweater in a rocking chair to notify viewers that all of their sweaters are on sale.

The earliest that the product/service or brand name in the audio or visual

information was revealed in an enigmatic commercial was 23 seconds into the commercial.

The traditional or non-enigmatic that were used included:

1. El Pollo Loco - a fast-food commercial using a man who counts everything in his life, including El Pollo Loco's three piece chicken dinner;
2. Tuscany - this commercial shows a man, who obviously uses the cologne, in a romantic setting with a beautiful woman;
3. Halls - this cold medicine commercial shows a woman with a cold symptoms walking through a computer generated hall;
4. Duracell - to demonstrate the longer life of the battery this commercial uses toy dancers that outlast the band during a dance contest;
5. *Excalibur - this commercial was for the dinner show at the Excalibur Hotel/Casino and uses scenes from the show set at King Arthur's jousting match;
6. Tappan - a microwave oven commercial showing the new faster oven and clock being cut by a quarter to demonstrate the speed of the new oven.

The latest that the product/service or brand name was revealed in a non-enigmatic commercial was 15 seconds into the commercial. The scripts for all the commercials are included in Appendix A.

* Commercials for local products and services.

Each commercial was a relatively current network commercial, 30-seconds in length, videotaped from the major television networks (i.e., ABC, CBS, NBC). For each enigmatic commercial a non-enigmatic commercial was selected that was similar in style and pace. For example, if an enigmatic commercial used humor and gradually mixed from scene-to-scene, a non-enigmatic commercial was selected that used humor and gradually mixed.

All the commercials appeared in three groups (arbitrarily named "Red" group, "White" group or "Blue" group). Within each group the commercials were randomly assigned to a condition with all commercials appearing in a different condition within the three groups to prevent order bias. The rotational chart is included in Appendix B. Subjects were randomly assigned to one of the three groups. There were 14 subjects in the 'Red' and 'Blue' groups and 15 subjects in the 'White' group.

The method selected examined three areas of schema theory: recall, emotional reaction, and inferences. Recall was examined in condition one in which subjects viewed two non-enigmatic and two enigmatic commercials edited into the last commercial break within a segment of ABC World News Tonight with Peter Jennings. Emotional responses were examined in condition two where subjects viewed commercials, two non-enigmatic and

two enigmatic commercials one at a time. Subjects' ability to make inferences were examined in condition three in which subjects viewed two enigmatic commercials one at a time that were stopped prior to revealing the product/service or brand name. While the non-enigmatic commercials were accounted for in each condition, they were not shown in condition three.

A pilot study using four graduate students was conducted in order to verify the clarity of the instructions, questionnaire and quality of the edited videotape. The pilot study revealed the need for a few minor changes to the instructions and layout of the 7-point scale for emotional response.

Subjects

A total of 43 undergraduate introductory psychology students, 17 females and 26 males, participated in the study. All subjects signed a consent form and received class credit for their participation in the study. The consent form is included in Appendix C. There were no more than 10 subjects per group and each group was exposed to all three conditions.

Procedure

The study was conducted in an office at a university. The room contained ten chairs set in a half-circle to provide equal and unobstructed viewing for all subjects, a 20 -inch color television, and a VHS videotape

playback unit. Subjects were kept uninformed about the nature of the study, other than it was investigating 'television viewing.' They were asked to be seated, make sure they could see the television clearly, and were told that there would be more complete instructions once they had finished viewing the program.

Immediately after viewing, subjects were asked to complete a multiple-choice questionnaire about information contained in the ABC News program which featured five stories and lasted for 11 minutes and 6 seconds. When all subjects had completed the questionnaire, they were asked to provide as much information as they could remember about the commercials contained in the commercial break. Subjects were given 7 minutes to complete this portion of the questionnaire. They were then asked to complete the multiple-choice questions on each of the commercials contained in the commercial break. In addition, subjects were asked how often they could remember seeing the commercial.

In condition two, viewers watched two enigmatic and two non-enigmatic commercials that were shown one at a time. After each commercial was shown, the tape was stopped and subjects were asked to complete a questionnaire with 13 emotional items using a 7-point scale and

an optional section allowing subjects to write-in an emotion. Subjects were also asked how often they could remember seeing the commercial.

In condition three, subjects viewed two enigmatic commercials that were stopped before disclosure of the product/service or brand name. It was not necessary to show the non-enigmatic commercials in this condition however, they were accounted for on the rotational chart (Appendix B). They were asked to predict the product/service or brand name based upon the information they received. Once again, subjects were asked how often they could remember seeing the commercial. The consent form, text of the instructions and the debriefing statement made to all subjects are included in Appendix C. The Questionnaires for the 'Red,' 'White' and 'Blue' groups are included in Appendix D.

Results of the unaided recall items were scored independently by two coders who were unfamiliar with the purposes of this experiment. Each coder was able to watch the commercials and review them as necessary. They read the subjects' responses and scored them on a scale with a maximum possible score of 7-points. The score breakdown was:

1. Theme 0-1
2. Audio Information 0-2
3. Visual Information 0-2
4. Product/Service 0-1

5. Brand Name 0-1.

The reliability coefficient for the coders was .97 using the Kuder-Richardson-20 formula.

Chapter Five

Results

Results of the recall items for the ABC News program produced a mean recall score for all subjects of 3.9 on a 5 point scale. The results seem to indicate that subjects did pay attention to the program.

Hypothesis 1: The first hypothesis predicted that enigmatic commercials would generate better recall of the specific events than non-enigmatic commercials. Because each subject viewed two enigmatic and two non-enigmatic commercials in condition one, an average recall score was computed for enigmatic and non-enigmatic commercials.

A t-test was performed to compare the average scores. The one-tailed t-test produced no significant differences in recall of specific events in either the unaided ($t=-.53$, $df=42$, $p>.05$) or aided ($t=-1.67$, $df=42$, $p>.05$) portions of condition one. A t-test was computed comparing both the enigmatic and non-enigmatic commercials factoring out the product/service and brand name scores and no significant differences were found ($t=-.40$, $df=66$, $p>.05$). Thus, the results did not support hypothesis one. Enigmatic commercials did not generate better recall of specific events than non-enigmatic commercials.

Hypothesis 2: Traditional commercials would generate greater recall of the product/service or brand name than enigmatic commercials. Because each subject viewed two enigmatic and two non-enigmatic commercials in condition one, an average recall score was computed for both the product/service and brand name for enigmatic and non-enigmatic commercials t-tests were performed to compare the average scores.

A one-tailed t-test produced no significant differences between recall of the product/service in either the unaided ($t=-1.35$, $df=42$, $p>.05$) or aided ($t=-1.00$, $df=42$, $p>.05$) portions of condition one. Another one-tailed t-test produced no significant differences between recall of the brand name in either the unaided ($t=-1.04$, $df=42$, $p>.05$) or aided ($t=-.40$, $df=42$, $p>.05$) portions of condition one. Thus, the results did not support hypothesis two. Traditional commercials did not generate greater recall of the product/service or brand name than enigmatic commercials, although the means were in the predicted directions (see Table 1).

