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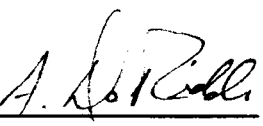
Signature 

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THE EFFECTS OF NEW MELODY FAMILIARITY ON BRAND NAME RECALL IN INTRODUCTORY RADIO JINGLES

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ABSTRACT

This study examines the effect of new melody familiarity on brand name recall using one jingle presentation. The research question was this: Will increased incidence of brand name recall be acheived by one presentation of a radio jingle that uses an unfamiliar melody if the subjects are previously exposed to the same melody? There were three groups of subjects in the experiment. The control group listened to a 42 minute tape of radio formatted music which contained an experimental jingle which incorporated an unfamiliar melody. The treatment given experimental group 1 differed only by the presentation of an experimental treatment in the form of the same unfamiliar melody which appeared in the tape before the experimental jingle. The treatment given experimental group 2 differed from the control group in that a very familiar melody was used in the experimental jingle. Educators often pair unfamiliar stimulus with a familiar stimulus to facilitate learning. Using a similar rationale, the hypothesis was that the control group would have the lowest incidence of brand name recall, group 1 an intermediate level, and group 2 the highest level. Strong covariation effects were discovered that were due to an ordering effect and total number of ads remembered. Although replication is needed to screen out these effects before a strong

conclusion can be reached, according to the results there was no significant difference in recall at a .05 level for all three groups.

TABLE OF CONTENTS

LIST OF FIGURES

INTRODUCTION

Broadcast advertisers constantly seek to make their commercials more effective. Many times the perceived source is manipulated to increase credibility or believability. Often the message is constructed to make it more appealing to the intended audience. One of the most sought after effects of manipulation of the advertising message source and the advertising message is the memorability of the product or brand name. Advertisers generally feel their ads aren't working if these ads aren't consciously remembered.

According to senior editor James P. Forkan in the April 25, 1985, edition of Advertising Age, it has been common knowledge for years within the advertising industry that by taking a popular, familiar melody and making it into a jingle, advertisers associate "fond" memories of the target market with the advertiser's product. This is thought not only to increase recall of the product but also to lead the target market to regard the product in a favorable manner. Forkan saw as a growing trend the adaptation of hit songs of the 1960s into jingles aimed at young, upwardly-mobile professionals. In the same article, John Hill, president of John Hill Music, maintained that when a former hit song is licensed for jingle use, the advertiser is buying all the associations people have for that song.

According to Sherrid in Forbes magazine (1985, p. 214), using familiar music in an ad can sway the audience toward a product by enlisting the good feelings they already have for a popular song, and in this sense, act as "emotional shorthand." She reported that use of familiar popular music in advertising is on the increase. For example,

> Sprint, GTE Corp.'s long-distance telephone service, broadcast a new TV ad featuring a recent hit song by Stevie Wonder, 'I Just Called to Say I Love You.' The commercial ended with a toll-free telephone number for inquiries. Within three days, calls to Sprint's telemarketing center rose 25%. 'The music generated more immediate impact than anything else we have done for Sprint,' says William Lane, an executive creative director at ad agency J. Walter Thompson.

Indeed, according to Thomas B. Ryan, advertising manager for the Lincoln-Mercury Division of the Ford Motor company (Sherrid, 1985, p. 214), by using demographically targeted music advertisers can effectively reach the consumer's emotions. He reported that there exists an almost fervent loyalty among members of his target market for their music--music of the '60s. Further, "It was more than just fond remembrance. They developed an emotional bond with those songs. If you understood their music, you understood them."

Sherrid warned (1985, p. 215), however, that music used badly in advertising "can turn into poison," and a familiar melody can sometimes bring back the original lyric of a song--which, of course, is not the advertiser's intention.

She added that the interrelationship between lyrics, melodies, and emotion is not always straightforward.

As widespread as this practice of using familiar music may be within the advertising industry, there appears to be a dearth of scientific evidence that would indicate that using a familiar melody incorporated into a jingle will increase brand name recall more than an unfamiliar melody would. This study attempts to determine if, upon the initial presentation of a jingle, the use of familiar music will facilitate brand name recall.

CHAPTER 1

PSYCHOLOGICAL OVERVIEW OF ASSOCIATIONAL LEARNING

Learning and memory constitute the cornerstone of effective advertising strategy. The ultimate objective of advertising is either to persuade or to inform, and this cannot occur unless the consumer learns and remembers product-related information on some cognitive level. This chapter provides a brief overview of selected psychological theories of learning and memory and investigates the possible implications they have for the use of music in advertising and brand name recall.

Wilkie and Farris (1976, pp. 1,2), of the Marketing Science Institute, have developed an orientation toward consumer learning and memory that they term "Consumer Information Processing, (CIP)." CIP refers to sequences of mental activities used in a consumer context. These activities can at times relate to evaluation, learning, or decision processes.

> The most common research view of CIP sees the consumer as an information processing system whose operations are somewhat similar to a computer, in the sense that information is put in (received), that it is processed in an internal center, and that something is put out (e.g., a decision is make, an attitude changed, a fact impression is added to memory, etc.)

Wilkie and Farris (1976, p. 2) also said that the

concepts of "long-term memory" (LTM) and "short-term memory" (STM) are integral in the CIP orientation.

> Short-term memory is the active processing center for CIP; it is here that almost all of the activity takes place. Long-term memory is the repository for accumulated experiences, facts, and impressions; it thus provides information that is readily accessible to the consumer. In addition to this role LTM has the crucial function of holding the structures, rules or heuristics that the consumer will use to guide processing activities.

White and Siegel (1976) added yet another category to this list. They postulated that, "We have very short-term, short-term, and long-term memories." They proposed that the brain is an interorganized set of computers, and that knowledge is plural; that is, specific memories are stored in more than one place in the brain.

Bower (1981, p. 134) described an associative network theory of memory and emotion. He stated that human memory can be modeled in terms of an associative network of semantic concepts and schemata that are use to describe events. Further, an occurrence is represented in memory by a cluster of descriptive propositions. These propositions are recorded in memory by creating new associative connections among instances of the concepts used in describing the occurrence. The proposition is the basic unit of thought, and the contents of consciousness are the concepts, sensations, and propositions whose activation level currently exceeds some threshold. Presumably,

activation spreads from one proposition to another, or from one concept to another, by an associative linkage between them. An apt analogy would be an electrical network where terminals correspond to events or concept nodes (units). Within this network, connecting wires would correspond to associative relations with varying degrees of resistance and electrical energy would correspond to activation that is injected into one or more nodes (units). Node activation can be accomplished either by prior activation of an associated thought or by presentation of the corresponding stimulus pattern. Or in other words, for a concept or event stored in memory to exceed threshold and become remembered, one of two conditions must occur--either the context in which this concept was learned must be reinstated to the degree of similarity that remembrance occurs, or the subject must be already thinking about concepts which are already associatively linked with the to-be-remembered concept.

This model of memory retrieval is very similar to the models of Anderson and Collins and Loftus (Ratcliff & McKoon, p. 454). In these models, memory is assumed to be an interlinked network of nodes. Here again, each node represents a concept, and links between nodes represent relations between concepts. In these models, however, concepts are activated during the retrieval of information from memory, and activation spreads through the network. When activation from two concepts intersects, the path

between the concepts is retrieved; that is, it becomes available to decision and response processes.

Runquist, Pullybank, and Whyte (1982, p. 225) said, "In many situations demanding the use of information stored in memory, a person acquires different items of information in different contexts and is required to retrieve specific target information when provided with a representation of the context as a cue." This suggests that associational pairing between familiar and unfamiliar stimuli takes place and that representation context (familiar stimulus) prompts the recall of the associationally paired target information (unfamiliar stimulus).

Donaldson (1981, p. 316) did a study on context effects in recognition memory and determined the need to examine both item and contextual information when assessing recognition memory. He found that when appropriate contextual information occurs in a same-context test, a superior recognition performance is produced, which he labeled the context effect.

A slightly different approach was taken by Estes (1976, p. 43). Estes developed the "Associative Coding Model," which states as a basic assumption that when a behavioral occurrence (response or stimulus) happens in a background context, a trace of this experience is laid down in the central nervous system. Later reactivation of this trace may be experienced later by similar stimulus inputs to

generate either a partial or full reinstatement of the original experience from the individual's standpoint.

Estes (1976, p. 44) added that after a number of experiences, a number of these trace vectors are laid down in the memory. The result is that as new situations are experienced, the stimulus input from each is directed to the system of trace elements. Only if a corresponding match of the new stimuli to one of the trace elements occurs is the stimuli input transmitted on through the system and allowed to activate associative connections of the matching control component with other components in the response system or the memory system.

Spear (1978, p. 406) offered a similar, but differently worded approach with his "Encoding Specificity Theory."

> Encoding specificity theory assumes that whenever an event (such as a word) is perceived, the representation of that event is stored together with the representation of accompanying events; that is all perceived events of an episode are stored together as a conglomerate entity. If a given word is to be recalled on a retention test, its retrieval therefore depends on the presence of test events that sufficiently match those of the original episode.

This suggests that the recurrence of the context in which the advertising stimulus was learned is instrumental in prompting the memory retrieval of this stimulus.

In 1935, Koffka postulated (Greeno, James, DePolito, & Polson, 1978, p. 6), ". . . that a (memory) trace

will influence a (cognitive) process in such a way that the reactive influence exerted by the process on the trace will not diminish, but if possible increase, the latter's stability." According to Greeno, James, DePolito, and Polson (1978, pp. 6-7), this means that if part of a trace system were activated without the whole system becoming active, the stability of the system would decrease. They went further to say this implication explained the retrieval of associations, and that:

> When a part of the trace system that constitutes an association (presumably a 'relatively segregated subunit') becomes active, the whole trace system becomes active, because trace systems tend to maintain their stability. Retrieval of associations is therefore a process of redintegration.

Nelson and Friedrich (1980, p. 717) maintained the encoding of a familiar experience is best described as the product of a complex interaction between previously acquired and current related experiences. Later recall for the recent experience will be a function of the results of this interaction, including both qualitative aspects and quantitative aspects. They added:

> In this instance, quantitative aspects refer to the number of related past experiences implicitly or explicitly activated by the event and subsequently encoded. Qualitative characteristics refer to different types of information being functionally encoded, including information related to appearance, name, and meaning.

Nelson and Friedrich (1980, p. 730) conducted research on encoding and cuing and determined that recall prompted by a sensory cue is not limited by implication, to the domain of sensory information, and, similarly, recall prompted by a semantic cue is not necessarily limited to the domain of semantic information. They added, "The retrieval process is apparently more reconstructive, with successful recall mediated primarily by recapitulation of the study-trial encoding, no matter what type of cue is shown at test." Their results indicated that in the absence of specific contextual cues, subjects will ordinarily focus on meaning because of habitual modes of semantic processing. In their conclusion they state that at present, it is not clear how much of our ability to recall a meaningful experience can be attributed to sensory information in the trace and how much can be attributed to semantic information. They added, "All that is presently clear is that both kinds of information are often apparently encoded and that separating their relative contributions is a little like recovering the first two raindrops from a barrel of water."

Greeno, James, DaPolito, and Polson (1978, p. 68) also added that associationist theory views the processes of stimulus encoding and response learning as auxiliary processes, brought about by the demands of the task, and capable of being understood in terms of undifferentiated connections between mental elements. They maintained:

> Learning to distinguish among stimuli is a process of associating distinctive meaning responses to physically similar stimuli. And learning a response involves overcoming interfering associations when the components are combined in unusual stimuli. In associationist theory, there are many kinds of associative learning in a paired-associate experiment, and formation of a connection between the stimulus and response seems to play a relatively minor role in the whole process.

