

**Dimensions of Music:  
The Effect of Music/Brand Congruity on Advertising and Brand Evaluations**

by

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## **ABSTRACT**

This research investigates the role of background music in the process of attitude formation. Specifically, this paper examines how the fit between a piece of music and a brand in a product evaluation setting may affect attitudes toward the brand and the advertisement. Based on the theories of Mandler (1982) and Berlyne (1972), this research proposes that a moderate congruity between the music and the brand will lead to more positive evaluations of the brand and advertisement than either high or low congruity. In the first part of the research, a scale is created to measure how people describe their perceptions of music samples. A framework to measure the dimensions of music is developed by determining the number and nature of the underlying dimensions (calming, dark, energizing, jazzy, and sophisticated). In the second part of this research, an experiment is designed to test the effects of music/brand congruity on advertising and brand evaluations under conditions of high and low cognitive capacity. This experiment uses the dimensions of music scale to create conditions of high, moderate, and low music/brand congruity. Music/brand congruity is determined by the degree to which people tended to evaluate the music and the brand similarly on the dimensions (calming, dark, energizing, jazzy, or sophisticated). Implications of the scale development and experiment are discussed, and further research is proposed.

## **Chapter I**

### **Introduction**

Advertisers frequently use music in their commercials. This music can take on a prominent role, such as a jingle, or it can take on a background role. For television advertisements, the music is often scored such that the music matches the actions on screen. The same is true for radio advertisements, with the volume of background music decreasing when voice-overs occur. The music is often selected for general appeal, for cost considerations, and occasionally for the popular associations of the song (e.g., Nike and Revolution). There has been research about how the presence versus absence of music affects advertising evaluations. While the presence of music may affect the degree to which consumers like the commercial, it is also likely that the choice of music will affect evaluations. The research examining the choice of music has not clearly studied how the fit between descriptions of a brand and descriptions of a piece of music influences evaluations in advertising settings. In this dissertation, I address this question by creating a scale to measure descriptions of music, and subsequently designing and executing an experiment that manipulates the fit between music and a brand in an advertising setting. As a preface to the present research, it is informative to have an overview of issues and existing research in the areas of music and music in advertising.

## Overview

According to Huron in *Music in Advertising: An Analytic Paradigm* (1989) the use of music in advertising originated in early vaudeville, where music served to soften up a spoken narrative sales pitch. The purposes of the music were to engage a listener's attention and to make the advertising message less of an unwanted intrusion. Huron (1989) identifies six basic ways in which music can increase the effectiveness of an advertisement: 1) entertainment, 2) structure/continuity, 3) memorability, 4) lyrical language, 5) targeting, and 6) authority establishment.

From an entertainment perspective, research has looked at how the presence or absence of music can make an advertisement more attractive to viewers. Additionally, research has examined how this positive affect towards the advertisement does or does not transfer to the brand. Music serves to attract attention, and if it is effectively used, it can help to maintain a viewer's attention (e.g., Stout and Leckenby, 1988)

From a structure/continuity perspective, Alpert and Alpert (1991) proposed a possible structure that looks at the role that music takes in an advertisement. Music can take a dominant role, that is, be in the foreground, carry lyrics, or be distinctive. Music can also take a purely background role. In a background role, the primary message is carried through a voice-over or written verbal messages. Alpert and Alpert take the position that music is primarily a cultural and social phenomenon and reflects the values and attitudes of a subculture. A stream of research on the role of music in film serves to highlight

the role music has in creating structure and continuity (Boltz, Schulkind, and Kantra, 1991; Boltz, 2001; Vitouch 2001).

Music can increase the memorability of an advertising message or other elements of an advertisement. Music may serve as a cue to assist in recall of brand messages. The use of music to increase the memorability of the advertisement and of the brand name can be shown by the use of jingles in advertisements. Jingles are pieces of music with lyrics that carry the brand message. Jingles are often catchy and hard to forget. Jingles also demonstrate an example of music as a lyrical language. As an example, people of many age groups know the music to accompany “Plop, plop, fizz, fizz, oh what a relief it is,” and can name the brand associated with these lyrics and music (Alka Seltzer). As another example, *Rhapsody in Blue* has been used as background music in United Airlines advertisements since the mid-1980s. The music and the brand have become closely linked in the minds of many consumers.

The choice of music for an advertisement may assist in the targeting and positioning of a brand. There exist many stereotypes regarding musical preferences for different social and demographic groups. Research has examined the use of popular music, classical music, and top-40 music in marketing settings (e.g., Areni and Kim 1993 and North, Hargreaves et al 1999), and has shown that the style of music can influence purchase choice. The use of music in advertising may help marketers position their brands, and can even attract consumers who identify themselves with the genre of music or the specific musician. Consumers could have a connection with the music and subsequently

form an attraction to the brand. Or, the meaning associated with the piece of music may give the featured brand meaning. Differentiating a brand from its competitors has long been seen as a basic and necessary component for successful brand management. Brand managers want their brands to be viewed favorably and distinctively relative to key competitors. Changes in advertising may result in consumers making new associations with a brand. Music, as one component of an advertisement, can establish or reinforce a brand's positioning.

Finally, music in advertising can establish authority. Primarily this can be seen in music adding to the credibility of a message. Especially when considering familiar, previously recorded music, the credibility of the artist may transfer to the product. In unfamiliar music, the appropriateness of the music for the advertisement may establish a credible feel, as most U.S. consumers have discriminating ears when it comes to advertising. U.S. consumers recognize the quality differences in "local" advertisements versus "national" advertisements. Part of this difference comes from the seamless merging of music and other elements in most national advertisements.

With regard to the present research, the music used in the studies is unfamiliar, instrumental music. Because of this, the focus of the research is on how music can affect the entertainment, structure, and memorability. This research examines how music affects the likeability of an advertisement and brand, and the thoughts and recall generated by advertisements with music. Specifically, this research examines people describe music and how the fit

between the musical descriptions and the brand descriptions affect advertising evaluations.

### Fit between music and advertising

Research in the field of marketing has examined how music positively or negatively affects evaluation of an advertisement. This evaluation has looked at how music affects purchase intentions (Gorn, 1982; Alpert and Alpert, 1990) and processing of ad-related information (Kellaris, Cox and Cox, 1993; Park and Young, 1986; MacInnis and Park, 1991). Both the appropriateness of the music's lyrics (MacInnis and Park, 1991) and the fit between the visual elements and the music (Hung, 2000) have been considered. In both of these situations, the fit between the music and the advertisement is idiosyncratic, that is, it is specific to the piece of music and the visual elements of the advertisement. This research takes a more systematic approach to examining musical fit in an advertising setting.

In a similar fashion to Aaker's (1997) brand personality scale, this research examines the dimensions of music. A scale is developed that captures how people tend to describe and characterize music. Subsequently, music is paired with brands in order to examine the effect of congruity between the music and brand on specific dimensions. Bruner wrote that, given music's ability to establish the mood of an ad, it is important for marketers to be familiar with what kinds of music produce what kinds of effect in advertisements (Bruner, 1990, p. 100).

This research initially develops a scale to measure how people systematically describe pieces of music. Using this scale, pieces of music are paired with one brand. The result of these pairings is to produce fits between brand personality descriptions and music dimension descriptions that are high, moderate, and low in congruity. Research on congruency theory (Mandler, 1982) predicts that moderate congruency in a target object relative to expectations for that target object, should lead to higher evaluations of the target object relative to high congruency or low congruency. In an advertising setting, music that is moderately incongruent with a target brand would lead to higher evaluations of the brand and of the advertisement than music that is congruent with the target brand. However, additional research suggests that this result should be moderated by product category knowledge and cognitive capacity.

Following is a brief description of the organization for this document. Chapter 2 contains a review of the relevant literature regarding music in psychological and marketing settings. Chapter 3 explains the procedures and results of developing a scale to measure the descriptive dimensions of music. Chapter 4 develops the theory and hypotheses regarding how the fit between a piece of background music and a target brand in an advertisement influences consumer evaluations and thoughts. Chapter 5 describes an experiment designed to test these hypotheses. Finally, Chapter 6 discusses the implications of this research.

## **Chapter II**

### **Literature Review**

In a Journal of Marketing paper, Bruner (1990) performed a meta-analysis of studies on musical expression and concluded three things regarding the use of music in marketing: (1) humans non-randomly assign emotional meaning to music; (2) humans experience nonrandom affective reactions to music; and (3) the music used in marketing-related contexts is capable of evoking nonrandom affective and behavioral responses. Music can be examined as a summation of components. Bruner examined three such components of music: time, pitch, and timbre. The following chapter covers two separate approaches to examining music. In the first approach, the definition of music and musical terms are defined. Additionally, research that examines how the structural elements of music tend to influence people's reactions to and descriptions of pieces of music is reviewed. The second approach examines how music is incorporated with other visual and audio elements. Specifically, this research addresses the roles of music in film, in service settings, and in advertising settings.

The first approach generates some evidence that people do systematically describe pieces of music based upon the elements. From a marketing perspective, there is evidence that music can influence attitudes and purchase intentions in an advertising setting, and that music can influence shopping



behavior in retail settings. However, the existing research in marketing settings does not examine how descriptions of music influence consumer evaluations and shopping behavior.

This dissertation aims to unite research about descriptive responses to music with research about the influence of music in marketing settings. Following is a review of the relevant literature in three areas. The first literature reviewed focuses on the study of music, independent of other context. This review starts with definitions of musical terms and continues with a review of literature that examines how specific elements of music influence emotional descriptions. The second literature reviewed focuses on background music in film. This section highlights the additional information that music brings to other audio and to video material. The final review focuses on the use of music in marketing settings. This review breaks down the literature into two broad areas: music in service settings and music in advertising settings.

## **A. Musical Terms and Structural Elements of Music**

The Oxford English Dictionary defines music as “that one of the fine arts which is concerned with the combination of sounds with a view to beauty of form and the expression of emotion; also, the science of the laws or principles (of melody, harmony, rhythm, etc.) by which this art is regulated.” A melody refers to series of single notes arranged in musically expressive succession, while harmony refers to the combination of simultaneous notes so as to form chords, and rhythm refers to the systematic grouping of notes according to their duration.

Another key element of music is the tempo, which refers to the speed or rate of a piece of music.

Music can be defined by several of its elements. Each individual note represents a tone, and the influence of a note over all of the other pitches that surround it in a melody refers to the tonality. The scales of Western music are mostly comprised of seven-note scales. The octave divides into twelve equal parts, resulting in the twelve-tone equal temperament. Western major and minor scales are built by starting on any one of the twelve notes and building ascending patterns of notes stopping on the note an octave above the starting note. The interval between each note of our octave of equally spaced pitches is called a one-half or “half” step. Two half steps make up a whole step.

Major and minor scales are built by an ascending pattern of half and whole steps. A system of symbols called sharps and flats is employed with the letter names of notes, to allow for all possible combinations of major and minor scales. The pattern of half and whole steps for a major scale is “W W H W W W H,” and one example of a minor scale is “W H W W H W W W.” The minor scale has several variations, but generally tends to be more discordant to the Western ear.

The process of patterning beats with a stressed, accented beat (a louder and/or longer sound in comparison to other surrounding sounds) followed by a series of weaker beats is called “meter.” Meter is a result of the periodic effect of pulse (or beat) in music. A piece that is in four/four will have four beats within a measure, and typically features an emphasis on beat one within each measure. Comparing this to three/four, the emphasized beat would be every third note

rather than every fourth note. The waltz is a classic example of a piece in 3/4. The stronger accented beat of a pattern (the louder or longer one) is called the downbeat. An accent of length is called an agogic accent. Music does not require a pulse (or beat) to be music in fact much music has no obvious pulse.

The sound of a note can be measured with several characteristics: pitch, duration, amplitude, and timbre. The pitch refers to how high or low the note is. In piano, the upper register is a higher pitch and the lower register a lower pitch. As another example, a flute is in a higher pitch while a cello produces lower pitched notes.

The duration refers to the length of the sound. A note can be the only note in a set period of time, but this note can be held for varying lengths up to the maximum time. There are two types of accents in music: agogic and dynamic. The agogic accent refers to the length of the note. A quarter note can be carried for the entire beat, or it can be shortened, and stressed. Playing notes shorter and separating them from each other is called staccato or staccato articulation. Playing notes longer and connecting them to each other is called legato or legato articulation. In general, notes are played more staccato in faster tempi, while, for slower tempi, notes are played with more legato articulation. The other type of accent is a dynamic accent, which will be defined shortly.

The amplitude refers to the volume of the note. Amplitude is the physical measurement of levels of loudness and softness in sound, and, in music, the psychological term used to describe gradations of amplitude is dynamics. Loud sounds are generally associated with vigor, turmoil and conflict, while soft sounds

are associated generally with repose, tranquility and calmness. Various degrees of loudness can sometimes cause a particular passage of music to have the foregoing characteristics. Amplitude also has a periodicity aspect about it in that music may have patterns of dynamic intensity as well as patterns of pitch length. As stated earlier, there are two types of accents. The dynamic accent is a stress of loudness, whereby a certain note is played louder than other notes within the rhythmic pattern.

The timbre refers to the tone quality or the color of the tone. This timbre can vary from musician to musician on an instrument, but more dramatically varies from instrument to instrument playing the same note. For example, there is a brassier sound from a trumpet, an airier sound from a double reed instrument, or a mellow sound from a single reed instrument. On any instrument the timbre can be altered through the breath, or the force of the bow/hand. To recognize the importance of timbre, one need only consider the associations we make with human voices. We can recognize a person based on the word "Hello" over the phone. With a familiar voice, we can also infer information about the mood or purpose of the conversation from a single word. Most people can recognize the difference between several instruments playing the same piece. They may not be able to identify the instrument, but they can definitely identify that the instruments are different, just as the voice may be different.

The above section provides a brief overview as to the basic elements of music. Phrases of music can typically be classified as in the major or minor mode, the instrumentation can be identified, and the rhythm, tempo, and

dynamics can all be classified by their consistency. The following section examines how researchers have studied the effects of the structural elements of music on how people evaluate the music. This research generally looks at how different structural components produce different emotional descriptions of the music.

## **B. Responses to Structural Elements of Music**

In the 1920s and 1930s empirical research on emotional responses to music started to appear. The purpose was typically to investigate listener agreement on perceived emotional expression, or to investigate what factors in the musical structure, as provided in musical notation, influenced perceived emotional expression. This research tended to present subjects with selected pieces of music that represented different structural combinations, and asked subjects to choose among terms to describe the music. This literature provides evidence that people tends to be commonalities in the way that people describe music. The following section reviews research focusing on people's emotional responses to music. Specifically, it reviews the conclusions drawn about how specific elements of music can influence descriptions.

Gatewood (1927) provided subjects with 10 musical compositions. Subjects were asked to report both the most prominent element in each piece of music and the dominant effect it evoked. The dominant effects were compiled by the author prior to the research, and included: amused, devotional, gay/happy, irritated, like dancing, longing, patriotic, rested, sad, sentimental, serious, and

stirred/excited. The results indicated that marked rhythm was a chief factor in arousing feelings of happiness and excitement. Quick, lilting tunes were selected as being like dancing and happiness. Hymns were viewed serious. Funeral marches were sad. This research did not demonstrate that listeners experience the emotions, but rather than they feel the music can be described by these emotional phrases. This demonstrates a strong tie between emotional connection to the context of the music (e.g., funeral march) and the perceived emotions within the music.

Heinlein (1928) presented 30 subjects triads of music in either major or minor mode. Heinlein used 48 chords per test, and varied intensity across four levels: (1) major and minor chords played *piano* (soft), (2) major and minor chords played *forte* (strong), (3) major played *piano* and minor played *forte*, and (4) major played *forte* and minor played *piano*. Subjects were asked to rate the music as either how the music made them feel. Heinlein found that major intervals are described as sad or plaintive twice as often as minor. Heinlein found that intensity is the dominant modifier of feeling. Such that soft chords were rated with words more soothing than the loud chords. He speculated that the tendency to view pieces in the minor mode as melancholy/sad is related to the titles invariably associated with these pieces. He felt children are first indoctrinated by the titles of piano pieces in the minor mode, which were often weird, mysterious, sad, or gloomy.

Gundlach (1935) states that music can elicit a fairly uniform characterization in audiences solely through factors present within the musical

structure itself. Gundlach (1935) analyzed 40 pre-recorded phrases. He analyzed the scores and created an index for several musical features included tempo, loudness, range of melodic line, central pitch (mid-most tone in the melodic line), rhythms (smooth, rough, and uneven), family of instruments, and orchestral accompaniment. Gundlach presented 112 subjects with a subset of 40 classical pieces. The subjects were asked to choose any number out of 17 terms that applied to the piece of music (brilliant, animated, uneasy, tranquil, dignified, triumphant, exalted, glad, somber, melancholy, mournful, delicate, whimsical, flippant, sentimental, awkward, and grotesque).

Some of the conclusions that Gundlach drew from his analysis were that rough rhythms were viewed as grotesque and uneasy, while smooth rhythms were brilliant and animated. High pitch is sentimental and whimsical, while low pitch is mournful, somber, and tranquil. Fast music is brilliant, animated, grotesque and uneasy, while slow music is dignified, somber, tranquil, and delicate. Looking at specific instruments, brass instruments carrying the melody have been characterized as triumphant and/or grotesque, woodwinds expressed awkward and/or mourning feelings, piano are brilliant and/or tranquil, and string sounds are characterized as glad (Gundlach, 1935). Gundlach found that the louder pieces in his study were described as triumphant or animated, whereas the softest pieces were judged to be delicate or tranquil. Please see table 2.1 for a summary of Gundlach's conclusion.