Table 1
 Mean Recall Scores of Brand Name and Product/Service
 For Open And Close Ended Enigmatic And Non-Enigmatic Commercials

Response Condition	Commercial Type	
	<u>Enigmatic</u>	<u>Non-Enigmatic</u>
Open Ended Product/Service	1.02	1.21
Close Ended Product/Service	1.56	1.65
Open Ended Brand Name	1.07	1.23
Close Ended Brand Name	1.44	1.49

Hypothesis 3: Viewers previously exposed to enigmatic commercials would show no greater recall of the product/service or brand name than viewers not exposed. The aided recall scores from subjects that had not viewed the enigmatic commercials before and scores from subjects that had seen the enigmatic commercials before were compared using t-tests. A one-tailed t-test produced no significant differences in recall of the product/service in condition one ($t=-0.62$, $df=78$, $p>.05$). In addition, a second one-tailed t-test produced no significant differences in recall of the brand name in condition one ($t=.98$, $df=78$, $p>.05$). The means are reported in Table 2. Thus, the results did support hypothesis three. Viewers previously exposed to enigmatic

commercials did not show any greater recall of the product/service or brand name than viewers not exposed.

Table 2
 Mean Recall Scores Of Brand Name And Product/Service
 For Previously Viewed And Non-Viewed Enigmatic And Non-Enigmatic
 Commercials

Response Condition	Enigmatic Commercials	
	<u>Product/Service</u>	<u>Brand Name</u>
Previously Viewed	.85	.70
Non-Viewed	.79	.79

A further analysis to examine whether or not traditional commercials produced similar results was conducted. A 2 X 2 ANOVA comparing product/service recall scores between the non-enigmatic and enigmatic commercials with previously viewed and non-viewed commercials produced a significant main effect for viewing level as shown in Table 3. A post hoc t-test produced significant differences in recall of product/service between previously viewed and non-viewed non-enigmatic commercials as shown in Table 4.

Table 3

Two-Way Analysis Of Variance Of Product/Service Recall For Two Viewing Levels Of Enigmatic And Non-Enigmatic Commercials

Source	SS	d.f.	MS	F
Commercial Type	.0998	1	.0998	.84 ns
Viewing	.698	1	.698	5.86 *
Interaction	.25	1	.25	2.1 ns
Residual	18.59	156	.12	
Total	19.69	159		

ns = Not Significant

* = $p < .05$

Table 4

T-Test For Recall Of Product/Service Between Previously Viewed And Non-Viewed Non-Enigmatic Commercials

Variable	Mean	SD	N	d.f.	t
Non-Viewed	.76	.43	34	78	-3.13 ***
Viewed	.97	.15	46		

*** = $p < .001$

The results seem to indicate that the recall of the product/service in non-enigmatic commercials increases with the number of viewings.

Enigmatic commercials show no significant differences in the recall of the product/service with additional viewings.

A 2 X 2 ANOVA comparing recall of brand name for the non-enigmatic and enigmatic commercials with previously viewed and non-viewed commercials produced no significant main effect, but did produce a significant interaction effect as shown in Table 5. A post hoc t-test produced significant differences in the recall of brand name between previously viewed and non-viewed non-enigmatic commercials as shown in Table 6.

Table 5
Two-Way Analysis Of Variance Of Brand Name Recall For Two Viewing
Levels Of Enigmatic and Non-Enigmatic Commercials

Source	SS	d.f.	MS	F
Commercial Type	.001	1	.001	.006 ns
Viewing	.409	1	.409	2.28 ns
Interaction	1.58	1	1.58	8.78 **
Residual	28.0	156	.18	
Total	30.0	159		

ns = Not Significant

** = $p < .01$

Table 6
T-Test For Recall Of Brand Name Between Previously Viewed And Non-
Viewed Non-Enigmatic Commercials

Variable	Mean	SD	N	d.f.	t
Non-Viewed	.59	.50	34	78	-3.32 ***
Viewed	.89	.31	46		

*** = $p < .001$

The results indicate that the recall of the brand name in non-enigmatic commercials increases with the number of viewings. Enigmatic commercials show no significant differences in the recall of the brand name with additional viewings.

Hypothesis 4: Enigmatic commercials will generate greater emotional levels than traditional or non-enigmatic commercials. Because each subject viewed two enigmatic and two non-enigmatic commercials in condition two, an aggregate emotional score was computed for enigmatic and non-enigmatic commercials as well as average emotional scores for each emotion for enigmatic and non-enigmatic commercials.

A 13 X 2 within subject ANOVA comparing all emotions by type of commercial produced two significant main effects and a significant interaction effect as shown in Table 7. The main effect of emotion produced an F of 16.79 ($p < .001$). The main effect of condition (enigmatic vs. non-enigmatic) produced an F of 9.50 ($p < .001$). The interaction effect of emotion by condition (enigmatic vs. non-enigmatic) produced an F of 40.57 ($p < .001$).

Table 7
Two-Way Analysis Of Variance Of Emotional Level Comparing Each Emotion
By Enigmatic vs. Non-Enigmatic Commercials

Source	SS	d.f.	MS	F	
Constant	38175.39	1	38175.39	1157.25	***
Emotion	1113.92	12	92.83	16.79	***
Condition	34.71	1	34.71	9.50	**
Interaction	3819.21	12	318.27	40.57	***
Error (within cells)					
Emotion	2786.69	504	5.53		
Condition	153.40	42	3.65		
Interaction	3954.18	504	7.85		

** = p < .01
*** = p < .001

Thirteen post priori one-tailed t-tests on individual emotional items comparing enigmatic and non-enigmatic commercials produced significant results as shown in Table 8 . The emotional item 'curious' produced significant results at the $p < .01$, and the emotional items "attention" and "surprised" produced significant results at the $p < .05$.

Table 8

T-Tests For Aggregate Emotional Means Between Enigmatic And Non-Enigmatic Commercials

Emotion	Enigmatic Mean	Non-Enigmatic Mean	t
Attention	10.58	9.30	2.28 *
Nervous	3.26	2.98	.94 ns
Calm	8.28	8.02	.58 ns
Angry	3.12	2.81	1.03 ns
Happy	7.16	6.53	1.24 ns
Satisfied	7.40	6.74	1.55 ns
Frustrated	3.91	3.91	.00 ns
Confused	4.19	3.65	1.17 ns
Informed	6.67	7.40	-1.80 ns
Curious	8.70	6.93	2.80 **
Bored	5.00	5.35	-.65 ns
Surprised	6.19	5.02	2.12 *
Disappointed	3.95	4.47	-.96 ns

ns = Not Significant

* = $p < .05$

** = $p < .01$

Thus, results did support hypothesis four. Enigmatic commercials did generate greater emotional levels than non-enigmatic commercials.

Hypothesis 5: Viewers not receiving the ending of the enigmatic commercial will be unable to predict the product/service or brand name. Out of a total of 86 enigmatic commercials the product/service was recalled in 25 of these for a correct prediction rate of 29 percent. Of those that were recalled, 21 of them or 84 percent had been viewed previously. The brand name was recalled in 21 of the enigmatic commercials or 24 percent. Of those that were recalled, 19 or 90 percent had been viewed previously. Thus, results did support hypothesis five. Viewers that did not receive the ending of the enigmatic commercial were unable to predict the product/service and brand name.