Associational theory relies heavily upon the idea that a trace of memory exists in the brain, and that by activating these traces, remembrance occurs. However, according to Thompson, Barchas, Clark, Donegan, Kettner, Lavond, Madden, Mauk, and McCormick (1984, p. 71), the nature of the memory trace has proven to be among the most baffling questions in science. Further, the current analysis of brain mechanisms of memory and learning confronts problems that are both conceptual and empirical. To be able to analyze mechanisms of information retrieval and storage it is first requisite to identify and localize the brain structures, regions, and systems that are critically involved. Such information, with a very few exceptions, has not yet been obtained. Before such processes can be analyzed, it would seem necessary to know where they occur. Perhaps the greatest barrier to progress in the field is this problem of localization.

In the field of cognitive psychology, Lingle and Ostrom (1981) used a cognitive response approach toward attitude change and have demonstrated that, ". . . people's

self-generated thought about persuasive communications are remembered and mediated later judgements." An example of this kind of self-generated thought people may remember are the emotion-laden connotations we possibly attach to the advertising jingle we thoughtlessly hum as we drive to work in the morning.

In a similar vein, Patterson (1979) suggested that,

> . . . learning and the nervous system processes that underlie the behavioral changes seen during learning can be manifest in many different types of alterations, each with varying levels of complexity. Therefore, the capabilities a subject brings to the situation as well as neural activity present at the time of the learning must be taken into account.

Patterson stressed that there are many variables which affect, and sometimes interfere, with learning, and that there is no such thing as "simple learning."

Le Francois (1982, p. 51) wrote about the principles of operant conditioning in relation to learning. Operant conditioning attempts to identify and use the relationships that exist between reinforcement and behavior. This theory states that a primary reinforcer is a stimulus that is reinforcing without learning. Food, in this sense, would constitute a primary reinforcer because presumably people do not have to learn that eating is a good thing.

A general reinforcer, however, (Le Francois, 1982, p.51) is, ". . . a previously neutral stimulus that, through repeated pairings with a number of other reinforcers in

various situations, has become reinforcing for many behaviors. Prestige, money, and success are examples of extremely powerful generalized reinforcers."

The concept of generalized reinforcement is important to the advertising strategist. It is up to the strategist to determine which generalized reinforcer can best be paired with target information to create the most effective memory recall and brand awareness for the advertised product. Music may function as a generalized reinforcer, for, in general, it appears to be a previously neutral stimulus that, through repeated pairings with other reinforcers, has become reinforcing for many behaviors.

Le Francois (1982, p. 39) also said that repetition of the message is optimal if learning is to occur, and that (p. 149), ". . .material that is meaningful is more easily learned and is remembered for longer periods of time than is insignificant material."

In his analysis, Le Francois (1982, p. 154) included the concept of "transfer," the effects of old learning on new learning. He said transfer can either be positive or negative, and that positive transfer occurs when previous learning expedites new learning.

Greeno, James, DaPolito, and Polson (1978, p. 99) stated that in associationist (associational) theory the concept of generalization explains positive transfer between associations, with the simplest case involving two

associations having the same response and physically similar stimuli. Further, once a response has been associated with a stimulus, if the other similar stimulus is presented, a subject is likely to respond to this second stimulus in the same manner. In associationist theory, the strength of the generalized association depends on the degree of similarity between the stimuli, and when a new item is presented, there is some strength of association that generalizes to it. In the framework of concepts used by associationist theory it is reasonable to postulate that stimuli that sound alike or look alike will engender stimulus generalization. For instance, the action in the nervous system caused by a certain pattern of sound waves becomes connected to a particular response. When a very similar pattern of sound waves is presented, the brain activity caused by this second stimulus is probably very similar to the brain activity that is associated with the response. This resemblance is so strong that the response is likely to occur when the new but similar pattern of sound waves is presented to the subject.

Another related orientation was proposed by Sawyer and Ward (1976, p. 30). They have developed a "recipient-generated cognitive responses" hypothesis which holds,

> . . .the underlying process linking learning and attitudes involves thoughts generated by the recipient during communication. These 'cognitive responses' include counter-arguments, supportive arguments, source derogation, and curiosity.

They suggested it is not so much that the content of the message is important, but rather how we internally react to that content.

Sawyer and Ward (1976, p.31) also suggested, ". . . message content that is rehearsed, processed, or reacted to in some manner is placed in a secondary memory that may be critical to long-term communication effects." This suggests there is an "active" component to individualized learning which, if present, facilitates learning. By implication, if we could somehow cause our target audience to be more active in rehearsing, processing, or reacting to our target advertising message, there would be a greater chance of ad recall. Perhaps using familiar music with which to pair brand names in jingles will facilitate this activity.

In summary, many variables affect learning and memory. Among these; context, association, repetition, positive transfer, learner predisposition, rehearsal, and perceived reinforcement are salient concepts which are considered instrumental in the learning process. Applying these concepts to jingle advertising, it seems apparent that appropriate context could aid advertising message delivery immensely. For example, using external context, we would consider the potential consumer listening to the radio while stuck in a traffic jam an almost captive audience--therefore in an expeditious context which will enhance message receptivity. Using this idea of context within the jingle

itself, it seems reasonable that a melodic, catchy tune will work better to facilitate brand name recall than discordant, atonal music, simply because the catchy tune will probably linger longer in the mind and will be more easily recalled. If it is a really well-liked tune, possibly positive transfer will take place--which should increase the subject's positive feelings toward the target brand. Perhaps if the tune is repeated often enough, the subject will remember it well enough to rehearse it in his mind, which very possibly will cause him to remember, through association, the target brand. Furthermore, if the subject perceives reinforcement from the music after listening to the jingle, he may become favorably predisposed to attend to the advertising message within the jingle.

CHAPTER 2

MUSIC AS A GENERALIZED REINFORCER

Music can move us to dance or move us to tears, to make love or to fight. It can ease our lonely and anxious moments and inspire our most exalted religious feelings. Although its pleasures are many, it can also be irksome and almost maddening. According to Rosenfeld (1985, p. 48),

> (i)t is created by people to affect and communicate with other people. In one sense, it's no surprise that music grabs us--it's supposed to. But once you look at the process, it seems quite miraculous that people can bowl one another over just by jiggling sound waves.

She added that is a miracle similar to that of language, and that there is enough resemblance to have provoked serious study of their similarities. She maintained, however, "music is more than a language."

Rosenfeld (1985, p. 48), also said,

> Psychologists, philosophers, musicians and musicologists have been trying to understand music's emotional power for some time. Nonetheless, there's still no neat, complete theory or body of data that can explain how it works. . . . No matter how meticulously people analyze music and its power over our emotions, it remains elusive, evading verbalization and--like other arts, humor and love--largely slipping through the net of scientific enquiry.

There is no doubt that music has an effect upon an audience. In 1980, Vyatkin and Dorfman studied the effect of music upon sensorimotor behavior as a function of

"neurodynamic characteristics" and concluded that music does not have an invariant, single effect and that emotional characteristics of the music interact with the sensorimotor qualities of those who listen to it.

According to Halpern (1984, p. 496), humans are able producers of music from infancy to old age. Even before reaching an age of two years old, children can produce spontaneous songs that incorporate distinct pitches and occasional rhythmic patterns. The majority of adults can whistle or sing an enormous repertory of songs and fragments of larger pieces, and people of all ages are competent and enthusiastic music listeners.

McKernon (Halpern, 1984, p. 497) reported that young children can initially produce the phrase boundaries, contour and the correct pace of a song, and that later they produce the right rhythm.

Infante and Berg (1979, p. 135) noted that several analysts have speculated on the function of music in social influence situations. They reported that although there has been little experimental research on the matter, the studies which have been conducted suggest the persuasive potency of music. They added,

> Music appears to stimulate affective responses in people which influence other salient objects of judgment. The versatility of music is such that it probably is capable of stimulating nearly any human emotion. Theorists since Aristotle have emphasized the importance of placing the receiver of a message in a frame of mind, or emotional state, appropriate to the

message purpose. Music may be one of the means for accomplishing this.

A study by Fried and Berkowitz (1979, p. 199) indicated that aversive music arouses negative feelings while stimulating and soothing music creates different positive moods.

In a more recent study, Zakharova and Avdeyev (1982) have shown, ". . .music exerted complex influences on the central nervous system, manifested in changes in a number of neurophysical reactions that caused changes in the flow of excitations in the cortico-thalamic and cortico-limbic circles." They were also able to define some qualitative differences in the action of music on the central nervous system of their subjects, depending upon the presence or absence of musical education of the listeners and the interpretation of the composition.

Music has been described by composer Robert Sessions (Rosenfeld, 1985, p. 48) as "controlled movement of sound in time." Rosenfeld maintained that the notion of control in music is especially important, and adds, "music is rarely the spontaneous outpouring of whatever sounds someone happens to be moved to make. It is highly patterned sound, chosen and shaped, consciously or not, in quite logical ways that often follow rigid rules."

Composers and musicians have realized that the elements

of music are capable of manipulation so as to produce particular effects. According to Infante and Berg (1979, p. 135), one of the most important of these elements is modality. "Technically, modality refers to the arrangement of the eight diatonic tones of an octave according to one of certain fixed schemes of their intervals."

Rosenfeld (1985, p. 50) maintained that cultural environment dictates in large measure what music is and how it is to be structured. Furthermore,

> We all learn certain rules intuitively, simply by exposure, and if we go on with formal musical training, we learn still more. The rules provide a common framework of expectation that helps composers to organize their musical thought and listeners to track them. One such rule in much of Western music is that a piece of music should be key, with notes selected in accord with that key; further, the piece should end on the key's main note.

Dowling (1978, p. 342) stated that the cultures of the world, with few exceptions, use discrete changes of pitch along a musical scale in creating their melodies. He wondered why, since the singing voice and many early instruments are capable of producing a continuous variation of pitch, that the music of the world moves by discrete steps. He added that the functions of the melody or of music itself are as obscure as the ultimate biological functions of discrete steps, and that this focus may prove a fruitful avenue of scientific enquiry.

Infante and Berg (1979, p. 136) explained that a

melody can be composed in either the major or minor mode, and went further to say,

> In the evolution of Western harmonic practice, the major and minor modes have acquired a set of connotative meanings. It is generally assumed that feelings of happiness, hopefulness, and stability are stimulated by the major mode. On the other hand, it is believed that expressions of sadness, pessimism, and instability are created by the minor mode.

Musicologist Leonard Meyer (Rosenfeld, 1985, p. 50) argued that while listening to music we spin out certain expectations about how that music will proceed based on our cultural learning. He contended,

> When the music conforms to our expectations, we relax, but if it deviates somewhat, we become tense. It is the artful succession of tiny expectations, frustrated and fulfilled, and the related tension and release that form the basis for our emotional responses to music.

Rosenfeld (1985, p. 50) maintained,

> We become bored with the regularity of a piece that's too predictable, and uncomfortable with one that deviates too much from what's known and expected. If it's mostly predictable but has occasional quite strange deviations, we're surprised or amused.