<b>Table 2.1 Gundlach (1935)</b>		
<b>Tempo</b>	<b>Fast</b>	<b>Slow</b>
	Animated, brilliant, grotesque, uneasy	Delicate, dignified, somber, tranquil
<b>Dynamics</b>	<b>Loud</b>	<b>Soft</b>
	Animated, triumphant	Delicate, tranquil
<b>Rhythm</b>	<b>Rough</b>	<b>Smooth</b>
	Grotesque, uneasy	Animated, brilliant
<b>Pitch</b>	<b>High</b>	<b>Low</b>
	Sentimental, whimsical	Mournful, somber, tranquil

In an earlier paper, Gundlach (1932) studied the songs of six different American Indian tribes. Gundlach analyzed 334 Native American songs in scores. He looked for commonalities in the music and then compared this to the genres of the music (songs for love, healing, or war). He looked at the relationships between musical traits and other aspects of the tribes' cultures and societies. The speeches and the songs of the different Native American nations are unrelated, but the songs representing the same types of ceremonies showed considerable agreement. The musical elements such as intervals, rhythm, and range of melody were correlated with various functions of music in tribal life. From this, Gundlach concluded that some of music's conventions are grounded on a firm basis of physiologic structure and behavioral similarity of human beings.

In a series of studies, Kate Hevner presented subjects with pieces of music and asked them to choose which adjective clusters from a selection best described the pieces of music. Hevner (1935) presented 205 students with 10 classical pieces manipulated in mode. Hevner (1936) presented 450 primarily musically trained students with 26 classical pieces manipulated in rhythm,



melodic line, and harmony. Hevner (1937) presented 222 students with 21 pieces, most classical but some especially composed, that had been manipulated in tempo and pitch level.

In Hevner's studies, listeners were instructed to mark as many of the terms in the adjective circle they found appropriate for the music in question. Please see appendix 2.1 for the adjective circle. Across the three studies, Hevner drew many conclusions as to how structural elements affected emotional perceptions (Table 2.2 contains a summary). Variables with the largest effects on their choices turned out to be tempo and mode, followed by pitch level, harmony and rhythm, whereas melodic direction has little, if any, effect. Fast tempos elicited judgments in the happy and exciting clusters, and to a lesser extent in vigorous/graceful clusters. Slow tempos elicited judgments in the dignified, sad, sentimental-tender, and calm-serene clusters. Major mode was associated with happiness, gaiety, playfulness, and sprightliness, while minor mode with sadness, sentimental, yearning, and tender effects. When examining pitch, higher pitch level had greatest effect on the sprightly humorous cluster, while lower pitch level on the sad, vigorous-majestic, and dignified-serious qualities. Harmonies were described as simple versus complex, with simple harmonies tending to be characterized as happy, graceful, serene, and sentimental, and complex dissonant harmonies as exciting. Musical pieces with even-valued rhythms are perceived as sacred or serious compared to those with uneven-valued rhythms, which are interpreted as happy or playful.

<b>Table 2.2 Hevner (1935, 1936, 1937)</b>		
<b>Mode</b>	<b>Major</b>	<b>Minor</b>
	Gaiety, happiness, playfulness, sprightliness	Sadness, sentimental, tender, yearning
<b>Tempo</b>	<b>Fast</b>	<b>Slow</b>
	Exciting, happy	Dignified, sad, sentimental, serene
<b>Harmony</b>	<b>Simple</b>	<b>Complex</b>
	Happy, graceful, sentimental, serene	Exciting
<b>Rhythm</b>	<b>Uneven</b>	<b>Smooth</b>
	Happy, playful	Sacred, serious
<b>Pitch</b>	<b>High</b>	<b>Low</b>
	Sprightly, humorous	Sad, vigorous, dignified, serious

Watson (1942) provided 30 classical pieces to 100 listeners from one of six age levels (fourth grade through twelfth grade and adults). In addition he had twenty musical experts listen to the music. The listeners were asked to pick their first and second choice among the following terms: happy, mischievous, amusing, very happy, exciting, very exciting, dignified, kingly, peaceful, serious, pleading, sad, tragic, mysterious, and unclassified. Watson, using musical experts' judgments as criterion for the intended expression in selected pieces of music, found that even children in 6<sup>th</sup> and 8<sup>th</sup> grades showed good (> 50%) agreement with the criterion, best for expressions such as mischievous, happy, exciting, kingly, dignified, and sad. Results were worse for expressions such as pleading, tragic, and mysterious, for which 50% agreement was not reached until respondents were the age of college students. Watson (1942) found the louder songs were judged as exciting or very happy and softer pieces were peaceful or serious.

In a series of studies, Rigg (1937, 1940) tested a theory that sets of musical features characterized joy, lamentation, longing, and love. For example, a piece characterized by lamentation would be in the minor mode, have legato phrasing, be dissonant, have long-short rhythm, be in a slow tempo, and be in a low register. Rigg played fourteen existing excerpts of music in addition to six pieces he composed for the experiment. In his 1937 study, Rigg played 100 students the 20 musical phrases and collected free reports on their response. In addition, he asked them to choose one of a set of descriptions (joy, lamentation, hopeful longing, sorrowful longing, love). Rigg found that the supposed emotion was not frequently in the free description, but more frequently chosen when presented among the emotion terms.

In another study by Rigg (1940) five pieces were composed that systematically manipulated the tempo between 60 beats per minute through to 160 beats per minute. Eighty-eight college students were asked to judge whether each performance was “serious-sad” or “pleasant-happy.” Rigg reported a strong relationship between the responses and the tempos. Faster tempos were judged as more pleasant-happy, while slower tempos were judged as more serious-sad.

Wedin (1969) formulated a set of scales to measure the emotional expression in music. The 40 words in his scale set were derived from an initial group of 125 words gathered from literature on emotion in music. In a series of studies, Wedin exposed subjects to 20 pieces of music (18 classical pieces and 2 jazz pieces), and found three main emotional factors in music: tension/energy – relaxation; gaiety-gloom; solemnity-triviality (Wedin, 1969, 1972a, 1972b). Based

upon these studies, Wedin concluded that music with a rapid tempo tends to be interpreted as happy and pleasant. He also concluded that a staccato articulation is perceived as energetic, in contrast to a legato articulation which is perceived as relaxed/peaceful.

Scherer and Oshinsky (1977) synthesized eight-tone sequences that were manipulated in levels concerning amplitude variation (small, large), pitch level (high, low), pitch contour (up, down), pitch variation (small, large), tempo (slow, fast), envelope (low attack, equal attach) and filtration cut-off (intermediate, high). Subjects were asked to evaluate the pieces on an emotional level. The results are summarized in the Table 2.3 (Scherer and Oshinsky, 1977, p. 340).

<b>Rating Scale</b>	<b>Acoustic Parameters</b>
Pleasantness	Fast tempo, few harmonics, large pitch variation, sharp envelope, low pitch level, pitch contour down, small amplitude variation
Activity	Fast tempo, high pitch level, many harmonics, large pitch variation, sharp envelope, small amplitude variation
Potency	Many harmonics, fast tempo, high pitch level, round envelope, pitch contour up
Anger	Many harmonics, fast tempo, high pitch level, small pitch variation, pitch contours up
Boredom	Slow tempo, low pitch level, few harmonics, pitch contour down, round envelope, small pitch variation
Disgust	Many harmonics, small pitch variation, round envelope, slow tempo
Fear	Pitch contour up, fast sequence, many harmonics, high pitch level, round envelope, small pitch variation
Happiness	Fast tempo, large pitch variation, sharp envelope, few harmonics, moderate amplitude variation
Sadness	Slow tempo, low pitch level, few harmonics, round envelope, pitch contour down
Surprise	Fast tempo, high pitch level, pitch contour up, sharp envelope, many harmonics, large pitch variation

Hill, Kamenestky, and Trehub (1997) examined the effect of tempo and dynamics on the perception of emotion in music. Participants were exposed to one of four versions of a song: tempo and dynamics unvaried; variations in

tempo only; variations in dynamics only; and variations in both tempo and dynamics. The results of this study revealed emotional expressiveness was rated highest when both dynamics and tempo varied, next when only dynamics varied, then when only tempo varied, and finally when neither element varied. However in this case, the music with only tempo variations liking evaluations did not significantly differ from the no-variations piece, and music with both tempo and dynamic changes were not significantly more likable than those with only dynamics changes. In this research the pieces used for music were excerpts from different compositions, perhaps making it difficult to attribute the differences solely to tempo and dynamics. It can be argued that it is difficult to draw meaningful conclusions about variations in music when it is across pieces of music. The keys were different; they were all in a major mode, with different textures and meters. With a computer the excerpts were equalized in terms of length of notes, loudness, to create a base version with unvarying tempo and dynamics.

All of this research, dating back decades, has concluded that listeners do attach descriptive labels to pieces of music, and that many of these descriptions are based upon underlying structural elements. These researchers never make the claim, however, that listeners attribute their responses or descriptions to the structural elements of a piece of music. The formal, structural approach to music is not how typical consumers think about or deconstruct music. Typical consumers do not consciously consider structural elements in their descriptions of music. The preceding review of the music literature does show that there may

be systematic descriptions to pieces of music. However, it also demonstrates the need for a scale that will capture how the typical person describes music. The following review examines how music has been studied in applied settings, specifically film and marketing.

### **C. Music in Film Soundtracks**

Films contain a combination of auditory and visual elements. These auditory and visual elements work together to send a message. One particular aspect of the auditory side of a film is the music. Music is incorporated into the background of many movies. The music selected for a film can help to establish context, and oftentimes, the music helps to create emotion. Research on the use of music in films shows some of the effects of music on cognitive processing of other auditory elements and of visual elements. Following is a review of literature that examines the influence of background music in film settings.

Boltz, Schulkind, and Kantra (1991) examined background music in filmed events, and concluded that music can influence recall, and that music mood congruity with the film mood also produced an effect on recall for film events. In this study, participants were presented with a series of filmed episodes. These clips were independent episodes, in that there was a distinct beginning and either a positive or negative outcome, and each lasted 3-4 minutes. The musical pieces that corresponded with the clips were all equal in amplitude, performed by single instruments, and lacked lyrics. The music was 20-30 seconds long and appeared during moments without dialogue. Half of the pieces were classified as producing

positive affect, and half as producing negative affect. When the filmed event had a positive outcome and positive music (or negative/negative) this was deemed mood congruent. When the outcome is opposite from the music is mood incongruent (positive outcome/negative music or negative outcome/negative music). Additionally, the music either accompanied the climatic scene, or foreshadowed the scene.

Participants were asked to provide a written recall of each filmed episode, after viewing all of the episodes. In addition participants were presented with a random selection of 32 tunes and asked to indicate whether the song was used in a clip or not. Finally, participants heard each of the 16 old tunes accompanied by 6 stills from the episodes, and participants were asked to match the still shot with the original music. The results indicate that when the mood of the music and the scene were congruent and it accompanied the outcome, higher recall occurred compared to mood-incongruent music. There were no significant effects of the experimental manipulations on recognition of the music. However, when the music itself was more negative emotionally, this produced higher false-recognition than those with more positive music.

Other research on background music in film has examined whether or not the music influences people's expectations of the actions or plot of the film. Boltz (2001) presented study participants with three film clips accompanied by positive music, negative music, or no music at all. The three film clips were chosen due to the ambiguous nature of their endings. Participants were asked to hypothesize about the possible resolution to the clip, and were asked to evaluate the

personality of a character using an adjective scale. The results indicated that both positive and negative music led to viewers attending to mood consistent information, and away from information that was inconsistent with the valence of the music.

Similarly to the Boltz et al (1991) piece, Vitouch (2001) also examined how music affects people's perceptions of what will happen in a film clip. In this research, Vitouch presented 48 participants with one of two versions of a film: original score versus fake score. Participants were asked to write brief continuations of the plot. The movie, *The Lost Weekend*, originally was scored with a piece of music that draws a positive mood. The fake score was chosen because it was viewed as "sad" or "melancholic". The prediction was that participants viewing the positive music would have more positive continuations than the participants viewing the sad music, and this was what the research showed. The different musical tracks produced different narrative views, with positive music producing more positive continuations than the negative music.

In addition to affecting the expectations for what will come next in a film, the music also is considered to have an effect on specific reactions to portions of the film. Boltz (2004) examined how music is cognitively encoded, and how it is interpreted relative to the visual action. In two experiments, participants viewed music and film clips that were either congruent or incongruent with their emotional affects. Additionally, the research manipulated attention by instructing participants to attend to either the music, the film, or both in tandem. The dependent measures were tune recognition and film recall. Mood congruent pairs



lead to joint encoding of the music/film information, while incongruent pairs resulted in an independent encodings, where a dimension is only remembered well if participants were asked to selectively attend to that dimension.

Beyond considering how the music affects viewers perceptions of the film and its emotions, other research looked at whether or not there is consistency in how people evaluate the fit between the musical score and the visual scenes. Lipscomb and Kendall (1994) asked participants to pick which musical score provided the best fit for a visual scene. Each participant saw five visual scenes paired with one of five audio tracks. Included in the combinations was the original pairing of score and film. Results indicated that the majority of participants selected the original score and film pairing as the “best fit.” In a second study, participants were asked to rate all 25 combinations of film and audio on semantic differential scales (Dimension 1 (Evaluative): good/bad, beauty/ugly, interesting/boring, effective/ineffective; Dimension 2 (Activity and Potency): heavy/light, tense/relaxed, active/passive, agitated/calm). The results indicated that the composer-intended combinations yielded higher scores on the evaluative dimension, while the ratings on the activity/potency dimension remained relatively consistent. The authors concluded that music exercises both a strong and a consistent effect over people’s responses to an audiovisual stimulus, regardless of the visual stimulus.

Research on musical soundtracks has shown that music can influence the interpretation, emotions, and recall of film information. This research has implications for advertising research, as it pairs music with another source of

information, be it visual only or visual and audio together. Looking at research on musical soundtracks shows that the fit between music and another sensory feed can influence interpretations, thought processes, and recall.

#### **D. Music in Marketing Settings**

Music is highly prevalent within many consumer settings. Research on music in marketing settings has primarily focused on two areas: advertising and service settings.

Music is considered to be a major component of a servicescape, and is often used in retail settings and customer service settings. The research on music in service settings has generally been from a musical element perspective. The music used in the studies is varied based upon one broad element, such as tempo or genre, and evaluations, perceptions, and shopping behavior are the typical dependent variables of interest.

The second main area of marketing focusing on music is the role of music in advertising. This research focuses on the presence versus absence of music, the affective responses created by the music, the influence of music on attitudes and choice behavior, and finally the effects of music on recall. Many of the papers researching music in advertising have focused on the effects of the music, more than the music itself.

These literatures on music in advertising and service settings tend to take a non-cognitive approach to explaining the effects of music on behavior. However there are some studies that consider how people cognitively process

music as an additional piece of information. The following sections review the major findings from these two streams of literature, and it looks at situations in which people seem to instinctively react to the music and situations in which people seem to more consciously process the music.

### **i. Music in Service Settings**

A series of papers in marketing and psychological journals has investigated the effects of background music in retail settings on consumer perception and behavior. In an article examining practical applications of music in service settings, Herrington and Capella (1994) create a framework that proposes background music can influence shopping time, purchase amount, evaluations, product choice, and store image. The research reviewed in the following sections examines studies that demonstrate how changes to the background music can influence consumer behavior, and consumers' perception of service.

#### **a. Perceptions of Time**

Understanding the effects of music on perceptions of time spent has significant importance to management. Several papers have examined how music may affect actual time spent shopping, time spent in a restaurant, time spent queuing, and perceptions of time spent doing these activities.

A study by Milliman (1982) suggests background music in a retail setting with a slow tempo can slow the pace of in-store traffic flow. When shoppers in supermarket were exposed to slow-beat music rather than fast-beat music, this lead to higher sales volume as consumers spent more time and money in the store. The shoppers were observed to move at a slower pace, with the slower music, thus matching their movements with the music.

Milliman (1986) exposed restaurant patrons to either fast or slow tempo instrumental music. Individuals tended to stay longer when listening to slow music compared to fast music. With slower music, people tended to eat more slowly and spend more. The additional time did not result in any greater expenditure on food, but did lead to an increase in the amount spent on drinks. This study did not include surveys, so while it is not known whether the customers of the restaurant knew they were spending more time, it seems unlikely that the mere tempo of the music consciously made people eat slower.

Herrington and Capella (1996) conducted a similar supermarket study to that of Milliman (1982) but used the same musical compositions for both slow and fast tempo levels, arguing that response to Milliman's (1982) study may have been confounded with other musical elements (harmony, mode). They reported that shopping expenditure was not influenced by tempo or volume of background music, but observed how expenditure tended to increase according to the level of preference for the music. Kellaris and Kent (1991) also argue that the Milliman studies ignored the interactive effects of tempo with other musical variables,

concluding from their own study that tempo and mode (harmony) operated interactively on evaluations of music's appeal.

Smith and Curnow's (1966) study of the influence of loud and soft music on shopping duration in supermarkets provided no quantifiable measure of audible volume, but reported that loud music made shoppers shop for a shorter time period. In contrast, Herrington and Capella (1996) used a decibel meter to monitor loud and soft sound levels of music within a supermarket, concluding that volume background music did not influence shopping time. This research reported that musical preference could have a positive influence on the amount of money and time spent by shoppers in service environments.

Field research by Yalch and Spangenberg (1988) suggested that music affects shopping times. In their study, clothing store shoppers were exposed either to a youth-oriented foreground music or adult-oriented background music. Interviews with shoppers as they exited revealed that younger shoppers felt they had shopped longer when exposed to (adult) background music, whereas older shoppers felt they had shopped longer when exposed to (youth) foreground music. Unfortunately, actual shopping times were not observed, so it could not be determined if individuals shopped longer, merely thought that they did, or a combination of both factors.

Chebat et al (1993) examined the impact of fast/slow music with visual stimulation on perceived waiting times, using contrasting sections from the same Mozart symphony. *Andante Catabile* was used as the slow tempo excerpt with *Molto Allegro* portraying the fast tempo (symphony number 41). They concluded

that time perception was significantly affected by the combined effects of visual stimulation and slow music. With fast music, there was no significant effect on time estimates under high and low visual stimulation, whereas with slow music, the effects were significant. However music tempo alone was reported to have no direct effect on subjective estimation of time.

Kellaris and Altsech (1992) supported the belief that music affects time perceptions. Individuals listened to original music composed in a light popular style, lasting 180 seconds. Its loudness varied from being loud or soft, corresponding to levels associated with foreground or background music. Afterward, male and female participants estimated song length. The results indicated no differences in perceived duration for males but that females perceived the loud music as lasting much longer than the soft music. These results, however, are not directly applicable to retailing because individuals were listening to music and not shopping. Further, exposure time was controlled for all individuals so it is not known if the volume of music would have affected self-determined listening times.