Chapter Six

Discussion

This study examined the effects of schema on television commercials. A subject's commercial schema is the framework of knowledge gained from experience with commercial information and how new commercials are affected by the existing schema. This study examined the recall, emotional response and subjects' ability to make inferences. Analysis of the subjects' responses yielded the following information.

The results of the unaided and aided recall did not support the expected hypothesis that the enigmatic commercials would generate greater recall than the non-enigmatic commercials. This would seem to contradict recall results of the Wicks and Drew (1991) study and those of Mandler and Johnson (1976) who found more detail was recalled when the material presented was inconsistent with existing schema. However, it is important to note that these studies used forms of stimuli very different from commercials.

It is possible that recall results may be explained by the range and styles of commercials that were selected. There were mixed results with the recall of details between the enigmatic commercials and their non-enigmatic

counterparts. In some cases the enigmatic commercial was recalled better and in others the non-enigmatic produced better recall.

In addition, it is clear that the complexity, amount and speed of the information presented by television are also likely to influence attention and memory. Because commercials compete for the viewers' attention and memory with the program and other commercials viewers may have been forced to limit the processing of information (see Bartlett, 1932).

The results of this study showed no significant difference between the recall of the product/service or brand name between traditional and enigmatic commercials. This result is important considering the structure of enigmatic commercials provides only limited exposure to the product/service and brand name. This study's results appear to contradict the Palmer (1975) study that found subjects would name scenes or items from the scene rather than the target or context of schema inconsistent material.

A possible explanation is the significant difference in attention scores between the enigmatic and traditional commercials. As Cerulo (1988) suggests, the variation in the presentation of enigmatic commercial's scene schema as well as more bizarre images demand greater attention on the part

of subjects in order to apprehend the message as it relates to the product/service and brand name.

One enigmatic commercial's results suggest that this may be the case. The commercial, Health Plan of Nevada, received attention scores that were similar to those of its traditional commercial counterpart, however, the subjects' ability to recall the brand name and product/service was lower than that of the traditional commercial. It is possible that if enigmatic commercials fail to get greater than normal attention, recall of the product/service and brand name will decrease.

Since this particular enigmatic commercial was for a local health care company, lacking brand name recognition, it is possible, that name recognition plays an important role in the effectiveness of enigmatic commercials. If, at the end of the commercial, the viewers do not receive a recognized brand name, they may consider this an unexpected or inappropriate result or an error. This error can disrupt the continuation of a schema and the viewer may stop paying attention, exiting the schema (Schank & Abelson, 1977).

When enigmatic and traditional commercials that had not been previously viewed were compared, the recall of the brand name in the

enigmatic commercials was significantly higher than that of the traditional commercials. This result, consistent with Cerulo's (1988) predictions, suggests that the manner in which enigmatic commercials present information by moving the context of the commercial to the end is effective in gaining and keeping the subjects' attention in the first viewing.

As hypothesized, there was no significant increase in the recall of product/service and brand name when enigmatic commercials that had not been previously viewed were compared to those that had been previously viewed. In the case of brand name, mean recall scores decreased with additional viewings. This may be explained because once the enigmatic commercial has been viewed, and the puzzle solved, the viewer will not give the necessary attention to the commercial.

It is possible that limiting attention may have a detrimental effect over a period of time according to literature on schema. Schank and Abelson (1977) suggest, if the structure of enigmatic commercials results in improper encoding, the scene schema will deteriorate over time or other memories will alter the schema. With the product/service and brand name in the enigmatic commercials seemingly unrelated to the majority of the material presented in the commercial it would become a non-schematic feature and lost over

time as Margres (1987) suggests.

There were significant differences in the recall of product/service and brand name when traditional commercials that had not been previously viewed were compared to those that had been previously viewed. This indicated that, unlike enigmatic commercials, recall of the product service and brand name increased with the number of viewings of non-enigmatic commercials. Additional research is needed to explore this area more fully.

Enigmatic commercials do generate more emotional response than traditional commercials. Ten of thirteen emotional mean scores were in the predicted directions and three emotions attention, curiosity and surprise resulted in significant differences. The results suggest that the structure of the enigmatic commercials violates non-enigmatic commercial schema and does not allow the viewer to make inferences thereby, increasing attention. By not knowing where the material is going, curiosity and surprise are correspondingly higher. This is consistent with information present by Schank and Abelson (1977) and Cerulo (1988) in the review of literature.

As hypothesized, when the ending of the enigmatic commercials were removed, the vast majority of viewers were unable to predict the product/service or brand name. These results seem to indicate that material

presented before disclosure of the product/service and brand name is not closely enough associated to allow the subjects to make inferences about them. In addition, a majority of those who could not determine the product/service or brand name, indicated that they had never seen the commercial before. This finding seemed unusual because the likelihood of this high number of subjects having never seeing these commercials seemed remote when considering the commercials were being broadcast at the same time the study was conducted. A more likely explanation is that subjects were unable to access the associated schema that corresponded to the commercial (Wessells, 1982).

If the writers of enigmatic advertisements had intended to use enigmatic commercials for the sole purpose of brand recognition then the results of this study suggest that for the first viewing they are achieving the intended results. However, with repeated exposure the recall of the brand name may continue to fall as the brand name becomes a non-schematic feature and is lost (Margres, 1987; Schank & Abelson, 1977; Wessells, 1982).

The results of this study suggest that enigmatic commercials can cause new schema to develop. However, the results also indicate that the schema may deteriorate over time. If this is case, advertisers may consider producing

several enigmatic commercial running them less frequently, as opposed to one traditional commercial running more frequently.

Limitations and Future Research

When considering the higher attention scores that the enigmatic commercials received it is possible that more in-depth questionnaires that probe more deeply into the audio and visual information may need to be developed. It is also possible that with repeated viewings all the commercials are encoded, although differently. However, it is more likely that while the traditional commercials were selected to match the enigmatic as closely as possible in style and pace, it was not possible to find an exact match which is an obvious limitation of this study.

A more precise method, would be to produce two commercials, of national quality, for various brand names, one enigmatic and one traditional. The creation of commercials with the same product/service and brand name, while using an enigmatic and traditional structure would duplicate the comparative aspects of other studies in the review of literature such as the Wicks and Drew (1991) study. By placing these newly created commercials in a program, a more representative comparison of recall between the enigmatic and traditional commercials may be drawn. Unfortunately, this was not

monetarily or technically possible for this study.

Another area of future study is a closer analysis of attention scores. If the attention scores are similar between an enigmatic and non-enigmatic commercial, or if the enigmatic commercial attention score is lower, would recall of the product/service and brand name differ? Such a study could be performed by examining the attention scores between enigmatic and non-enigmatic commercials that were for the same product.

Additional schema research suggests that the verbal information about the picture is lost over time, possibly because picture memory is essentially nonverbal. In addition, as suggested by Bahrick and Boucher (1968) visual memory is mainly schematic and over time details of the information such as verbal cues (labels, tags and details) are no longer available. A future study may consider investigating the point at which viewers interrupt viewing of enigmatic commercials and after what period of time the product/service and brand name become non-schematic and lost.

Considering the complexity of the information television presents, a future study may examine the combinations of factors influencing memory and attention such as: scene schema, selective attention and audio/visual

redundancy.