Meyer also pointed out (Rosenfeld, 1985, p. 50) that music is usually arranged so that certain melodies or themes are introduced, repeated and alternated with other melodies or themes, but then the original ones eventually return and give us a comforting sense of completion when they do. He noted that this is true for many diverse styles of music,

ranging from the classical symphony to folk or popular music.

Rosenfeld (1985, p. 51) also cited work done by psychologist Kate Hevner, who found in the 1930s that listeners usually judged the mood of various short musical excerpts similarly, and that their judgments depended on specific elements in the music. For example, people described the mood of low-pitched music as sad and serious, while high-pitched music was judged happy and playful. Hevner examined the effects of many different musical elements and discovered that tempo to be the single most important factor.

Much of the psychological research of music investigates how individual melodies are represented in memory (Halpern, 1984, p. 497). Further,

> These studies of melody perception form the basis of hypotheses about the musical relations that may exist among the melodies. Some aspects of a melody that are important in its representation may be the intervals between contiguous or non-contiguous pairs of notes, the contour (pattern of ups and downs of successive notes), the harmonic relation of each note to the tune's tonal center, and rhythm.

Rhythm alone can be a reliable cue to a familiar song's identity (White, 1960, p. 107). Many researchers have found people are excellent producers, perceivers, and perhaps rememberers of rhythmic patterns.

Dowling and Bartlett (1981) demonstrated the importance of individual interval size in melody recognition. In

particular, they found that interval information is especially important in long-term memory for real music. This suggests that in retrieving a musical melody, exact interval knowledge could prove crucial in a fast search.

Dowling (1973, p. 37) did a study involving memory for brief melodic phrases that was tested using a short-term recognition-memory paradigm. The results support the idea that rhythmic grouping of input determines subjective chunking and memory formation and storage, which in his study appeared to facilitate the recognition of test items chunked in the same way as list items.

In 1978, Dowling (p. 341) wrote an article which develops a two-component model of how melodies are stored in long and short-term memory. Further,

> The first component is the overlearned perceptual-motor schema of the musical scale. Evidence is presented supporting the lifetime stability of scales and the fact that they seem to have a basically logarithmic form cross-culturally. The second component, melodic contour, is shown to function independently of pitch interval sequence in memory.

Dowling noted (1978, p. 341) that if people who belong to Western-European culture hear a melody from some other culture using a non-Western scale, their subsequent reproductions of that melody will use their own Western scale while preserving the contour of the original melody. He made the important point that this Western scale functions as a classic example of a sensorimotor schema

controlling perception and behavior, for in this instance the non-Western melody was assimilated to the Western schema.

In affinity with this idea, Shepard and Jordan (1984, p. 1333) maintained that the diverse phenomena of perception and memory indicate that our experience is determined by external inputs as well as internal schemata. They believe this explains why musical tones, while physically variable along a continuum of frequency, tend to be interpreted categorically as the discrete notes of an internalized musical scale. Their results indicated that Western listeners interpret the tones relative to the Western major diatonic scale (do, re, mi, . . .) even when they try to judge the purely physical relations between the tones.

Bharucha and Krumhansl (1983, p. 63) stated that our capability to appreciate most Western music presupposes cognitive structures which are able to abstract underlying harmonic structure from a complicated string of musical events. They provided a description of the listener's knowledge of hierarchies of harmonic stability, and posited that the organization on harmonic information may be summarized by six principles. The three principles which govern harmonic organization independent of context are "Key Membership, Intrakey Distance, and Intrakey Asymmetry." The three principles which govern harmonic organization in the presence of a tonal context are "Contextual Identity,

Contextual Distance and Contextual Asymmetry." Further, "Chords that are members of the same key are represented in a hierarchy of stability that is independent of context. Chords from different keys are represented in a hierarchy of stability that is dependent upon the prevailing context."

Concerning the abstract structure of music (Bharucha & Krumhansl, 1983, p. 64), the theory that has prevailed offers a description of music in terms of two fundamental concepts. The foremost is the hierarchy of stability that relates to the dozen tones of the chromatic scale within an octave range. The concept of stability refers to the actuality that certain tones are perceived as more final. Because of this perception, these tones serve as better endings of melodic phrases than do others, which need 'resolution' to more stable tones in the system. The tones that appear more frequently, with rhythmic stress and in prominent positions, are generally the more stable ones. One single tone, called the tonic, is the most stable tone in the hierarchy of stability. The tonic is also the first tone in Western musical scales. Any tone can function as the tonic, or in other words, melodies are transposable. This means that the arrangement of the tonal hierarchy depends upon the context and is determined by the temporal ordering and employment of tones from a particular scale.

Cuddy, Cohen, and Miller (1979, p. 148) stated that melodies transposed to different keys are recognized even

though the absolute frequencies of the tones are changed, and that musical transposition involves recognition of acoustic pattern or form. They suggested (1979, p. 149) that apprehension of the structure described by musical rules enables the audience to detect tone ratios. How easily the structure is apprehended determines the ease of melody recognition under transposition.

Bharucha and Krumhansl (1983, p. 64) explained further that in Western music the second fundamental organizing concept is the harmonic functioning of simultaneously sounded tones in chords. Most work done by music theorists has dealt with harmonic organization. Further, it is noteworthy that although many surface aspects of music have changed drastically over the last four centuries, the underlying harmonic structure has remained constant for the most part. "Popular forms of music still cling to the traditional emphasis on triads built on the tonic (I), the dominant (V), and the subdominant (IV) chords."

Music theory suggests (Bharucha & Krumhansl, 1983, p. 65) that the units of harmonic analysis are chords. When analyzing a piece of music, the chords may not actually be present in the music as simultaneously sounded tones. Instead it is possible that they are implied by a sequence of successive tones (i.e., a melody). Further,

> The analysis of tonal melodies in music theory thus invariably makes reference to the underlying--or implied--harmonic structure. The music theoretic

> analysis of music into abstract chord functions suggest the possibility that listeners have an internal representation of these chord functions which may be activated not only by direct sounding of these chords, but also by certain melodic patterns.

Bharucha and Krumhansl (1983, p. 67) suggested that the internal representation of harmony is a fruitful focus of study. They maintained that since there has been no careful empirical investigation of harmonic structure, we cannot be sure that the average listener is extracting all or any part of this structure. Comparing music to language, this point is even more critical for music than it is for language for the following reason. Everyone creates novel sentences in a language. A necessary condition for the production of novel sentences is linguistic competence. Therefore, such competence can be inferred in every speaker. Musical competence, however, cannot be inferred in the majority of people, who do not produce novel musical sequences in improvisation or composition. Almost all people listen to music, however, and there is forceful reason to suppose that they 'comprehend' it, that is, extract some uniting, underlying structure. To support this is the fact that the acceptance by the public of atonally structured or unstructured music has been meager, although various composers have tried to introduce music based on other than the tonal structures occurring in the present century.

Therefore, it would seem that most listeners do have considerable knowledge of structure in music.

Bharucha and Krumhansl also noted that tones in the immediate pitch vicinity of the tonic are perceived with reference to it, and generally, single tones which are less stable are perceived with reference to more stable tones. They suggested that stable tones and chords function as cognitive reference points.

Why do we listen to music? What is it about music that makes us want to listen? Obviously some music is reinforcing. While the pattern of brain activation which occurs when people listen and emotionally react to music has yet to be revealed (Rosenfeld, p. 55), Goldstein conducted a study which has revealed that brain chemicals may be involved in people's intense enjoyment of music. Specifically, he examined what gives people "thrills," those feelings which occur when people experience sudden changes in emotion. He reported that subjects described the sensation as feeling like a shudder, chill, tickling or tingling, often accompanied by weeping, goose bumps, or a lump in the throat. Goldstein analyzed the self-reports of over 250 subjects, and found that the most frequently mentioned thrills occur in response to music (96 percent of respondents)--which is far more than the rate for sexual activity (70 percent), an expected thriller. Assuming that the thrill experience involved naturally occurring brain

opiates (endorphins), which are considered to be involved in many types of 'highs,' he compared volunteers' responses to thrilling music of their own selection before and after they received either a placebo or naloxone, a drug that blocks brain opiates. Goldstein discovered that while the effect was not pronounced, naloxone did appreciably lessen musical thrills in some listeners.

Goldstein said (Rosenfeld, 1985, p. 55) this thrill sensation clearly involves the autonomic nervous system, and suggests that it may arise from a brain area that is linked to the limbic system, which is a subcortical area heavily involved in people's emotional reaction.

Johnson (Rosenfeld, 1985, p. 55) reported that subjects' heart rates increased when they experience this thrill sensation and decreased when they do not. He found that the subjects tended to have the same pattern of thrills each time they listened to a particular piece of music, although the intensity varied from hearing to hearing. However, not all the subjects who listened to the same piece of music respond with the same thrill pattern. He noted,

> Evidently, the emotional content is perceived differently by different people. . . .Often, subjects told me, what makes a certain musical passage able to elicit thrills is some association with an emotionally charged event or a particular person in the subject's past, as though the music had become a conditioned stimulus for the emotional response.

From a psychodynamic perspective (Sales Giglio & Garcia Giglio, 1980), music is seen as giving expression to life through release of libidinal energy--mainly through rhythm. They also maintained that music is perceived as highly symbolic because of its ambiguity and simultaneity of elements. It influences the integrative and dissociative functions of the ego's cognitive style.

Studies suggest (Fried and Berkowitz, 1979, p. 199) that industrial music is reinforcing to the extent that it helps the performance of simple repetitive jobs and can also improve the morale of employees. The beneficial effects of music have often been attested to by musical therapists, who cite studies that indicate music tends to heighten pleasant interactions. They also pointed out (p. 201) that music can create negative as well as positive feelings. They believe that the audience might regard some music as nothing but "noise," and that noise can be aversive.

Fontaine and Schwalm (1979, p. 71) found that not only that familiar music increased heart rate but also significantly increased subjects' performance in a "vigilance" task, which is one that requires sustained attention (for instance, driving). They noted that no matter what type was played, as long as it was familiar to the subject, music (p. 73) significantly increased arousal and overall percent detections on a vigilance task.

Even when music is not initially reinforcing, results from a study by Dorow (1980, p. 8) indicate that subjects can be conditioned, through pairing with food, to experience that music as reinforcing. Dorow used a severely retarded, nonambulatory 15-year-old girl as a subject and found that during the maintenance phase (p. 12) the effectiveness of the music as a reinforcer did not decrease when it was no longer paired with food.

Examining the relation between music and advertising, Gorn (1980) used a classical conditioning approach in a study of the effects of music in advertising on choice behavior. He used liked or disliked music (as indicated by the subject) and found that simple association between a product and another stimulus can affect product preference.

Park and Young (1986, p. 11) studied the impact of involvement and background music on brand attitude formation in consumer response to television commercials and reported that the results indicate that the effect of music on brand attitude depends on the type and level of involvement. Further, involvement can be understood by the degree of personal relevance or importance. They added,

> When subjects find message information personally relevant or important, they are expected to devote considerably more attentional capacity to the message contents and to process that information at a deeper level than they would when they do not find the message information relevant.

They believe that a subject's level of involvement can be identified as either a low- or high-involvement condition, and that the high-involvement condition can be further differentiated into two types, cognitive and affective. Their results indicated that music had a distracting effect for subjects in the cognitive involvement condition and a facilitative effect on brand attitude for those in the low involvement condition.