In a laboratory study of time perception, Kellaris and Cox (1992) found the modality-affected listeners' estimates of time period duration in a manner contradictory to the conventional wisdom of "time flies when you're having fun." Perceived duration of time was longest for participants exposed to positively-valenced music and shortest for negatively-valenced music. Thus, contrary to popular belief, time did not "fly" when the interval was filled with an affectively positive musical selection.

In summary, research suggests some relationships between characteristics of environmental music and both the actual and perceived amount of time devoted to a task. Music is viewed to be one of the major components of atmosphere in retail settings. Increased time spent in some retail settings can be viewed as a positive as it may lead to increased sales. In other settings, such as fast food restaurants, where high turnover is a goal, it may be beneficial to decrease time spent, but not decrease perceived time spent. However the results are mixed, indicating that further research is needed to investigate the relationship between music, actual time, and perceived time.

#### **b. Consumer Behavior**

A second focus of research on music in service settings is the effects of changes in music on various consumer behaviors, such as purchase intentions, product choice, and evaluations of service.

Roballey (1985) studied the effects of music on eating behaviors. This study was conducted in the cafeteria of a university and utilized 11 participants from the school, who were not aware of the study as it was conducted. It was found that the presence of background music significantly increased the average number of bites taken per minute, which again supports the hypothesis that music affects behavior. This study did not examine the type of music, but rather the presence versus absence of music. Later research has gone on to examine how types of music may influence attitudes toward retail settings.

For example, North and Hargreaves (1996) found a positive correlation between liking for music in a cafeteria and participants' desire to return to the cafeteria. The more participants liked the music, the more they wanted to return to the situation. The opposite was true if they did not like the music, to the point that in one case physical violence was threatened if the music was not turned off. It is suggested that this situation may be predicted based on the complexity of the music, with less complex finding better acceptance (North & Hargreaves, 1996).

In another study, North and Hargreaves (1998) investigated whether affective responses to music of different styles could influence the perceived characteristics of a commercial environment. That is, do people think differently about a retail environment because of the type of music being played? The results showed that pop music made customers view the cafeteria as an "optimistic" and "confident" environment, but not peaceful. Classical music led to a feeling of "elegance" and "high class," but scored lowest on the "optimism" factor. The absence of music altogether resulted in a feeling of "peacefulness" but a lack of confidence. "Easy listening" music led to the most negative feedback. Overall, there were no statistically significant differences amongst the amounts customers were prepared to spend when subjected to different types of music. However, the study showed that customers were willing to pay more for their food when they had been exposed to classical or pop music.

Areni and Kim (1992) looked at the effect of top-40 music versus classical music on shopping behavior in a wine store. Classical and top-40 music were



alternately played in a wine cellar. The genre of music had no influence on the total number of bottles sold, but classical music led to sales of more expensive wine. The authors argued that the fit between the music and the behavior of purchasing expensive wine led to the effect. This study did not examine whether classical music would increase the sales of any product, or only those where there is a perceived fit for the consumer.

In another study examining wine purchases, North, Hargreaves, and McKendrick (1999) examined the influence of stereotypically French and German background music on selections of French and German wines. In a non-laboratory study, consumers were observed purchasing wine from a selection of four French wines and four German wines on an aisle end in the alcoholic beverages section of a supermarket. French music was alternated with German music (by day), and consumer behavior was observed. The researchers found that French wine outsold German wine when French music was played, and German wine outsold French wine when German music was played. Further survey analysis revealed that participants reported that French music made them think of France, and German music made them think of Germany. This supported the belief that music could activate customers' knowledge associated with a country, and subsequently affect selections.

Baker *et al* (1994) have examined the influence of polarized musical genres of classical and popular music within a service environment. The authors found that the ambient elements of classical music led to inferences that merchandise and service quality would be higher when compared to Top 40

music. While genres such as classical and jazz are generally accepted to be more complex than the popular music genre, some studies have manipulated the complexity of stylistic subsets of these broader genres in order to assess the impact on approach behavior. North and Hargreaves (1996) found that new age music of moderate complexity elicited more positive response from browsers at an advice stall than high or low complexity new-age music.

Changing from genre to overall the ability of music to create arousal, another stream of research in the servicescape arena has examined how music can increase arousal, and how increased arousal may influence evaluations. Dubé, Chebat, & Morin (1995) looked at the effects of background music on consumer and sales person relationship. Using a bank video-stimulation, the researchers measured arousal and willingness to engage with a salesperson. It was found that the more pleasure and arousal that the music elicited from the consumer the more they desired to have buyer-seller interaction. However this does not mean that they bought more goods. But the belief is that the seller would have a better chance of selling to a consumer that was willing to interact. The study also showed that music that produced a peak arousal that was either very relaxing or very exciting did the best.

Dubé and Morin (2001) continued to look at the effects of pleasure from background music. In a field study, 110 shoppers in a mall outlet were asked to evaluate a store, attitudes toward the servicescape, attitudes toward the sales personnel and the background music pleasure. The results indicated that the store evaluation was not directly influenced by the pleasure intensity of the

music, but rather that this was mediated by the attitude to the servicescape. Pleasure intensity from the music positively influenced consumers' attitudes toward the servicescape, which in turn influenced overall store evaluation. These results suggest that the effect of background music on evaluations of all objects in a servicescape is not through an automatic transfer of affect. Rather, there seems to be a network of relationships in consumers' minds, and background music can influence evaluations both directly and indirectly. The research on music as part of the servicescape consistently shows that people respond unconsciously to the music being played in service settings. This music can influence choice, and perceptions of the service environment. Further research can investigate how people have expectations of music in environments, and how discrepancies between music selection and expectations might influence consumer behavior.

## **ii. Music in Advertising**

Dunbar (1990) highlighted that music in advertising seems to communicate on three principal levels: the sensual, the emotional, and the intellectual. Dunbar argues that music makes you watch or listen to advertising in a different way than commercials without music, and adds an emotional dimension to the consumer response to the brand. The music used in advertising is often carefully scored to visual and other audio elements to create a certain tone and image. Sometimes the music chosen is familiar music, such as

California Raisin Grower's choice of "I Heard it Through the Grapevine" for their television advertisement campaign. Millions of dollars are spent on background music research with the belief that the proper music choice helps to reinforce commercial messages (Kellaris, et al. 1993).

Alpert and Alpert (1991) proposed a possible structure that looks at the role that music takes in an advertisement. Music can take a dominant role, that is, be in the foreground, carry lyrics, or be distinctive. Music can also take a purely background role. In a background role, the primary message is carried through a voice-over or written verbal messages. They take the position that music is primarily a cultural and social phenomenon and reflects the values and attitudes of a subculture.

Huron (1989) proposed there are six ways in which music can contribute to an advertisement: entertainment, structure/continuity, memorability, lyrical language, targeting, and authority establishment. Huron stated that the meanings of advertisements "are necessarily linked dynamically to particular times and the past experience of viewers" (Huron, 1989, p. 569).

Both of these papers argue that music can play multiple roles in an advertisement, and that the meanings associated with pieces of music may be influenced by the culture and experiences of the individual listener. The examination of music in advertising and other marketing settings has covered the presence (vs. absence) of music, the fit between the lyrical message and the visual elements (television commercials), and the role of atmospheric music in

retail settings. The following is a review of the existing literature on how music affects consumer behavior in advertising settings.

### **a. Music and Affective Response**

Many people consider music to be an emotion inducer. In everyday life, people will use music to “pump” up, to relax, to make themselves feel better, and to set the mood. The following section examines the role of music in advertising on affective responses (moods and emotions).

Alpert and Alpert (1989) looked at how specific elements of music’s structure (such as happy and sad) affect a consumer’s mood and responses to advertisements. These structural changes in the music may affect perceptions of the sadness of the target product, the overall attitude towards the advertised product, and the behavioral intentions towards the target product. In this study, participants were presented happy, sad and neutral greeting cards (all participants received all cards). At the time of presentation, participants heard musical selections pre-tested as happy or sad, or heard no music at all. All pieces chosen for the study were classical pieces by Bach, with different melodies. Participants were asked to self-report their moods, their overall impression of the advertisement, and their purchase intentions. The results show the music had a significant effect on the self-reported mood, with happy music producing the highest average mood score, and sad music producing the lowest. However, the emotional tone of the music did not produce significant variations in

perceptions of card mood. Overall, impressions of the cards were not significantly different.

Stout and Rust (1986) found commercials with music were liked more and elicited more descriptive and empathic emotional responses than the commercial without music. “Descriptive” referred to the ability to recognize the emotion, but not necessarily feel it. “Empathic” and “experiential” emotional responses represent two other levels of possible response to advertising music. Empathy referring to feeling the same emotion the character feels, and experiential refers to emotions generated by reacting to self-relevant events (Stout and Leckenby 1988). However, this research found no differences on recall between a commercial with music and one without.

Bruner (1990) argued that music was a powerful stimulus for affecting moods. It has been observed that arousing music can produce greater degrees of mood enhancement. He performed a meta-analysis of studies on musical expression, and he concluded that particular musical parameters could be predicted. Specifically, structural elements of the music can influence the mood. The usage of music with different instrumentations and tempos can affect how viewers respond affectively to advertisements. For example, sadness is associated with slow tempos, soft volume, and minor keys.

Scott (1990) examined music in advertising from an interpretive perspective. Through in-depth interviews, Scott looked at the interaction of music in advertising with persuasion. Specifically looking at needledrops and jingles, Scott explains that music aids in persuasion. Scott claims “music is an affective

background component that causes attachment to the product without the cognitive involvement of the viewer (p. 225).” People can be persuaded by nonverbal elements in advertising without verbal traces to recall. Scott argues that music, like language, has the potential to invoke complex, culture-dependent symbolic schemata. If music can be harnessed appropriately, it may be used to reduce boredom and maintain the attention spans of ad viewers/listeners.

Morris and Boone (1998) used a Self-Assessment Manikin as a way of nonverbally describing feeling states. In the experiment, participants viewed transparencies of 12 print advertisements for 30 seconds. Half of the participants listened to music that was congruent in mood to the content of the ad. All participants were asked to select from a series of cartoon characters representing 15 emotive states. There were no differences in brand attitudes or purchase intention due to the music. However, with regards to affective responses, participants showed significant differences in their emotional responses when music was presented. The effect was especially strong for negative mood/negative ad pairings.

Gorn, Pham and Sin (2001) used music to induce pleasant or unpleasant affective states in a series of two studies. In the first study, music was pretested to be either pleasant (Mozart’s “Eine Kleine Nachtmusik: Allegro”) or less pleasant (a classical Indian piece by Pandit Dhimsen Joshi), but both pieces were equally arousing. Two advertisements were tested to be either positive in affective tone or ambiguous in affective tone. In study 1, the valence of the affective state affected the evaluation of the ad in the mood-congruent direction.

This effect was limited to ads with an ambiguous affective tone. In study 1, the affective state was manipulated by music. In study 2, both the affective state and arousal levels were manipulated by the music. The valence of the affective state was determined through pre-testing, and the arousal levels were manipulated by tempo of the music. Four pieces of music were used to achieve a two (arousal: high versus low) by two (valence: high pleasure versus low pleasure) by two (ad tone: positive versus negative) design. The results of this study indicated that the arousal dimension influenced the ad evaluation, but the valence direction did not. Under conditions of high arousal, the ad evaluation was more polarized in the direction of the ad's affective tone than under conditions of low arousal. So while the focus of the research was on arousal rather than music, the results indicated that music could influence ad evaluations.

Research does demonstrate that music can produce changes in a person's affective state, and that this change in affective state may influence advertising evaluations. As shown, there is a tendency to compare and contrast the mood of the music with other elements of the advertising. This suggests that the fit of the music is what drives the affective responses. Additional studies discussing the fit of the music will be discussed later.

## **b. Music and Attitudes**

The effect of background music on attitude toward the advertisement has also been examined. In this research, it has been proposed that people will



prefer commercials with background music to those without. However, prior research has not consistently found this result.

Park and Young (1986) examined the effect of music on attitude toward the brand, the ad, and behavioral intentions. In addition, this research manipulated the level of cognitive involvement. Participants in the high cognitive involvement group were told that there were substantial differences in the performance of leading product brands, and asked to keenly attend to the products' benefits. In the non-cognitive involvement condition, participants were told that there are no differences among the leading brands of the product, and asked to imagine they were viewing the advertisement after having been told your closest friend is seriously ill. In the non-cognitive involved group, music was associated with more positive attitudes than in a "no music" condition. The authors were expecting a positive effect of music when participants were in a high-affective involvement, but this result was not found. In the high-cognitive involvement condition, music was found to be distracting, leading to lower attitudes and behavioral intentions. In this research the authors used a familiar song, and the commercial featured a female model in a setting designed to evoke a "classy" feel. The commercial was scored with no music or with "The Tide is High" by Blondie. The familiarity of this music may have affected the results. Additionally, as pointed out in MacInnis and Park (1990), this music choice may have been a poor fit, as the commercial was aiming to portray a classic beauty, and the music was music was modern and popular.

Gorn, Goldberg, Chattopadhyay, and Litvack (1991) conducted a study examining the effects of music versus information on recall, choice, and attitudes. In this study, participants were presented with commercials for apple juice. During the commercial, a voice-over provides five product benefits. Four of these claims were superimposed onto the bottom of the screen, to coincide with the voice-over. The fifth claim was just spoken for technical purposes to ensure the professional appearance of the commercial. Participants viewed one of three versions of this commercial: informational, which just had the voice-over; musical, which eliminated the voice-over and just had music; information plus music, which combined the music and the voice-over. A fourth control group did not see any commercials. Participants were asked to provide a written recall, a recognition measure, belief measures, an attitude toward the product and the commercial, and asked to choose from a selection of coupons including the advertised brand. The authors found that the attitude toward the apple juice was highest in the information condition (mean of 4.5 out of 5.0) versus the music condition (mean of 3.97).

Blair and Shimp (1992) examined how an unpleasant experience with a piece of music can affect consumers' attitudes toward a brand. In this research, half of the participants were exposed to pieces of music at multiple times during a preconditioning phase. The music was used to introduce and conclude audiotaped business books. The mere process of having to repeatedly return to view this tape led to a negative association with the music. These two initial groups were divided into two more groups (four total): conditioning and control.

The conditioning group was given repeated information about a fictitious brand of sportswear paired with the music. The control group did not receive information systematically pairing the sportswear brand with the music. Attitudes towards the brand (sportswear) were measured, and results indicated that participants who were originally exposed to music in an unpleasant context held less favorable attitudes toward the brand than participants who were not pre-exposed to the music.

The presence of music has been shown to improve the attitude toward the ad in some situations. However, some research indicates that attitudes toward the product may be highest in situations with information only (no music). Additionally, there is conflicting evidence as to whether the placement of the music and the type of music positively or negatively influences advertisements.

### **c. Music and Recall/Message Processing**

It can be argued that a main purpose of advertising is to communicate brand name, brand information, and to influence how people process this information. Since, in most advertising, people are not exposed to the ad at the time of purchase, it is important to consider recall. Several studies have looked at how music may influence recall for advertising components, and overall message processing.

Empirical studies by Wallace (1994) and Rubin (1993) have demonstrated that several variables enhance the recall of a song's lyrics. A simple repetitive melody and a consistent rhythmic structure across the verses are the most

important musical consideration. Lyrically, the use of strong-end rhymes, imagery, internal rhymes and poetic devices such as alliteration and assonance are the most important factors. Wallace's research asked participants to recall verses of a ballad that was either spoken or sung. Verbatim recall was significantly greater for the sung condition than for the spoken condition. In a second experiment, the ballads were spoken with rhythmically stressed syllables and a metronome in the background. In this study, the verbatim recall was again higher in the sung condition than in the rhythmically spoken condition. Both of these studies involved repeated exposure to the ballad. A third study involved only one exposure, and in this case the verbatim recall was significantly higher in the spoken condition than in the sung condition. So the melody of a song can make the text more memorable, but Wallace concludes this is when the melody is simple and easy to learn (Wallace, 1994).

Kilgour, Jakobson, and Cuddy (2000) examined whether music training acts as a mediator to the recall of spoken and sung lyrics. In a study, participants were exposed to the first two verses of a 1901 song, which were sung, sung with piano prelude, or spoken. Half of the participants had little musical training, while half of the participants had extensive training. The sung and sung with piano prelude produced similar results in terms of immediate recall of the words, and they were both significantly better than the spoken condition. Those with musical training demonstrated superior recall, even when recalling spoken text. A delayed recall measure revealed significantly better recall in the musical

conditions relative to the spoken. The non-music major undergraduates were almost uniformly found to have very little musical training.

Stout and Rust (1986) conducted a study in which sixty women chosen in a mall intercept were exposed to one of two similar commercials. The difference in the commercial was that one of the ads contained background music and one did not. After exposure to the advertisement, respondents were asked to tell the interviewer “what thoughts or ideas went through your mind and what feelings did you have?” The results indicated that music in the ad did not increase the effectiveness of the ad. The ad without music resulted in higher recall of the brand name than the ad with music.

Stout and Leckenby (1988) looked at the relationship between music and people’s responses to advertising. In a study with 50 thirty-second commercials for a wide variety of product categories, participants were asked for brand recall, purchase intent, and attitude toward the advertisement. The results indicated no difference on brand recall for music vs. no music commercials. This is contrary to the results from Stout and Rust (1986). However, different commercials were used in the “with music” and “without music” conditions, and had differing musical samples, making the results difficult to interpret.

In a series of studies, Olsen (1995, 1997) examined how the presence or absence of music may influence recall. Participants watched advertisements that had different lengths of time between pieces of information (inter-stimulus interval (ISI)) and either had background music throughout or no background music. These studies focused on how silence versus music between pieces of

information may affect recall. The results showed that with music present, the increasing time between pieces of information led to an increase in recall. However, when there was no music present, there was a significant drop in recall when the interstimulus interval (ISI) increased from 2 seconds to 3 seconds. The conclusion was that as the ISI increases, there are more processing resources available, and generally create higher recall. However, as the ISI increases without additional motivation to attend to information, there may be a downturn in recall.

