Results May Vary: Overcoming Variability in Consumer Response to Advertising Music

Lincoln G. Craton and Geoffrey P. Lantos
Stonehill College

Richard C. Leventhal
Ashford University

ABSTRACT

Although listening to music seems effortless, it actually involves many separate psychological mechanisms. This article describes and extends the multimechanism framework proposed by Juslin and colleagues, highlighting how the operation of psychological mechanisms leads to two general types of variability in consumer response to advertising music. First, the risk of between-consumer variability (individual differences) in musical response is moderate or high for most mechanisms, and it often depends on each individual's particular history of exposure to music (listening biography). Second, within-consumer variability occurs when different mechanisms have contrasting effects, so that an individual consumer's musical response is often mixed (e.g., guilty pleasures, bittersweet feelings, pleasurable sadness). Both types of variability can negatively impact advertising objectives (message reception, recall, acceptance, brand attitudes, etc.). The article offers preliminary suggestions for how marketers can use a multimechanism approach to successfully incorporate music in commercials and reduce the risk of unanticipated consumer responses. It ends with proposals for further research. © 2016 Wiley Periodicals, Inc.

Scope and Goals of the Article

According to Levitin and Tirovolas (2010, p. 599),

Music cognition . . . is the scientific study of those mental and neural operations underlying music listening, music making, dancing (moving to music), and composing. It is intrinsically interdisciplinary, drawing on methods from cognitive and sensory psychology, neuroscience, musicology, computer science, music theory, and sociocultural aspects of music, with genetics and evolutionary biology becoming increasingly relevant. Music-processing is a complex, higher cognitive activity engaging many areas of the brain and employing many distinct cognitive operations. (emphasis added)

Taking this as a starting point, the article surveys what Levitin and Tirovolas (2010) refer to in the quotation above as the mental and neural operations that occur when a consumer listens to advertising music. The term “mechanisms,” which is standard in the music cognition literature, is used to denote these operations. The primary goals of the article are to (1) describe how these mechanisms affect consumer response to advertising music, (2) illustrate implications of the
new multimechanism framework in music cognition for effectively incorporating music into commercials and achieving advertising objectives, and (3) provide suggestions for future research.

For the sake of brevity, it was necessary to restrict the scope of coverage. First, the article only addresses music listening (not music making, dancing, and composing). Second, it draws primarily on cognitive methods used to study music listening. A cognitive approach regards advertising music as a form of communication using acoustic information to initiate a variety of mental processes that operate on this information and elicit a variety of conscious experiences (Bharucha, Curtis, & Paroo, 2006).

Third, the article is concerned primarily with recent work coming out of music cognition proposing a multimechanism framework and this work’s implications for broadcast (TV and radio) and digital (online and social media) advertisements incorporating music. This approach does not seem to have been addressed in the most recent reviews of the marketing literature (e.g., Allan, 2007; Kellaris, 2008).

Two Types of Variability in Musical Response

Music is ubiquitous in advertisements (Allan, 2008; Marshall & Roberts, 2008). But does music always enhance a commercial's effectiveness, that is, shape consumer responses so as to achieve advertising objectives? Although this may seem to be a safe assumption, two of the authors have argued elsewhere that this is not always the case (Craton & Lantos, 2011; Lantos & Craton, 2012). In the marketing literature, this assumption has sometimes been supported (Galizio & Hendrick, 1972; Hoyer, Srivastava, & Jacoby, 1984) but often disputed (Allan, 2007; Haley, Richardson, & Baldwin, 1984; Englis & Pennell, 1994; Macklin, 1988; Sewall & Sare, 1986). Given the importance of achieving desirable consumer responses to advertising music, this article evaluates this assumption further by addressing two related questions: (1) “How variable is musical response between listeners (between-consumer variability)?” and (2) “How variable is musical response within a given listener (within-consumer variability)?” The more variable are consumer responses to ad music, the less confident advertisers can be in achieving their advertising goals.

Between-consumer variability refers to individual differences in musical response. The traditional marketing assumption—that advertising music can be favorably received by specific target markets based on demographic and psychographic market segmentation criteria believed to correlate with musical tastes, namely, generations, ethnicity, sex, lifestyle, and so on—now seems unrealistic (e.g., Kupfer, in press). Heterogeneity in musical preferences is high and increasing within such targeted groups (Craton & Lantos, 2011; Lantos & Craton, 2012; Nuttal et al., 2011). Recent psychometric approaches are discovering more valid correlates of music preferences such as personality (Rentfrow, 2012; Rentfrow et al., 2012) and musical intelligence (Krishnan, Machleit, Kellaris, Sullivan, & Aurand, 2014).