In conclusion, although music definitely has an effect upon the persuasive communication used in advertising, this effect is evidently not a straightforward one. It is doubtful that babies are born with the desire to listen to music--rather, this is probably a learned behavior, which would make music, by definition, a generalized reinforcer. Further, because of the tremendous amount of music listening behavior exhibited by the general public, some music must serve the function of a learned general reinforcer. In the experiment, a particular melody will be paired to a specific brand name to examine if prior exposure to this melody will increase brand name recall.

CHAPTER 3

METHODOLOGY

People do not remember every radio commercial they hear. Some commercials are superficially processed by the mind and then forgotten immediately. Others appear to be ignored entirely. Most people do not turn on the radio to listen to commercials. Since radio advertisers have to deal with this "passive" audience, they have to format their commercial in such a way as to increase the likelihood their advertising message will be perceived, mentally processed, and then remembered.

The research question addressed in this study is: Will using a familiar melody in an introductory jingle be more effective in producing brand name recall than using an unfamiliar melody? Before the design of this experiment is explained, the word "introductory," which was used in the title of this study, needs to be operationally defined. In this study this word will not mean initial product introduction to the market. Rather, it will refer to the initial presentation of the radio jingle. This has to be the case because if any new or unfamiliar music is used in an ad and repeated often enough, it will become familiar to the listening audience. So what this study is attempting to measure will be the level of memory recall resulting from

just one exposure to the experimental commercial. Similarly, "familiarity" will be operationally defined as one exposure to a melody. Playing a melody more times througout a tape of radio formatted music would further ensure remembrance for the tune, but was not done in experiment for fear of unduly sensitizing the subjects to the experimental melody.

Many times radio advertisers create new melodies for jingles without doing any research into the potential effectiveness of any particular melody. Rather, they speculate and then "play a hunch." Hopefully, findings from this study will help indicate the optimal choice for these advertisers--either to create a new melody for an advertisement, or to use an existing familiar melody.

The subjects, selected by convenience, were recruited from undergraduate Communication classes. They were assigned to one of three groups: the control group, experimental group 1, and experimental group 2. Random sampling was attempted but was not realized in this study. A sample size of 30 was sought for each group because statistically significant inferences can be reliably drawn from a sample of 30 or more. However, only 23 subjects were in the control group, 16 subjects were in experimental group 1, and 28 subjects were in experimental group 2.

All three groups were exposed to a 42-minute tape of

commercial-radio formatted music (T2--See figure 1) which was interspersed with nine radio commercials. In order of appearance on the tapes, these commercial advertised Bubble Yum bubble gum, Lipton iced tea, Lays meats, Gulfpride oil, Pabst extra light beer, Chevrolet, Fantastic Sams hairstyling salons, Seven-up soft drink, and First Tennessee Bank. For the sake of brevity, these commercials will be hereafter referred to as Bubble, Lipton, Lays, Gulf, Pabst, Chevy, Sams, Seven, and Bank, respectively.

The experimental group 1 tape contained an experimental treatment (T1--See Figure 1) consisting of an unfamiliar melody. No other group received this treatment. This melody was the third song heard on this tape of music. The control group tape is identical to this tape except, instead of using this unfamiliar melody, another melody was used. Both the experimental group 1 and the control group were then presented with an identical "test" commercial (T3--See Figure 1), which occurred in this tape as the sixth commercial, and near the end of the tape. This test commercial was in the form of a jingle which incorporated the same unfamiliar melody used in T1. The brand name "Chevrolet" was mentioned three times in this advertisement--twice in the song and once in the spoken tag line. The question is: Will previous exposure to a melody increase the incidence of brand name recall of a product which uses the same melody in an advertising jingle?

RESEARCH DESIGN

Control Group	--	T2	T3	M1
Experimental Group I	T1	T2	T3	M1
Experimental Group II	--	T2	T4	M1

FIGURE 1. Research Design.

T1=unfamiliar melody

T2=nine commercials plus music (radio format)

T3=test commercial using the unfamiliar melody found in T1

T4=test commercial using the familiar melody (Rockytop)

M1=unaided recall of all brand names

Educators often pair unfamiliar stimuli with familiar stimuli to facilitate the learning process. Using a similar rationale, the hypothesis is, with all other variables remaining constant, that those subjects in experimental group 1 will experience a higher incidence of brand name recall for the test commercial than will the subjects in the control group.

Assuming that one exposure to the experimental melody will cause this melody to become familiar to the subjects in the experimental group, they should be able to more easily recall the test commercial brand name because of prior mental associations. In other words, since some of the sensory information (the melody) contained in the jingle has already (possibly) been encoded into memory before it was paired with the new stimulus consisting of the brand name, reactivation of the memory trace containing this new stimulus should be more likely because the previously encoded melody will serve as a cognitive reference point facilitating this reactivation.

The tape used for experimental group 2 carries this notion even further. This tape is identical to the one used for the control group except that the test commercial was changed. In its place was substituted another commercial which promoted the same brand name, used the same spoken tag line, but used a different melody. This melody was the state song of Tennessee--Rockytop. The hypothesis is that

the subjects in this group will experience an even greater incidence of brand name recall since the memory of this melody probably already exists in the subjects long-term memory. And because this memory already exists, the new stimulus with which it was paired (the brand name) should be easier for the minds of the subjects to access.

After the tape was played for each group, all the subjects were immediately asked which, if any, commercials they remembered (M1--See Figure 1). If the hypothesis was correct, there will be three levels of brand name recall exhibited by the experimental results. The control group should exhibit the lowest level of target brand name recall. Experimental group 1, which was subjected to the experimental treatment using the unfamiliar melody, should exhibit an intermediary level of brand name recall. Experimental group 2, which was subjected to the experimental treatment using a very familiar melody, should exhibit the highest level of brand name recall.

CHAPTER 4

EXPERIMENTAL RESULTS

Using analysis of variance (ANOVA), strong covariance variables were discovered. The total number of ads remembered by each group affected the number of times that group remembered the target commercial. Apparently, the ability to recall radio ads is not randomly distributed throughout the population, and this resulted in unmatched groups in this respect. Although this covariate affect was noticeable, it was not as pronounced as the ordering effect which was strongly evidenced in all three groups. Members of all groups had a pronounced tendency to list the commercials they remembered in the order in which they were presented in the tape. Using ANOVA, this covariance caused by this ordering effect and recall ability was adjusted for in each group's total recall score. Using these adjusted scores, the overall per cent recall varied only slightly between groups. The overall grand mean recall score for all groups for all commercials was 44.44%, the mean recall score for the control group was 44.33%, the mean recall score for experimental group 1 was lowest at 43.88%, while the mean recall score for experimental group 2 was highest at 44.66%.

The results of the compiled scores for the target commercials in all three groups did not support the

hypothesis, and the null hypothesis was confirmed. Figure 2 and Table 1 show there was variance between all groups after scores were altered to account for covariance. Had the hypothesis been correct, there should been no variance among any of the groups except for the Chevy test commercial. As shown in Figure 2 and Table 1, recall scores for the Chevy ad varied only slightly. The overall grand mean for this ad among all three groups was 58%, the control group experienced the highest recall level at 62%, the experimental group 1 had the next highest recall level at 57%, while experimental group 2 had the lowest recall level at 55%. While these scores indicate a slight inverse relationship instead of the expected positive relationship between melody familiarity and brand name recall, Table 2 shows that the variance caused by the experimental treatment was not significant at a .05 level.

On the average, the Lays commercial (See Figure 2) was the most recalled ad of all three groups, the Lipton ad the second most recalled ad, while the Chevy and Sams commercial were tied as being the third most recalled ads. The largest variation among the groups for a single ad was found in the Lays commercial (See Figure 2 and Table 1), where 78% of the subjects in experimental group two remembered the Lays brand name, while only 49% of those in experimental group 1 remembered this brand name.

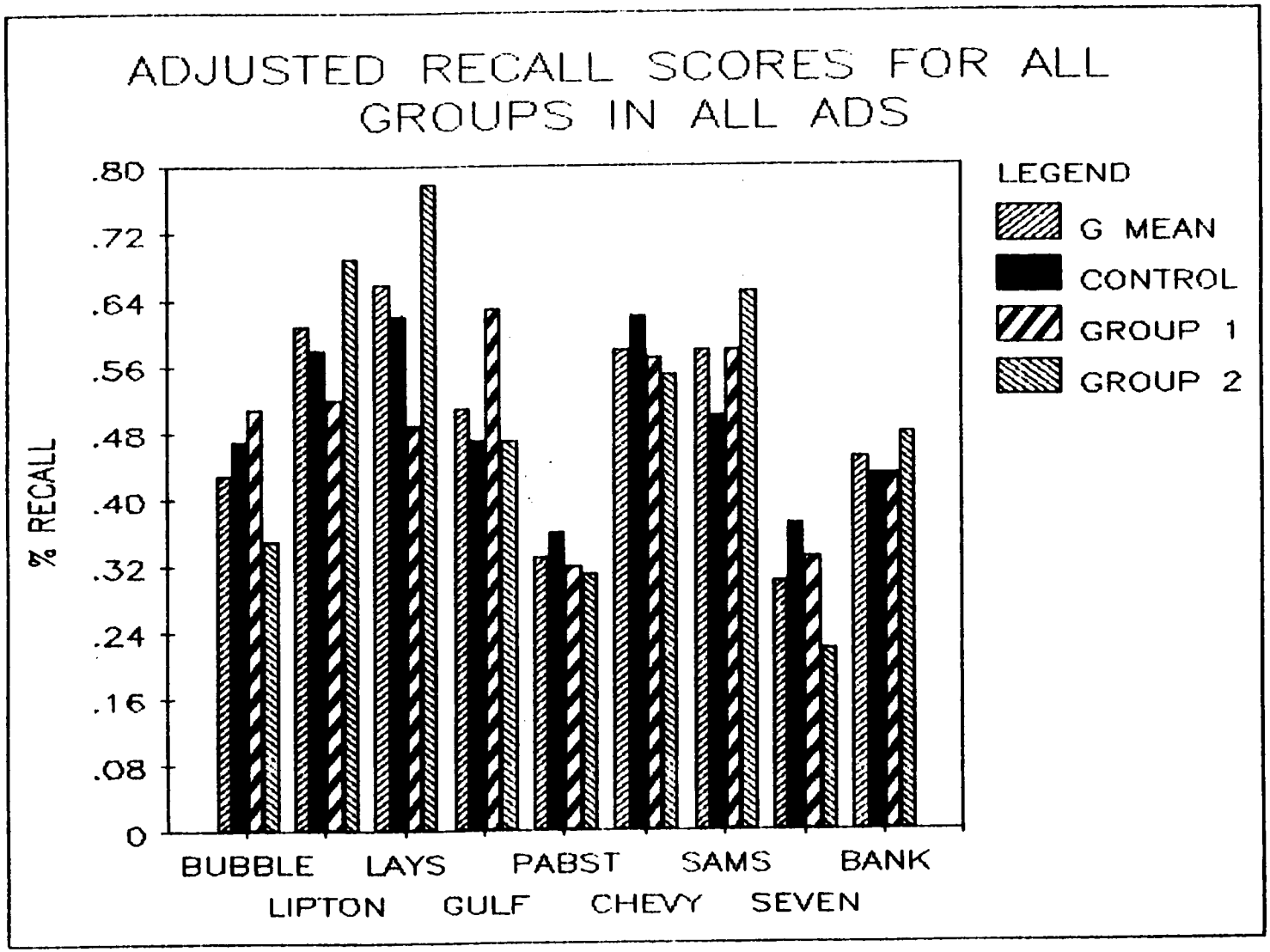

FIGURE 2. Adjusted recall scores for all groups in all ads.