Gorn, Goldberg, Chattopadhyay, and Litvack (1991) examined how music in advertisements affects elderly participants' recall and recognition of explicit product benefit claims. The authors found that when presented with just music, participants recalled more visual elements than in the informational or combined condition. The verbal recall was significantly higher in the informational than in the combined condition. The music only condition was excluded since it contained no information. In the recognition task, participants were asked to evaluate whether statements were true or false. Participants in the informational condition recognized significantly more elements of the commercial than participants in the combined condition recognized. Participants in the music only condition recalled more of the visual elements than those in the information and combined conditions.

In an advertising tracking experiment, Stewart, Farmer and Stannard (1990) studied the effects on music on product recall. Approximately three thousand people were contacted by telephone over a nine-month period. Two

weeks after the interviews started, a new campaign for a well-known car began, and its commercials were shown during the course of the study. In the interviews, people were asked to recall the advertisement with either a verbal cue (the product name) or a ten-second tape of the music used in the campaign (the musical cue). The results showed that 62% of people could remember the commercial after the verbal cue, while 83% of people recognized the music. Of the people who indicated they had not seen the advertising, 29% of these recognized the music. In a follow-up study, Stewart and Punj (1998) looked only at the last three months of the study, and found that nearly all of the respondents recognized the musical cue.

Looking at more structural elements of music, Hahn and Hwang (1999) found that when familiar music is used, there is an inverted U-shaped relationship between tempo and message recall. However, when unfamiliar music is used, there is no such relationship. In a study that manipulated tempo (slow versus fast) and familiarity (low versus high), participants were presented with a television ad for a fictitious brand of soap. The authors proposed that the faster the tempo, the more information provided. In cases with high familiarity, participants would be able to process the additional information (up to a point) and recall the brand name. However, with low familiarity, participants would not have sufficient resources to process the additional information supplied by the increased tempo. The results supported these hypotheses. Additionally, the researchers found that participants in the low tempo familiar music were able to

recall more information than the no-music group, suggesting that changes in familiar music can have a positive effect on recall.

In another study examining familiarity effects on recall, Roehm (2001) presented study participants with advertisements containing instrumental versions of a song or vocal versions of song. She measured the familiarity with the song (“The Long and Winding Road”) and created groups using a median split. The lyrics recalled were measured as the key indicator of recall.

Participants unfamiliar with the song had greater recall when presented with a vocal version. However, participants familiar with the song had greater recall of lyrics when presented with an instrumental version. Additionally, the familiar participants were more likely to sing along to the music when it was instrumental versus vocal. This suggests greater processing effort (filling in the lyrics) led to better recall.

Hung (2001) looked specifically at teaser ads, which she defined as highly visual advertisements that provide incomplete information, and rely on lush visual images. As in the research on music in films, which examined ambiguous situations, this research looked at how background music can influence perceptions. Participants viewed a television advertisement with a classical piece or a modern “edgy” piece. When asked what images the ad evoked, participants viewing the classical piece provided more successful imagery, while those viewing the edgy piece were more likely to provide imaginative imagery. The author concluded that music could accentuate aspects of the visual event.



Zhu and Meyers-Levy (2005) also looked at product perceptions, specifically looking embodied meanings in music (hedonic responses) and referential meaning (semantic descriptions) and how these can influence product perceptions and recall. Participants were presented with a target radio advertisement and two filler advertisements. The advertisements contained either an energetic piece of music or a sedate piece of music. Need for cognition (NFC) was also measured for the participants. The results indicated that people who engage in non-intensive processing (low NFC) are insensitive to the type of meaning in the music, while those who are intensive processors (high NFC) exhibit recall based on the music's referential meaning when they have low resources. However, when the intensive processors have high resources they exhibit recall based upon the music's embodied meaning.

When evaluating the effectiveness of an advertisement, recall of the advertisement and specifically the brand name and product information is important. Different music treatments appear to affect recall differently. The presence or absence of music can also influence the amount of information recalled, and the type of information recalled. Additionally, there is evidence that the music chosen may influence how people perceive the products.

#### **d. Music and Choice Behavior**

The literature on how music in advertisements affects choice behavior has been contradictory. Initial research found a positive relationship between liking for music and purchase intentions, but this research has not been replicated.

Following is a review of the literature concerning how music in advertisement influences purchase intentions and choice behavior.

In 1982, Gorn found that background music in commercials could positively influence subsequent choice behavior. His research used a classical conditioning perspective; participants' feelings toward the music would be transferred to the product (Gorn 1982). Gorn's research was the first to demonstrate a positive effect of music on advertisement processing. In his study, participants were asked to evaluate pen advertisements while listening to pleasant or unpleasant music. The dependent measure was which pen the participant chose (either the advertised pen or another). His research found that participants who viewed the pen while listening to pleasant music were much more likely to choose that pen than participants exposed to unpleasant music. However, subsequent research has not replicated Gorn's finding (Kellaris and Cox, 1989).

In Kellaris and Cox (1989), the authors attempted to replicate the study with a few modifications. In Gorn's study, participants were told the purpose of the study, and were sent to separate areas in a room to choose either pen. Kellaris and Cox created a study with either the same instructions as Gorn or different instructions from Gorn, and the method of picking a pen was less conspicuous. Pens were passed around in a box, and participants were asked to choose a pen not knowing that one pen wrote in black and one wrote in blue. The responses were coded using the color of the ink. This research demonstrated no effect of music on pen choice. The authors next conducted a non-experiment in

which participants were asked to imagine the stimuli and then make a choice. In this case the choice method was the same as in Gorn's original study, and the results were replicated, suggesting a demand artifact within the method of choosing. Both the Gorn study and the Kellaris and Cox study used existing music that was similar in terms of tempo, instrumentation, and mode. However, these elements were not specifically controlled for within the experiment.

In addition to measuring the effect of music's structure on a consumer's mood, Alpert and Alpert (1989) also measured purchase intentions. In their study pairing greeting cards with sad music, happy music, or no music, the purchase intention analysis revealed that cards appearing with sad music were significantly more likely to be chosen than those with no music or happy music. There were no significant differences between the happy and no music conditions in terms of purchase intentions.

Gorn, Goldberg, Chattopadhyay, and Litvack (1991) primarily examined how music in advertisements affects elderly participants' recall and recognition of explicit product benefit claims. The researchers also offered a choice of a coupon for the advertised brand of apple juice or for one of these alternatives. Results showed that those exposed to the information were more likely (41.7%) to pick a coupon for the advertised brand of apple juice compared to those exposed to music only (26.8%).

With regard to choice behavior and music in advertising, the results have varied, with some producing significant effects and others observing no significant effects. So potentially background music in advertising may influence

product choice. This area needs further investigation to determine under what circumstances music can influence choice, and what aspects of music may contribute to preference formation.

#### **e. Fit between Music and Other Advertising Elements**

When the auditory stimulus is music that is congruent with simultaneously presented non-musical elements, the music may facilitate attention to these non-musical elements. Several studies have featured experiments in which the fit between the music and the other elements of the ad has been manipulated.

In a review on the subject of congruity of music in advertising, Oakes (2007) identified 10 definitions of music/advertising congruity (score, mood, repetition, association, valence, semantic, genre, image, tempo, and timbre). He concludes that future research should examine the benefits of carefully selected incongruous music.

Several studies have manipulated the fit of the music and other components of the advertisement. MacInnis and Park (1991) found that music that generates emotional memories creates positive feelings and ad attitudes when the memories are congruent with the ad's primary message. Music that aroused incongruent emotions and memories led to more negative feelings and ad attitudes. In this study semantic congruity was manipulated. Their experiment manipulated involvement, indexicality, and congruity. The indexicality refers to the likability and familiarity of music, such that music that is high in indexicality is liked because it is familiar and linked with positive memories, while

music low in indexicality is not liked because of its familiarity or the memories linked to it. The songs used in this study include “You Make Me Feel Like A Natural Woman,” “Stop in the Name of Love,” and two unfamiliar pieces “Mirage” and “Mediterranean Sundance.” The product was Shena, a shampoo by Estee Lauder. It is not apparent whether the unfamiliar songs also included lyrics, or if instrumental versions of the familiar pieces were used. The music was aired at the beginning and end of the commercial but not while the voice-over occurred. So this study did not examine the effects of specific aspects of the music, and did not necessarily adjust for the presence or absence of lyrics.

Kellaris et al (1993) examined the fit of music and the message (low versus high), and the attention getting value of the music (low versus high). Twelve pieces of music were rated on attention-getting value and thoughts produced while listening to them. The images were matched to appropriate products, and copy was written to agree. As an example, music suggesting action was paired with an action movie. The dependent measures were recall and recognition of brand names and message arguments. The results of the research showed that when background music was congruent, attention-getting music increased recall and recognition of brand names. When the music was attention getting, but the message incongruent, it pulled listeners away from the message and negatively influenced recall. The no music ads performed as well or better than the musical ads in terms of recall and recognition.

Hung (2000) conducted a study examining the effects of the genre congruity of the music with the visual stimuli on consumers’ evaluations of the

advertisement. Participants were presented with commercials for coffee. Two commercials were used, one called *Brazil* and the second *Been to Café*. These were both aired in Australia, and contained no written or spoken words, and instrumental music. These commercials featured either their existing soundtrack, or the soundtrack of the other commercial, thus yielding four different commercials. A majority of the viewers (64%) presented with the Café music/Brazil video traced the origin to South America. The Brazil music/Café video generated mysterious setting (26%) and users were non-conformists (26%). This research suggests that viewers do generate meanings from the music in commercials. When natural music occurred with a natural video, the result was a natural coffee. With the avant-garde music and black and white video of a café, the coffee was considered trendy. When the music was incongruent with the video, the participants still found meaning, such as ruggedness, and strangeness.

Alpert, Alpert, and Maltz (2005) presented participants with a series of black and white slides for various products including happy and sad greeting cards, each of which was viewed for 45 seconds. This study looked at the mood congruity between the music and the product (greeting cards). The participants were divided into one of four groups, with all four groups hearing the same neutral music initially. Two of the four groups heard sad music with the target ad, and the other two of the four groups heard happy music with the target ad. Half of the participants in both the happy and sad music conditions were asked about their purchase intentions for happy occasions, while the other half were asked

about their purchase intentions for sad conditions, thus created the four experimental groups. Results indicated that participants who were choosing a card for a happy occasion had higher purchase intentions for a birthday card when the card was paired with happy music than those who viewed the happy card with sad musical background. When choosing a card for a sad occasion, those who viewed the card ad with the sad music background had a higher purchase intention than those exposed to the same ad with happy music.

These studies begin to examine the effect of the fit between music in advertising and the featured brand of the advertisement. How consumers judge the goodness of fit between a piece of music and a brand in an advertising setting requires one to know exactly which aspects of the music and the brand will be compared. Brand extension literature has defined fit as a function of product-similarity judgments in which participants compare existing products with extension products. Whether a piece of music is seen as consistent with a brand concept or a brand personality depends on how *easily* consumers can make a connection between the music and the brand. This ease depends on the consumers' perceptions of whether the music associations are potentially relevant to or desirable in the particular product.

## **E. Literature Review Conclusion**

The effects of music in advertising and related settings have been examined on many dimensions. A focus on effects of music in advertising

settings has generated inconsistent results. Much of this research includes possible confounds within the music selection. The music varies on many dimensions, such that differences in responses may be attributed to subject-specific associations with the music. The popular music chosen in some of the advertisements brings in questions of familiarity, affect toward the performer, and idiosyncratic associations with the musical selections.

It is however safe to conclude that music can have an effect on consumer behavior and evaluations in both advertising and service settings. The effect is often attributed to affective responses to the music or to broad changes in a musical element (e.g., the tempo or the genre). The North, Hargreaves, and McKendrick (1999) paper starts to address the cognitive associations people may have with pieces of music. While many pieces of music may have specific associations tied to them that vary by individual, other pieces of music may have more universal associations and descriptions that do not vary as much by individual. As discovered in the literature on music, people tend to describe music in a major mode as happy, and music in a minor mode as sad. The descriptions that people apply to music are likely to influence evaluations and behavior in a way similar to changes in the structural elements of a piece of music, because these structural changes likely are the root of descriptive changes.

Currently, there exists no method of measuring how people describe pieces of music. In the next chapter of this dissertation, a scale is developed that aims to measure how people tend to describe pieces of music. With this scale, it



will be possible to test how the cognitive descriptions of music influence consumer behavior in an advertising setting.

## **Chapter III**

### **Dimensions of Music Scale**

#### Overview

The literature on music suggests there is consistency in the ways in which different listeners describe pieces of music. The specific elements of the music contribute to this, such as the tempo, the key, the mode, and the instruments used. In practice, the style of music, or genre, can be identified by these elements. While people may not know the specific elements that cause something to be classified as jazz, they can with a high degree of certainty classify a musical piece as jazz, or as country, or as hip-hop. The purpose of this part of the research is to devise a scale that describes music. This scale will then be used to vary the fit between the music and the brand in an advertising setting.

#### Musical Trait Generation

##### Study 1 a

##### Method

In a paper and pencil task, eighty-eight participants were asked to complete three tasks for three of their self-generated favorite pieces of music. Participants completed the task in groups between 10 and 15 people, and received partial credit for an introductory marketing class.

In order to receive descriptions from multiple genres, participants were given specific instructions to consider music from various genres when generating their favorite pieces.

The first task was to name the piece of music, and to provide the name of the piece and the artist/composer. The second task asked the following:

We are interested in learning about why this is one of your favorite pieces of music. Please recall your thoughts, reactions, experiences, and associations with this specific piece of music. Please be as detailed as possible in your writing down your thoughts.

And the third task asked the participants to:

Please list the words and phrases that you feel best describe the piece of music you have selected. These can include words that specifically describe aspects of the music, or they can include how the music makes you feel, or what you think the music is meant to represent.

### Results:

The responses from the second task were coded for all descriptive words and phrases. Likewise, the words and phrases provided in the third task were coded for all descriptive words. Through coding of both of these responses, a list of 446 non-redundant words and phrases was created. A complete list of the words produced is available in Appendix 3.1.

Examining the musical pieces selected, the participants selected pieces of music Country-Western, bluegrass, jazz, popular, rock and roll, Broadway/musical, rap, salsa, techno, hip hop, folk, world music, and various eras of classical music.

### Study 1 b

The purpose of the second portion of the scale development was to reduce the original list of 446 words to a more manageable number.

### Method

Twenty-three participants completed a survey rating each of the original 446 words. The words were divided into 5 lists, and the words were presented in one of two orders on each of the five lists. The order of the five lists was varied across participants. The instructions asked the participants to rate how descriptive each word was to describe music in general (1 = not at all descriptive, 7 = extremely descriptive). To reduce the chances of focusing on a particular piece of music or genre of music, participants were told to consider many different types of music when evaluating each trait.

### Results

Of the original 446 words, 114 words received mean ratings of 5.0 or above. These 114 words are listed in Appendix 3.2. The majority of the traits produced were positive, which most likely results from participants choosing their favorite pieces of music.

### Study 1 c

The purpose of the third study in the scale development process was to test how people would rate specific pieces of music using the 114 words resulting from the first two studies.

## Method

One hundred and fifty participants were asked to rate specific pieces of music using these 114 traits. Using a five-point Likert scale (1=not at all descriptive, 5= extremely descriptive), participants rated the extent to which the 114 words describe a specific piece. Participants repeated the rating task for two additional pieces of music. There were four music groups, and the order in which music was presented was counterbalanced. Additionally, the order in which the words were presented to rate the music was counterbalanced. A total of 12 pieces of music were selected for the study. The pieces of music selected came from the following categories of music: baroque, classical, romantic, impressionistic, contemporary jazz, country, hip hop, 50s popular, 60s popular, 70s rock, 90s rock, and 90s alternative.

## Results

Exploratory factor analysis of the 114 words resulted in a five-factor solution. The 114 X 114 correlation matrix was factor-analyzed using principal components analysis and a varimax rotation. A five-factor solution resulted with all five factors having an eigen value greater than one, a dip in the Scree plot following the fifth factor, the five factors were meaningful.

A separate factor analysis was conducted on each of the five factors, to identify the words that most accurately represented each of the resulting factors. These factor analyses reduced the list from 114 words to 32 words for the five factors. The five factors produced were labeled Energizing, Calming, Dramatic,

Jazzy, and Sophisticated. Table 3.1 contains a complete list of the items associated with each factor.

<b>Table 3.1</b>				
<b>Study 1 c: Five dimensions of music</b>				
Calming	Energizing	Dark	Sophisticated	Jazzy
Calm Soft Peaceful Relaxing Tender Restful Tranquil Serene	Energizing Upbeat Lively Cheerful Bouncy Uplifting Exciting Vibrant	Dark Stormy Haunted Tense Mysterious	Sophisticated Complex Intricate Captivating Brilliant Riveting Triumphant	Jazzy Bluesy Soulful Sexy
$\alpha=.94$	$\alpha=.93$	$\alpha=.86$	$\alpha=.88$	$\alpha=.79$

A confirmatory factor analysis was also conducted using the 32 words and the responses from study 1c. Table 3.2 contains a summary of the fit measures from the confirmatory factor analysis. As shown in the table, the model has the best fit when the five factors are allowed to correlate with each other (5-factor revised). This is compared to a model in which all of traits load on to one factor (one-factor null) or one in which the five factors are independent of each other (5-factor original).

