

Chapter 14

Music in television advertising and other persuasive media

Mark Shevy^a and Kineta Hung^b

^aNorthern Michigan University, USA

^bHong Kong Baptist University, Hong Kong

In Greek mythology, mariners had more to worry about than just the wind, waves, and other natural hazards of the sea. If they ventured too close to a particular island, they would hear the enchanting songs of sirens. Those who heard the music were unable to resist, following it to their deaths as their boats crashed into the island's rocky shores. Although few would argue nowadays that music is strong enough to render listeners as helpless as the ill-fated Greek adventurers, studies show that music does have the power to sway people navigating the waters of today's media-saturated society (Allan, 2008; Bruner, 1990; North & Hargreaves, 2008). Music is used as a means of persuasion in love, political messages, and commercial advertising. Empirical research in media persuasion suggests that music, in conjunction with extra-musical information (e.g., visual images, words, narrative structure), exerts a persuasive influence through cognitive and affective processes. Alexomanolaki, Loveday, and Kennett (2007) state that 'Music may play several roles and have many effects in advertising; it may attract attention, carry the product message, act as a mnemonic device, and create excitement or a state of relaxation' (p. 51).

This chapter presents an overview of theories and research on the role of music in advertising and other persuasive media. Most of the work in music and mediated persuasion has been conducted in the field of advertising, but the concepts should be beneficial for other contexts that use persuasion, such as public service announcements, edutainment, and online shopping sites. The discussion begins with a brief consideration of the prevalence of music in advertising. Next, the Elaboration Likelihood Model of media persuasion is introduced, which provides a conceptual framework for explaining how music can persuade people through a variety of psychological processes. The chapter then addresses specific effects of music on message processing, mood, attention, attitude, memory, musical fit, meaning construction, priming, and conditioning, followed by a consideration of the psychological functions of music in the commercial use of branding, jingles, and virtual atmospheres. Finally, the chapter explores the idea that persuasion is not merely a function of media. Moderating variables such as music preference and familiarity, and sex and culture of the audience can also have a bearing on how consumers are influenced by musical messages.

The prevalence of music in advertising

Advertising is pervasive in everyday life. Through television, an average American aged 18 or above is exposed to close to 150 commercials (or just over 60 minutes of advertising) every day (Holt, Ippolito, Desrochers, & Kelley, 2007). The number would be even higher if radio and internet advertising were included. These advertising messages often include music. Over 80 percent of television advertisements in the United States contain music (Allan, 2008; Furnham, Abramsky, & Gunter, 1997), and the percentage may be even higher in other countries (Murray & Murray, 1996). Content analyses of television and radio advertisements provide information such as whether an advertisement contains any music and whether the music is a jingle, contains lyrics, or is easily identifiable (Stewart and Furse, 1986). Allan (2008) conducted an analysis of 3,456 US prime-time television commercials aired on ABC, CBS, FOX, and NBC. Results revealed that 14 percent contained popular music, 5 percent used jingles, and 81 percent used generic, prefabricated, multipurpose musical beds.

Other studies have examined specific attributes of the music itself. For example, Hung and Rice's (1992) content analysis used a typology that followed Bruner's (1990) discussion of musical elements, including time- (e.g., tempo), texture- (e.g., volume), and pitch-related (e.g., modality) structural elements of music. It also included consideration of musical style (e.g., easy listening, jazz, fanfare/march) and mnemonic devices (e.g., theme song, jingle) to account for musical elements that could potentially contribute to consumer affect and recall of the content of advertisements. This typology was tested on 292 advertisements aired on three US networks (ABC, NBC, and CBS) on a weekday at different times: 9–10 a.m., 1–2 p.m., and 8–9 p.m. Selecting all the commercials during these time periods allowed for a broad representation of commercials aired on each network over the course of a normal programming day. Repeats were excluded so that each commercial was counted only once. The analysis revealed that 80 percent of the music in the sampled commercials was instrumental (no lyrics). There was a variety of musical styles, including adult contemporary (29.1 percent), classical (20.1 percent), easy listening (13.1 percent), jazz (12.7 percent), rap/dance (6.1 percent), fanfare/march (5.7 percent), atmospheric (5.7 percent), and hard rock/metal (5.7 percent). The music was likely to be in a major mode (72 percent), soft (62 percent), and have a moderate tempo (49 percent). Most had a distinct melody (52 percent), but only 10 percent used a jingle (defined as 'an identifiable musical or otherwise audio fragment which is associated with a brand name across different ads of the same brand'; Hung & Rice, 1992, p. 225).

Theoretical foundations: The Elaboration Likelihood Model

In most cases, the ultimate goal of persuasive messages is to produce an intended behavior, such as voting for a candidate, buckling seatbelts, donating to a cause, or buying a product (Petty, Briñol, & Priester, 2009). Social psychologists and media scholars have considered how *input variables* such as the message, message source (e.g., spokesperson), and the recipient might each influence persuasion through a hierarchy

of psychological processes (*output variables*), including exposure to the message, attention, comprehension, yielding to a new attitude, and action based on the attitude (McGuire, 1985). Music constitutes one input variable that interacts with other input variables to influence output variables in the persuasion process.

Allan (2007) reviewed 28 studies from 1982 to 2006 investigating the effects of music in advertising and found that musical properties such as tempo (i.e., speed or pace of the music), mode (major or minor), and fit with extra-musical elements may have a positive, a negative, or no influence on a variety of psychological variables (e.g., attitude toward an advertisement, perception of advertisement time, brand recall, message processing, pleasure, arousal, mood, product preference, and purchase intention). Factors that may interact with music include audience characteristics (e.g., familiarity with the music), the type of product, imagery, or other extra-musical meanings in the message. For example, Allan reported studies indicating that attitude toward a brand can become more positive if the meanings of the music and the rest of the advertisement fit well together from the listener's perspective (North, MacKenzie, Law, & Hargreaves, 2004) but attitude may become more negative if they do not (Shen & Chen, 2006). Allan summarized the review by saying that the influence of music in advertising can be effective, but it is 'complicated' (Allan, 2007, p. 28). For reviews of the literature on musical persuasion, see Allan (2008), Bruner (1990), Hahn & Hwang (1999), and North & Hargreaves (2008).

Attitude change and the Elaboration Likelihood Model

Many scholars view attitudes as cognitive structures that lead to the favorable or unfavorable evaluation of some entity such as a person, activity, idea, or product (Eagly & Chaiken, 1993). Attitudes can consist of both cognitive and affective elements. That is, people may associate an entity with positive or negative thoughts and feelings (Eagly & Chaiken, 1993). Over the past few decades, researchers have used the *Elaboration Likelihood Model* or ELM (Petty & Cacioppo, 1986) to explain attitude change through mass media (e.g., Allan, 2007; Petty, Briñol, & Priester, 2009; North & Hargreaves, 2008; Trampe, Stapel, Siero, & Mulder, 2010).

The ELM is a 'dual-route' model depicting how a message may change one's attitude through either a peripheral or central route. The basic elements of the model are depicted in Figure 14.1 (slightly adapted to consider the possible role of music). People are more likely to give greater cognitive effort ('elaboration') to the central argument (a logical, persuasive appeal) of a message if they have the motivation and ability to do so. This is called *central route processing*, in which a person is highly involved with the message and critically evaluates the argument. According to the ELM, if the central argument of the message is strong, containing relevant, logical facts, the individual will develop a more favorable attitude toward a product. If the argument is weak, the individual is likely to develop a less favorable attitude. If the motivation or ability to elaborate is lacking, the model predicts that a person will give less cognitive effort to the central argument, and the argument quality will have less impact. This is called *peripheral route processing*. In this instance, the individual does not or cannot give the argument much thought. Yet, people may still be persuaded by cues that require little thought, such as whether the message source is an attractive person or whether they like the background music.