This study sought to determine if the structure of enigmatic commercials affects viewers' ability to recall information, viewer emotional reaction and effectiveness of the commercials. The results of this study suggest that enigmatic commercials do generate greater emotion reaction, with a significant difference with attention, curiosity and surprise. However, even with an increase in overall recall there were no significant differences between the recall of the product/service or brand name between non-enigmatic and enigmatic commercials. These are important areas for understanding how to make the transmittal of information more effective on television. It is also valuable for advertisers who are trying to compete for our attention on television.

Appendix A
Scripts

Enigmatic Commercials

Timex - disclosure of product/service or brand name occurred in 20 seconds.

Opens with scene of an old woman primping in a mirror as piano music plays. The mirror shatters. The woman is then at a bus stop with a man wearing glasses. They look at each other and his glasses shatter. The old woman takes a seat on the bus, looks out the window and the window breaks. She finds her way to a department store counter where three men are working. One of the men placing watches in a display counter looks up and sees her, instantly all the glass objects in the room, televisions, counter top and lights explode - except one watch. The woman picks the watch up and a male voice says, "Timex ... it takes a licking and keeps on ticking." The old woman taps on the face, smiles and looks into the camera. Ends with a close-up of the old woman's face and the camera lens shatters.

Marines - disclosure of product/service or brand name occurred in 25 seconds.

Opens with scene of man dressed in a medieval wardrobe of black. With his sword in hand he slides across what a long-shot reveals is a chess board, and makes a knight dressed in white disappear. A white knight on a horse then attacks and destroys him. Another battle occurs and the white

knight on the horse causes the king dressed in black to yield. The horse rears up on its hind legs and lightning hits the knight's sword turning him into a marine. Ends on a medium-shot of the marine with a logo and a phone number.

TV Guide - disclosure of product/service or brand name occurred in 25 seconds.

Opens with scene of a man carrying a microphone, walking through a studio audience with the logo "The Pen Pendelton Show." Then on the stage are accountants, who are dressed like clowns. The host asks a clown with red hair when he first started dressing like a clown. The red haired clown responds that it was at a company picnic then he honks his horn. A male voice fades in over the top of the clown and says, "Were you watching something like this when Paul Simon gave the concert..." then there is a fade to printed material on a page with Paul Simon's name. The pages turn revealing the cover TV Guide. Ends on close-up of TV Guide logo.

Health Plan of Nevada - disclosure of product/service or brand name occurred in 23 seconds.

Opens with scene of mixed gender rowing team moving down a river. A female coxswain is calling out the rowing count. Then there are mixes to various angles of the rowing team as they move through the water. During these various scenes a male voice says adjectives such as "smooth," "efficient," and "coordinated." After "coordinated" the announcer says, "Just like the Health Plan of Nevada." Ends on an overhead shot of the rowing team with the logo of Health Plan of Nevada.

Prudential - disclosure of product/service or brand name occurred in 23 seconds.

Opens with scene of a tree in a meadow as the sun rises. The portion of the commercial with the tree in the meadow is filmed in time-lapse photography. The sky over the tree changes from day to night, then from blue sky to dark and rainy and eventually to snow. A male voice then says, "In a world of constant change, there is one certainty ...". The Prudential rock slowly fades in over the meadow scene. Ends on a long-shot of the Prudential rock with the logo superimposed over it.

Millers Outpost - disclosure of product/service or brand name occurred in 26

seconds.

Opens with scene of an old woman in a rocking chair knitting. The chair is on a small rug in a white room. Violin music plays as she continues to knit. This continues until she puts her knitting needles in her lap and then stares into the camera. A male voice then says, "Not everyone is happy that all of our sweaters are on Sale," which is also printed on screen. Ends on Millers Outpost logo.

Non-Enigmatic Commercials

Excalibur - disclosure of product/service or brand name occurred in 10 seconds.

Opens with scene of an man holding a sword up with a male voice saying, "There has never been a show like it . . . King Arthur's Tournament" While the announcer is talking about how to get tickets and the number of nights the show runs, there are various scenes with people in medieval dress dancing, men on horse back in a jousting tournament and those attending the show eating. Ends on Merlin running across the jousting match mixed with a long shot of the Excalibur hotel and its logo.

Tappan - disclosure of product/service or brand name occurred in 3 seconds.

Opens with scene of microwave oven with the light on inside and a clock on the wall. A male voice says, "Introducing the new Tappan Speedway 1000 Microwave Oven." The announcer begins talking about how the new oven can cut a quarter off cooking time while the scene remains the same. Then a saw blade begins cutting through a quarter of the clock that eventually falls to the floor when the light goes off in the oven. Then the logo of Tappan microwave ovens appears. Ends on long-shot of four microwaves with the

announcer tell how Tappan dealers can save a purchaser \$15 off a new microwave oven.

Halls - disclosure of product/service or brand name occurred in 15 seconds.

Opens with scene of doors sliding open to reveal a rain soaked woman coming in from a stormy night. She begins walking down a hallway and, as a man's voice describes cold symptoms, faces appear out of the walls. The woman walks through another set of sliding doors as the announcer tells of the Halls of medicine. The Halls package appears and then the next scene has the woman walking through the hall with blue sky in the skylight overhead. Ends on the shot of the skylight with various types of Halls packages.

El Pollo Loco - disclosure of product/service or brand name occurred in 9 seconds.

Opens with scene of a man wearing a suit standing in front of a red curtain. The male voice says, "Milton Lang Jr. is a piece loving guy..." then counts all the pieces of various items he has around him including the new 2-piece special from El Pollo Loco. As the announcer describes the meal there are various shots of the items included with the meal such as chicken,

tortillas and salsa. Ends on El Pollo Loco logo with flames rising up around it.

Duracell - disclosure of product/service or brand name occurred in 9 seconds.

Opens with scene of people walking by a poster for a dance marathon. Images are shown inside the dance with contestants and band. Then shows three toy couples with Duracell batteries strapped on their backs. A male voice says, "Someone has taken some steps to juice up their batteries." One toy couple has new Duracell batteries and the others fall by the wayside. The last toy couple continues to dance even after the band has left. Ends on the toy couple still dancing with a Duracell battery superimposed with the tag-line below it.

Tuscany - disclosure of product/service or brand name occurred in 2 seconds.

Opens with scene of a meadow with rolling hills in color then mixes to a woman and man in black and white. The next scene is the rolling hills in color with sections of the Tuscany bottle mixed in. The man or woman are shown in black and white and the other scenes are in color. The bottle appears in front of a white curtain the Tuscany logo as the male announcer says it's now available at Dillard's with a watch as an added

gift. Ends with mix of Tuscany bottle the man and woman and Dillard's logo.

ABC World News Tonight

The information in the program prior to the commercial break contained news about Russia's economic needs (0:58), the Russian airline Aeroflot (4:04), the Ukrainian military (0:15), an Olympic hockey score (0:12) and a preview of The American Agenda. The American Agenda contained information about voters in New Hampshire on the eve of the primaries. The story was reported by Peter Jennings (4:15). The program was shown to the closing logo and faded to black in order to provide closure for the subjects. The total time for the program and the added commercials was 11:06.

Appendix B

Rotation

Commercial Rotation

This is the outline for the commercial rotation between the various conditions. Rotations are divided between three groups designated: Red, White and Blue.