<b>Table 3.2 – Confirmatory Factor Analysis Fit</b>								
Model	X2	f	GFI	AGFI	CFI	NFI	NNFI	RMSEA
One-factor null	7373.34	95	.307	.215	.695	.680	.674	.270
5-factor original	1806.63	85	.789	.781	.942	.922	.936	.0828
5-factor revised	1231.43	75	.858	.831	.966	.947	.962	.0598

## **Chapter IV**

### **Theory and Hypotheses**

Evaluations of advertisements are sometimes based on the discrepancy between the elements of the advertisements and consumers' expectations for that type of advertisement. Theory suggests that items that are viewed as moderately discrepant from expectations are preferred to either congruent or extremely incongruent alternatives (cf. Berlyne, 1971, 1972; Mandler, 1982). A series of studies examining evaluations of products supports this positive effect of moderate incongruity, demonstrating that consumers may evaluate moderately incongruent products more positively than congruent ones (e.g., Meyers-Levy and Tybout, 1989; Peracchio and Meyers-Levy, 1994). This "moderate incongruity effect" has been demonstrated for incongruity arising from new product attributes (Meyers-Levy and Tybout 1989) brand extensions (Meyers-Levy, Louie, and Curren, 1994) and taste (Stayman, Alden, and Smith 1992).

Mandler (1982) suggests that the level of congruity between a stimulus and an evoked schema influence the processing of information and the evaluation of the stimulus. He proposes that a congruent stimulus is not arousing and results in a mild positive evaluation based on familiarity. Within an advertising setting, this would equate to an advertising being what consumers tend to expect for a brand. This would result in an evaluation based upon the familiarity with the

brand. However, moderate incongruity is believed to heighten processing, leading to the resolution of the incongruity and enjoyment of the product novelty. Mandler suggests that people enjoy solving the incongruity, and that the process of reaching a solution results in a positive evaluation. However, if the incongruity is too great, consumers are unable to solve the incongruity, and the process is not satisfying. Therefore the optimal level of incongruity is moderate, that is, the "moderate incongruity effect."

Martindale and Moore (1988) argued that the mind is composed of interconnected cognitive units that differ in the strength with which they can become activated. Units coding more prototypical stimuli are activated more frequently and are therefore stronger than those coding atypical stimuli.

Martindale and Moore claim that

Aesthetic preference is hypothetically a positive function of the degree to which the mental representation of a stimulus is activated. Because more typical stimuli are coded by mental representations capable of greater activation, preference should be positively related to prototypicality (p. 661).

This theory supports an argument for high congruity leading to more positive evaluations than low congruity.

Research testing Mandler's theory has uncovered some of the boundary conditions that limit when the moderate incongruity effect occurs. The same research could also demonstrate the situations under which Martindale and Moore's theory is not supported. Meyers-Levy and Tybout (1989) found that the moderate incongruity effect only occurs for nondogmatics. Study participants with the individual trait of dogmatism did not show a higher evaluation for moderately



incongruent products relative to congruent ones. Peracchio and Tybout (1996) showed that prior product knowledge moderates the preference for moderately incongruent options; the moderate incongruity effect did not occur for people with high product knowledge. Campbell and Goodstein (2001) investigated the effect of perceived risk of a product category, and found that consumers appear to have preferences for high congruity under high-risk conditions. Only in conditions where consumers perceived a low risk did the moderate incongruity effect occur. Thus, these studies identify three variables – dogmatism, prior knowledge, and risk perception -- that moderate the occurrence of the moderate incongruity effect.

In the present research, we investigate the effects of the fit between music and brand or ad evaluations, based on the notions that the degree of congruity influences consumer evaluations. As in the Peracchio and Tybout (1996) paper, the effects of prior product knowledge will be examined. This is to examine how situations in which consumers know more or less about the product category are able to resolve incongruity between the music and the brand. As the stimulus will be an advertisement, and an advertisement is frequently viewed in a noisy distracting environment, it is relevant to examine the effects of cognitive load on processing. Mandler's theory assumes that people have the cognitive capacity to resolve moderate incongruity between expectations and a target stimulus. Hence, we might expect that consumers will respond favorably to moderate congruity between music and a brand to the extent that they have sufficient cognitive capacity to resolve the incongruity. Moreover, we might expect this to hold, only to the extent that consumers have relatively low product knowledge.

In the present research, we begin by proposing that the evaluations of a brand in an advertising setting depend on the congruity between the music and the target brand. In the next section, the formulation of music/brand congruity will be discussed.

## **Constructs**

### **Music/Brand Congruity**

Aaker (1997) defined brand personality as "the set of human characteristics or traits that consumers attribute to a brand." Brand personality gives the consumer something to relate to that is vivid, alive, and more complete than what is conveyed by the generic offering. A well-established brand personality can result in increased preference and usage, higher emotional ties to the brand, and trust and loyalty. To successfully differentiate a brand, the personality must be distinctive, robust, desirable, and constant. Recognizing the importance of brand personality to marketers, Aaker developed a framework intended to capture the key dimensions of brand personality. The five traits proposed are competence, sincerity, ruggedness, sophistication, and excitement.

There has been debate as to the stability of Aaker's (1997) dimensions, and to the generalizability of her dimensions across cultures. However, there is a little debate that in practice brand image and brand personality are considered important as means to differentiate a product. While these traits may not be an exhaustive list of the traits associated with products, it is easy to think of products

that encompass each of these traits. What has not been studied is how elements of advertising can affect how a brand is perceived on brand personality dimensions.

The scale developed in Chapter III of this dissertation provides a way to measure the descriptions of pieces of music. When examining the dimensions of music scale and the brand personality scale, there are dimensions for which there are overlaps between the two scales. Specifically, Aaker (1997) found that brands could be viewed as exciting, while this research found that pieces of music could be viewed as energizing.

To represent situations of brand/music fit, the two scales were used in conjunction. To represent high congruity, a piece of music rated as highly energizing was paired with a highly exciting brand. To create moderate congruity, an exciting brand was paired with a highly calming piece of music/moderately energizing. Finally, low congruity between music and brand was created by pairing an exciting brand with music rated as highly dark/low energizing.

## **Hypotheses**

### Effects of Music/Brand Congruity on Brand and Advertising Evaluations

When the congruity between the music and the brand is high versus low, evaluations of the ad will be more positive. When the congruity is high, the music's dimensions will act as a reinforcement of the brand's schema and there will be improvement in the brand and ad evaluations. However, when the

congruity is low, the music's dimensions will not be assimilated into the brand's schema such that the music's dimensions do not serve to enhance brand and ad evaluations. Consistent with Mandler's theorizing, we expect that moderate levels of incongruity between the music's dimensions and the brand's schema also to lead to favorable brand and ad evaluations.

Hypothesis 1:

Moderate music/brand congruity will lead to higher brand and advertising evaluations than high or low music/brand congruity conditions.

#### Effects of Product Category Knowledge on Evaluations

Consistent with prior research by Peracchio and Tybout (1996), we expect product knowledge to moderate the music/brand congruity effects. More specifically, we do not expect the moderate incongruity effect to occur for people with high product knowledge. Possessing high knowledge of a product category implies that a consumer knows more about product alternatives, and can easily evaluate and make choices in that product category. Peracchio and Tybout (1996) argue that when knowledge is not elaborate, judgments will reflect congruity-based affect, whereas when knowledge is elaborate, judgments will reflect inference-based affect. Accordingly, consumers with elaborate knowledge structures are less likely to be sensitive to schema incongruity when making evaluations.

### Effects of Cognitive Load

Mandler's theory on congruity rests on the assumption that moderate incongruity leads to additional cognitive resources being applied to resolving the incongruity. In situations of moderate incongruity, individuals possess enough cognitive capacity to resolve the incongruity, and they experience positive affect from solving the puzzle. In situations of high congruity, high cognitive resources are not needed to process the information, and in situations of high incongruity, people may have insufficient resources to solve the incongruity. Advertising is often presented in distracting situations. Oftentimes, people may be doing multiple tasks while being exposed to an advertisement, thereby reducing the cognitive resources available to process information. In situations of high cognitive load, consumers are less likely to resolve the incongruity.

### Effects of Congruity, Product Category Knowledge, and Cognition

Based on the above discussion of the proposed effects, we expect the following:

Hypothesis 2:

A. Under conditions of low product category knowledge, moderate music/brand congruity will result in higher evaluations only under conditions of low cognitive load.

B. Under conditions of high product category knowledge, there will be no effect of music/brand congruity and cognitive load on evaluations.

### Effects on Cognitive Processing

Maheswaran and Chaiken (1991) studied the effect of incongruent product attitudes and product messages on processing. They found that attribute-related thinking and argument recall were more extensive when attitude and message valence were incongruent. The authors argue that incongruity leads to systematic processing of the information, while congruent messages and attitudes can be processed using heuristics. Applying this to music and brand setting, one would expect that an advertisement with high music/brand congruity would be more easily processed. When music/brand congruity is lower, that is, moderately incongruent, the information will be processed more deeply. If consumers cannot easily resolve the discrepancies, this will lead to a reliance on either the music or the brand for the evaluation. If the consumers can resolve the discrepancies (a moderate incongruity), then this will result in greater processing of the advertising information.

#### Hypothesis 3:

Under conditions of low cognitive load, when music/brand congruity is moderate, cognitive processing (as measured by number of thoughts) is higher than when music/brand congruity is high or low.

In sum, the main hypothesis is that music/brand congruity will result in positive evaluations only under certain conditions: when product category

knowledge is low and when cognitive load is low. The next chapter will discuss a study designed to test these hypotheses.

## **Chapter V**

### **Study**

The purpose of this study is to examine how the congruity between the dimensions of a piece of music and the brand personality of a target product in an advertisement affects consumer evaluations of the advertisement and the brand. Further, it investigates the extent to which product category knowledge and cognitive load moderate the effects of music/brand congruity on evaluations.

#### Pretest 1 – Brand Choice

A pretest was conducted to determine an exciting brand. Exciting was the desired brand personality, as the traits to measure excitement contained considerable overlap with the traits within the musical dimension of energetic.

Twenty-four participants were asked to evaluate Kit Kat brand using Aaker's (1997) brand personality scale. Each participant completed the entire scale for the Kit Kat brand of chocolate bars using a scale of 1 (not at all descriptive) to 5 (extremely descriptive). Kit Kat received a mean rating of 3.9 on the subset of traits measuring excitement.



## Pretest 2 – Brand Choice second test

A second pretest was conducted to determine the appropriateness of Kit Kat for a brand.

Forty-six participants were asked to evaluate Kit Kat brand using the traits determined in the previous study. Participants were asked to evaluate how appropriate each word is to describe the personality of Kit Kat. Instructions specified that some words, such as “soft” and “dark” should be interpreted from a personality perspective rather than a physical description. Each participant completed entire scale for the Kit Kat brand using a scale of 1 (not at all appropriate) to 7 (extremely appropriate).

Kit Kat’s mean rating on each of the five elements is shown in table 5.1.

<b>Table 5.1 – Pretest Brand Choice</b>	
<b>Dimension</b>	<b>Mean</b>
Dark	1.29
Calm	4.46
Energizing	6.33
Sophisticated	2.41
Jazzy	1.96

### Pretest 3 - Music Selection

A pretest was conducted to select pieces of music that were (1) high in excitement, (2) high in calmness, and (3) high in darkness. Eight-eight participants (50 females, 38 males) were asked to rate one of three instrumental pieces of music. The pretest was part of a series of unrelated studies. Participants were brought into one of 12 experimental sessions, with between 6 and 10 participants in each session. At one point during the series of studies, all participants were exposed to one piece of music. Each participant was asked to rate the piece using 7-point semantic differences scale for liking (did not like at all – liked very much), familiarity (extremely unfamiliar – extremely familiar), and interest (extremely uninteresting – extremely interesting). The pieces chosen were original compositions created for the authors by a Masters of Composition student or a professional musician. The mean ratings for the three music pieces are presented in table 5.2. The music pieces ratings on liking, familiarity, and interest were not significantly different from each other ( $F(1, 86) < 1, p > 0.5$  for liking;  $F(1,86) = 1.471 p > 0.2$  for familiarity;  $F(1,86) < 1, p > 0,3$  for interest).

	Energizing piece N=29	Calm piece N=30	Dark piece N=29
Liking	4.41 (1.78)	4.13 (1.63)	4.52 (1.46)
Familiarity	2.10 (1.35)	1.90 (1.03)	2.38 (1.52)
Interest	3.90 (1.95)	3.69 (1.54)	4.21 (1.57)

#### Pretest 4 – Music Selection

A pretest was conducted to evaluate the musical selections based upon the dimensions of music determined in the previous studies. In groups of 10 to 13 participants, one hundred and thirteen (49 males, 64 females) participants completed several unrelated tasks. At one point during the session, participants were exposed to a piece of music. Prior to hearing the music, participants were given instructions and the questionnaire. The piece of music was played once, and then the participants were asked to complete a form evaluating the piece of music on each of the 32 dimensions identified in the previous studies. Each participant listened to two songs, but only the first song's evaluations were used in the calculations. The questionnaire asked the participants to rate music on each of the 32 dimensions with 1 being the "not at all descriptive of the music" and 5 being "highly descriptive of the music". The piece of music was played a second time while the participants were completing the task.

The three pieces of music were the same as from the previous pretest (pretest 2a) were selected to represent (1) energizing (2) calm and (3) dark. Table 5.3 shows the mean scores for each piece of music, the table includes all five dimensions to demonstrate that the music did not vary on any of the variables that were not of primary focus. The pieces of music did not significantly differ on the jazzy and sophisticated elements, ( $F(2, 113) = 1.79$  and  $1.99$ , respectively,  $p > 0.1$  for both variables). The three songs were significantly different on the dark dimension ( $F(2, 113) = 412.08$ ,  $p < 0.01$ ), on the calm

dimension ( $F(2, 113) = 143.32, p < 0.01$ ), and the energizing dimension ( $F(2, 113) = 227.52, p < 0.01$ ).

	Type of Music		
Dimensions	Energizing	Calm	Dark
Calm	2.23	4.18	1.99
Dark	1.36	1.39	4.15
Energizing	4.07	1.85	2.20
Jazzy	1.43	1.65	1.59

### Congruity Operationalization

Congruity between the music and the brand was operationalized by choosing pieces of music that measured highly on three elements (energizing, calm, and dark) and matching each with the Kit Kat brand. The three pieces of music were paired with the brand Kit Kat to create three levels of music/brand congruity (see table 5.4). The high level of congruity was created by pairing Kit Kat with an energizing piece of music. Kit Kat received high scores on energizing, as did the piece of music. The second level of congruity, moderate, was created by pairing Kit Kat with a calming piece of music. Kit Kat was described as moderately calming in the pretest. The music received a high score on calming, thereby creating a situation in which the music and the brand were

moderately incongruent. Finally, the third level of congruity, low, was created by pairing Kit Kat with a dark piece of music. The music received high scores on darkness, while the brand received low scores on darkness. In order to create situations in which the music was distinct in terms of dimensions, the design confounds music and brand. The pretests for the music did not produce music that was moderate or low on energizing without being high on another dimension.

<b>Table 5.4 – Music/Brand Congruity</b>		
<b>Congruity</b>	<b>Music</b>	<b>Kit Kat Brand</b>
High	High on Energizing	High on Energizing
Moderate	High on Calm	Moderate on Calm
Low	High on Dark	Low on Dark

#### Cognitive Load Operationalization

Cognitive load was manipulated using a string of numbers. Participants in the high cognitive load condition were given a string of numbers to memorize prior to reviewing the advertisement. The first question after viewing the advertisement asked the participants to recall the number string.

## Method

The study was a 3 (Music/Brand Fit: High, Moderate, Low) X 2 (Product Knowledge: High vs. Low) X 2 (Cognitive Load: High vs. Low) between subjects factorial design. Music/brand fit and cognitive load were manipulated variables and product knowledge was a measure variable. One hundred and fifty-one participants (86 males, 65 females; average age = 20.57) were randomly assigned to one of six experimental conditions. The study was held in a behavioral lab, with individual computers and headsets provided for each of the participants. The studies were conducted in groups ranging from 8 to 11 individuals.

Upon entering the laboratory setting, each participant was asked to sit in front of one of the running laptop machines. After completing consent forms, oral instructions were given, in addition to written instructions. After completing the instructions, each person was instructed to turn to the computer in front of them. A PowerPoint presentation was running that featured additional, condition-specific information, and general information about how to use the headphones, and how to advance slides. As part of the instructions, participants were informed they would be exposed to a radio advertisement. While viewing the presentation, participants were asked to activate a sound icon on the screen, which started the radio advertisement. Upon completing the presentation, participants were directed to complete a paper questionnaire.

Participants in the high cognitive load condition were presented with a string of digits prior to exposure to the radio advertisement, and given instructions to memorize these numbers as they would be asked to recall the numbers later in the session. Participants in the low cognitive load condition proceeded to the radio advertisement immediately after receiving instructions.

### Dependent Measures

The questionnaire asked participants to rate attitude toward the advertisement (3 items using a 7-point scale: not at all favorable/extremely favorable; not at all positive/very positive; not at all like/very much like). Additionally, attitude toward the brand was measured (6 items using a 7-point scale: appeal, quality, desirability, superiority, value, worth buying).

After completing the attitude scales, participants were asked to recall as much as they could from the advertisement they heard. Finally product category knowledge was measured through questions asking about interest, expertise, feature knowledge, and strength of preference.

## Results

### **Main Effects**

#### *Congruity on Attitudes*

An ANOVA was conducted to evaluate the extent to which the fit between the music and the brand influenced attitude toward the advertisement and the brand. Consistent with Hypothesis 1, the main effect of congruity on attitude toward the advertisement was significant ( $F(2,137) = 11.03, p < 0.001$ ).

Examining this more closely, the moderate condition of congruity was significantly different than both the high condition of congruity and the low congruity ( $p < .05$  and  $p < .001$ , respectively) (see Figure 5.1). The high and low congruity conditions were not significantly different from each other ( $p > 0.1$ ). The main effect of congruity on attitude toward the brand was also significant ( $F(2,137) = 7.74, p < 0.01$ ). Examining this more closely the moderate congruity condition was again significantly different from both the high congruity condition and the low congruity condition ( $p < .001$  and  $p < .05$ , respectively) (see Figure 5.2). The high and low congruity conditions were not significantly different from each other ( $p > 0.1$ ).