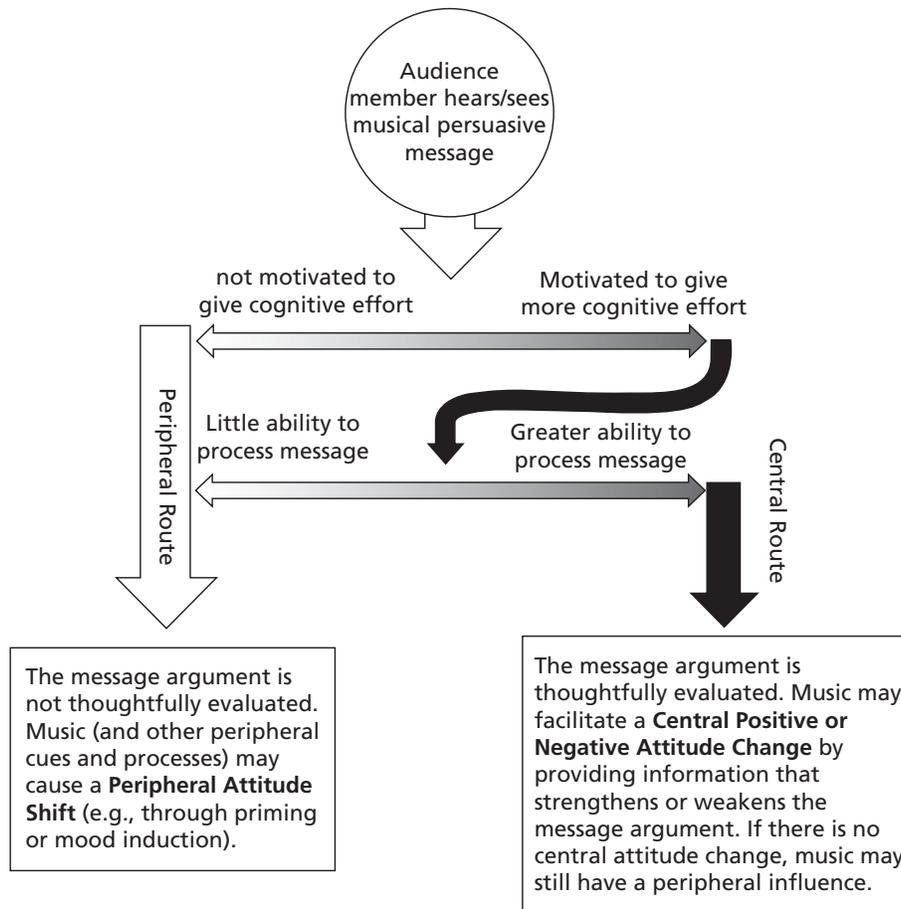


Figure 14.1 Proposed Elaboration Likelihood Model for music persuasion. Music may increase or decrease the listener's motivation and ability to process the persuasive message. It can also provide information within peripheral- and central-route processing. The ELM terminology and general concepts are adapted from Petty and Cacioppo (1986) and Petty, Briñol, and Priester (2009).

The two routes are distinguished by the amount of elaboration given to a message. Elaboration is the extent to which cognitive effort is expended to understand issue-relevant arguments and contemplate main points, logic, and counter-arguments in order to form an attitude or judgment. Empirically, elaboration has been measured by participants' self-reports of the level of effort expended, thought-listing measures (participants write down their thoughts about a message, and the thoughts are analyzed to indicate the amount of elaboration), psychophysiological measures (e.g., electromyographic activity), and participant responses to message argument quality. There is greater differentiation between strong and weak arguments when participants expend more cognitive effort (Petty & Cacioppo, 1986).

In past empirical work, researchers have manipulated ability and motivation to elaborate in a number of ways. For example, they may decrease a participant's level of

ability to process information by presenting distractions that disrupt participants' ability to think or they may improve the ability to scrutinize arguments by repeating messages (Petty & Cacioppo, 1986). Motivation can be raised by increasing the relevance of a message to participants, heightening their level of involvement (Petty & Cacioppo, 1986). When MacInnis and Park (1991) wanted to induce high involvement in order to study the effect of music in a TV shampoo commercial, they told participants that the brand of shampoo would be available locally. Trampe et al. (2010) manipulated the level of relevance by telling participants they would have to write a review about an advertised product. Petty & Cacioppo (1979) told participants that a policy would alter their own graduation requirements rather than those at a distant university. Motivation can also be increased through a heightened sense of personal responsibility. If participants think they are part of a smaller group (e.g., four participants) and their responses are important, they tend to expend more effort than if they think they are part of a larger group (e.g., 16 participants; Tormala, Briñol, & Petty, 2007).

Further, some participants may be more naturally motivated to process messages more thoughtfully than others, a trait that Cacioppo and Petty (1982) and others refer to as the 'need for cognition.' Need for cognition (NFC) refers to the extent to which a person engages in and enjoys effortful cognitive processing, and was first identified by Cohen, Stotland, and Wolfe (1955). People who are driven to understand the nature of things and enjoy engaging in intellectual activities are high in NFC, whereas those who tend to avoid tasks requiring a lot of mental effort and do not find much intrinsic pleasure in such activities are low in NFC. In general, individuals with a low need for cognition are more likely to engage in peripheral processing of persuasive messages—for instance, focusing on the physical attractiveness of the product endorser—whereas those with a high need for cognition are more likely to attend to the quality of the message or the strength of the argument (Haugtvedt, Petty, Cacioppo, & Steidley, 1988).

In general, attitudes and learning produced through the central route of the ELM model are more enduring, more resistant to counter-persuasion, and more predictive of behavior than those produced through the peripheral route (Petty, Briñol, & Priester, 2009; Petty & Cacioppo, 1986). The price for trying to achieve a high-quality central-route attitude in advertising, though, is that it requires a strong argument that can withstand the scrutiny of potential consumers.

Elements of a message are not intrinsically central or peripheral. For example, the attractiveness of a beautiful model in a TV commercial is usually considered a peripheral cue, because it is not part of the central argument. However, according to the 'match-up hypothesis' (e.g., Kahle & Homer, 1985; Trampe et al., 2010), the model's appearance could support the central argument if attractiveness is relevant to the product being sold (e.g., beauty products). Likewise, music could have an influence in either the peripheral or central route, depending upon the degree of elaboration, the music's relation to the central message, and other factors such as the structural qualities of the music and their relation to other elements of the advertisement (e.g., images, editing pace). This will become more apparent in the following sections. Similarly, it is important to note that 'peripheral' and 'central' are not enduring audience member traits. Each individual may process messages with more central processing at one time and

more peripheral processing at another time, depending on the message relevance and the person's ability afforded by the context of a specific instance.

The Elaboration Likelihood Model, music, and mood

There are two main ways music may function within the ELM. First, music may increase or decrease motivation or ability to elaborate, guiding a person toward central or peripheral route processing. Second, music can provide information that is processed within a particular route. Some of the psychological processes discussed later in this chapter illustrate how music can fulfill these functions.

In the first function or role of music within the ELM, mood induced by music (e.g., Gorn, Pham, & Sin, 2001) may increase the motivation or ability to think about the argument by increasing arousal (Kellaris, Cox, & Cox, 1993). On the other hand, music may also increase cognitive load, reducing one's ability for central processing. For example, if sad music were used in an otherwise cheerful commercial, people might miss the central argument, because they are busy wondering what the incongruous music is supposed to mean (cf. Oakes and North, 2006; Park & Young, 1986). As another example, a favorite or emotionally moving tune could increase one's motivation to attend to the music itself but not to the central argument. This type of value-expressive motive is called 'affective involvement' and may be an instance in which attitudes are formed based on peripheral cues despite a higher level of cognitive effort (Park & Young, 1986).

In addition to guiding potential consumers to use the central or peripheral route in an advertising context, music may provide information that is processed within the route. (This is the second possible function or role that music may play in the ELM). For instance, the 'affect-as-information' model of cognition and emotion suggests that people may consider their own feelings during decision-making. When they do, the valence dimension (positive or negative affect) provides evaluative information (positive or negative appraisal), and the arousal dimension indicates urgency or importance (Gorn, Pham, & Sin, 2001; Storbeck & Clore, 2008). Gorn, Pham, and Sin (2001) found that positive or negative mood induced by music directed participants' liking for an ambiguous print advertisement in a mood-congruent direction. The valence of the mood did not influence liking for advertisements that already had a clear positive or negative affective tone. However, arousal induced by the music strengthened the effect of the advertisement, causing the positive advertisement to seem more favorable and the negative ad to seem less favorable. The authors concluded that the results were consistent with the affect-as-information model. If the advertisement was ambiguous, participants considered the valence of their own feelings (positive or negative) when making an evaluation. If the advertisement had an affective tone, participants' level of arousal determined how strongly they felt about the advertisement. The authors further stated that the results could also be consistent with the ELM, but were inconclusive whether attitude formation based on one's own feelings was a peripheral-route heuristic or a type of central-route processing.