RED

Condition 1

El Pollo Loco
Health Plan
Tuscany
Prudential

Condition 2

Timex
Duracell
TV Guide
Tappan

Condition 3

Miller's
Marines
*Excalibur
*Halls

WHITE

Condition 1

Marines
Halls
Timex
Duracell

Condition 2

Tuscany
Health Plan
Excalibur
Miller's

Condition 3

Prudential
TV Guide
*El Pollo Loco
*Tappan

BLUE

Condition 1

Excalibur
TV Guide
Miller's
Tappan

Condition 2

Prudential
Halls
Marines
El Pollo Loco

Condition 3

Timex
Health Plan
*Tuscany
*Duracell

* Non-enigmatic commercials that were accounted for in the rotation, but not shown.

Appendix C

Consent, Instructions and Debriefing

RESEARCH INVOLVING HUMAN SUBJECTS**CONSENT TO SERVE AS A SUBJECT IN RESEARCH**

I consent to serve as a subject in a research investigation sanctioned by the Greenspun School of Communication and the Psychology Department at the University of Nevada, Las Vegas, conducted by Micheal Schneweis.

I understand that any inquiries I make about this study will be answered and that I may withdraw from this research project at anytime while it is being conducted. I also understand that my identity will not be revealed in any publication, document, computer data storage, or in any other way relating to this research.

Signed _____

Date _____

Time _____

Investigator

Introduction

[Fill out consent]

Hello, and thank you for participating. This is a study about television viewing. Please make sure you can see the screen clearly. Afterward I will ask you to complete some questionnaires and I will give more complete instructions once we get started.

Condition 1

Now let's watch some television.

[Turn on tape. Stop it. Pass out questionnaire]

You'll be filling out a questionnaire about information contained in the program you just watched. You will notice on the questionnaire that you have the option of responding "Don't Remember." If you do not remember, please be sure to circle that response. Throughout this questionnaire you will see pages with the word 'STOP' printed on them, this indicates an end to that portion of the questionnaire. When you see a 'STOP' page please do not turn it and look up when you are finished. When everyone else finishes we will continue. Please turn to the first page and begin.

[wait for completion]

The next portion of the questionnaire is about the commercials contained in the commercial break. If you can't recall everything write down what you do remember. There will be a 7 minute time limit. Once again, when you get to the page with word 'STOP' printed on it, do not turn the page and please look up when you are finished. You may begin.

[wait for completion]

Now we need you to answer more specific questions about the commercials you saw. These are multiple choice questions, and the commercial's theme is at the top of the page. Mark an answer if you are pretty sure you know the correct answer. However, if you do not remember, please be sure to circle the "Don't Remember" response. Once again, when you see the page with word 'STOP' printed on it, do not turn the page and

up. You may begin.

Condition 2

As you may have guessed, we are interested in discovering what viewers remember seeing and hearing in commercials. However, we are also interested in how people feel about the commercials. You will be shown a group of four commercials. You will see them one at a time and after each one you will fill out a questionnaire about how the commercial made you feel. Fill out this questionnaire as quickly as you can and don't spend too much time on any one feeling.

[Turn on tape]

[repeat 4 times]

Condition 3

You're almost done. You will see two more commercials one at a time. The commercials will be stopped prior to revealing the product/service or brand name. You will be asked to fill out a questionnaire after each is shown in order to predict what the product/service or brand name is for the product being advertised. If you don't know, please be sure to write "**Don't know**" in the space provided.

[Turn on tape]

[repeat]

Debriefing

This study is investigating how different styles of television advertisements affect memory. I need your help on one more item. While your participation in this study is completed, others possibly your friends or individuals in your class have not. This is where I need your cooperation. It is critical that all students be completely uninformed when they come to participate. Naturally, people you know may be curious about what you did during your session. If you tell them, that will affect their answers and the overall results of this study. The success or failure of this study depends on uninformed subjects. People you know may not understand at first, but they will after they have participated. If they do ask, just tell them 'Yo

some television.' If you have any questions about the study I'll be happy to answer them.

Appendix D
Questionnaire

- a. Male Female
b. Age: _____
-

ABC News Program Questionnaire

1. The news anchor was:
 - a. Tom Brokaw
 - b. Dan Rather
 - c. Peter Jennings
 - d. Don't remember

2. One of the stories was about an airline. What was the name of the airline?
 - a. Air Italia
 - b. Aeroflot
 - c. Lufthansa
 - d. Don't remember

3. Did the news anchor read the story about the airlines?
 - a. Yes
 - b. No
 - c. Don't remember

4. The last story was about:
 - a. Voters in New York
 - b. Voters in Georgia
 - c. Voters in New Hampshire
 - d. Don't remember

5. Did the news anchor read the last story?
 - a. Yes
 - b. No
 - c. Don't remember

6. What, if anything, can you remember from any of the commercials you saw during the commercial break. Please describe the commercials in as much detail as possible in 7 minutes. For example, the product or service, brand name, people, animals, things, gender of speaker(s).

Theme: The first commercial counted items as a theme.

1. Excluding music, how many different speaking voices are heard in this commercial:
 - a) None
 - b) One
 - c) Two
 - d) Three
 - e) Don't remember

2. How many people appeared in this commercial:
 - a) 1 -3
 - b) 4 - 6
 - c) 7 - 9
 - d) 10 or more
 - e) Don't remember

3. One of the things said in the commercial was:
 - a) "Milton Lang Jr. is a peace loving guy."
 - b) "Milton Lang Jr. is a chicken loving guy"
 - c) "Milton Lang Jr. is a suit loving guy"
 - d) None of the above
 - e) Don't remember

4. Which of the following appeared in the commercial:
 - a) Baked Potato
 - b) Hamburger
 - c) Tortillas
 - d) All the above
 - e) Don't remember

5. **One of the settings** of this commercial is:
 - a) In a Kitchen
 - b) In a Restaurant
 - c) In front of a wall
 - d) In front of a curtain
 - e) Don't remember

6. What was the product or service? _____
7. What was the brand name? _____
8. Excluding this viewing, how many times have you seen this commercial?
 - a) 0
 - b) 1 - 3 times
 - c) 4 - 6 times
 - d) 7 - 9 times
 - e) 10 or more times
 - f) Don't remember

Theme: The second commercial had rowing as a theme.

1. How many different speaking voices are heard in this commercial:
 - a) One
 - b) Two
 - c) Three
 - d) More than three
 - e) Don't remember

2. How many people appeared in this commercial:
 - a) 1 - 3
 - b) 4 - 6
 - c) 7 - 9
 - d) 10 or more
 - e) Don't remember

3. One of the things said in the commercial was:
 - a) "Smooth"
 - b) "Difficult"
 - c) "Effortless"
 - d) None of the above
 - e) Don't remember

4. The color of the tank-tops the rowers were wearing was:
 - a) Red
 - b) Yellow
 - c) White
 - d) All the above
 - e) Don't remember

5. The setting of this commercial is a:
 - a) Woman's rowing team
 - b) Men's rowing team
 - c) Mixed gender rowing team
 - d) Senior rowing team
 - e) Don't remember

6. What was the product or service? _____
7. What was the brand name? _____

8. Excluding this viewing, how many times have you seen this commercial?
 - a) 0
 - b) 1 - 3 times
 - c) 4 - 6 times
 - d) 7 - 9 times
 - e) 10 or more times
 - f) Don't remember

Theme: The third commercial had a romantic theme.