TABLE 1

ADJUSTED RECALL SCORES OF ALL GROUPS FOR ALL ADS

Commercial	Grand Mean	Control Group	Group 1	Group 2
Bubble Yum	0.43	0.47	0.51	0.35
Lipton	0.61	0.58	0.52	0.69
Lays	0.66	0.62	0.49	0.78
Gulf	0.51	0.47	0.63	0.47
Pabst	0.33	0.36	0.32	0.31
Chevrolet	0.58	0.62	0.57	0.55
Fantastic Sams	0.58	0.50	0.58	0.65
First TN Bank	0.30	0.37	0.33	0.22

TABLE 2

ANALYSIS OF VARIANCE RESULTS

Commercial	R2	Source of Variation	Sum of Sqares	F	Sig of F
Bubble	0.616	Main	9.827	48.19223	0.000
		Total	0.942	9.241683	0.003
		Order	6.251	61.30510	0.000
Lipton	0.469	Main	7.124	26.12264	0.000
		Total	0.200	1.467889	0.230
		Order	4.829	35.41845	0.000
Lays	0.635	Main	0.872	4.905804	0.011
		Total	0.034	0.378954	0.540
		Order	6.123	68.91602	0.000
Gulf	0.686	Main	0.297	1.747216	0.183
		Total	0.009	0.104930	0.747
		Order	7.207	84.81218	0.000
Pabst	0.730	Main	0.040	0.311181	0.734
		Total	0.033	0.518544	0.474
		Order	8.536	132.5276	0.000
Chevy	0.618	Main	0.047	0.234227	0.792
		Total	0.282	2.809336	0.099
		Order	4.850	48.35108	0.000
Sams	0.657	Main	0.245	1.359646	0.264
		Total	0.013	0.145387	0.704
		Order	4.732	52.51553	0.000

TABLE 2 (continued)

Commercial	R2	Source of Variation	Sum of Squares	F	Sig of F
Seven	0.743	Main	0.298	2.565098	0.085
		Total	0.026	0.443962	0.508
		Order	5.591	96.11079	0.000
Bank	0.763	Main	0.030	0.237485	0.789
		Total	0.154	2.437479	0.124
		Order	9.959	157.2561	0.000

LEGEND

Main = Variance due to experimental treatment

Total = Covariance due to overall recall ability among groups

Order = Covariance due to ordering effect

Analysis of variance results are shown in Table 2. In the column headed "Source of Variation," the word "main" represents main effects due to treatment, the word "total" represents the covariation due to overall recall ability among groups, and "order" represents the covariation due to the ordering effect found in all groups.

Table 2 shows that variation due to main treatment effects was found at a significant level in the first three commercials when there was no difference in treatment performed on any of the groups. All commercials were exactly the same for all groups with the exception of the experimental Chevy ad. Clearly something else was going on that must account for this variance. Conceivably, this variance could have been caused by unevenly matched groups regarding the individual subject's ability to recall radio ads. More likely, however, is the possibility that because these three ads were presented as the first three ads the subjects in all three groups were more attentive toward the beginning of the tape and more likely to remember material presented at that time.

The covariate labeled "total" (See Table 2) was significant at the 0.05 level for only the Bubble commercial. Covariation due to the ordering effect, however, was significant at 0.0 for all commercials at a 0.05 level.

The R2 scores were uniformly high for all commercials, especially Bank, at 0.763. The lowest R2 score was for Lipton, at 0.469.

Figures 3 through 11 are line graphs showing per cent recall for all groups for each commercial. The order in which these figures are displayed matches the order of presentation in the experimental tapes. Recall for the experimental target Chevy ad varied only slightly. Also displayed on figures 3 through 11 are the R2 scores and the variation due to main effects treatment and the total and order covariates.

Because of the pronounced covariation found in the results, further replication of this study must be conducted before any strong conclusions are drawn. However, within the scope of this study, results from this experiment do not indicate a correlation between one exposure to a melody and brand name recall. If this finding is corroborated by replication, this would suggest that radio advertisers who want to establish brand name awareness using minimal frequency of commercial presentations would likely be equally successful using either familiar or unfamiliar music in the body of the jingle.

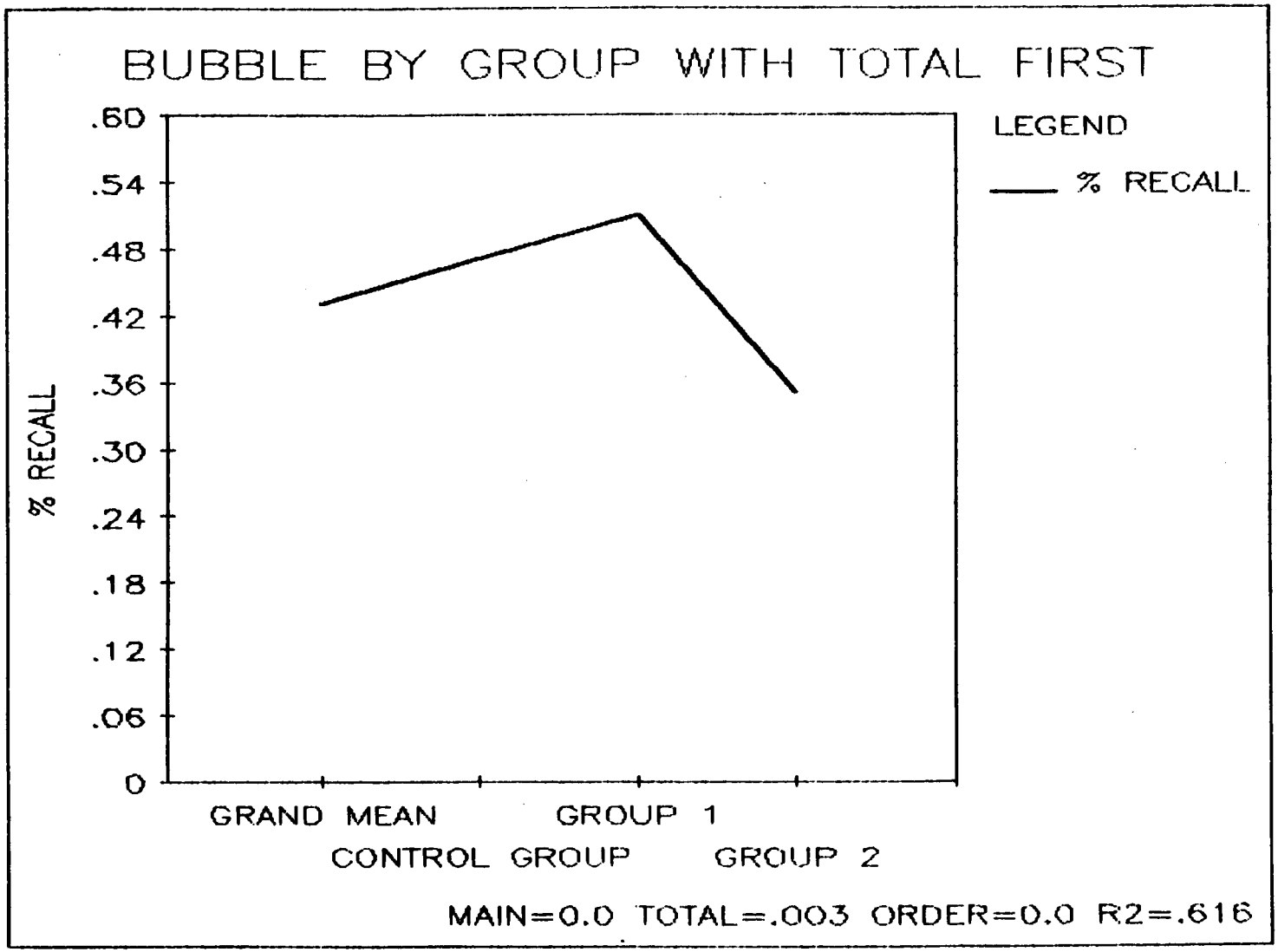

FIGURE 3. Bubble by group with total first.

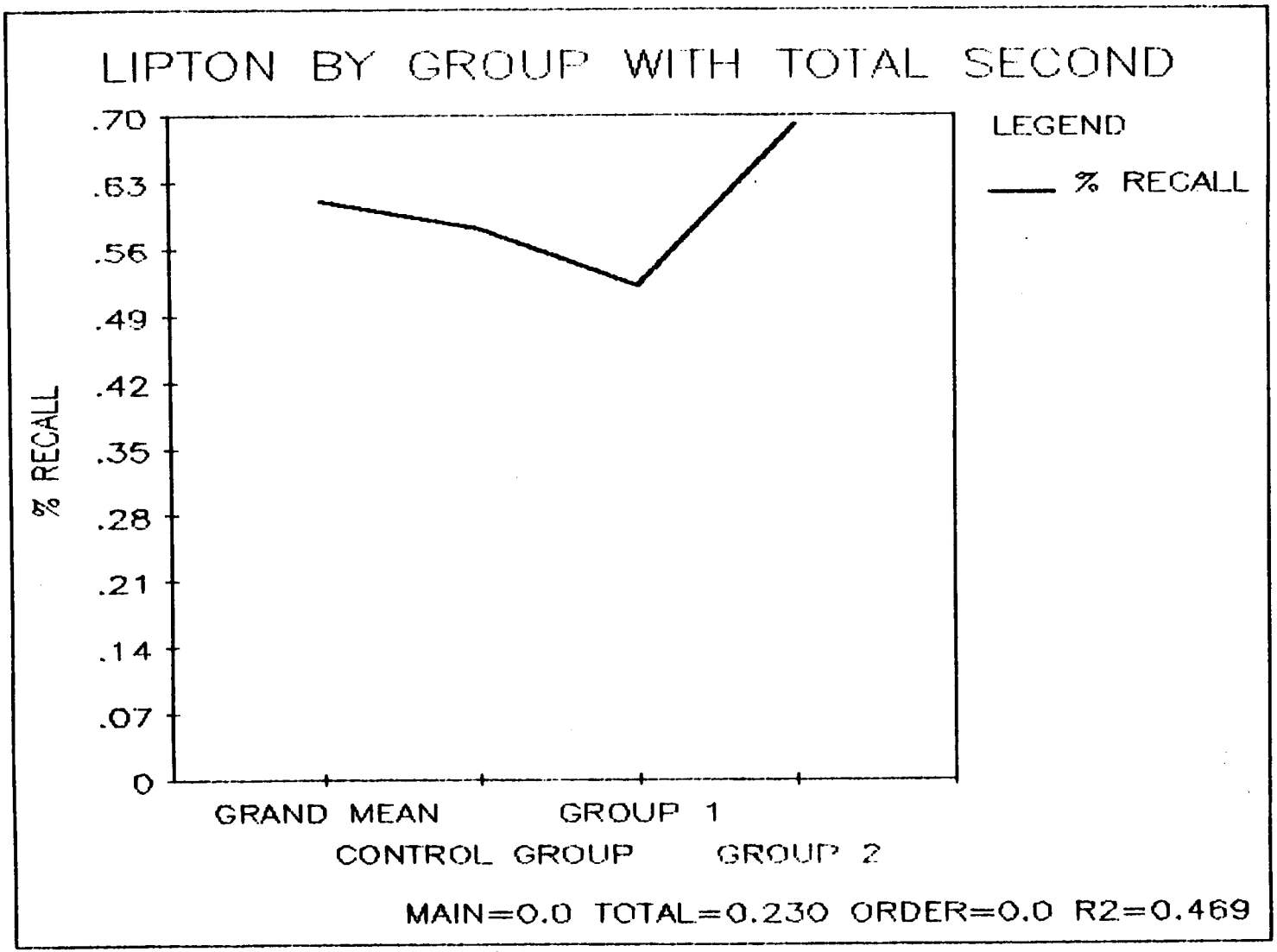

FIGURE 4. Lipton by group with total second.