MacInnis and Park (1991) found an example in which music clearly had an effect by providing information within the peripheral route. The authors elicited high or

low involvement for a television shampoo commercial by telling participants whether the brand of shampoo would be locally available. Those who believed that the shampoo would be locally available were more highly involved with the commercial, which increased central-route processing. Participants in the low-involvement condition (peripheral-route processing) experienced negative emotions (e.g., disgust, annoyance, and boredom) when the music (e.g., ‘Stop in the Name of Love’ by Diana Ross & the Supremes) did not fit the commercial’s primary message that the shampoo was closely associated with nature. A lack of musical fit did not cause negative emotions for high-involvement participants. The authors determined that emotion caused by perception of musical fit was a peripheral cue. In support of their findings, MacInnis and Park stated that ‘Previous research suggests that executional cues (e.g., music) in an ad exert their influence primarily under conditions of low involvement in the form of peripheral processing’ (1991, p. 161).

Other areas of mood and ELM research allow inferences about the effects of music, though research that specifically addresses the role of music is still needed. One such area is the awareness of manipulation. A person who becomes aware of attention-getting tactics and emotionally manipulative content (both of which plausibly include music) can become more critical toward an advertisement and form a negative attitude toward it (Campbell, 1995; Cotte, Coulter, & Moore, 2005). Researchers should investigate whether music can cause awareness of manipulation and whether such awareness influences the level of elaboration (first function) or provides information within a route (second function).

Another area for research is the influence of mood valence on elaboration. Bless, Bohner, Schwarz, and Strack (1990) found that German university students who were induced into a negative mood by recalling an unpleasant life event gave more elaboration to an audio announcement than those who were induced into a positive mood by recalling a pleasant event. Researchers should determine whether musically induced mood can have the same effect. More recently, studies have indicated that negative mood can enhance attention and memory for central, episodic details of an object or event by creating a ‘narrowing effect’ that reduces attention to contextual or peripheral information (Avramova, Stapel, & Lerouge, 2010). In contrast, positive mood can enhance the use of contextual information and conceptual processes, which could increase the use of peripheral cues in message processing (Kensinger, 2009).

Factors affecting the impact of advertisements

Attention, memory, and cognitive load

Before a message can persuade, it must attract a person’s attention. In media research, attention is a state of focus on a particular stimulus, such as a television advertisement, and is often, but not always, accompanied by the orientation of sensory organs (e.g., eyes and ears) toward the stimulus and its message (Shevy & Hawkins, 2008). Sometimes media content can elicit an automatic reaction such as an orienting response in which a sound in a television show causes audience members to reflexively look at the source. Other times, people have a more voluntary response, such as consciously deciding to

look at the television to determine the cause for an onset of musical sound. Research investigating automatic and controlled attention generally falls into two categories: (1) what increases attention to a message and (2) how the stimulus-induced attention impacts message processing, such as the construction of comprehension and memory.

Media researchers have studied music as a means of attracting children's attention to educational shows to facilitate learning. (See also Chapter 12 by Calvert, in this volume.) Observing kindergarten, 3rd-, and 4th-graders, Calvert, Huston, Watkins, and Wright (1982) measured how the formal features of the show (e.g., movement of objects within a shot, camera zooms, sound effects, and music) affected children's visual attention and comprehension of a television cartoon. Although some formal features increased selective attention to visual content, the presence of music had the opposite effect. The older children (3rd- and 4th-graders) who did pay attention during the music learned more incidental, non-essential story content. Recall of incidental information is typically associated with younger children, who have less ability to filter and comprehend the central, important elements of a story. Wakshlag, Reitz, and Zillmann (1982) conducted a similar experiment and found that children were more likely to tune into a television show (selective exposure) that had fast, appealing background music. However, once a show was selected, the fast-tempo music reduced children's visual attention, especially if the music was appealing. Furthermore, the fast-tempo music reduced the amount that children learned.

Other studies suggest that music can enhance attention and facilitate memory. In an experiment with background music in radio advertisements, participants reported paying more attention to a commercial when it contained popular music (e.g., Eminem's 'Without Me'), especially if the original lyrics or lyrics altered to promote the sponsor were included, compared to no-music versions (Allan, 2006). Versions of the music with altered lyrics also consistently increased brand recall. Kellaris, Cox, and Cox (1993) proposed that, as certain properties of the music increase arousal in listeners, attention increases, which results in better memory for the persuasive message.

The mixed results in the attention and memory research reviewed here point to the challenge of incorporating attention-getting devices in advertisements without overburdening limited cognitive capacity. Cognitive resources can be allocated toward some stimuli and processes to the detriment of others (Lang, 2009). Thus, music with arousing properties, such as a fast tempo, may attract attention to an advertisement, but it may also draw the allocation of cognitive resources toward the music, leaving fewer resources for encoding the persuasive message into memory. A goal for message producers, then, is to find ways of using music in a manner that maximizes memory by heightening attention while minimizing detriment to memory caused by resource reallocation.

Day, Lin, and Huang (2009) refer to this as 'background music as the arousal inducer versus the distractor' (p. 130). They proposed that the effect of background music may be contingent upon the type of music, the task the person is attempting to perform, listener differences, and 'other contextual factors' (p. 130). Day et al. asked undergraduate students to complete easy and difficult problem-solving tasks while either a faster or slower version of a new-age piano piece ('In the Enchanted Garden' by Kevin Kern) played in the background. The results showed that the faster-tempo music improved

accuracy in the difficult task, which supports the idea of ‘background music as arousal inducer.’ (The easier task had relatively high accuracy scores regardless of music tempo.)

Hahn and Hwang (1999) found that there is an optimal range for the tempo of background music for effective message processing and that listeners’ familiarity with the music also played a role in attention and cognitive load. They conducted two experiments involving college students in Korea, one in which they added slow versus fast and familiar versus unfamiliar music (Western classical style) to a fictional TV soap commercial, and a similar second experiment in which they added music to a TV car commercial, using three *tempi*: 60, 90, and 120 beats per minute (bpm). The first study revealed that unfamiliar music increased cognitive load, reducing message recall, while familiar music improved cognitive efficiency as determined by improved recall scores. The slower of the two *tempi* in the first study resulted in marginally better recall than higher tempo, but only if the music was familiar. The familiarity results were not replicated in their second study. However, the second study showed that recall was better at 90 bpm than at the slowest or highest *tempi*. The authors suggested that there may be an optimal range for increasing cognitive resource allocation without creating an overload, and that range may follow the ‘inverted U’ pattern found in other studies of cognitive efficiency, emotion, and aesthetics (e.g., Anand & Sternthal, 1990).

Salient changes in stimulus parameters have also been associated with attracting attention and increasing recall. Olsen (2002) found that stopping background music during a radio advertisement—using silence to highlight a piece of spoken information—increased recall for that information. This effect was most pronounced for the first one or two pieces of information highlighted and when the silence lasted no longer than 3 seconds. Olsen concluded that the increase in attention was due to an orienting response causing increased attention and greater salience of the highlighted information. In a previous study, Olsen (1997) found that too much silence between pieces of information in an advertisement would lead to lower recall for low-involvement listeners. This was apparently because their minds would start to wander. Olsen’s study indicated that light classical music in the background during these times helped keep listeners’ attention on the message by delaying interfering thoughts.

In summary, certain properties of music may increase attention and impact the allocation of cognitive resources to persuasive messages. Yet, music can also draw attention away from the important information or overload cognition, leaving fewer resources for encoding messages into memory. Music tempo seems to influence attention and memory, as do listeners’ familiarity with the music, the amount of cognitive effort required to process a message (or perform a task), and dramatic changes in the audio stimulus (e.g., insertion of silence). Another variable that may impact cognitive load is the degree to which the audiovisual stimuli match (referred to here as ‘musical fit’), discussed in the ‘Musical fit’ section.

Musical fit

Musical fit refers to the subjective perception that the music in an advertisement is relevant or appropriate to an extra-musical attribute of the advertisement, such as the central message (MacInnis & Park, 1986). For example, if a television advertisement

for a luxury car presents words and images that portray the car as sophisticated and high class, most people would probably say that classical background music fits the commercial better than bluegrass music. The amount of musical fit is based upon ‘pattern activation’ as described by Gawronski and Bodenhausen (2006, pp. 693, 698–700). In pattern activation, the pairing of two stimuli activates memories common to both, making their shared attributes more salient. An example can be drawn from Nicholas Cook’s (1998) analysis of a television car commercial in his book *Analysing Musical Multimedia*. Visually, the commercial presents scenes of artistic painters in the countryside interjected with images of a car ‘racing along a country lane’ (p. 6). The opening of Mozart’s overture to the *Marriage of Figaro* initially occurs only when the car is shown, but it later accompanies the images of both the painters and the car.