1. Excluding music, how many different speaking voices are heard in this commercial:

a) None	d) Three
b) One	e) Don't remember
c) Two	

2. How many people appeared in this commercial:

a) None	d) Three
b) One	e) Don't remember
c) Two	

3. One of the things said in the commercial was:

a) "Now available at Dillard's"	
b) "Now available at Bullocks"	
c) "Now available at Neiman Marcus"	
d) None of the above	
e) Don't remember	

4. This commercials was filmed in:

a) Blue Tint	d) All the above
b) Green Tint	e) Don't remember
c) Color and Black/White	

5. **One of the settings** of this commercial is a:

a) Green rolling hills	d) Skyscraper
b) Busy city streets	e) Don't remember
c) Horses running in a field	

6. What was the product or service? _____

7. What was the brand name? _____

8. Excluding this viewing, how many times have you seen this commercial?

a) 0	d) 7 - 9 times
b) 1 - 3 times	e) 10 or more times
c) 4 - 6 times	f) Don't remember

Theme: The fourth commercial had changing seasons as a theme.

1. How many different speaking voices are heard in this commercial:
 - a) One
 - b) Two
 - c) Three
 - d) More than three
 - e) Don't remember

2. How many people appeared in this commercial:
 - a) None
 - b) One
 - c) Two
 - d) Three
 - e) Don't remember

3. One of the things said in the commercial was:
 - a) "In a world of constant change, there is one certainty"
 - b) "There is only one constant in the world"
 - c) "With all things changing, one thing remains the same"
 - d) None of the above
 - e) Don't remember

4. What object did not move in this commercial:
 - a) Tree
 - b) Sky
 - c) Horse
 - d) All the above
 - e) Don't remember

5. The setting of this commercial is a:
 - a) Meadow
 - b) Mountain Range
 - c) Wheat Field
 - d) Forest
 - e) Don't remember

6. What was the product or service? _____

7. What was the brand name? _____

8. Excluding this viewing, how many times have you seen this commercial?
 - a) 0
 - b) 1 - 3 times
 - c) 4 - 6 times
 - d) 7 - 9 times
 - e) 10 or more times
 - f) Don't remember

Theme: The first commercial had knights and horses as a theme.

1. Excluding music, how many different speaking voices are heard in this commercial:
 - a) None
 - b) One
 - c) Two
 - d) Three
 - e) Don't remember

2. How many people appeared in this commercial.
 - a) 1 - 3
 - b) 4 - 6
 - c) 7 - 9
 - d) 10 or more
 - e) Don't remember

3. One of the things said in the commercial was:
 - a) "To complete the game you have to be smart ... to win... you have to be better."
 - b) "In order to finish, you have to begin ... to win... you have to be determined."
 - c) "To compete, you have to be strong ... to win... you've got to be smart."
 - d) None of the above
 - e) Don't remember

4. Which of the following weapons appeared in the commercial:
 - a) Sword
 - b) Ball and Chain
 - c) Axe
 - d) All the above
 - e) Don't remember

5. The setting of this commercial is a:
 - a) Castle
 - b) Chess Board
 - c) Fortress
 - d) Medieval Village
 - e) Don't remember

6. What was the product or service? _____
7. What was the brand name? _____

8. Excluding this viewing, how many times have you seen this commercial?
 - a) 0
 - b) 1 - 3 times
 - c) 4 - 6 times
 - d) 7 - 9 times
 - e) 10 or more times
 - f) Don't remember

Theme: The second commercial had a storm theme.

1. Excluding music, how many different speaking voices are heard in this commercial:
 - a) None
 - b) One
 - c) Two
 - d) Three
 - e) Don't remember

2. How many people appeared in this commercial:
 - a) None
 - b) One
 - c) Two
 - d) Three
 - e) Don't remember

3. One of the things said in the commercial was:
 - a) "One stuffy nose."
 - b) "One rainy day."
 - c) "One sore back."
 - d) None of the above
 - e) Don't remember

4. What appeared on walls in this commercial:
 - a) Faces
 - b) Pictures
 - c) Rainbow
 - d) All the above
 - e) Don't remember

5. **One of the settings** of this commercial is a:
 - a) Hallway
 - b) Kitchen
 - c) Bathroom
 - d) Bedroom
 - e) Don't remember

6. What was the product or service? _____
7. What was the brand name? _____
8. Excluding this viewing, how many times have you seen this commercial?
 - a) 0
 - b) 1 - 3 times
 - c) 4 - 6 times
 - d) 7 - 9 times
 - e) 10 or more times
 - f) Don't remember

Theme: The third commercial had breaking glass as a theme.

1. Excluding music, how many different speaking voices are heard in this commercial:
 - a) None
 - b) One
 - c) Two
 - d) Three
 - e) Don't remember

2. How many people appeared in this commercial:
 - a) 1 - 3
 - b) 4 - 6
 - c) 7 - 9
 - d) 10 or more
 - e) Don't remember

3. One of the things said in the commercial was:
 - a) "For professional use only"
 - b) "It takes a licking and keeps on ticking"
 - c) "Precision crafted"
 - d) None of the above
 - e) Don't remember

4. One thing to break in the commercial was a:
 - a) Glass Vase
 - b) Mirror
 - c) Statue
 - d) All the above
 - e) Don't remember

5. **One of the settings** of this commercial is a:
 - a) Bus stop
 - b) Grocery store
 - c) Airport
 - d) Museum
 - e) Don't remember

6. What was the product or service? _____
7. What was the brand name? _____
8. Excluding this viewing, how many times have you seen this commercial?
 - a) 0
 - b) 1 - 3 times
 - c) 4 - 6 times
 - d) 7 - 9 times
 - e) 10 or more times
 - f) Don't remember

Theme: The fourth commercial used toys as a theme.

1. Excluding music, how many different speaking voices are heard in this commercial:
 - a) None
 - b) One
 - c) Two
 - d) Three
 - e) Don't remember

2. How many people appeared in the commercial:
 - a) 1 - 3
 - b) 4 - 6
 - c) 7 - 9
 - d) 10 or more
 - e) Don't remember

3. One of the things said in the commercial was:
 - a) "You can't top the copper top."
 - b) "It keeps going and going."
 - c) "Built to stay on top."
 - d) None of the above
 - e) Don't remember

4. The toy couple that continued dancing in this commercial had:
 - a) Blond and Black hair
 - b) Black hair
 - c) Black and Red hair
 - d) All the above
 - e) Don't remember

5. The setting of this commercial is a:
 - a) Dance
 - b) Cheerleading Competition
 - c) Wedding
 - d) Ice rink
 - e) Don't remember

6. What was the product or service? _____
7. What was the brand name? _____
8. Excluding this viewing, how many times have you seen this commercial?
 - a) 0
 - b) 1 - 3 times
 - c) 4 - 6 times
 - d) 7 - 9 times
 - e) 10 or more times
 - f) Don't remember

Theme: The first commercial had knights and horses as a theme.