This article takes a complementary approach to the emerging literature on correlates of musical taste by considering the implications of particular music-processing mechanisms for between-consumer variability in musical response. Research in music cognition reveals that some of these mechanisms may lead to individual differences in musical response. For instance, although basic features of music are perceived similarly by all listeners, some mechanisms depend a great deal on that person’s “listening biography”—all of that person’s previous exposures to, knowledge about, and experiences with music (Huron, 2006; Margulis, 2014). Because consumers in a given target market now have virtually unlimited online access to the entire catalogue of recorded music, their listening biographies are likely to differ—and, consequently, so are their responses to advertising music.

The second kind of variability in musical response is within-consumer variability. As two of the authors have discussed previously (Lantos & Craton, 2012), an individual’s response to the same piece of advertising music may be very dissimilar on two different listening occasions. This can occur, for instance, if the listening situation (ongoing activities, social context, program content, voluntary vs. involuntary exposure) changes. This article focuses on a subtler kind of variability in an individual’s musical response: variability that occurs during a single listening occasion. The marketing literature’s tacit assumption is that a consumer’s musical response is essentially uniform at any given moment—a person either likes, dislikes, or feels neutral about a given piece of ad music (Alpert & Alpert, 1991; Birkett, 2012; Holbrook & Schindler, 1989; Verstreken, 2013).

Although this assumption seems intuitively reasonable, a multimechanism approach suggests otherwise. Because each mechanism can affect musical response differently, an individual’s musical response is multifaceted and often a mixture of contrasting responses. For instance, negative cognitive evaluations may occur along with positive emotional responses (e.g., “guilty pleasures”), and emotional responses themselves may be mixed (e.g., “bittersweet” feelings, “pleasurable sadness”). After reviewing mechanisms identified by music cognition researchers, the article discusses how understanding the simultaneous operation of these mechanisms may help marketers assess the trade-offs involved in selecting advertising music.

Identifying the mental mechanisms at work when a consumer listens to ad music casts doubt on the assumption that music always enhances advertising effectiveness. These mechanisms produce variability in musical response both between and within consumer listeners, which may in turn result in unanticipated consumer responses to the entire ad that work against achieving advertising objectives. Nonetheless,
the article will suggest how marketers can judiciously select music that may enhance—or at least, not detract from—their advertisements for most target audience members.

Plan for the Article

The article begins by briefly reviewing the multidimensional musical response construct attitude toward the advertising music (A_am) proposed by Craton and Lantos (2011). It then surveys mechanisms from the music cognition literature and illustrates how each mechanism is likely to influence A_am, using examples from actual commercials. Next, it summarizes the practical implications of this work for marketers who create or select music for commercials, focusing on the two types of variability in musical response. Finally, it offers suggestions for future research.

Attitude toward the Advertising Music (A_am)

Previously, Craton and Lantos (2011) introduced a new construct for describing a consumer’s response to ad music, A_am. The contents of A_am are listed in the circle on the right-hand side of Figure 1; the particular elements of A_am considered in this article are shown in bold. Paralleling Lutz’s (1985) definition of attitude toward the advertisement (A_ad), they defined A_am as a predisposition to respond in a favorable or unfavorable manner to an ad’s music during a particular exposure occasion. A_am is comprised of cognitive and affective elements that jointly constitute a given listener’s musical response, and A_am is a significant component of one type of mediator of advertising effectiveness—A_ad—in ads employing music (Lutz, MacKenzie, & Belch, 1983).

A_am is essentially what the consumer perceives, thinks, and feels in response to an ad’s music—that is, how the consumer consciously experiences the music. As a multidimensional construct, A_am overcomes a limitation in the literature: musical appeal is usually only conceptualized as a one-dimensional variable—typically “liking or disliking” (Allan, 2007). A_am specifies the many ways in which musical response can vary between listeners (between-consumer variability). It also captures the richness and complexity of a single listener’s reaction to a musical piece, allowing for simultaneous, contrasting cognitive and affective responses (within-consumer variability).

Survey of Mechanisms Affecting A_am

Both the between- and within-consumer variability in musical response captured by the A_am construct can be attributed to the fact that, whenever a consumer listens to ad music, multiple music-processing mechanisms are operating concurrently (Juslin & Västfjäll, 2008; Scherer, 2004; Scherer & Zentner, 2001). In recent years, Juslin’s multimechanism approach has provided a particularly useful framework guiding music cognition research (Juslin, 2013; Juslin, Liljeström, Västfjäll, & Lundqvist, 2010; Juslin & Västfjäll, 2008). For ease of exposition, the article will not repeatedly cite these three sources; readers can assume that descriptions of the mechanisms rely on those papers.

The present survey includes seven mechanisms from Juslin’s framework, which he claims is the most comprehensive synthesis to date in the area of emotional response to music. Because the framework concerns only emotional responses while advertisements usually also generate cognitive responses, this article extends it in two ways in order to include cognitive musical responses. First, it describes how each of the seven mechanisms can also generate cognitive responses. Second, it adds two additional cognitive mechanisms from the music cognition literature, for a total of nine mechanisms (see Figure 1). While each of the proposed mechanisms has garnered some empirical support, current understanding of them varies quite a bit.