Cook (1998) explains that, separately, the music could have a broad range of meanings and the visuals might not make much sense. Within the context of one another, however, the visuals give meaning to the music, and the music gives meaning to the visuals through the salience of shared attributes. The overture and car each possess attributes of ‘liveliness and precision’ (Cook, 1998, p. 6). Thus, the combined music and images communicate that the car has a lively engine and precise road-holding. The music and painters both have associations with high art and prestige. Cook states that meanings emerge from these attributes to communicate that the car ‘represents an ideal synthesis of art and technology’ (p. 6). In terms of musical fit, we can say that the classical music fits with both the technological features of car and the painters, allowing the audience to associate the car with a favorable meaning constructed from the music and painters.

The example drawn from Cook (1998) considers the musical fit of the meaning of images, but the principles presented by MacInnis and Park (1991) and Gawronski and Bodenhausen (2006) suggest that musical fit could result from matching patterns between music and many other variables, including words, emotion, product and spokesperson traits, the overall tone or style of an advertisement, or the emotional state of an audience member.

Kellaris, Cox, and Cox (1993) conducted an experiment that showed how musical fit and the attention-gaining properties of music could interact to influence memory for information in a radio advertisement. Selecting pieces of music that were determined to have high or low attention-gaining value and evoked imagery (e.g., sounding like an ‘adventure movie’), the researchers used these auditory stimuli as background music in advertisements that promoted products that either fit (e.g., adventure music with an adventure movie advertisement) or were incongruent with the music (e.g., adventure music with a restaurant). In general, the results showed that high attention-gaining music with good fit (message congruent) led to better memory of advertisement information than the low-fit and low-attention music combinations. However, memory in the high-attention, good-fit condition was only about the same as that for advertisements without music. In other words, the best music condition did not improve memory, but the other conditions decreased memory, probably due to increased cognitive load. Kellaris et al. (1993) encouragingly stated, however, that although some music might interfere with cognitive processes, it might benefit persuasion in other ways, such as mood elevation and affect transfer.

North et al. (2004) not only found that good fit of background musical style (instrumental easy listening, jazz, new age, etc.) in a radio advertisement increased recall above that of no-musical advertisements, but that it also led to a positive attitude toward the advertisement and increased the likelihood that a participant would purchase the advertised brand. The authors suggested that the good-fitting music primed brand-relevant concepts that improved cognitive processing, while poor-fitting music diverted attention away from the advertisement messages. (This is an example of how musical fit and priming can influence elaboration in the ELM.)

Oakes and North (2006) raised the possibility that music tempo could be a matter of musical fit leading to reduction of memory for advertising content. They speculated that the ‘fast-tempo’ music in their experiment (170 bpm) was so much faster than typical advertisement background music that it became a distraction by being incongruent with what is usually played. Oakes and North also tested the association of musical timbre to musical fit. The consultation of an advertisement agency musician and pretesting determined that the sound of a piano was congruent with the tone of a radio advertisement for cosmetic surgery services, while the sound of a church organ or Caribbean-style steel drums was not. In an experiment, listeners’ recall for the intended message was higher when the background music consisted of the piano rather than the other instruments or no background music at all.

The lyrics of a song and perceived mood of the music may also influence the degree of musical fit. In an experiment with Taiwanese college students, Chou and Lien (2010) found that older, familiar Mandarin pop songs in television advertisements not only evoked good moods and favorable nostalgic thoughts, but they also improved attitudes toward an advertisement if the songs had lyrics with high relevance to the advertisement (see also Olsen & Johnson, 2002). Concerning mood, Alpert, Alpert, and Maltz (2005) asked college students to evaluate advertisements of greeting cards for the occasion of either a friend having a birthday (happy occasion) or a friend who was sick in the hospital (sad occasion). Either a happy or sad prelude from Bach’s *Well-Tempered Clavier* (determined by pretesting) played in the background during the advertisements. Those who heard the sad music—regardless of the occasion for which they were supposed to be purchasing the card—reported feeling significantly sadder than those who heard the happy music. Participants reported more likelihood of buying the card if the musical mood was congruent with the purchase occasion.

The examples described here are not the only types of musical fit or effects that can occur. Factors such as culture and congruity between visual and audio formal structures could also have an impact (cf. Iwamiya & Hanako, 2004; Shen & Chen, 2006). (This topic is addressed in more detail in Chapter 7 on semantic and formal congruence by Iwamiya, in this volume.)

Constructing meaning

Like pictures and words, music can be associated with concepts of people, values, cultures, and social processes (cf. Barthes, 1985; Shevy & Kristen, 2009). When integrated into advertising, music can help to portray a venue, occasion, activity, or type of person (as exemplified by sex, race, age, appearance, and lifestyle). Some studies have examined how people combine music with images, words, messages, and products to create meanings or make certain product attributes and values salient.

Hung (2000, 2001) conducted a series of experiments showing that changing the type of music in television commercials directed attention to different attributes of the product, location, and people in the commercial. In the first of these studies, participants were shown one of two television coffee advertisements; the music was either culturally congruent or incongruent with the images. Participants who saw a video showing rainforest scenery and what appeared to be Latin American workers with Brazilian music or a video of a European café with European music gave somewhat consistent descriptions of the video images according to the culture represented. However, participants who saw the incongruent stimuli (e.g., European images with Brazilian music) made the music fit with the video in individual ways. For example, the café video with café music was interpreted as a relaxing, social atmosphere, and the coffee was perceived as sophisticated, expensive, and somewhat pretentious. The café video with Brazilian music, however, was interpreted differently by individual participants. Some perceived a mysterious setting with non-conformist coffee drinkers, while others perceived young professional coffee drinkers. The interaction between music and visual images is complex, with each element contributing to the overall meaning constructed (Cohen, 2005; Cook, 1998; Scott, 1990). Zander (2006) found that changing the style of music in a radio advertisement did not influence low-involvement participants' intention to buy a product, but it did change their impression of the brand and the endorser (as measured by a personality inventory).

In relation to the ELM discussed previously, music can increase or decrease one's ability to think about the central argument of a message. It is also possible that motivation and the cognitive demands of the advertisement's argument can influence one's ability to process the music. Drawing from the work of Leonard Meyer (1994), Zhu and Meyers-Levy (2005) studied two types of meaning listeners can construct from music and how cognitive load influences which meaning the music imparts. The first type of meaning, 'embodied,' referred mainly to the 'hedonic value or favorableness' (p. 334) of feelings evoked by the music. The authors stated that embodied meaning should require relatively few cognitive resources because understanding whether a piece of music is pleasant is an easy task. The second type of meaning, 'referential,' involves constructing meaning based on associations between the music and the extra-musical world, which should require more cognitive resources. Zhu and Meyers-Levy (2005) presented travel agency radio advertisements that had either an easy message structure (a lecture) or a demanding structure (a narrative). They found that participant evaluations and open-ended comments about the agency reflected the background music's referential meaning in the easy structure condition and the music's embodied meaning in the difficult structure condition. They concluded that the narrative consumed more cognitive resources, leaving fewer for constructing more taxing meanings from the music. These effects were only present for some participants (i.e., those who were willing to give cognitive effort in the first place).

Priming and conditioning

The associative view depicts memory as a network of associated nodes, with each node representing a concept, word, or similar knowledge construct. When a stimulus activates a node, making it more accessible for use in working memory, other closely associated

nodes may also be activated (Anderson, 1983; Dimofte & Yalch, 2011). A group of closely associated concepts is called a *schema*, and the process of activating a concept or schema is called *priming*. Shevy (2008) conducted two experiments showing that the sound of popular music genres is associated with distinct groups of extra-musical concepts, forming ‘cognitive genre schemas.’ In Shevy’s first experiment, participants indicated the meanings they associated with a brief recording of instrumental sections of country or hip-hop music. In comparison to country music, listeners associated hip-hop more strongly with minority ethnicity, youth, and liberal ideology and less with trustworthiness and friendliness. In a second experiment, a different group of participants heard the same music in an audio recording ostensibly of a musician making a persuasive appeal for charity donations at a concert. The genre of music did not directly alter attitude toward the charity, but it did change listeners’ perception of the musician. Those who heard the hip-hop music were more likely to think he was of minority ethnicity, urban, younger, and more of an expert (e.g., well-informed, intelligent).