1. Excluding music, how many different speaking voices are heard in this commercial:
 - a) None
 - b) One
 - c) Two
 - d) Three
 - e) Don't remember

2. How many people appeared in this commercial:
 - a) 1 - 3
 - b) 4 - 6
 - c) 7 - 9
 - d) 10 or more
 - e) Don't remember

3. One of the things said in the commercial was:
 - a) "You won't believe your eyes."
 - b) "You won't believe your ears."
 - c) "You won't believe the show."
 - d) None of the above
 - e) Don't remember

4. Which of the following weapons appeared in the commercial:
 - a) Sword
 - b) Ball and Chain
 - c) Crossbow
 - d) All the above
 - e) Don't remember

5. **One of the settings** of this commercial is a:
 - a) Jousting match
 - b) Chess Board
 - c) Fortress
 - d) Medieval Village
 - e) Don't remember

6. What was the product or service? _____
7. What was the brand name? _____
8. Excluding this viewing, how many times have you seen this commercial?
 - a) 0
 - b) 1 - 3 times
 - c) 4 - 6 times
 - d) 7 - 9 times
 - e) 10 or more times
 - f) Don't remember

Theme: The second commercial had clowns as a theme.

1. How many different speaking voices are heard in this commercial:
 - a) None
 - b) One
 - c) Two
 - d) Three
 - e) Don't remember

2. How many people appeared in this commercial:
 - a) 1 - 3
 - b) 4 - 6
 - c) 7 - 9
 - d) 10 or more
 - e) Don't remember

3. One of the things said in the commercial was:
 - a) "We're talking to bankers who dress like clowns."
 - b) "We're talking to accountants who dress like clowns"
 - c) "We're talking to lawyers who dress like clowns"
 - d) None of the above
 - e) Don't remember

4. The name of the singer mentioned in the commercial was:
 - a) Paul Simon
 - b) James Taylor
 - c) Bob Dillon
 - d) All the above
 - e) Don't remember

5. The setting of this commercial is a:
 - a) TV News Program
 - b) Shopping Center
 - c) Variety Show
 - d) Talk Show
 - e) Don't remember

6. What was the product or service? _____
7. What was the brand name? _____
8. Excluding this viewing, how many times have you seen this commercial?
 - a) 0
 - b) 1 - 3 times
 - c) 4 - 6 times
 - d) 7 - 9 times
 - e) 10 or more times
 - f) Don't remember

Theme: The third commercial had a old lady knitting as a theme.

1. Excluding music, how many different speaking voices are heard in this commercial:
 - a) One
 - b) Two
 - c) Three
 - d) More than three
 - e) Don't remember

2. How many people appeared in this commercial:
 - a) None
 - b) One
 - c) Two
 - d) Three
 - e) Don't remember

3. One of the things said in the commercial was:
 - a) "This woman's not happy that all our sweaters are on sale"
 - b) "Not everyone is happy that all of our sweaters are on sale"
 - c) "Everyone is happy about all our sweaters being on sale"
 - d) None of the above
 - e) Don't remember

4. The woman stopped knitting and rocking, then:
 - a) Turned and stared into the camera
 - b) Bent over and pick up some yarn
 - c) Turned and smiled
 - d) All the above
 - e) Don't remember

5. The setting of this commercial is a:
 - a) White Room
 - b) Kitchen
 - c) Porch
 - d) Black Room
 - e) Don't remember

6. What was the product or service? _____
7. What was the brand name? _____

8. Excluding this viewing, how many times have you seen this commercial?
 - a) 0
 - b) 1 - 3 times
 - c) 4 - 6 times
 - d) 7 - 9 times
 - e) 10 or more times
 - f) Don't remember

Theme: The fourth commercial had a time theme.

1. How many different speaking voices are heard in this commercial:
 - a) None
 - b) One
 - c) Two
 - d) Three
 - e) Don't remember

2. How many people appeared in this commercial:
 - a) None
 - b) One
 - c) Two
 - b) Three
 - c) Don't remember

3. One of the things said in the commercial was:
 - a) "Which makes it so fast it cuts 25 percent off the time it takes to cook almost anything."
 - b) "It is so fast that it only takes a short time to cook almost anything."
 - c) "Which makes it so fast that it cuts 50 percent off the time it takes to cook almost anything."
 - d) None of the above
 - e) Don't remember

4. Which sound was heard in this commercial:
 - a) Sawing
 - b) Power Drill
 - c) Hammer
 - d) All the above
 - e) Don't remember

5. The setting of this commercial was a:
 - a) Dining room
 - b) Kitchen
 - c) Porch
 - d) Basement
 - e) Don't remember

6. What was the product or service? _____
7. What was the brand name? _____
8. Excluding this viewing, how many times have you seen this commercial?
 - a) 0
 - b) 1 - 3 times
 - c) 4 - 6 times
 - d) 7 - 9 times
 - e) 10 or more times
 - f) Don't remember

Commercial Name _____

1. We are interested in your feelings, specifically how the commercial made you feel. Place rate how the commercial made you feel using a scale from "1" to "7" where "1" means "Not at all" and 7 means "Very much."

Nervous

Not at all Very much

1 2 3 4 5 6 7

Calm

Not at all Very much

1 2 3 4 5 6 7

Angry

Not at all Very much

1 2 3 4 5 6 7

Happy

Not at all Very much

1 2 3 4 5 6 7

Satisfied

Not at all Very much

1 2 3 4 5 6 7

Frustrated

Not at all Very much

1 2 3 4 5 6 7

Confused

Not at all Very much

1 2 3 4 5 6 7

Informed

Not at all Very much

1 2 3 4 5 6 7

Curious

Not at all Very much

1 2 3 4 5 6 7

Bored

Not at all Very much

1 2 3 4 5 6 7

Surprised

Not at all Very much

1 2 3 4 5 6 7

Disappointed

Not at all Very much

1 2 3 4 5 6 7

Other emotions, please specify and rate _____

Not at all Very much

1 2 3 4 5 6 7

2. Please rate how well the commercial kept your attention:

Not at all

Very much

1 2 3 4 5 6 7

3. Excluding this viewing, how many times have you seen this commercial?

- | | |
|----------------|---------------------|
| a) 0 | d) 7 - 9 times |
| b) 1 - 3 times | e) 10 or more times |
| c) 4 - 6 times | f) Don't remember |

1. Please identify the product or service:

2. Please identify the brand name:

3. If you remembered the product/service or brand name, please describe the cues in the commercial that helped you identify them?

4. Excluding this viewing, how many times have you seen this commercial?

- | | |
|----------------|---------------------|
| a) 0 | d) 7 - 9 times |
| b) 1 - 3 times | e) 10 or more times |
| c) 4 - 6 times | f) Don't remember |

References

- Anderson, R. C., & Shrifrin, Z. (1981). The meaning of words in context. In R. J. Spiro, B. C. Bruce, & W. F. Brewer (Eds.) Theoretical issues in reading comprehension, Hillsdale, NJ: Lawrence Erlbaum Associates, Inc.
- Antes, J., & Mann, S. (1984). Global-local precedence in picture processing. Psychological Research, 46, 247-259.
- Baddeley, A. (1986). Working memory. New York: Oxford University Press.
- Baggett, P. (1975). Memory for explicit and implicit information in picture stories. Journal of Verbal Learning And Verbal Behavior, 14, 538-548.
- Bahrick, H., & Boucher, B. (1968). Retention of visual and verbal codes of the same stimuli. Journal of Experimental Psychology, 78(3), 417-422.
- Bartlett, F. (1932). Remembering, Cambridge, England: Cambridge University Press.