Figure 5.1

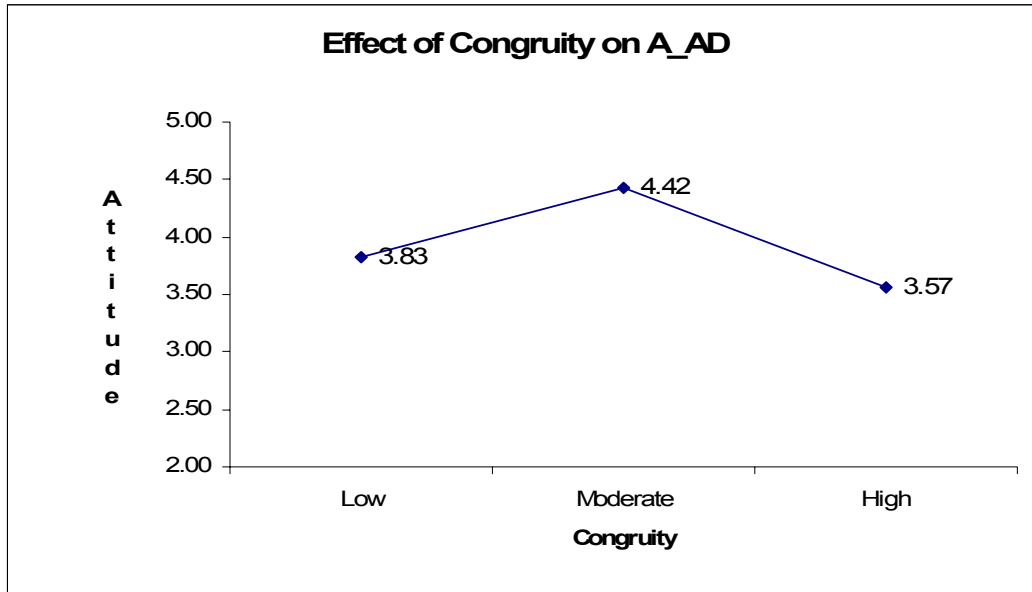
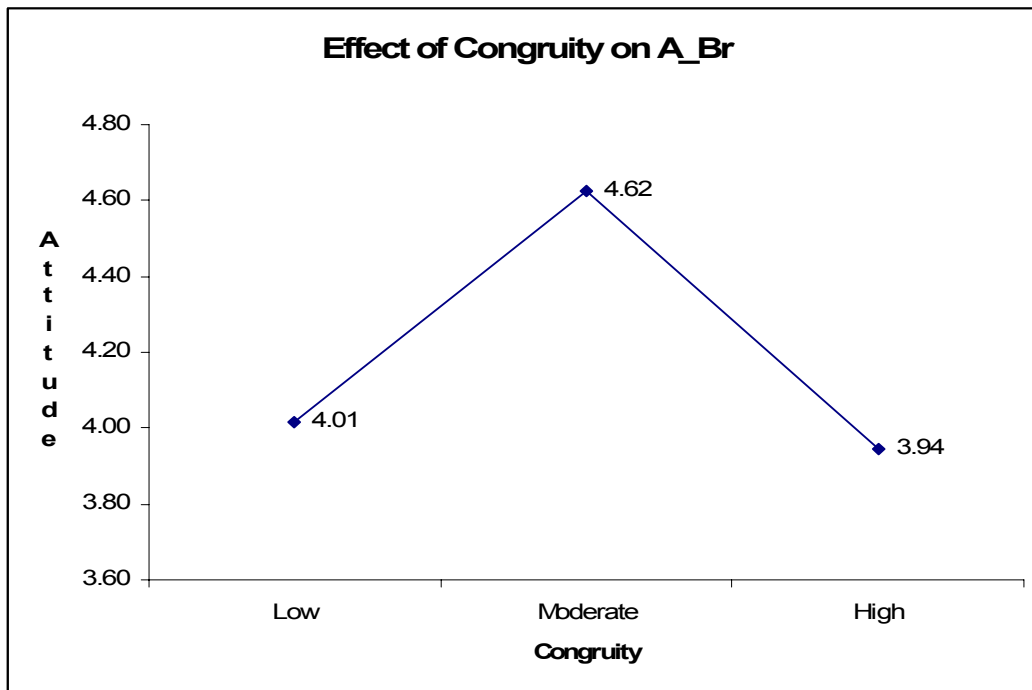


Figure 5.2



### *Cognitive Load on Attitudes*

An ANOVA indicated a significant main effect of cognitive load on attitude toward the advertisement ( $F(1, 137) = 5.01, p < 0.05$ ), but not on attitude toward the brand ( $F(1, 137) = 2.65, p = 0.11$ ). Examining the attitude toward the advertisement, participants under a high cognitive load rated the advertisement lower ( $M = 3.69$ ) than participants under a low cognitive load ( $M = 4.09$ ). Results were directionally similar for attitude toward the brand with means of 4.07 and 4.33 for high and low cognitive load, but the difference was not significant ( $p > .05$ ). Please see Figures 5.3 and 5.4.

Figure 5.3

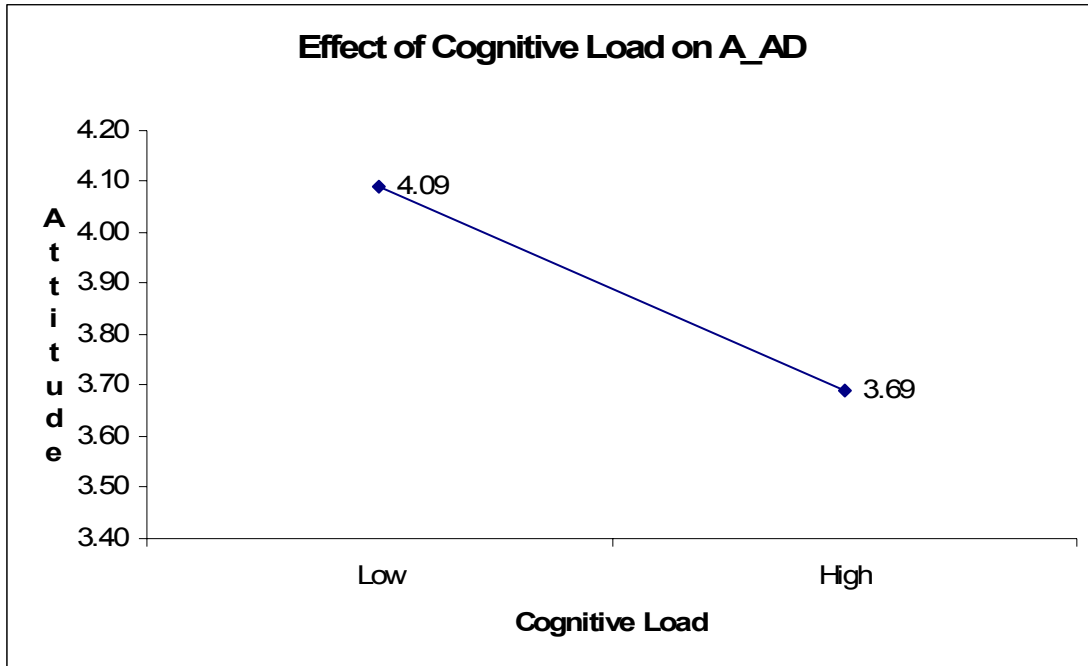
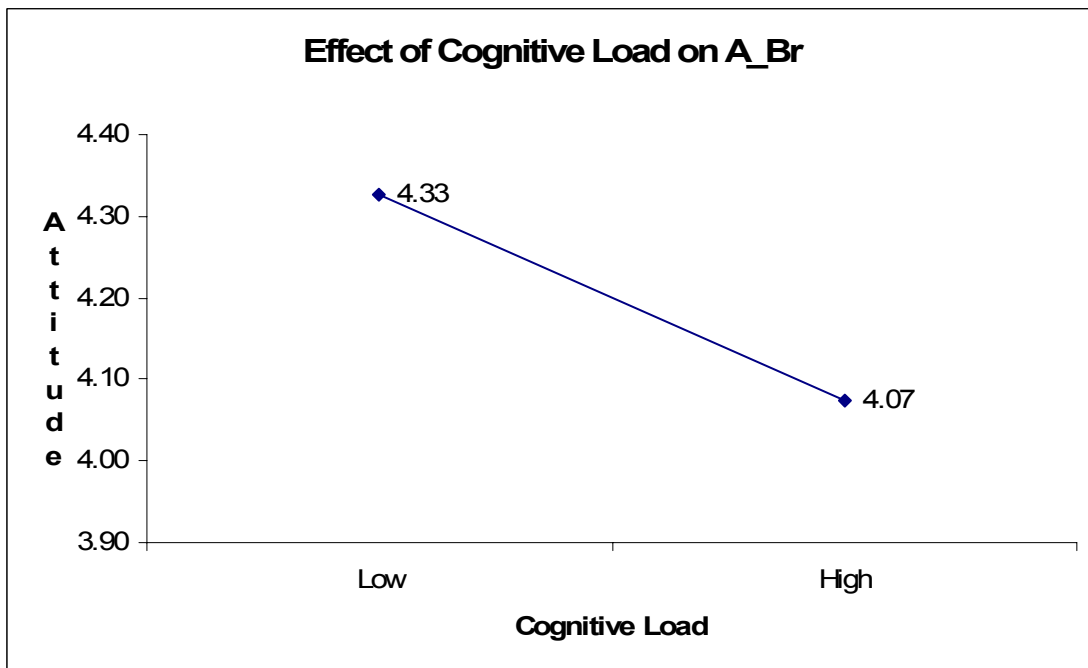


Figure 5.4



### *Product Knowledge on Attitudes*

Product knowledge produced significant effects on both attitude toward the brand and attitude toward the advertisements. ANOVA indicated the effect of product knowledge on attitude toward the advertisement was significant ( $F(1,137) = 6.79, p = 0.01$ ). Participants with high product knowledge rated the advertisement higher ( $M = 4.08$ ) than participants with low product knowledge ( $M = 3.76$ ). Likewise with attitude toward the brand, tests revealed a significant relationship ( $F(1,137) = 5.93, p < 0.05$ ), with means of 4.34 and 4.01 for high product knowledge and low product knowledge, respectively. (See Figures 5.5 and 5.6).

Figure 5.5

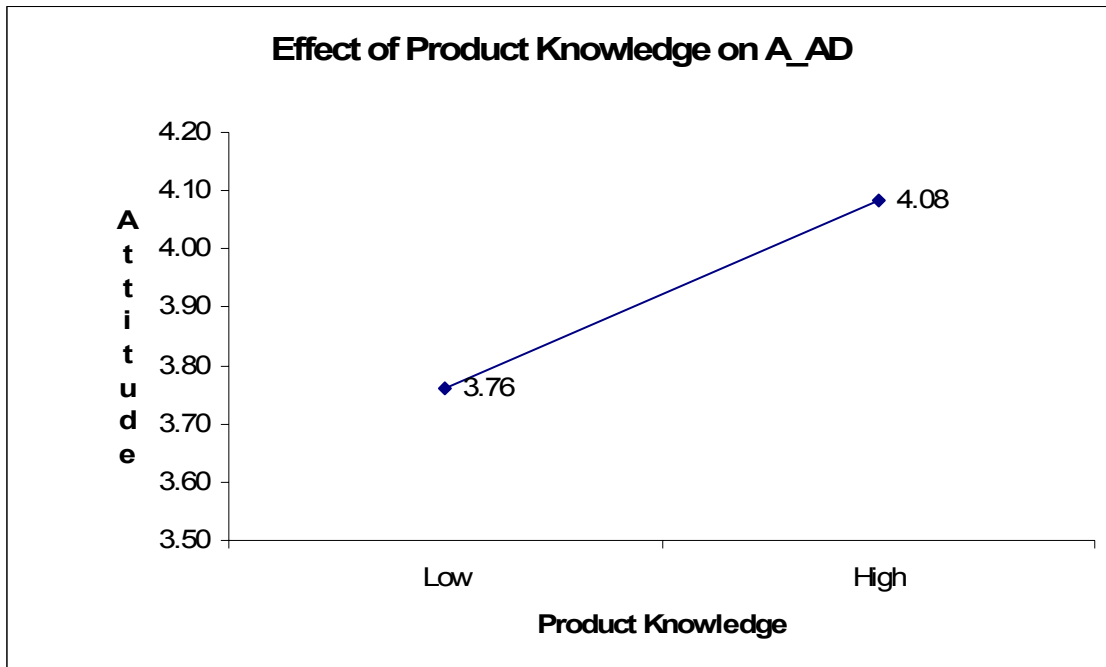
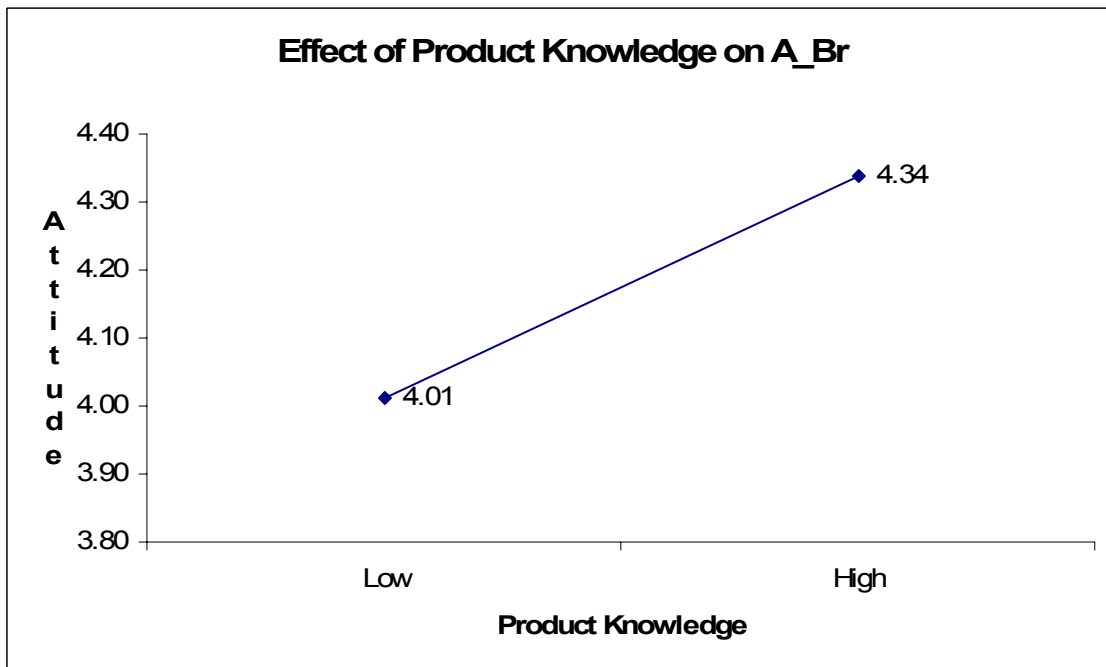


Figure 5.6



## ***Interactions***

No significant two-way interactions were obtained on attitude toward the brand or attitude toward the advertisement.

### Three way interaction

Hypothesis 2 proposed that under conditions of low product category knowledge, moderate music/brand congruity would result in higher evaluations only under conditions of low cognitive load. While under conditions of high product knowledge, there would be no effect of music/brand congruity and cognitive load on evaluations.

The analysis indicated a significant 3-way interaction between product knowledge, music/brand congruity, and cognitive load ( $F(2, 137) = 3.53, p < 0.05$ ) on attitude toward the advertisement only. By decomposing the three-way interaction, we found a significant interaction of congruity and cognitive load for low knowledge ( $F(2, 58) = 3.71, p < 0.01$ ); see Figure 5.7), but not high knowledge study participants ( $F(2, 79) = 1.59, p > 0.20$ ; see Figure 5.8). Further inspection of the low knowledge study participants revealed that they evaluated the advertisement more highly under moderate ( $M = 4.40$ ) compared to high ( $M = 3.06, p < 0.01$ ) or low congruity ( $M = 3.52, p < .01$ ) condition. However, contrary to what we predicted in Hypothesis 2, this effect was evident under conditions of high cognitive load ( $F(2, 30) = 13.61, p < .001$ ; means equal to 2.41, 4.57 and 3.37 for high, moderate and low congruity, respectively; all pairwise comparisons significantly different at  $p < 0.05$ ), but not under low cognitive load ( $F < 1$ ).

Moreover, low knowledge study participants gave lower evaluations of the advertisement with high music/brand congruity, when under high cognitive load ( $M = 2.41$ ) compared to low cognitive load ( $M = 3.70$ );  $F(1, 16) = 5.90, p < 0.03$ .