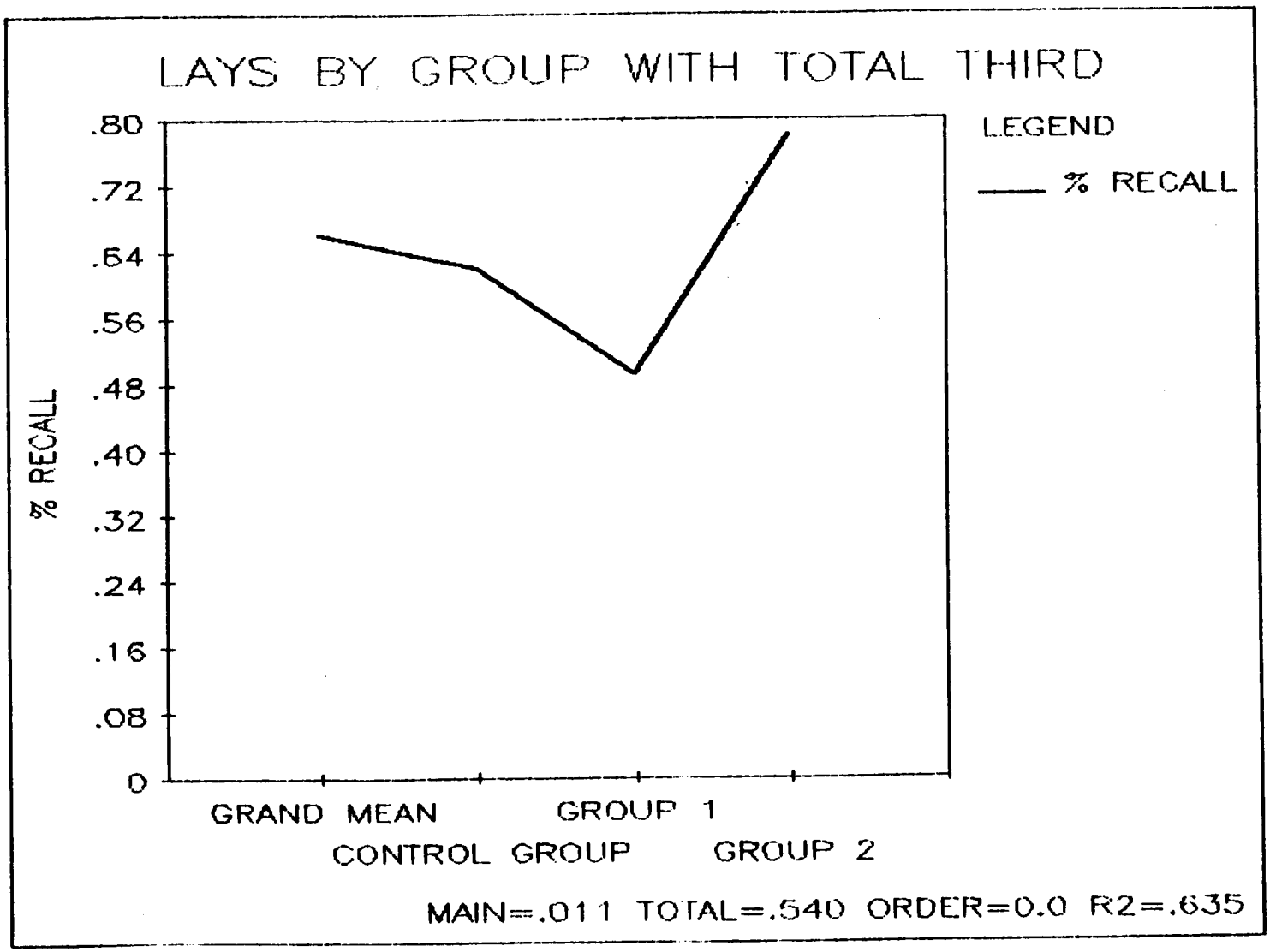

FIGURE 5. Lays by group with total third.

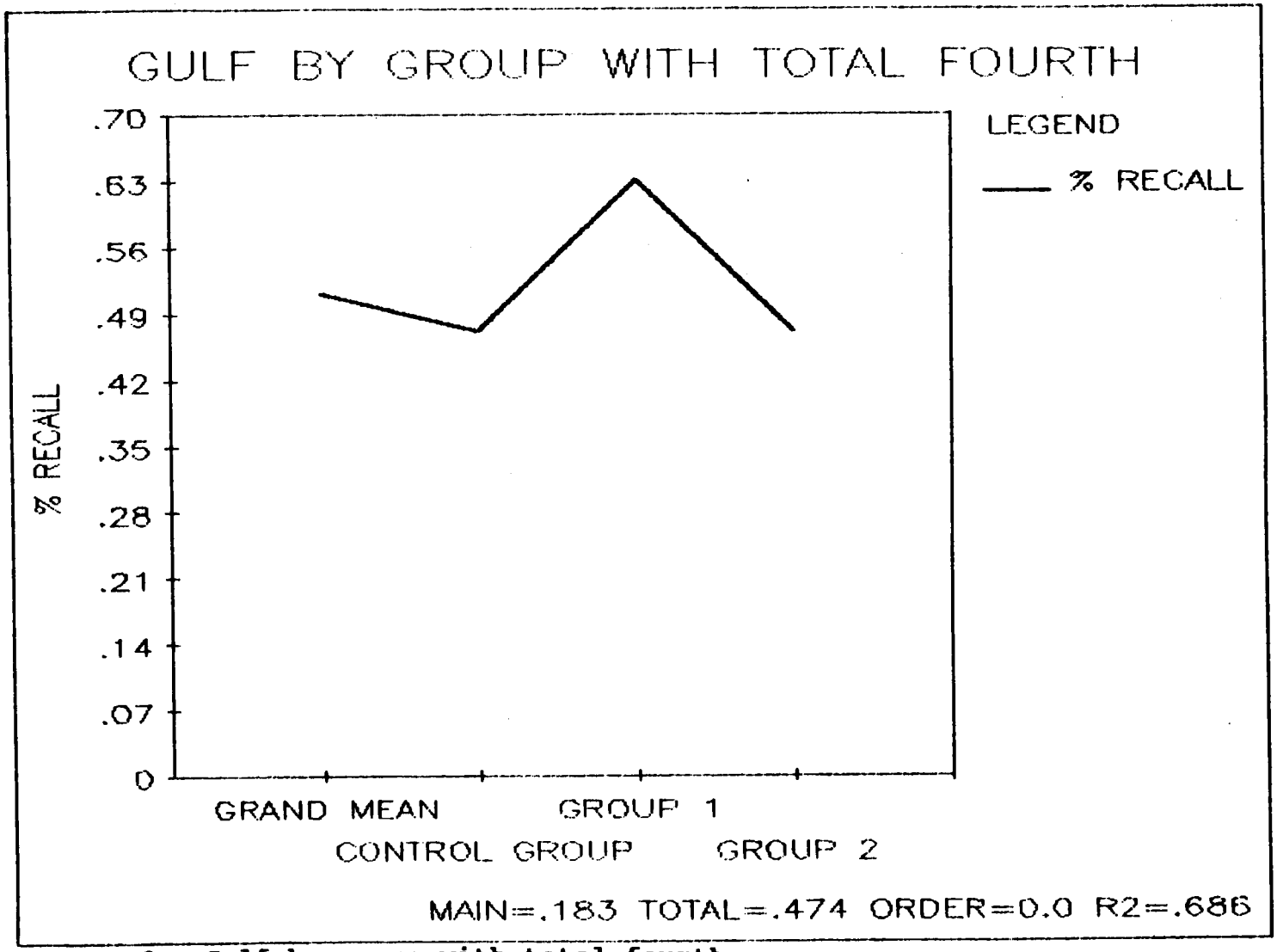

FIGURE 6. Gulf by group with total fourth.

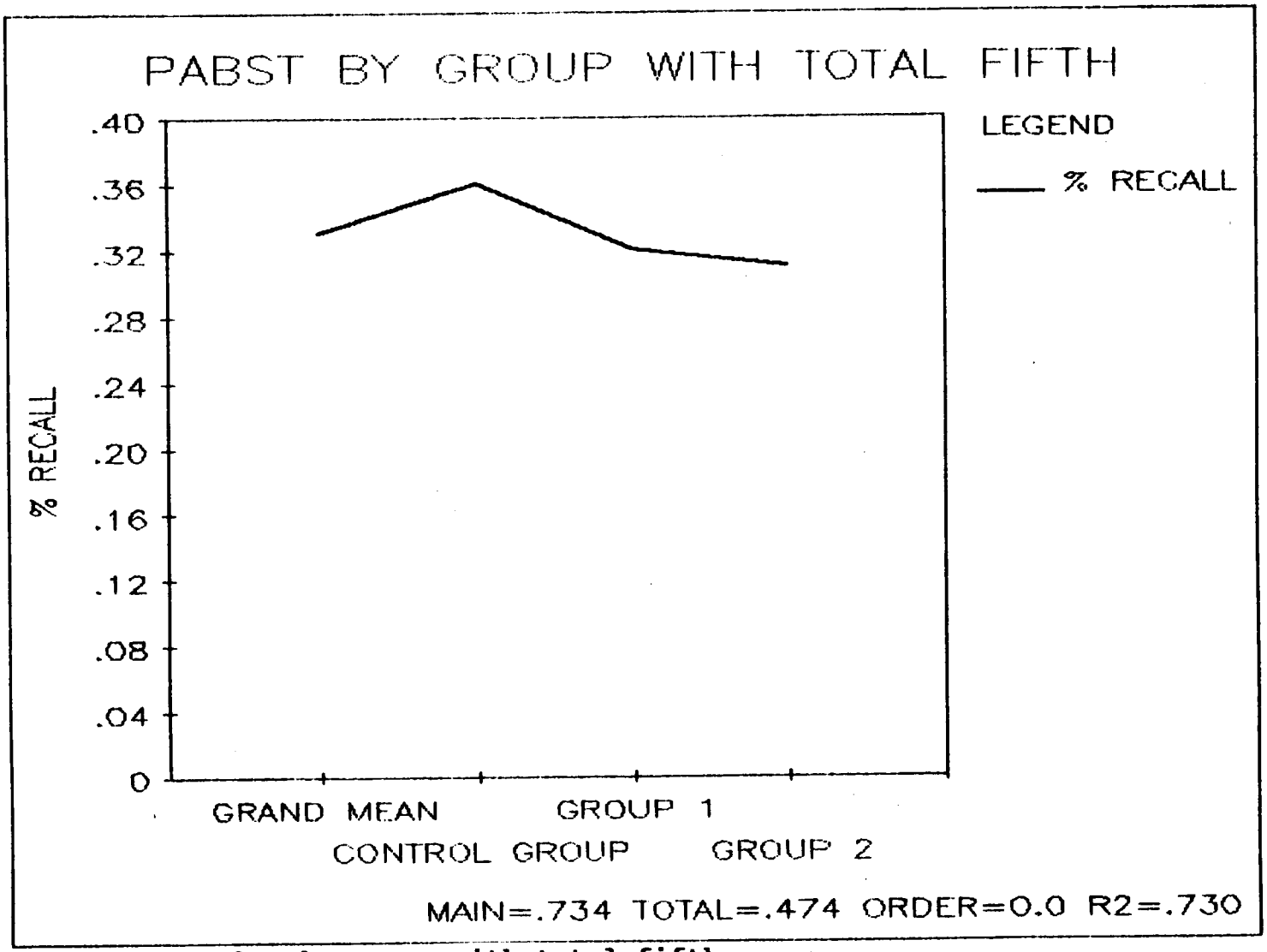

FIGURE 7. Pabst by group with total fifth.