- Biederman, I. (1981). On the semantics of a glance at a scene. In M. Kubovy, & J. Pomerantz, (Eds.) : Perceptual organization. Hillsdale, NJ, Lawrence Erlbaum Associates.
- Biron, J., & McKelvie, S.J. (1984). Effects of interactive and non-interactive imagery on recall of advertisements. Perceptual and Motor Skills, 59, 799-805.
- Bransford, J. D., & Johnson, M. K. (1973). Consideration of some problems of comprehension. In W. G. Chase (Ed.), Visual information processing. New York: Academic Press.
- Broadbent, D. (1982). Task combination and selective intake of information. Acta Psychologica, 50, 253-290.
- Cerulo, K., (1988). What's wrong with this picture. Journal of Psychology, 17, 93-101.
- Chafe, W. L. (1972). Discourse structure and human knowledge. In R.O. Freedle & J.B. Carroll (Eds.), Language comprehension and the acquisition of knowledge (pp. 41-69). Washington, DC: Winston & Sons.

- Dhawan, J., & Pellegrino, J. W. (1977). Acoustic and semantic inference effects in words and pictures. Memory & Cognition, 5, 340-346.
- Diehl, V. A. (1987). Looking, listening, and learning: the effect of schema and strategy on memory for pictures and stories. Unpublished Dissertation. University of Maryland.
- Drew, D.G., & Grimes, T. (1987). Audio-Visual redundancy and TV news recall. Communication Research, 14, 452-461.
- Durgee, J.F., (1988). Product drama. Journal of Advertising Research, Feb./Mar. 42-49.
- Einstein, G.O., & Hunt, R.R. (1980). Levels of processing and organization: Additive effects of individual item and relational processing. Journal of Experimental Psychology: Human Learning and Memory, 6, 588-598.
- Freyd, J. (1983). The mental representation of movement when static stimuli are viewed. Perception & Psychophysics, 33(6), 575-581.

- Friedman, A. (1979). Framing pictures: The role of knowledge in automatized encoding and memory for gist. Journal of Experimental Psychology: General, 108(3), 316-355.
- Graber, D.A. (1986). Processing the news. New York: Longman.
- Head. (1920). Studies In neurology. (Vol. 2). London: Hodder & Stoughton and Oxford University Press.
- Horn, J.C., (1986). Forgettable commercials. Psychology Today, Dec. p. 16.
- James, W. (1890). Principles of psychology. New York: Holt.
- Koehler, W. (1926). Gestalt psychology. New York: Appleton.
- Mandler, J.M. (1984). Stories, scripts, and scenes: Aspects of schema theory. Hillsdale, NJ; Lawrence Erlbaum Associates.
- Mandler, J.M., & Johnson, N.S. (1976). Some of the thousand words a picture is worth. Journal of Experimental Psychology: Human Learning and Memory, 5, 529-540.
- Mandler, J., & Ritchey, G. (1977). Long-term memory for pictures. Journal of Experimental Psychology: Human Learning & Memory, 3(4), 386-396.

- Margres, M. (1987). Bizarre imagery: the differential effects of orienting tasks and schematic bases on the recall of normal and bizarre images. Unpublished Dissertation. Washington State University.
- Martin, D.S., & Ditcham, L. (1987). Information processing analysis of television advertisement recall. Journal of General Psychology, 114, 5-12.
- McDaniel, D. (1973). Film's presumed advantages in presenting television news. Journalism Quarterly, 50, 146-149.
- McDaniel, M., & Einstein, G. (1986). Bizarre imagery as an effective aid: The importance of distinctiveness. Journal of Experimental Psychology: Learning, Memory, & Cognition, 12, 54-65.
- Norman, D.A. & Shallice, T. (1980). Attention to action: Willed and automatic control of behavior. University of San Diego CHIP Report 99.
- Paivio, A. (1975) Perception comparisons through the mind's eye. Memory & Cognition, 3, 635-647.
- Palmer, S. (1975). The effects of contextual scenes on the identification of objects. Memory & Cognition, 3(5), 519-526.

- Piaget, J. (1929). The child's concept of the world. New York: Harcourt, Brace & World, Inc.
- Reese, H. (1977). Toward a cognitive theory of mnemonic imagery. Journal of Mental Imagery, 2, 229-244.
- Reese, S.D. (1984). Visual-verbal redundancy effects on television news learning. Journal of Broadcasting, 28, 79-87.
- Rumelhart, D.E. (1981). Schemata: The building blocks of cognition. In R.J. Spiro, B.C. Bruce, & W.F. Brewer (Eds.) Theoretical issues in reading comprehension. Hillsdale, NJ: Lawrence Erlbaum Associates, Inc., 33-58.
- Seamon, D, After Y&R Tinkers. Goodyear spots purr, Adweek 22 Aug.. 1988: 2,24.
- Schank, R., & Abelson, R. (1977). Scripts plans goals and understanding: An inquiry into human knowledge structures. Hillsdale, NJ: Lawrence Erlbaum Associates, Inc.
- Smith, M.C., & Magee, L.E. (1980). Tracing the course of picture-word processing. Journal of Experimental Psychology: General, 109, 397-392.

- Spiro, R.J. (1981). Construction processes in prose comprehension and recall. In R.J. Spiro, B.C. Bruce, & W.F. Brewer (Eds.) Theoretical issues in reading comprehension. Hillsdale, NJ: Lawrence Erlbaum Associates, Inc., 245-278.
- Stauffer, J., Frost, R., & Rybolt, W. (1981). Recall and learning from broadcast news: Is print better? Journal of Broadcasting, 23, 3.
- Terminal television: Viewer recall of the last commercial. American Demographics Jan. 1987: 15-16.
- Thorndyke, P.W. (1977). Cognitive structures in comprehension and memory of narrative discourse. Cognitive Psychology, 9, 77-110.
- Treisman, A. (1964). Verbal cues, language and meaning in selective attention. American Journal of Psychology, 77, 206-219.
- Tversky, B., & Hemenway, K. (1983). Categories of environmental scenes. Cognitive Psychology, 15, 121-149.
- Tversky, B., & Hemenway, K. (1984). Objects, parts, and categories. Journal of Experimental Psychology: General, 113(2), 169-193.
- Wessells, M.G. (1982). Cognitive psychology. New York: Harper & Row, Publishers, Inc., 311-321.

Weyant, J.M., & Smith, L.S. (1987). Getting more by asking for less.

Journal of Applied Social Psychology, 17, 392-400.

Wicks, R., & Drew, D. (1991). Learning from news: Effects of message consistency and medium on recall and inference making. Journalism Quarterly, 68, 155-164.

Wollen, K., & Margres, M. (1987). Bizarreness and the imagery multiprocess model, In McDaniel, M. and Pressley, M., (Eds), Imagery and related mnemonic processes, NY; Springer-Verlag, N.Y.