While priming is the activation of existing associations, *conditioning* is a process through which cognitive or affective associations are made between two stimuli, e.g., music and an extra-musical entity such as a brand, behavior, or person (Gorn, 1982). Gorn conducted a seminal experiment in which college students selected pens that had been briefly presented with music they liked (from the movie *Grease*) and avoided selecting pens that had been presented with music they disliked (Indian raga). Gorn’s study became a source of controversy when subsequent researchers failed to replicate the results (Kellaris & Cox, 1989). More recent research has provided support for the role of conditioning. Redker and Gibson (2009) presented participants with a Web-based root beer advertisement containing scrolling text and images of the root beer and its logo. For participants who liked country music, the country music accompaniment resulted in a more favorable attitude toward the brand. The researchers concluded that music influenced two types of attitudes: explicit (consciously indicated) and implicit (measured by response time in a task comparing brand names). At the end of the study, participants were allowed to select a bottle of root beer to take home. The combined measures of the explicit and implicit attitudes predicted the chosen root beer brand 75% of the time.

Ziv, Hoftman, and Geyer (2012) tested the influence of background music conditioning on moral judgments through a series of three experiments that presented fictional radio advertisements promoting the unethical activities of cheating on a pension plan or buying a pre-written college seminar paper. The advertisements contained either no music or music that had been shown to convey a positive mood (Mozart’s *Eine Kleine Nachtmusik* or James Brown’s *I Got You/I Feel Good*) or a negative mood (Albinoni’s *Adagio in G minor*) in prior studies and pretesting. The addition of any background music reduced recall of information, but the positive music caused participants to list more advantages and fewer disadvantages of the unethical behavior and made them more likely to recommend the websites to a friend. When participants were motivated to think harder before hearing the advertisement (high involvement), the positive music still led to a more positive evaluation of the cheating behavior. Negative music increased negative evaluations of the cheating behavior. The authors concluded that the music had an affective conditioning effect in which the mood conveyed by the music became associated with the behavior and influenced moral decisions, particularly

when participants were not thinking as hard about the advertisement. They suggested that the effect of the music when participants were thinking harder was not necessarily due to conditioning, but other means of biasing thoughts (recall our previous discussion of the ELM central route).

Concerning the role of conditioning in advertisement, North et al. (2004) stated, ‘The most prudent conclusion to draw at the moment is simply that the debate over classical conditioning continues’ (p. 1677). Our understanding of musical conditioning may be enriched as researchers address moderating variables such as cognitive effort, musical fit, types of association (e.g., semantic imagery or affect), and the number of exposures to the advertisement-music pairing.

Engaging the consumer

The previous sections have centered on psychological processes involved in responses to persuasive multimedia presentations and have mainly focused on television advertisements. This section is organized around three common practices used in advertising to actively engage the consumer: Audio branding conveys a company’s identity and image to the public, jingles make slogans appealing by making them ‘sing-able,’ and the creation of virtual environments such as online shopping sites engage consumers in interactive multimedia. The psychological explanations for how and why these practices work (or do not work) are briefly discussed. Many involve the same psychological processes discussed earlier, though their application to these practices may provide novel insights into the role of music in advertising.

Audio branding

Audio branding, also known as sonic branding or sonic identity (Audiobrain, 2009), is a field of study closely related to conditioning. Audio branding is the formation of cognitive associations between music or other sounds and a logo or other symbol. A well-recognized example of audio branding in the United States is the musical chimes accompanying the NBC television network peacock logo. People who have seen that logo enough times will likely think of NBC when they hear the musical sequence in other places. The principles of forming this kind of association between sound and image are similar to those used in film music such as the dramatic violin motif accompanying the shower scene in *Psycho* or the minor second *leitmotif* used to reference the shark in *Jaws* (Jackson, 2003). In audio branding, musical fit and conditioning serve as strategic principles. Audio brand designers often try to develop an original sound that evokes meanings and feelings that communicate the unique identity and market positioning of an organization or brand.

The cognitive associations in branding include perceptual cues such as music and the visual logo, specific meanings or attributes made salient by the combination of these cues, and generating a positive attitude (Bronner, Hirt, & Ringe, 2010; Wang, 2005; Williams, 1999). Shevy and Kristen (2011) emphasized the importance of music genre meanings when using music in an audio brand. In their study, participants from Germany and the United States indicated the concepts they associated with ‘German folksy’ (a contemporary representation of German folk), country, punk, and hip-hop

music. The results showed significant differences between the genres in concepts that could be important in portraying a brand or organization. For example, punk and hip-hop were associated more with valuing personal independence, whereas country and German folksy were associated more with valuing family. German folksy was associated more with optimism for the future, while punk was associated more with pessimism. These patterns were consistent between the US and German participants, indicating that meaning associated with musical genres has some stability internationally, at least when comparing Western cultures.

Jingles

Jingles are a type of audio branding that have been defined as:

an identifiable musical or otherwise audio fragment which is associated with a brand name across different ads of the same brand... A jingle is similar to a theme song except that a jingle is short, may or may not contain words or advertising message, is attention-catching and memorable. (Hung & Rice, 1992, p. 225)

Studies consistently show the effectiveness of well-constructed jingles on memory. Yalch (1991) found that people recalled more slogans presented as jingles than slogans that were merely spoken. A set of experiments by Wallace (1994) showed that ‘a repeating, simple melody can provide a recall aid above and beyond what is provided in the text alone or in the poetic properties of the text such as rhyme’ (p. 1481).

Most jingle research examines the effects of structuring a textual message such as a slogan as part of the music. Jingles may operate primarily at the level of perception and implicit memory, requiring little to no conscious effort (Alexomanolaki et al., 2007). When people hear jingles such as Coca Cola’s ‘Have a Coke and a smile,’ McDonald’s ‘I’m lovin’ it,’ or State Farm Insurance’s ‘Like a good neighbor, State Farm is there,’ learning to associate the surface, phonetic features of words with melody may happen without much effort. However, this kind of learning does not assure that listeners understand the meaning of the words. (See similar findings for children and educational media, reviewed by Calvert, Chapter 12, in this volume.)

Yalch (1991) proposed that musical structure (e.g., melody, phrasing, rhythm) can serve as a mnemonic device that improves lyrical memory if two conditions are present: (1) ‘constructability’ and (2) ‘associability.’ In order to meet the constructability condition, the musical structure must be accessible during learning and recall of the message (e.g., simple and familiar melodies tend to work better); to meet the associability requirement, the words must be easy to associate with the musical structure. As a mnemonic device, the musical structure can help break the incoming verbal message into chunks that are easier to encode and emphasize certain words to enhance memory for salient information. During recall, memory of the musical melody can help people remember the number and order of words and whether any are missing (Wallace, 1994). Lyric rhyming structure (if used), emotion associated with the melody, and the possibility of the melody leading to increased rehearsal of the words (e.g., singing the words to oneself) also has the potential to improve memory.

An experiment by Alexomanolaki et al. (2007) revealed that the presence of music, particularly a jingle, in a television commercial improved implicit learning and recall

of words and images. The authors defined implicit learning and recall as processes of encoding and retrieving information ‘without deliberate or conscious reference to what is being learned’ or recalled (p. 53). Explicit learning and recall, on the other hand, require conscious effort. Drawing from studies in advertising and film music, Alexomanolaki and colleagues proposed that visual information would be more closely linked to explicit memory and that music would be more closely linked to implicit memory. They also presented literature suggesting that implicit memory processes tend to occur during a state of low attention and that implicit recall may be more accurate than explicit recall for indicating consumer thought and behavior.

In Alexomanolaki et al.’s (2007) experiment, participants watched an episode of a television situation comedy. Embedded within the show were four commercials; three were distractors to facilitate implicit learning by reducing attention to the target advertisement, a commercial for Nescafé coffee. To further facilitate implicit learning of the coffee commercial, the instructions given to the participants purposely avoided mentioning the commercials. Rather, participants were simply told that they would watch a television show and answer questions about what they had seen. To encourage a state of low attention toward the television, participants were minimally supervised and were allowed to eat, drink, and chat during the show.

The coffee commercial was accompanied by one of four soundtracks: (1) the musical jingle that originally accompanied the commercial, (2) instrumental music only, (3) the instrumental music with the words of the jingle spoken as a voiceover, and (4) sound effects (no music) with the spoken jingle voiceover. Implicit memory was assessed by asking participants to quickly select words and images relevant to the commercial visuals and product from larger lists of words and images. Participants were also asked to complete a word fragment that formed the brand name and a phrase fragment that formed the slogan. The participants were given little time to complete these tasks in order to minimize their ability to think. Several questions also explicitly asked about the commercial with no time constraints. Explicit recall did not vary significantly between the conditions, but implicit recall did. Implicit recall was higher for the commercials that contained music in comparison to the no-music version, and the jingle version had the highest implicit recall of all. The authors concluded that the ‘jingle seems to be the most effective form of music reinforcement in advertising’ (p. 65).