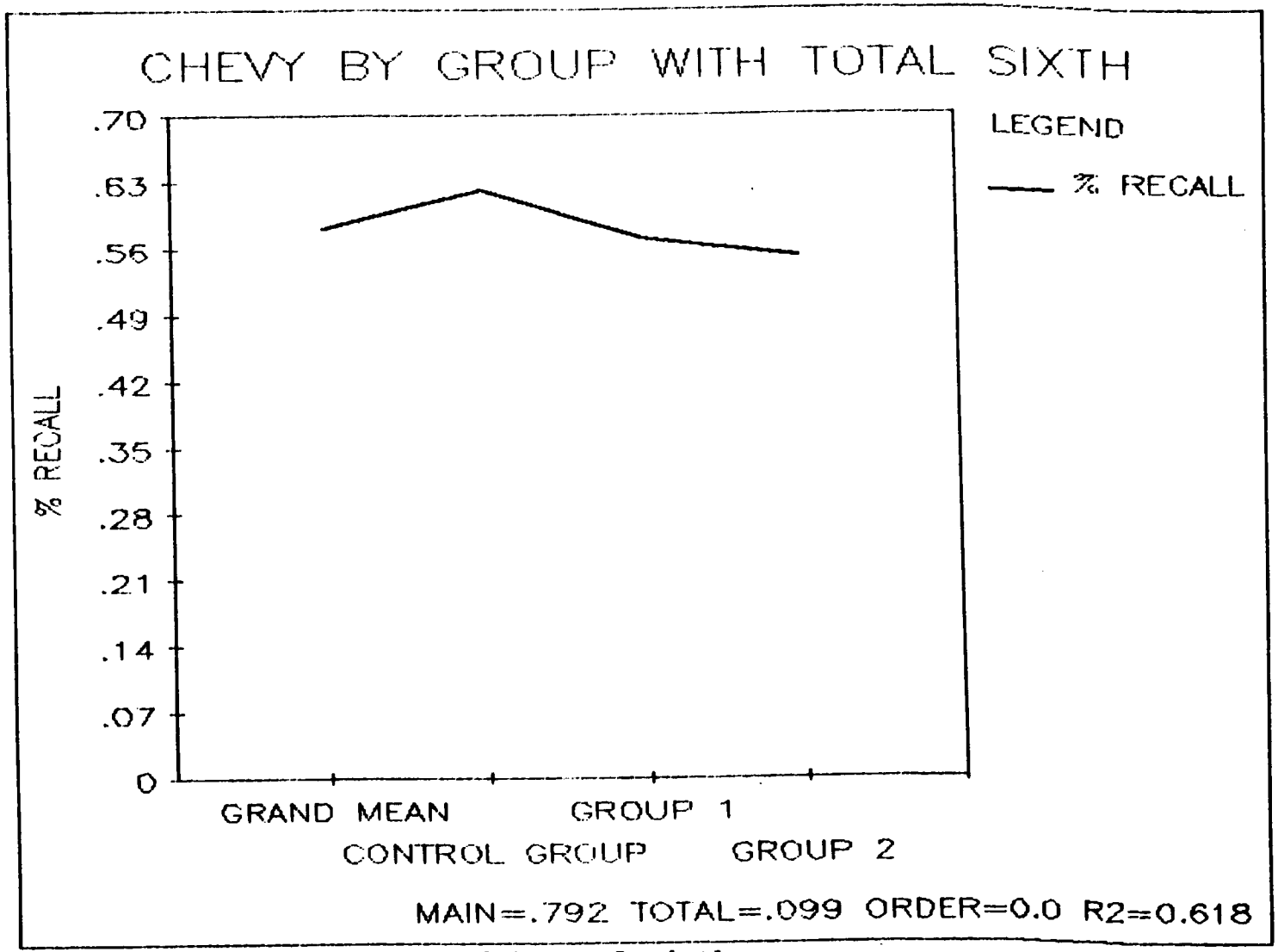

FIGURE 8. Chevy by group with total sixth.

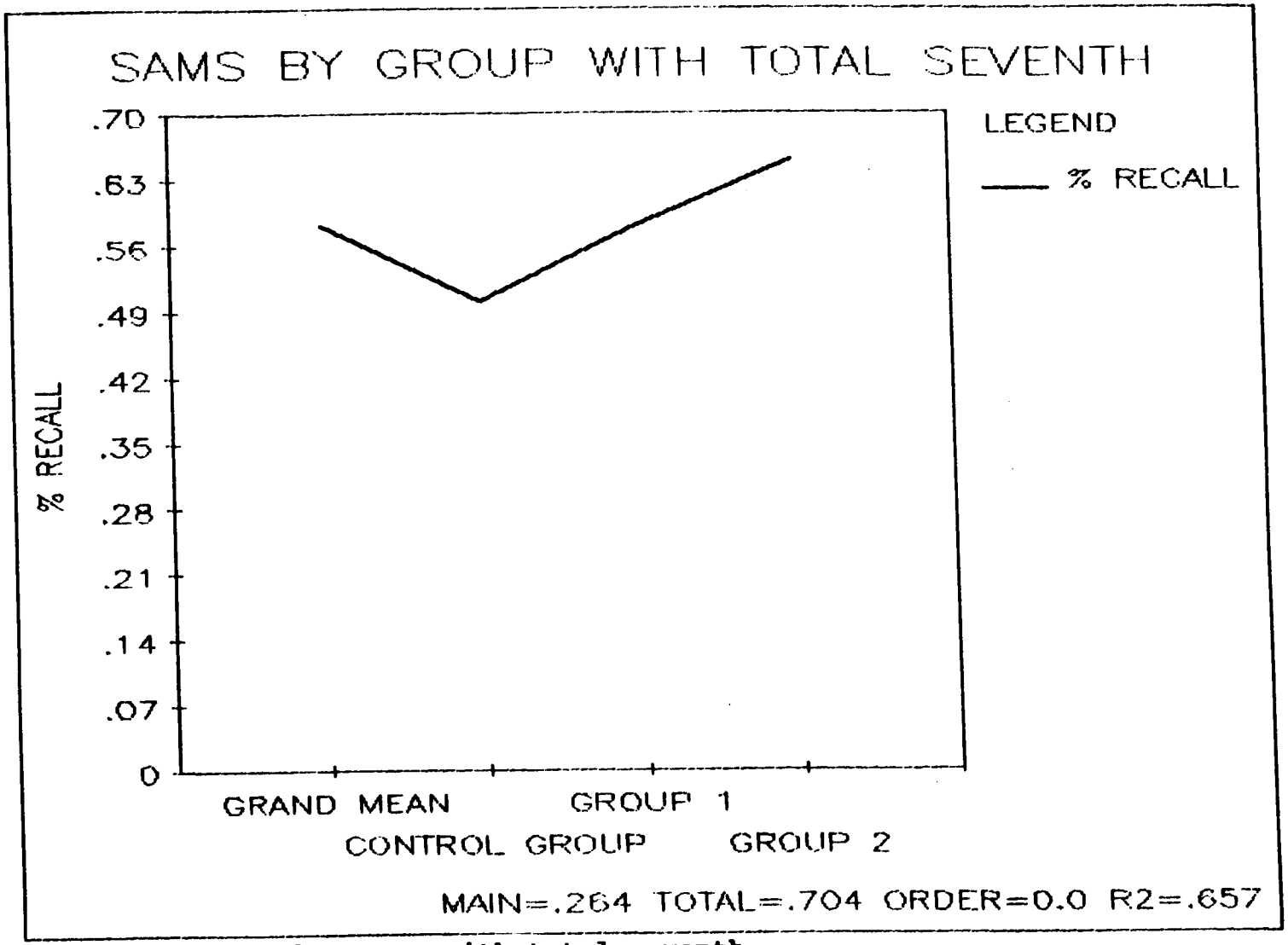

FIGURE 9. Sams by group with total seventh.

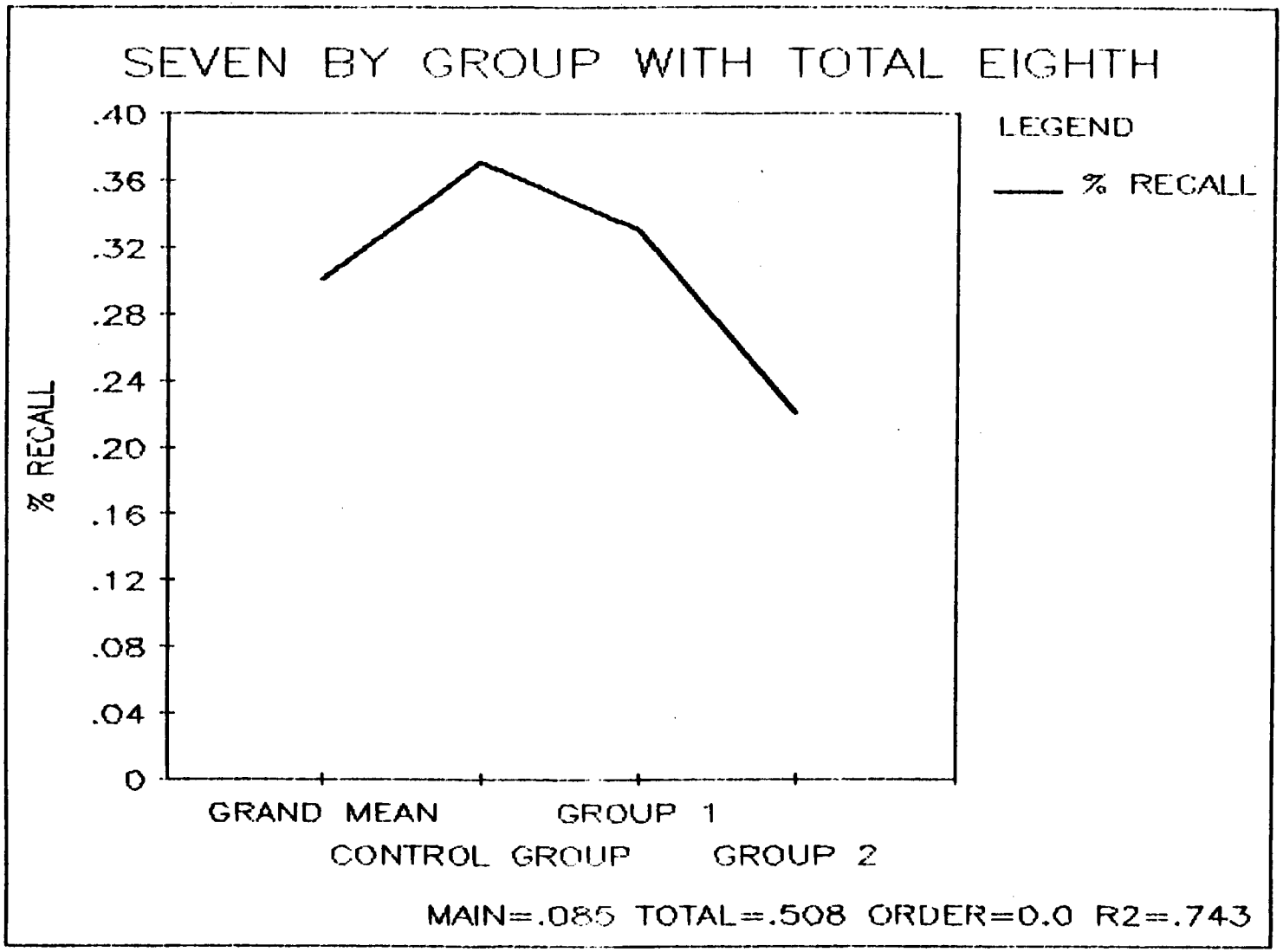

FIGURE 10. Seven by group with total eighth.