Figure 5.7

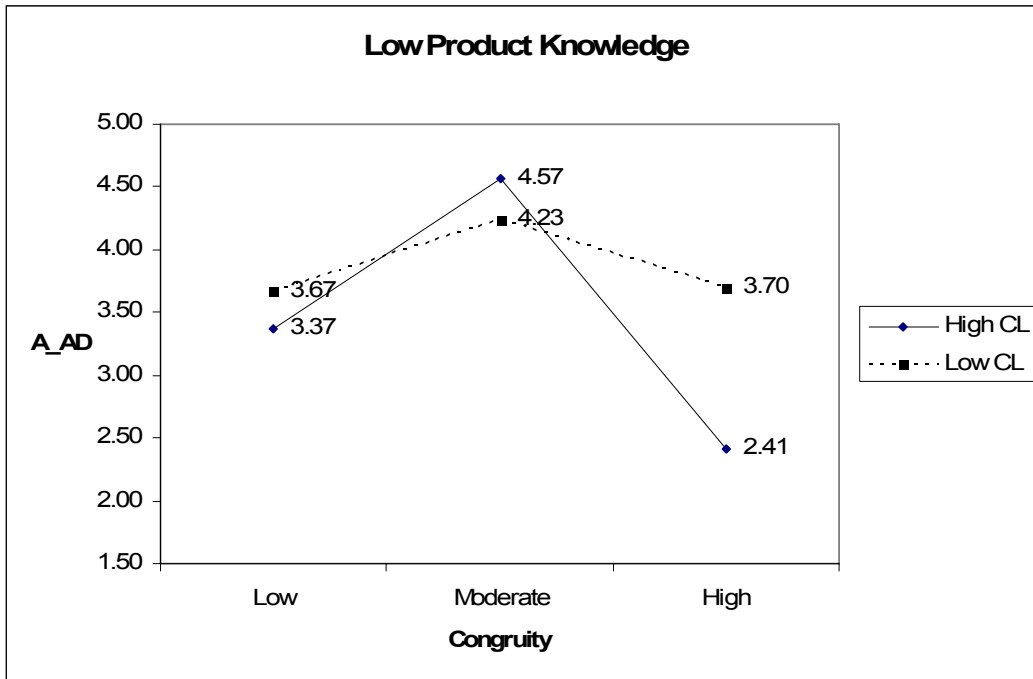
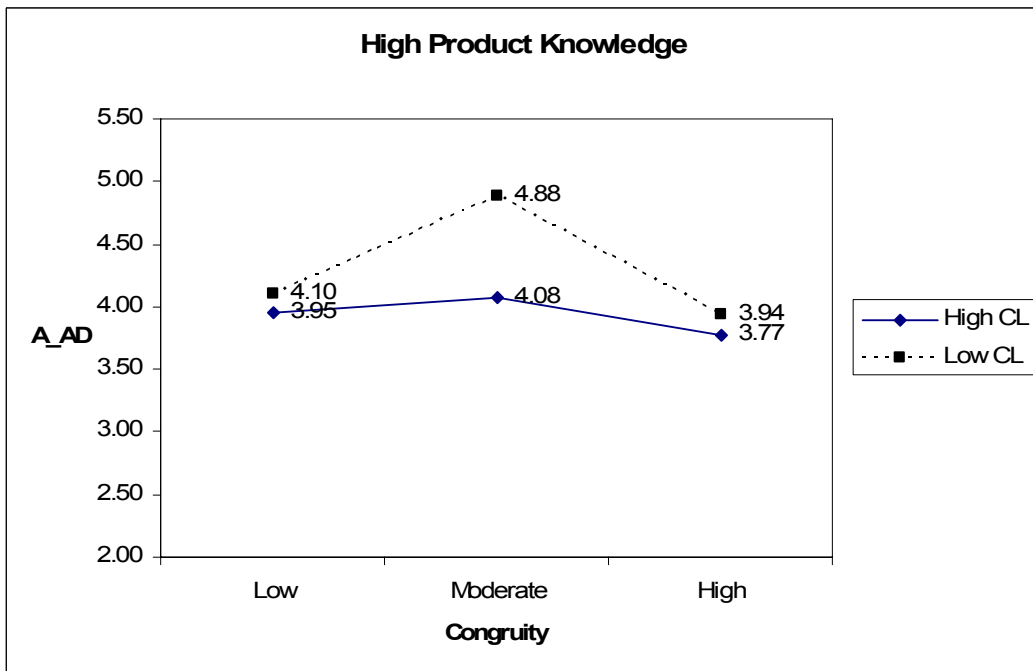


Figure 5.8





## Classification of Thought Protocols

Thoughts and recall remarks were classified by type and quantity of comments. Thoughts were classified as positive, neutral, and negative with regards to the overall feel of the ad and to the music. In addition, the open-ended responses were classified with regards to comments about the music, the brand, and non-music elements of the advertisement. Finally, overall categorizations of the advertisement were classified. For a complete list of the coding methodology, please refer to Appendix 4.2.

Two research assistants coded the responses for the first 28 items on the coding methodology list. The author of this research coded the responses for the final 11 items.

### *Total number of Thoughts*

Hypothesis 3 predicted that under conditions of low cognitive load, when music/brand congruity is moderate, cognitive processing (as measured by number of thoughts) would be higher than when music/brand congruity is high or low.

Collapsing across product knowledge, there was a significant interaction between version and congruity on total number of thoughts ( $F(2, 147) = 3.36, p < .05$ ). Under conditions of high cognitive load, the mean total number of thoughts were 6.00, 6.63, and 5.32 for high, moderate, and low congruity

conditions respectively (high versus moderate and low, not significant,  $p > 0.1$ , moderate versus low, marginally significant.  $p = 0.056$ ). Further inspection of the cognitive condition showed mean totals for number of thoughts of 5.33, 6.42, and 7.36 for conditions of high, moderate, and low congruity conditions respectively. The high and moderate congruity conditions were not significantly different ( $p > 0.2$ ), but the high and low congruity conditions were significantly different from each other  $p < 0.05$ . This provides partial support for Hypothesis 3, where we expected the moderate congruity condition to be significantly higher than both the high and low congruity conditions. However, the results indicated a moderate congruity boost under high cognitive load rather than low cognitive load.

#### *Thoughts regarding dimensions of music*

Collapsing across product knowledge and cognitive load, an ANOVA indicated significant main effects of congruity on thoughts about music as calming, ( $F(2, 147) = 5.21, p < .01$ ), energizing  $F(2, 147) = 9.37, p < .001$ , and dark ( $F(2, 147) = 6.51, p < .01$ ). Further analysis was conducted on each congruity condition.

#### *High congruity (Energizing music)*

Participants in the high congruity condition had significantly more thoughts about the music as energizing ( $M = .016, 0.00, \text{ and } 0.00$  for high congruity,

moderate congruity, and low congruity conditions,  $p < 0.001$  for both comparisons between high and moderate congruity and high and low congruity).

#### *Low congruity (Dark music)*

Participants in the low congruity condition had significantly more thoughts about the music as dark than participants in the high or moderate congruity conditions ( $M = 0.15, 0.00, 0.02$  for low, high, and moderate congruity conditions, respectively,  $p < .01$  for moderate to low,  $p < .001$  for high to low).

#### *Moderate congruity (calming music)*

Participants in the moderate congruity condition had significantly more thoughts about the music as calming than participants in the high congruity conditions ( $M = 0.24$  and  $0.02$  for moderate and high congruity respectively,  $p < .01$  for high to moderate. However, there was not a significant difference between moderate and low congruity ( $M = 0.24$  and  $0.15$ ,  $p > 0.2$ ).

#### *Recall remarks about music*

The thought protocols were coded for the number of recall remarks about the music. These were comments that contained thoughts about specific aspects of the music and the use of the music in the advertisement. An ANOVA of number of recall remarks about the music revealed a significant main effect of congruity on the number of recall remarks ( $F(2,145) = 4.71$ ,  $p < .05$ ). The means for recall remarks were 0.51, 0.78, and 0.44 for high, moderate, and low

congruity respectively. Pairwise comparisons indicated that the high congruity condition is not significantly different from the low congruity condition ( $p > 0.05$ ). However, the moderate congruity condition was significantly different from both the high and low congruity conditions ( $p < 0.01$ ).

The main effect of congruity was qualified by a significant interaction between congruity and product knowledge was revealed on recall remarks about the music in the ad ( $F(2,145) = 4.91, p < 0.01$ ). Under conditions of high product knowledge means were 0.59, 0.57, and 0.55 for all high, moderate, and low congruity respectively (all pairwise comparisons nonsignificant,  $p > 0.05$ ). In conditions of low product knowledge, means were .353, .963, and .235 for high, moderate, and low congruity (moderate congruity was significantly different from both high and low congruity ( $p < 0.01$ , but not between high and low congruity ( $p > 0.05$ )).

### *Music as distracting*

An ANOVA of number of mentions of the music as distracting revealed a significant effect of cognitive load ( $F(1,145) = 5.00, p < 0.05$ ). There was a mean number of .082 for high cognitive load versus .014 for low cognitive load conditions. While the numbers are low, this does indicate that the cognitive load manipulation may have successfully distracted the participants.

## Discussion

The results of the study do support the main effect of congruity on attitudes. For both the attitude toward the advertisement and the attitude toward the brand, the moderate congruity condition produced the most favorable attitude results. This is consistent with hypothesis 1.

The results did not support the second hypothesis, but were suggestive of differing effects in low knowledge vs. high knowledge conditions. Under both high and low cognitive load conditions, the results were consistent with a moderate incongruity effect. However, the effect under high cognitive load appeared to be driven by a pronounced dislike for the ad in the high congruity condition. It is possible that participants exposed to the exciting music were exposed to more stimulation than to participants in the other conditions. This high tempo, uplifting music might have been overwhelming, especially for participants in the high cognitive load condition. The results of the study show that there was an additional negative effect of cognitive load on attitude for the high congruity condition. Under conditions of low cognitive load the music might not have been as over-stimulating, therefore not producing a negative effect.

The thought protocol analysis provided evidence that participants did describe the music in a manner consistent with the scale developed. Participants exposed to highly congruent music (exciting), moderately congruent music (calming), and incongruent music (dark) made more references to these respective descriptions in their open-ended responses.

It was not evident in the thought protocol analysis that the music under conditions of high cognitive load was viewed as more distracting. However, the nature of the instructions might not have prompted this information. The thought protocol analysis did not produce significant differences in regard to the quantity of thoughts. The previous literature suggested that participants under high cognitive load would produce fewer thoughts. Additionally, the previous literature suggested that moderate congruity conditions would be more likely to generate thoughts, as viewers would be resolving the incongruity between the music and the brand. The process of resolving this incongruity would lead to more thought generation.

Whereas the thought protocol did not provide statistical support for the unexpected results with regards to attitudes, some of the specific thought protocols seemed to provide anecdotal support and explanations.

For example, a participant in the high congruity, high cognitive load condition stated the following:

“The music or noise in the background I felt took away from the advertisement. Sometimes I felt like I was listening more to the background noise than I was to the person speaking.” (High product knowledge)

While another participant in the same condition stated the following:

“I did not like the music when the ad first started to play, so I did not want to keep listening, and had a hard time paying attention to the words.” (Low product knowledge)

These two quotes taken together, along with those of other subjects, indicate that the music in the high cognitive load was potentially distracting and led to viewers tuning out from the advertisement. This suggests that the cognitive load in

combination with the energetic music might have been too demanding. A similar effect was found in Young and Park (1982). In their study, the high-cognitive involvement participants found music to be distracting, and led to lower attitudes and behavioral intentions.

Likewise, when looking at the moderate congruity conditions, it was apparent in some of the thought protocols that participants did recognize the music as moderately discrepant, but were still able to create a positive association between the music and the advertisement.

Moderate Congruity, Low Cognitive Load, High Product Knowledge:  
“The tone of the advertisement was almost a romantic fairy tale. ....There was string instruments playing in the background that seemed to crescendo as the Kit Kat was discussed. The image the ad created in my head did not match what I experience when I eat a Kit Kat.”

Moderate Congruity, High Cognitive Load, Low Product Knowledge:  
“Sweet light symphony music in background was a nice touch of elegance, although I felt that type of music paired with the Kit Kat did not seem to fit well.”

These participants provide evidence that the moderate congruity condition was resolvable. Additionally, the resolution produced was positive (romantic fairy tale and elegance).

Finally when looking at the low congruity conditions, the written thoughts did suggest that viewers interpreted the music as inappropriate (incongruent with the brand). For example:

Low Congruity, Low Cognitive Load, High Product Knowledge  
“There was a sharp discrepancy between the tone of the music in the advertisement and the atmosphere that the words spoken were trying to create. The combination of melancholic haunting rhythms with trivial exaggerations about the bar further underscored the hollowness of the assertions made in the advertisement and highlighted the folly and futility

of purchasing a bar in light of the deep despair that is undercurrent in everybody's life.”

This quote demonstrates not only a feeling that the music and the brand were incongruent, but also demonstrates an extreme backlash of pairing a brand with music that is incongruent with the brand and the other elements of the advertisement. Another viewer in the high cognitive load condition also stated that the music and the brand were incongruent, but did not elaborate extensively:

Low Congruity, High Cognitive Load, High Product Knowledge:  
“There was some solemn music in the background, which really turned me off to the advertisement. Because I know what Kit Kat bars are, I feel they are much more fitting with an upbeat commercial.”

The results of study 2 suggest moderate congruity between the descriptions of the music and the descriptions of the brand could lead to higher evaluations under different conditions. The results of the analyses of the attitudes and the thought protocol data suggest that there may have been an unexpected experimental artifact in the high cognitive load, high congruity conditions. This condition was not expected to produce the lowest overall evaluation of the advertisement. Some of the thought protocols suggest that the combination might have been too distracting, and therefore disliked.



## **Chapter VI**

### **Overview, Conclusions, and Recommendations**

This chapter begins with a summary of Chapters 1 to 5, and is followed by conclusions and recommendations of the dissertation.

#### Overview of the Dissertation

The aim of this dissertation was to examine the relationship between descriptions of brands and descriptions of music, and the effects of this relationship on attitudes towards the brand and advertisements. The literature looking at emotional descriptions of music, and the relationship between structural elements of music and descriptions can be traced back to the early 20<sup>th</sup> century. This dissertation created a new way of measuring descriptions of music that was not reliant upon structural elements of music.

In Chapter 1, an overview of the problem was described. It provided a perspective on the types of research regarding music conducted in the marketing field. It also pointed out the need for more systematic research on the effects of music in marketing settings.

Chapter 2 reported a literature review on different areas of music research. Initially, an overview of music and musical terms was provided.

Additionally, research focused on how the structural elements of music influence people's perceptions of music was discussed. This literature provides evidence that there is consistency in how people describe music. Following the review on musical structure, a review on music in film soundtracks is provided. Looking at music in combination with other information shows how music can provide additional information. It also demonstrates that viewers use the music to draw inferences and conclusions about the visual elements paired with the music.

The final portion of the literature review turns to research in marketing environments, specifically service environments and in advertising. This research looked at the presence versus absence of music, the genre of music, and some of the structural elements of music. In this section there is a review of how the fit between the music and the advertisement has previously been operationalized. A conclusion of the research into music in marketing settings is that the results have been inconsistent. One explanation for the inconsistent results is that individual responses to the music and/or personal experiences with the music may have influenced the results. The conclusion of the literature review is that there is not currently a systematic way to measure viewers' descriptions of music.

Chapter 3 aims to address the need for a consistent approach to describing music. Through a series of three studies a scale was created to measure how people tend to describe music. The aim of this scale was to create a scale that contained words that non-musicians use to describe music, and to create a scale that was not specific to individual genres of music. The scale

resulted in five dimensions of music: calming, dark, energizing, jazzy, and sophisticated.

In Chapter 4 additional research is reviewed. This chapter focused on research on schema congruity and factors that affect how people evaluate objects congruent or incongruent with existing knowledge structures. A series of hypotheses are proposed to predict how the fit between descriptions of music and descriptions of brand in an advertising setting will affect attitudes and thought processes. The first hypothesis posed that moderate music/brand congruity will lead to higher brand and advertising evaluations than high or low music/brand congruity. The second hypothesis examined the interactive effects of product knowledge and cognitive load with music/brand congruity on brand and advertising effects. It proposed that under conditions of low product category knowledge, moderate music/brand congruity would result in higher evaluations only under conditions of low cognitive load. However, under conditions of high product category knowledge, there will be no effect of music/brand congruity and cognitive load on brand and advertising evaluations. The final hypothesis considered the effects of music/brand congruity on cognitive processing. It was proposed that under conditions of low cognitive load, cognitive processing would be higher when music/brand congruity is moderate versus when music/brand congruity is high or low.

In Chapter 5, a study was conducted to test the hypotheses proposed in Chapter 4. An experiment manipulating congruity (high, moderate, and low) and cognitive load (high versus low) was conducted. In addition, product category

knowledge was measured. Three versions of a radio advertisement for Kit Kat brand chocolate bar were created with different pieces of music in the background. The music was used to create high congruity between the music and the brand (energizing music, exciting brand), moderate congruity (calming music, exciting brand), and low congruity (dark music, exciting brand).

Participants in a high cognitive load condition were also asked to memorize a string of numbers prior to being exposed to the advertisement. Participants were asked to evaluate the brand, the advertisement, and also to provide open-ended responses regarding their thoughts and recall of the advertisement.

The data provided by the experiment was also analyzed in Chapter 5. This consisted of analysis of the brand and advertising attitudes, and an analysis of the quantity and types of thoughts produced by viewers. As predicted in the first hypothesis, the results indicated a main effect of congruity on evaluations of the brand and the advertisement. The moderate music/brand congruity condition did produce the highest evaluations.

We found a significant interaction of congruity and cognitive load for low knowledge participants but not for high knowledge participants for attitude toward the advertisement only. Low knowledge participants evaluated the advertisement more highly under moderate congruity conditions versus high or low congruity conditions. Contrary to Hypothesis 2, this effect was evident under high cognitive load and not under low cognitive load conditions.

The final hypothesis predicted that under conditions of low cognitive load, when music/brand congruity is moderate, cognitive processing would be higher

than when music/brand congruity is high or low. The results provided partial support for Hypothesis 3 in which we expected cognitive processing in the moderate congruity condition to be significantly higher than both the high and low congruity conditions. Rather, the results indicated a moderate congruity boost under high cognitive load only. Additional analysis was conducted on the thought protocols.

### Conclusion

The major purpose of this dissertation was two-fold: 1. to create a scale to measure how people describe music, and 2. to examine how the fit between descriptions of the music and descriptions of a brand affect evaluations in an advertising setting. Based upon the second study, it is evident that the fit between the music and the brand does influence evaluations of advertising. The main effect of moderate incongruity was evident in both the evaluations of the advertisement and the evaluations of the brand.

However, the second study did not clearly demonstrate how other variables might contribute to or moderate the moderate incongruity effect. It was proposed that product knowledge and cognitive load would interact with music/brand congruity to affect brand and advertising evaluations. It was proposed that those with high product category knowledge would show no effect of music/brand congruity and cognitive load on evaluations. When participants had low product category knowledge, it was expected that moderate music/brand congruity would lead to higher evaluations under low cognitive load (versus high

cognitive load). Contrary to these hypotheses, the effect of moderate music/brand congruity appeared under conditions of high cognitive load. This effect is salient in the low evaluations from the low product category knowledge participants under conditions of high cognitive load and high congruity. We speculate that the combination of energizing music and load distraction was viewed as annoying. Rather than viewing the music as being congruent with the brand, the effect may have been overwhelming, thereby producing a negative advertising evaluation. Some anecdotal evidence from the thought protocols provides support for this idea.