Virtual atmospheres

Marketing researchers study the ways in which sensory stimuli (color, odor, music, etc.), called ‘atmospherics,’ influence consumer inferences, attitude, and behavior in physical spaces (Lunardo & Mbengue, 2011). Hence, the influence of background music on consumer behavior in places such as restaurants and retail stores has a substantial research history. These studies have advanced our understanding about the use of music as part of this ‘atmosphere.’ Music with a slow tempo can decrease the traffic speed and increase sales volume in a store (Milliman, 1982). Playing a style of music that fits individual departments within a store can increase the number of shoppers who make a purchase and the amount they spend (Yalch & Spangenberg, 1993). Classical music might persuade consumers to buy more expensive products (Areni & Kim, 1993). Music with prosocial lyrics can cause restaurant patrons to tip more

(Jacob, Guéguen, & Boulbry, 2010), and happy music and music that is liked by participants can increase attitudes toward a store shown in a video (Broekemier, Marquardt, & Gentry, 2008).

As consumers have begun to make purchases using the Internet, researchers have tracked their behaviors. In an experiment involving an online gift shop, Wu, Cheng, and Yen (2008) found that, compared to no music or slow music (72 bpm or less) conditions, faster music (92 bpm or greater) increased shoppers' arousal and pleasure, which correlated with favorable attitudes toward the store and purchase intention. Richard, Chebat, Yang, and Putrevu (2010) created a conceptual model of online consumer behavior in which Web atmospherics contribute affective and cognitive influences to online behavior (website involvement and exploratory behavior) and outcomes (website attitudes and pre-purchase evaluation). In the model proposed by Richard et al., the affective influence of Web atmospherics is via entertainment, which consists of sensory and hedonic elements such as color, music, and interactivity. The cognitive influence is attributable to the structure of the site (e.g., layout), the amount of information on the site, and the currency of information. The extent to which the site presents a challenge that is matched by the user's skill can also influence online behavior.

Lai, Wu, Hsieh, Kung, and Lin (2011) reported that fast-tempo background music on a shopping website caused visitors to shift between Web pages more frequently, and visitors also perceived their browsing time to be shorter. They also reported that playing different music on different Web pages caused more page shifting and longer perceived time compared to conditions in which music continued constantly through the whole site or where the same music replayed on each new page. The researchers also determined that playing the same music continuously through the whole website led to greater recall accuracy. Future research could investigate how music impacts other meaningful aspects of virtual worlds such as colorfulness, simplicity, and relaxedness, as has been done in some video game immersion research (Lipscomb & Zehnder, 2004).

Moderating variables

Although this chapter has focused on the impact of music and message content, these are certainly not the sole determinants of persuasion through media (see Shevy, Chapter 4, in this volume). A number of moderating variables may strengthen, weaken, or otherwise alter the persuasive influence of music. One example, presented earlier, is the way in which a person's level of involvement can increase or reduce the impact of music on attitude. Other examples of moderating variables include music familiarity and preference, the cultural origins of symbol systems and listeners, and other listener traits.

Familiarity with and preference for music may increase interest or arousal, though not always (Carpentier & Potter, 2007). Familiar music may draw fewer cognitive resources away from message processing than unfamiliar music. As discussed previously, Hahn and Hwang (1999) indicated that participants who heard familiar background music during a soap commercial recalled more information than those who heard unfamiliar music, though these results were not replicated in a second experiment. MacInnis and Park (1991) observed that listeners' level of familiarity and preference for a musical

selection were correlated with positive emotion, which led to a more positive evaluation of an advertisement. However, they also found that familiar music can also serve as a distraction, decreasing attention to the central message.

Cultural factors can also alter the effects of music. Tavassoli and Lee (2003) found that playing music (instrumental rock/funk and jazz) interfered with bilingual (Chinese and English) Singapore students' ability to learn advertisement text written in English but not in Chinese. The presentation of visual images rather than music had the opposite effect, interfering with Chinese advertisement text, but not English. The researchers argued that this is due to the fact that English uses a primarily sound-based mental code and Chinese is more visual. Concerning persuasion, the authors stated, 'Distraction can enhance or reduce the persuasive impact of a message. Distraction reduces learning of an advertisement's persuasive content and limits message scrutiny' (p. 470). Tavassoli and Lee also observed a parallel cultural effect in which music served as a better recall cue for English text, and visuals improved recall of Chinese text.

Music may also have different connotations for different cultural groups. As discussed earlier, Kristen and Shevy (2009) found that American listeners strongly associate hip-hop with minority ethnicity whereas German listeners do not. A difference in such a salient construct associated with strong attitudes (e.g., cultural identity or prejudice) is an important factor to recognize when creating messages for an international audience.

Individual characteristics and traits can also moderate the effects of music, including gender and cognitive styles. For instance, Kellaris and Rice (1993) found that females responded more positively toward music at lower volumes than males, which could have implications for music presentation in advertising. Richard et al.'s (2010) research investigating online shopping behavior indicated that entertainment atmospherics, including music, increased exploration of a site by women but not men. Meyers-Levy and Zhu (2010) showed that gender and willingness to expend cognitive effort (i.e., 'need for cognition' or NFC, as described earlier) interacted to moderate the musical meaning perceived in a radio advertisement. Meyers-Levy and Zhu measured two types of musical meaning, as introduced earlier: (1) 'embodied meaning,' which listeners construct from attributes of the structural properties of the music itself (e.g., a piece of music may sound solemn and grandiose because of its steady tempo and expansive chords) and (2) 'referential meaning,' which listeners construct from an association between the music and extra-musical ideas (e.g., the piece may bring to mind a coronation or other grand event and therefore seem to have stately and majestic qualities). Prior research had indicated that referential meaning requires more cognitive effort than embodied meaning. In Meyers-Levy and Zhu's (2010) study, men with high NFC were influenced by the referential meaning of background music when forming perceptions of advertised services (a florist and a test preparation service). The perceptions by men with low NFC, on the other hand, were influenced by embodied meanings. Women were sensitive to both referential and embodied meaning regardless of NFC level. Other personality traits (e.g., introversion/extraversion) have also been shown to play a role in the ability to cognitively process background music (e.g., Furnham & Bradley, 1999).

Conclusion

For centuries music has been used for persuasion, yet the central argument in persuasive messages rests predominantly in textual or visual form. Thus, the persuasive power of music often resides in the way that music facilitates or hinders the processing of messages in a multimedia context. Researchers have made substantial strides in understanding persuasive message processing with the Elaboration Likelihood Model as the overarching framework. The ELM has been applied to examine music's effects, both in establishing the amount of elaboration and as an influence within the central and peripheral routes. Particular attention has been given to delineating the way music may attract or detract attention, the motivation and ability for processing the central argument, and the comprehension and attitudinal outcomes of the persuasive message.

Music tempo, lyrics, and familiarity with music, if applied appropriately, could increase the allocation of cognitive resources to the persuasive message. Meanwhile, exposure to music may prime cognitive constructs with which it is previously associated, thereby allowing carefully constructed media presentations to form new associations through conditioning and branding processes. Mood valence and arousal evoked by music may influence people who rely on their gut feelings to make a decision. Indeed, this line of work on music may contribute to persuasion research by sensitizing the research community to the variety of persuasion and decision approaches adopted by different individuals. Additionally, variables such as musical familiarity, gender, and culture may moderate the processing and effects of an advertisement, public service announcement, or online store. A good fit between music and other message elements may reduce cognitive load, create favorable attitudes, and aid consistent meaning construction.

In spite of the gaps and inconsistencies in past research findings, there is great need for more work in this area. This is especially the case as new Internet and mobile formats emerge; gaming, viral marketing, and online shopping are already shaping the next generation of persuasive media. The types of persuasive messages found on social media sites and mobile platforms tend to be more interactive than the media advertising upon which the bulk of our knowledge of musical multimedia persuasion is based. Thus, there is a need to investigate and understand the roles and processes of music in these emergent platforms, especially from the perspectives of interactive persuasion. Such research will surely benefit message producers and consumers navigating the sea of media available to them.

References

- Alexomanolaki, M., Loveday, C., & Kennett, C. (2007). Music and memory in advertising: Music as a device of implicit learning and recall. *Music, Sound, and the Moving Image*, 1(1), 51–71.
- Allan, D. (2006). Effects of popular music in advertising on attention and memory. *Journal of Advertising Research*, 46(4), 434–443.
- Allan, D. (2007). Sound advertising: A review of the experimental evidence on the effects of music in commercials on attention, memory, attitudes, and purchase. *Journal of Media Psychology*, 12(3). Retrieved from <<http://www.calstatela.edu/faculty/sfischo/>>.