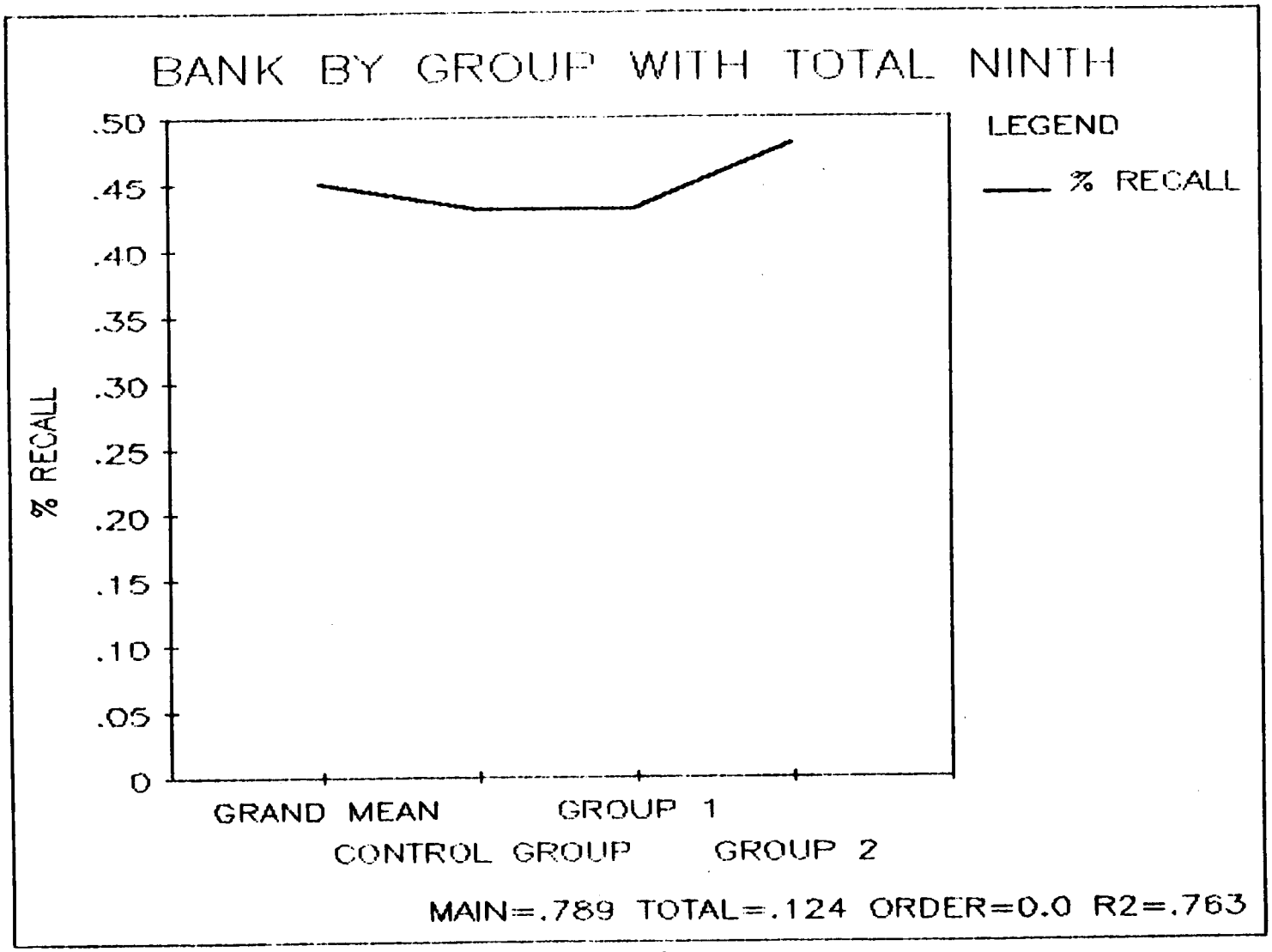

FIGURE 11. Bank by group with total ninth.

CHAPTER 5

LIMITATIONS AND SUGGESTIONS

Several factors influenced the conclusions from this study. These should be mentioned so any possible pitfalls might be avoided by other researchers.

This study was limited primarily by sampling procedure. Not only are larger groups of subjects needed in order to establish stronger statistical inferences, but the subjects should be screened on their ability to recall radio advertisements and then, with this factor in mind, be randomly assigned to groups.

Another limitation has to do with the ordering covariation exhibited by all three groups. When answering the unaided recall question, most subjects tended to list the commercials in the order in which they were presented. To circumvent this covariation effect, more tapes could have been produced in which the order in which the commercials were presented was altered. Possibly, using three different tapes for each experimental condition would solve this problem.

Yet another limitation was due to the production quality of the test commercials. Although professional sounding commercials were sought, the final product was

less than desired. Perhaps this factor affected the subjects perception and subsequent processing of these ads.

Also, using the melody of the Tennessee state song "Rockytop" in the experimental Chevy ad in experimental group 2 may have caused the subjects not to perceive these altered lyrics but to remember the original ones instead. The suggestion here would be to still use a familiar melody, but use instead an instrumental melody to which no lyrics have been placed.

One assumption made in this study was that one exposure to a melody constitutes familiarity for this melody, when actually more exposures to this melody may be needed before recognition occurs. Herbert Krugman (Scissors & Surmanek, 1982, p. 272), director of public relations at General Electric, advocates three exposures for a commercial before it becomes optimally effective. Melodies, however, differ from commercials in this respect in that they contain no semantic information. Moreover, in a melody key musical phrases are repeated often, which may cause something akin to the enhanced recall for an ad caused by repetition. The suggestion here which would help ensure that the subject recognizes the music upon jingle presentation would be to either present the experimental melody more than once during the tape of music, or to use a longer song.

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APPENDIX

TEST QUESTIONS

Of the radio commercials you just heard, please list all of the brand names you can recall.

1. _____
2. _____
3. _____
4. _____
5. _____
6. _____
7. _____
8. _____
9. _____

CONTROL GROUP

1.	Song: "No more I love you"	3.55 min.
2.	Song: "Face to face"	3.55
3.	Song: "Do it anyway"	3.03
4.	ANN	.12
5.	Commercial: Bubble Yum	.30
6.	Commercial: Lipton	1.01
7.	Commercial: Lays	.59
8.	ANN	.06
9.	Song: Instrumental, R.L. Jones	2.48
10.	Song: "She comes in colors"	4.00
11.	Song: "Flexible"	3.07
12.	Commercial: Gulfpride	1.00
13.	Commercial: Pabst Extra Lite	1.00
14.	Commercial: Chevrolet	1.12
15.	ANN	.04
16.	Song: "Life is what you make it"	3.57
17.	Song: "Sake of pity"	3.08
18.	Song: "She's on fire"	2.53
19.	Commercial: Fantastic Sam's	.55
20.	Commercial: 7-up	1.01
21.	Commercial: 1st Tennessee Bank	.59
22.	ANN	.01
23.	Song: "Lying to myself"	3.22
		42.07 min.

EXPERIMENTAL GROUP 1

1.	Song: "No more I love you"	3.55 min.
2.	Song: "Face to face"	3.55
3.	Song: Unfamiliar melody	2.04
4.	ANN	.10
5.	Commercial: Bubble Yum	.30
6.	Commercial: Lipton	1.01
7.	Commercial: Lays	.59
8.	ANN	.06
9.	Song: Instrumental, R.L. Jones	2.48
10.	Song: "She comes in colors"	4.00
11.	Song: "Flexible"	3.07
12.	Commercial: Gulfpride	1.00
13.	Commercial: Pabst Extra Lite	1.00
14.	Commercial: Chevrolet	1.12
15.	ANN	.04
16.	Song: "Life is what yoiu make it"	3.57
17.	Song: "Sake of Pity"	3.08
18.	Song: "She's on fire"	2.53
19.	Commercial: Fantastic Sam's	.55
20.	Commercial: 7-up	1.01
21.	Commercial: 1st Tennessee Bank	.59
22.	ANN	.01
23.	Song: "Lying to myself"	3.22
		42.07 min.

EXPERIMENTAL GROUP 2

1.	Song: "No more I love you"	3.55 min.
2.	Song: "Face to face"	3.55
3.	Song: "Do it anyway"	3.03
4.	ANN	.12
5.	Commercial: Bubble Yum	.30
6.	Commercial: Lipton	1.01
7.	Commercial: Lay's	.59
8.	ANN	.06
9.	Song: Instrumental, R.L. Jones	2.48
10.	Song: "She comes in colors"	4.00
11.	Song: "Flexible"	3.07
12.	Commercial: Gulfpride	1.00
13.	Commercial: Pabst Extra Lite	1.00
14.	Commercial: Chevrolet	.57
15.	ANN	.04
16.	Song: "Life is what you make it"	3.57
17.	Song: "Sake of pity"	3.08
18.	Song: "She's on Fire"	2.53
19.	Commercial: Fantastic Sam's	.55
20.	Commercial: 7-up	1.01
21.	Commercial: 1st Tennessee Bank	.59
22.	ANN	.01
23.	Song: "Lying to myself"	3.22
		42.30 min.

VITA

Dan Albee DeRidder was born in Knoxville, Tennessee on October 13, 1955. He attended elementary school in that city and was graduated from Doyle High School in June 1973. The following September he entered University of Tennessee in Knoxville, and in June 1977 he received a Bachelor of Arts degree in Psychology. He then accepted employment as a Psychiatric Technician at Lakeshore Mental Health Institute in Knoxville. He left Knoxville in August of 1979 and moved to Berkeley, California, where he accepted employment as a Mental Health Aid at Walnut Creek Psychiatric Hospital. He left California a year later to return to Knoxville, where he worked for several restaurants in the capacity of bartender and then manager. In the fall of 1985 he accepted a graduate assistantship at the University of Tennessee, Knoxville and began study toward a Master's degree.

While attending graduate school he was employed as an account representative for WUTK campus radio station. He sold, wrote, and produced 30-second announcements. He also interned during the summer of 1986 at St. Mary's Hospital. At St. Mary's he wrote, directed, and helped to produce radio commercials and PSAs, and also wrote articles for for two in-house publications. He has recently drafted a grant proposal for a local nonprofit organization.

His hobbies include amateur photography and piano.

The author has been active in the student advertising club and is a member of the local chapter of the Sierra Club.