Also evident in the thought protocol analysis was an unforeseen seasonality effect for the product choice of candy bars. “There was a Halloween theme going on;” “Background music reminded me of Halloween;” and “It had a Halloween feel to the ad.” If viewers of the ad were able to provide meaning to the dark music and make it appropriate for the ad, this would have potentially increased the evaluations under low congruity. This means that moderate incongruity effect might have been stronger if there was not a seasonality effect. That is, the low congruity conditions may not have seemed discordant if participants linked candy to the upcoming holiday, rendering this manipulation less effective.

Additionally, it was evident that the product category knowledge measurement was not entirely successful. This was not necessarily due to the scale, but rather due to the product category selected. There was a heavy skew towards high product category knowledge of candy bars. This made comparisons

between high and low product category knowledge difficult. As a result, the manipulation of category knowledge may not have produced large enough differences to measure.

### Recommendations

The findings of this study raise a series of questions and concerns about future directions.

Although a variety of music was selected as test pieces, this music was limited to western styles. The results of the scale could be different if the music was to include atonal music, and music specific to individual cultures around the world. A next step would be to test the scale using other kinds of music – ancient, non-western, or experimental as possible examples. This would enable the scale to be tested across more styles of music. It would also allow for the possibility of testing music that has extremely low levels of familiarity in terms of genre. This may eliminate the possibility of controlling for idiosyncratic preferences for music from specific genres, or music containing certain instruments.

Only one brand was used in the main study of this dissertation. The brand chosen was extremely well-known, which was purposeful, but future studies may look at less well-known brands. It can be argued that for a brand as familiar as Kit Kat there may have been a ceiling and floor effect on the brand evaluations. One exposure to a radio advertisement might not have had the power to change the existing brand evaluation, given that it was such a familiar product with perhaps a strongly held brand attitude. Future research should consider not only multiple brands but lesser-known brands, so there is more potential for

measuring how a single exposure of an advertisement may contribute to a brand attitude.

Beyond just the brands used, it would be important to consider the product category. In the research presented here, the product category knowledge was overall quite high. This created difficulties in testing the hypotheses. As stated earlier, this product category had some unforeseen seasonality effects because the data for the second study was conducted in the fall. The thought protocols revealed that several people were tying candy to Halloween. It would be interesting to examine more closely how the seasonality of a product category interacts with the associations tied to the season. For example, would darker music be more appropriate during the fall for candy than during other seasons (e.g., for Easter or for Valentine's Day).

Future research may examine new brands and show how music can help influence the descriptions applied to a brand. In this study, the brand was chosen in order to create varying congruity levels between the brand and the music. There are at least two possible approaches for using the dimensions of music scale in situations with unfamiliar brands. One study may look at how the descriptions of the background music can contribute to the descriptions of an unfamiliar brand. A second approach would be to experimentally manipulate participants' expectations for the unfamiliar brand. Through controlled learning, participants can be taught about an unfamiliar brand, and this could allow for situations in which the music either is congruent or incongruent with the provided information. This second approach would allow for manipulation of both the



expected descriptions of the brand and the descriptions of the music. This could create a richer experimental manipulation.

This research did not examine the possible interactive effects between voiceovers and the music. It is possible that a voice is more suited for music with different descriptions. Further investigations could examine whether the descriptions of the voices in an advertisement should be congruent or incongruent with the background music, and how this level of congruity interacts with the brand.

Another avenue for research is to consider television and other visual and audio forms of advertising. This research was specifically limited to radio advertising to control for possible visual/audio interactions. However, there is evidence that the visual elements of an advertisement can affect brand and advertising evaluations. It is a natural extension of this research to expand to television settings to determine how music descriptions, brand descriptions, and visual elements interact. Additionally, the Internet and other inactive mediums should be considered as they have a greater ability to customize background music to the audience.

Previous research (Hahn and Hwang, 1999) has considered that music with faster tempos may have more information for viewers to process. In a situation of both faster music and high cognitive load, there may be too much information to process and therefore this may have contributed to the negative evaluations shown in the study. Future research should examine not just the descriptions of the music, but also how much information the pieces of music

may contain. The tempo is one way in which this can be measured, but it might be useful to consider other elements such as the level of instrumentation or the rhythmic variations.

Research looking into physiological responses to music has shown that faster tempo can lead to higher arousal levels (Holbrook & Anand, 1990; North & Hargreaves, 1997). North and Hargreaves concluded that people prefer music that produces a level of arousal that helps them to achieve a specific goal. They showed that when driving with distractions, people tend to turn the volume down on music, especially highly stimulating music. Holbrook and Anand (1990) found that people tend to prefer music that falls between 70 and 100 beats per minute. Future research might need to standardize the tempo across pieces of music. It may be difficult since faster tempos are associated with the energizing descriptions, but it should be possible to find different pieces of music that would fall within a range of 70 – 100 beats per minute and have consistently different evaluations.

This research focused on descriptions of music rather than emotions or feelings experienced by the viewer. The applications of the research may be viewed as not as powerful, because they do not reflect how a viewer feels or what a viewer is experiencing during exposure to music. However, it could be the case that it is easier to control a person's descriptive response to music rather than their emotional responses to music.

A final issue to discuss for future research is the subject population. The participants in these studies were primarily college students. For the scale, the

words used to describe music may not vary across age generations, but the ways in which individuals apply these descriptive terms would likely vary with generation, culture, and experience. For later studies, it would be beneficial to look across populations to see how music/brand congruity affects evaluations. As most advertisements are not aimed only to college students, it would be interesting to see how the results vary across different populations.

### Summary

The findings from this research support the view that background music in advertising conveys additional information to listeners. Specifically, it shows that the pairing of music with specific brands may under certain conditions positively affect an individual's response to an advertisement.

The primary contribution of this dissertation is the development of the dimensions of music scale. The creation of a scale to measure the dimensions of music provides a systematic approach to categorizing music in advertisements. This is important because previous literature in marketing has tended to select music that represents a specific feature, so the results may be specific to the music selected. This scale would allow for music to be compared and contrasted on dimensions that are not specific to the music structural elements or cultural interpretations. This scale provides a tool for future research on the effects of music in advertising settings.

A secondary contribution of the dissertation is that we find preliminary support for the notion that the degree of fit between the brand and music

appearing in ads does affect consumer attitudes. Additionally, the insights from the study provide the basis for more systematic investigations of the relationship between music descriptions and brand descriptions on evaluations of the brand and of the advertisement.

## **Appendices**

## Appendix 2.1

Hevner's Adjective Circle (Hevner, 1935, 1936, 1937)

		6		
		merry		
		joyous		
		gay		
		happy		
		cheerful	5	
	7	bright	humorous	
	exhilarated		playful	
	soaring		whimsical	
	triumphant		fanciful	
	dramatic		quaint	
	passionate		sprightly	
	sensational		delicate	4
8	agitated		light	lyrical
vigorous	exciting		graceful	leisurely
robust	impetuous			satisfying
emphatic	restless			serene
martial	1		3	tranquil
ponderous	spiritual		dreamy	quiet
majestic	lofty		yielding	soothing
exalting	awe-	2	tender	
	inspiring	pathetic	sentimental	
	dignified	doleful	longing	
	sacred	sad	yearning	
	solemn	mournful	pleading	
	sober	tragic	plaintive	
	serious	melancholy		
		frustrated		
		depressing		
		gloomy		
		heavy		
		dark		

**Appendix 3.1**  
**Study 1 a: complete list of words and phrases generated**

accepting	accurate	Active	admiration
adorable	adversity	affection	aggressive
agreeable	alert	alive	aloof
amazing	anxious	Artsy	assertive
attractive	average	awesome	balanced
bass	beat	beautiful	bewildered
bittersweet	blissful	bluesy	blunt
blushing	bold	bouncy	bountiful
brave	bright	brilliant	calm
captivating	careful	carefree	catchy
cautious	celebration	charming	cheerful
childhood	clarity	Clean	clever
climatic	cocky	cognitive	cold
colorful	comfortable	commitment	compassionate
compelling	competitive	complex	comprehensive
concerned	concise	confident	confused
consistent	contagious	content	contrast
convincing	cool	courage	craving
crazy	creative	cultured	curious
cute	dance	dangerous	daring
dark	dazzling	deep	defining
delicate	delightful	depressing	desperate
destiny	determined	deterrence	devotion
different	difficult	dignified	disciplined
distinct	diverse	dominant	doubt
dramatic	dreamy	dynamic	eager
earthy	easy	eclectic	ecstasy
elated	eloquent	emotional	emphatic
enchanting	encompassing	encouraging	endless
enduring	energetic	engaging	engulfing
enjoyable	entertaining	enveloping	erratic
eternal	escape	exalting	excellent
exciting	exhilarating	expressive	extreme
faith	faint	familiar	family
fanciful	fantastic	Fast	fear
fearless	feeling	feminine	fierce
fiery	fired-up	floating	flow
fondness	foolish	foreign	forward
fragile	frantic	freedom	fresh
friendly	frightening	fulfilled	fun
funny	fuzzy	genius	gentle

gleeful	gleaming	glory	good
graceful	grand	great	grief
gripping	gutsy	happy	hard
harmonious	haunted	healthy	heartbreak
heartfelt	heavenly	helpful	helpless
high	high school	hilarious	holy
home	honesty	honor	hopeful
hopeless	historic	hot	humility
humorous	hungry	husky	imagination
imminent	impetuous	important	impressive
impulsive	incredible	independent	individualistic
indomitable	informative	ingenuous	innocent
inquisitive	insignificant	inspiring	intelligent
intense	interesting	intimate	intoxicating
intricate	intriguing	introspective	involved
Ironic	jazzy	jealous	jolly
joyous	jubilant	jumpy	just
kind	laidback	large	laugh
leisurely	leaving	life	light
lighthearted	lively	lofty	lonely
longing	loose	loss	loud
love	low	loyalty	lucky
lusty	lyrical	magical	majestic
masculine	material	mature	meaningful
melancholy	mellow	melodic	melodramatic
memories	merry	misty	modern
monumental	motivating	mourning	mysterious
mystical	nervous	new	nice
nostalgic	open	opportunities	optimism
ordinary	original	outrageous	outstanding
painful	party	passionate	peaceful
pensive	people	perfect	perseverance
personal	phenomenal	pitiful	playful
pleasant	poetic	poignant	poised
political	ponderous	positive	powerful
praise	pretty	progress	promising
proud	pure	puzzling	quaint
quality	quick	quiet	rapid
rare	raw	real	rebellious
reflective	regret	rejection	relatable
relation	relaxing	relevant	relief
religious	reminiscent	repetitious	resilient
resonant	respect	restful	restless
reticent	revolutionary	rhythmic	rich
riveting	robust	romantic	rough



rustic	sacred	sacrifice	sad
safe	satisfying	Scary	security
sensational	sensual	sentimental	separation
serene	serious	Sexy	sharp
shiny	silent	Silky	silly
simple	singing	sleepy	slow
smooth	soaring	Soft	solemn
somber	smiling	soothing	sophisticated
sorrow	soulful	spark	spirited
spiritual	splendid	sporty	squealing
still	startling	story	stormy
strategic	strong	struggle	subdued
successful	summertime	sunshine	super
superb	surprise	subtle	suspense
sweet	surreal	talented	tame
tender	tense	thankful	thoughtful
tight	timeless	touching	traditional
tranquil	trendy	triumphant	tropical
truelove	trust	truthful	understanding
uneven	unique	unpredictable	unrequited
upbeat	uplifting	vibrant	victory
violent	unusual	vivacious	vivid
visionary	vulnerable	warm	whimsical
wholesome	wild	windy	winsome
witty	wonderful	young	youthful
zany	zealous		

**Appendix 3.2**  
**Study 1 b: Reduced list of 114 words**

BASS	INTENSE	SAD
BEAUTIFUL	INTERESTING	SENSATIONAL
BLUESY	INTOXICATING	SENSUAL
BOLD	INTRICATE	SENTIMENTAL
BOUNCY	JAZZY	SERENE
BRILLIANT	JOYOUS	SERIOUS
CALM	LAIDBACK	SEXY
CAPTIVATING	LEISURELY	SIMPLE
CAREFREE	LIGHT	SINGING
CATCHY	LIGHTHEARTED	SLOW
CHEERFUL	LIVELY	SMOOTH
COMPLEX	LOUD	SOARING
CREATIVE	LYRICAL	SOFT
DANCING	MAJESTIC	SOLEMN
DARK	MELANCHOLY	SOMBER
DEPRESSING	MELLOW	SOOTHING
DIFFERENT	MELODIC	SOPHISTICATED
DRAMATIC	MELODRAMATIC	SOULFUL
DREAMY	MERRY	SPIRITED
ECLECTIC	MYSTERIOUS	SPIRITUAL
EMOTIONAL	ORIGINAL	STORMY
ENERGETIC	PASSIONATE	SUBDUED
ENJOYABLE	PEACEFUL	SURREAL
ENTERTAINING	PLEASANT	SWEET
ERRATIC	POETIC	TENDER
EXALTING	POIGNANT	TENSE
EXCITING	POWERFUL	THOUGHTFUL
EXHILARATING	PRETTY	TOUCHING
EXPRESSIVE	QUICK	TRADITIONAL
FAMILIAR	RELAXING	TRANQUIL
FAST	REMINISCENT	TRENDY
FLOATING	REPETITIOUS	TRIUMPHANT
FLOWING	RESTFUL	UPBEAT
GRACEFUL	RESTLESS	UPLIFTING
HAPPY	RHYTHMIC	VIBRANT
HARMONIOUS	RIVETING	VIOLENT
HAUNTED	ROMANTIC	WARM
HEAVENLY	SACRED	WHIMSICAL

## Appendix 4.1 Sample questionnaire, study 2

### Radio Advertisement

1. Please write down the number string presented to you earlier.

\_\_\_\_\_

Please circle the number on the scale that best represents your answer to each of the following questions.

1. What is your overall impression of the advertisement for Kit Kat candy bars?

1	2	3	4	5	6	7
Not at all favorable						Extremely favorable

2. How would you describe your attitude towards the advertisement for Kit Kat candy bars?

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

3. Overall, how well did you like the advertisement for Kit Kat candy bars?

1	2	3	4	5	6	7
Not at all like						Very much like

For each of the following scales, please circle the number that best represents your opinion of Kit Kat candy bars based on the advertisement you heard.

Not at all appealing to me	1	2	3	4	5	6	7	Extremely appealing to me
Likely to be of low quality	1	2	3	4	5	6	7	Likely to be of high quality
Not at all desirable	1	2	3	4	5	6	7	Extremely desirable
Likely to be an inferior product	1	2	3	4	5	6	7	Likely to be a superior product
Likely to be a poor value	1	2	3	4	5	6	7	Likely to be a good value
A product not at all worth buying	1	2	3	4	5	6	7	A product worth buying

How familiar were you with the Kit Kat brand name before today's session? Please circle the number that best represents your familiarity.

Not at all familiar	1	2	3	4	5	6	7	Extremely Familiar
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### Radio Advertisement

In the space provided below, we would like you to recall as much as you can from the advertisement that you just heard. Try to recall not only the product, but also the other audio elements of the advertisement. Please be as detailed and complete as possible in describing the product and any other information (such as image, tone, and format of the advertisement) that may have been conveyed to you. In recording what you remember, you should also feel free to describe any impressions or thoughts you had about the product and/or advertisement.

One and one half pages provided for response.

PAGE BREAK

### Product Knowledge

The following questions refer to your knowledge of the overall category of candy bars (not specifically one brand).

1. Please circle the number that describes your level of expertise regarding candy bars.

1	2	3	4	5	6	7	
Extremely low expertise							Extremely high expertise

2. Please circle the number that describes your level of interest in the product category of candy bars.

1	2	3	4	5	6	7	
Extremely uninterested							Extremely interested

3. Using the following scale, please rate how much you agree with each of the statements. Please place your response in the column to the left of the statement. Again, the product category is candy bars.

1	2	3	4	5	6	7	
Strongly disagree							Strongly agree

Rating	Statement
	This is a product category I could talk about for a long time.
	I understand the features well enough to evaluate the brands.
	This is a product that interests me.
	I have a preference for one or more brands in this product category.
	This is a product for which I have no need whatsoever.
	I am not familiar with this product category.
	I usually purchase the same brand in this product category.

## Appendix 4.2 Thought protocol coding methodology

1	Number of words
2	Number of total thoughts
3	Counterarguments related to music fit
4	Number of positive references to overall fit of ad with Kit Kat
5	Number of neutral references to overall fit of ad with Kit Kat
6	Number of negative references to overall fit of ad with Kit Kat
7	Number of counterarguments to ad's message
8	Number of thoughts about music in the ad
9	Positive thoughts
10	Negative thoughts
11	Neutral thoughts
12	Number of recall remarks about music in the ad
13	Number of remarks/descriptions about music in the ad as discrepant, odd, not fitting, etc.
14	Number of remarks/descriptions about non-music elements in the ad as discrepant, odd, not fitting, etc.
15	Number of thoughts about non-music elements in the ad as (including brand, spokesperson, etc.)
16	Positive thoughts
17	Negative thoughts
18	Neutral thoughts
19	Number of recall remarks about non-music elements
20	Number of recall about specific phrases from ad
21	Number of recall about specific execution elements from ad
22	Number of mentions about music as distracting
23	Number of mentions about non-music ad elements as distracting
24	Number of thoughts about referential meaning of music as Calming (calm, soft, peaceful, relaxing, etc.)
25	Number of thoughts about referential meaning of music as Energizing (energizing, upbeat, lively, exciting, etc.)
26	Number of thoughts about referential meaning of music as Dark (dark, tense, haunted, etc.)
27	Number of thoughts about referential meaning of music as Sophisticated (sophisticated, intricate, triumphant, etc.)
28	Number of thoughts about referential meaning of music as Jazzy (jazzy, bluesy, soulful, etc.)
29	Mentioned being annoyed
30	Mentioned attention problems
31	Mentioned specific moment of turnoff
32	Mentioned being unfocused, feeling ad was unfocused
33	Mentioned being confused
34	Referred to advertisement as having sexual overtones
35	Mentioned sound quality issues
36	Made references to Halloween
37	Made references to Nostalgia, old-fashioned
38	Made reference to Tony the Tiger
39	Classified advertisement as cheesy

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