- Allan, D. (2008). A content analysis of music placement in prime-time television advertising. *Journal of Advertising Research*, 48(3), 404–417.
- Alpert, M. I., Alpert, J. I., & Maltz, E. N. (2005). Purchase occasion influence on the role of music in advertising. *Journal of Business Research*, 58(3), 369–376.
- Anand, P., & Sternthal, B. (1990). Ease of message processing as a moderator of repetition effects in advertising. *Journal of Marketing Research*, 27(3), 345–353.
- Anderson, J. R. (1983). A spreading activation theory of memory. *Journal of Verbal Learning and Verbal Behavior*, 22(3), 261–295.
- Areni, C. S., & Kim, D. (1993). The influence of background music on shopping behavior: Classical versus top-forty music in a wine store. *Advances in Consumer Research*, 20, 336–340.
- Audiobrain. (2009). *Welcome to Audiobrain: Emmy award-winning sonic branding boutique*. Retrieved from <<http://www.audiobrain.com>>.
- Avramova, Y. R., Stapel, D. A., & Lerouge, D. (2010). Mood and context-dependence: positive mood increases and negative mood decreases the effects of context on perception. *Journal of Personality and Social Psychology*, 99(2), 203–214.
- Barthes, R. (1985). *Image-music-text* (S. Heath, Trans.). New York, NY: Hill & Wang.
- Bless, H., Bohner, G., Schwarz, N., & Strack, F. (1990). Mood and persuasion. *Personality and Social Psychology Bulletin*, 16(2), 331–345.
- Broekemier, G., Marquardt, R., & Gentry, J. W. (2008). An exploration of happy/sad and liked/disliked music effects on shopping intentions in a women's clothing store service setting. *Journal of Services Marketing*, 22(1), 59–67.
- Bronner, K., Hirt, R., & Ringe, C. (Eds.). (2010). *Audio Branding Academy Yearbook 2009 / 2010*. Sinzheim, Germany: Nomos.
- Bruner, G. C. (1990). Music, mood, and marketing. *Journal of Marketing*, 54(4), 94–104.
- Cacioppo, J. T., & Petty, R. E. (1982). The need for cognition. *Journal of Personality and Social Psychology*, 42(1), 116–131.
- Calvert, S. L., Huston, A. C., Watkins, B. A., & Wright, J. C. (1982). The relation between selective attention to television forms and children's comprehension of content. *Child Development*, 53(3), 601–610.
- Campbell, M. C. (1995). When attention-getting advertising tactics elicit consumer inferences of manipulative intent: The importance of balancing benefits and investments. *Journal of Consumer Psychology*, 4(3), 225–254.
- Carpentier, F. D., & Potter, R. F. (2007). Effects of music on physiological arousal: Explorations into tempo and genre. *Media Psychology*, 10(2), 339–363.
- Chou, H.-Y., & Lien, N.-H. (2010). Advertising effects of songs' nostalgia and lyrics' relevance. *Asia Pacific Journal of Marketing and Logistics*, 22(3), 314–329.
- Cohen, A. J. (2005). How music influences the interpretation of film and video: Approaches from experimental psychology. In R. Kendall & R. Savage (Eds.), *Selected reports in ethnomusicology: Perspectives in systematic musicology* (Vol. 12, pp. 15–36). Los Angeles, CA: Ethnomusicology Publications, UCLA.
- Cook, N. (1998). *Analysing musical multimedia*. Oxford, UK: Oxford University Press.
- Cohen, A. R., Stotland, E., & Wolfe, D. M. (1955). An experimental investigation of need for cognition. *Journal of Abnormal and Social Psychology*, 51(2), 291–294.
- Cotte, J., Coulter, R. A., & Moore, M. (2005). Enhancing or disrupting guilt: the role of ad credibility and perceived manipulative intent. *Journal of Business Research*, 58(3), 361–368.

- Day, R.-F., Lin, C.-H., & Huang, W.-H. (2009). Effects of music tempo and task difficulty on multi-attribute decision-making: An eye-tracking approach. *Computers in Human Behavior*, 25(1), 130–143.
- Dimofte, C. V., & Yalch, R. F. (2011). The mere association effect and brand evaluations. *Journal of Consumer Psychology*, 21(1), 24–37.
- Eagly, A. E., & Chaiken, S. (1993). *The psychology of attitudes*. Orlando, FL: Harcourt Brace Jovanovich, Inc.
- Furnham, A., Abramsky, S., & Gunter, B. (1997). A cross-cultural content analysis of children's television advertisements. *Sex Roles*, 37(1–2), 91–99.
- Furnham, A., & Bradley, A. (1999). Music while you work: the differential distraction of background music on the cognitive test performance of introverts and extraverts. *Applied Cognitive Psychology*, 11(5), 445–455.
- Gawronski, B., & Bodenhausen, G. V. (2006). Associative and propositional processes in evaluation: An integrative review of implicit and explicit attitude change. *Psychological Bulletin*, 132(5), 692–731.
- Gorn, G. C. (1982). The effects of music in advertising on choice behavior: a classical conditioning approach. *Journal of Marketing*, 46(1), 94–101.
- Gorn, G. C., Pham, M. T., & Sin, L. Y. (2001). When arousal influences ad evaluation and valence does not (and vice versa). *Journal of Consumer Psychology*, 11(1), 43–55.
- Hahn, M., & Hwang, I. (1999). Effects of tempo and familiarity of background music on message processing in TV advertising: a resource-matching perspective. *Psychology & Marketing*, 16(8), 659–675.
- Haugtvedt, C., Petty, R. E., Cacioppo, J. T., & Steidley, T. (1988). Personality and ad effectiveness: Exploring the utility of need for cognition. *Advances in Consumer Research*, 15, 209–212.
- Holt, D., Ippolito, P. M., Desrochers, D. M., & Kelley, C. R. (2007). *Children's exposure to TV advertising in 1977 and 2004: Information for the obesity debate*. Washington, DC: Federal Trade Commission, Bureau of Economics Staff Report.
- Hung, K. (2000). Narrative music in congruent and incongruent TV advertising. *Journal of Advertising*, 29(1), 25–34.
- Hung, K. (2001). Framing meaning perceptions with music: The case of teaser ads. *Journal of Advertising*, 30(3), 39–50.
- Hung, K., & Rice, M. (1992, April). *The development and testing of a typology of musical elements in television commercials*. Paper presented at the 1992 Conference of the American Academy of Advertising. Athens, GA.
- Iwamiya, S., & Hanako, O. (2004, August). *Formal congruency between image patterns and pitch patterns*. Paper presented at the Eight International Conference on Music Perception & Cognition, Evanston, IL.
- Jackson, D. M. (2003). *Sonic branding: An introduction*. New York, NY: Palgrave Macmillan.
- Jacob, C., Guéguen, N., & Boulbry, G. (2010). Effects of songs with prosocial lyrics on tipping behavior in a restaurant. *International Journal of Hospitality Management*, 29(4), 761–763.
- Kahle, L. R., & Homer, P. M. (1985). Physical attractiveness of the celebrity endorser: A social adaptation perspective. *Journal of Consumer Research*, 11(4), 954–961.
- Kellaris, J. J., & Cox, A. D. (1989). The effects of background music in advertising: a reassessment. *The Journal of Consumer Research*, 16(1), 113–118.
- Kellaris, J. J., Cox, A. D., & Cox, D. (1993). The effect of background music on ad processing: A contingency explanation. *Journal of Marketing*, 57(4), 114–125.

- Kellaris, J. J., & Rice, R. C. (1993). The influence of tempo, loudness, and gender of listener on responses to music. *Psychology and Marketing*, *10*(1), 15–29.
- Kensinger, E. A. (2009). Remembering the details: Effects of emotion. *Emotion Review*, *1*(2), 99–113.
- Kristen, S., & Shevy, M. (2009, September). *International meanings of the semantics of popular music: A comparison of the extra-musical associations with country, German folksy music, hip-hop and punk in American versus German listeners*. Paper presented at the Sixth Media Psychology Division Conference of the German Psychological Association. Duisburg, Germany.
- Lai, C.-J., Wu, Y.-L., Hsieh, M.-Y., Kung, C.-Y., & Lin, Y.-H. (2011). Effect of background music tempo and playing method on shopping website browsing. In J. Watada, G. Phillips-Wren, L. C. Jain & R. J. Howlett (Eds.), *Intelligent Decision Technologies* (Vol. 10, pp. 439–447). Berlin, Germany: Springer.
- Lang, A. (2009). The limited capacity model of motivated media message processing. In R. L. Nabi & M. B. Oliver (Eds.), *The SAGE handbook of media processes and effects* (pp. 193–204). Thousand Oaks, CA: Sage Publications.
- Lipscomb, S. D., & Zehnder, S. M. (2004). Immersion in the virtual environment: The effect of a musical score on the video gaming experience. *Journal of Physiological Anthropology and Applied Human Science*, *23*(6), 337–343.
- Lunardo, R., & Mbengue, A. (2011). When atmospherics lead to inferences of manipulative intent: Its effects on trust and attitude. *Journal of Business Research*. (First published online June 25, 2011.) Retrieved from <<http://www.sciencedirect.com/>>.
- Macinnis, D. J., & Park, C. W. (1991). The differential role of characteristics of music on high- and low- involvement consumers' processing of ads. *Journal of Consumer Research*, *18*(2), 161–173.
- McGuire, W. J. (1985). Attitudes and attitude change. In G. Lindzey & E. Aronson (Eds.), *Handbook of social psychology* (Vol. 2, pp. 233–346). New York, NY: Random House.
- Meyer, L. B. (1994). Emotion and meaning in music. In R. Aiello & J. A. Sloboda (Eds.), *Musical Perceptions* (pp. 3–39). New York, NY: Oxford University Press.
- Meyers-Levy, J., & Zhu, R. (2010). Gender differences in the meanings consumers infer from music and other aesthetic stimuli. *Journal of Consumer Psychology*, *20*, 495–507.
- Milliman, R. E. (1982). Using background music to affect the behavior of supermarket shoppers. *Journal of Marketing*, *46*(3), 86–91.
- Murray, N. M., & Murray, S. B. (1996). Music and lyrics in commercials: A cross-cultural comparison between commercials run in the Dominican Republic and in the United States. *Journal of Advertising*, *25*(2), 51–63.
- North, A., & Hargreaves, D. J. (2008). *The social and applied psychology of music*. New York, NY: Oxford University Press.
- North, A. C., Mackenzie, L. C., Law, R. M., & Hargreaves, D. J. (2004). The effects of musical and voice 'fit' on responses to advertisements. *Journal of Applied Social Psychology*, *34*(8), 1675–1708.
- Oakes, S., & North, A. C. (2006). The impact of background musical tempo and timbre congruity upon ad content recall and affective response. *Applied Cognitive Psychology*, *20*(4), 505–520.
- Olsen, G. D. (1997). The impact of interstimulus interval and background silence on recall. *The Journal of Consumer Research*, *23*(4), 295–303.

- Olsen, G. D. (2002). Salient stimuli in advertising: The effect of contrast interval length and type on recall. *Journal of Experimental Psychology: Applied*, 8(3), 168–179.
- Olsen, G. D., & Johnson, R. D. (2002). The impact of background lyrics on recall of concurrently presented verbal information in an advertising context. *Advances in Consumer Research*, 29(1), 147–148.
- Park, C. W., & Young, S. M. (1986). Consumer response to television commercials: the impact of involvement and background music on brand attitude formation. *Journal of Marketing Research*, 23(1), 11–24.
- Petty, R. E., Briñol, P., & Priester, J. R. (2009). Mass media attitude change: Implications of the elaboration likelihood model of persuasion. In J. Bryant & M. B. Oliver (Eds.), *Media effects: Advances in theory and research* (3rd ed., pp. 125–164). New York, NY: Routledge.
- Petty, R. E., & Cacioppo, J. T. (1979). Issue involvement can increase or decrease persuasion by enhancing message relevant cognitive responses. *Journal of Personality and Social Psychology*, 37(10), 1915–1926.
- Petty, R. E., & Cacioppo, J. T. (1986). The elaboration likelihood model of persuasion. *Advances in Experimental Social Psychology*, 19, 123–205.
- Redker, C. M., & Gibson, B. (2009). Music as an unconditioned stimulus: Positive and negative effects of country music on implicit attitudes, explicit attitudes, and brand choice. *Journal of Applied Social Psychology*, 39(11), 2689–2705.
- Richard, M. O., Chebat, J. C., Yang, Z., & Putrevu, S. (2010). A proposed model of online consumer behavior: Assessing the role of gender. *Journal of Business Research*, 63(9–10), 926–934.
- Scott, L. M. (1990). Understanding jingles and needledrop: a rhetorical approach to music in advertising. *Journal of Consumer Research*, 17(2), 223–236.
- Shen, Y.-C., & Chen, T.-C. (2006). When east meets west: The effect of cultural tone congruity in ad music and message on consumer ad memory and attitude. *International Journal of Advertising*, 25(1), 51–70.
- Shevy, M. (2008). Music genre as cognitive schema: extramusical associations with country and hip-hop music. *Psychology of Music*, 36(4), 477–498.
- Shevy, M., & Hawkins, R. P. (2008). Attending to mass media. In W. Donsbach (Ed.), *International Encyclopedia of Communication* (Vol. 1, pp. 216–221). Malden, MA: Blackwell Publishing.
- Shevy, M., & Kristen, S. (2009, June). *German listeners' music-genre schemas for international and domestic popular music: Differences in cognitive meanings associated with exposure to country, hip-hop, punk, and German folksy music*. Paper presented at the International Communication Association Annual Conference. Chicago, IL.
- Shevy, M., & Kristen, S. (2011). Semantic meanings associated with popular music: An international consideration of music genre in branding. In K. Bronner, R. Hirt, & C. Ringe (Eds.), *Audio Branding Academy Yearbook 2010–2011* (pp. 219–229). Sinzheim, Germany: Nomos.
- Stewart, D. W., & Furse, D. H. (1986). *Effective television advertising*. Lexington, MA: Lexington Books.
- Storbeck, J., & Clore, G. L. (2008). Affective arousal as information: How affective arousal influences judgments, learning, and memory. *Social and Personality Psychology Compass*, 2, 1824–1843.
- Tavassoli, N. T., & Lee, Y. H. (2003). The differential interaction of auditory and visual advertising elements with Chinese and English. *Journal of Marketing Research*, 40(4), 468–480.

- Tormala, Z. L., Briñol, P., & Petty, R. E. (2007). Multiple roles for source credibility under high elaboration: It's all in the timing. *Social Cognition*, 25(4), 536–552.
- Trampe, D., Stapel, D. A., Siero, F. W., & Mulder, H. (2010). Beauty as a tool: The effects of model attractiveness, product relevance, and elaboration likelihood on advertising effectiveness. *Psychology & Marketing*, 27(12), 1101–1121.
- Wakshlag, J. J., Reitz, R. J., & Zillmann, D. (1982). Selective exposure to and acquisition of information from educational television programs as a function of appeal and tempo of background music. *Journal of Educational Psychology*, 74(5), 666–677.
- Wallace, W. T. (1994). Memory for music: Effect of melody on recall of text. *Journal of Experimental Psychology – Learning Memory and Cognition*, 20(6), 1471–1485.
- Wang, J. (2005). Youth culture, music, and cell phone branding in China. *Global Media and Communication*, 1(2), 185–201.
- Williams, R. (1999). *Secret formulas of the wizard of ads: Turning paupers into princes and lead into gold*. Austin, TX: Bard Press.
- Wu, C.-S., Cheng, F.-F., & Yen, D. C. (2008). The atmospheric factors of online storefront environment design: An empirical experiment in Taiwan. *Information & Management*, 45(7), 493–498.
- Yalch, R. F. (1991). Memory in a jingle jungle: Music as a mnemonic device in communicating advertising slogans. *Journal of Applied Psychology*, 76(2), 268–275.
- Yalch, R. F., & Spangenberg, E. R. (1993). Using store music for retail zoning: A field experiment. In L. McAlister & M. L. Rothschild (Eds.), *Advances in Consumer Research* (Vol. 20, pp. 632–636). Provo, UT: Association for Consumer Research.
- Zander, M. F. (2006). Musical influences in advertising: How music modifies first impressions of product endorsers and brands. *Psychology of Music*, 34(4), 465–480.
- Zhu, R., & Meyers-Levy, J. (2005). Distinguishing between the meanings of music: When background music affects product perceptions. *Journal of Marketing Research*, 42(3), 333–345.
- Ziv, N., Hoftman, M., & Geyer, M. (2012). Music and moral judgment: The effect of background music on the evaluation of ads promoting unethical behavior. *Psychology of Music*, 40(12), 738–760.