The survey describes the operation of each mechanism with respect to four characteristics, shown in Table 1’s column headings. First, it specifies the information in the ad music that the mechanism uses to elicit a musical response. Knowing this can help marketers choose music that activates a particular mechanism. The first mechanism, feature analysis, is activated directly by the acoustic signal from the musical stimulus as it reaches the ear. It allows the consumer to detect “basic features” of music—rhythm, pitch, texture, and so on (see Table 2). Each of the remaining mechanisms is activated by one or more of these basic features (downward arrow in Figure 1).

Second, the survey notes whether the operation of each mechanism is affected by consumers’ listening biographies. Knowing this can help advertisers predict the amount of between-consumer variability in musical response that a mechanism causes. The more influential listening biographies are in determining a mechanism’s operation, and the more that listening biographies vary within a target market, the more individual differences in A_am there will be for ad music eliciting the mechanism. This, in turn, jeopardizes the achievement of advertising objectives.

Third, the survey identifies the particular cognitive and affective elements of A_am most likely to be influenced by each mechanism, and considers the positive and negative outcomes related to advertising objectives that can arise. The current treatment of cognitive responses draws on various works in music cognition as cited below, while the treatment of affective responses relies heavily on the influential recent synthesis of theory and findings by Juslin and colleagues.

Fourth, the article considers the risk of eliciting individual differences in musical response for each mechanism. Mechanisms that are strongly affected by the consumer’s listening biography (Table 1, column 3) generally lead to the highest risk of individual differences
Figure 1. Nine music-processing mechanisms that simultaneously influence attitude toward the advertising music ($A_{am}$).

When such individual differences exist, the job of selecting music that helps achieve advertising objectives of course becomes more challenging.

Altogether, the survey below outlines nine mechanisms that determine $A_{am}$. For each mechanism, coverage begins by describing the mechanism with respect to each of the four characteristics noted above, selectively reviewing relevant research. It then highlights implications for creating or selecting advertising music, providing at least one example of existing ad music to illustrate each mechanism (URLs for commercials are not provided here since they often change, but interested readers can search YouTube and similar sites for examples).
### Table 1. Nine Music-processing Mechanisms and Their Characteristics.

<table>
<thead>
<tr>
<th>Mechanism</th>
<th>Eliciting Information in Ad Music</th>
<th>Affected by Listening Biography</th>
<th>Elements of A&lt;sub&gt;am&lt;/sub&gt; Affected</th>
<th>Risk of individual differences in A&lt;sub&gt;am&lt;/sub&gt;</th>
</tr>
</thead>
<tbody>
<tr>
<td>Feature analysis</td>
<td>Acoustic signal</td>
<td>No</td>
<td>Perceived (basic) features</td>
<td>Low</td>
</tr>
<tr>
<td>Brain stem reflex</td>
<td>Extreme or rapidly changing basic features</td>
<td>No</td>
<td>Attention to music, Emotions evoked (e.g., surprise), Emotional arousal</td>
<td>Low</td>
</tr>
<tr>
<td>Rhythmic entrainment</td>
<td>Rhythmic features (pulse)</td>
<td>No</td>
<td>Image suggested, Emotions evoked, Emotional arousal</td>
<td>Moderate</td>
</tr>
<tr>
<td>Evaluative conditioning</td>
<td>Basic features</td>
<td>Yes</td>
<td>Image suggested</td>
<td>High</td>
</tr>
<tr>
<td>Emotional recognition</td>
<td>Voice-like basic features</td>
<td>No</td>
<td>Perceived features (emotions)</td>
<td>Low</td>
</tr>
<tr>
<td>Emotional contagion</td>
<td>Voice-like basic features</td>
<td>No</td>
<td>Image suggested</td>
<td>Moderate</td>
</tr>
<tr>
<td>Visual imagery</td>
<td>Basic features</td>
<td>Yes</td>
<td>Image suggested, Emotions evoked, Emotional memories activated</td>
<td>High</td>
</tr>
<tr>
<td>Episodic memory</td>
<td>Basic features</td>
<td>Yes</td>
<td>Image suggested, Emotions evoked, Emotional memories activated</td>
<td>High</td>
</tr>
<tr>
<td>Musical expectancy</td>
<td>Basic features unfolding over time</td>
<td>Yes</td>
<td>Attention to music, Depth of processing, Image suggested, Perceived as distinctive or not, Emotions evoked, Emotional arousal, Hedonic response</td>
<td>Moderate</td>
</tr>
</tbody>
</table>

### Feature Analysis

**Description.** As described briefly in Table 2, feature analysis mechanisms consist of rhythm perception, pitch perception, texture perception, streaming, feature integration, grouping, and multimodal perception processes. Because they are very basic processes that operate similarly in virtually all listeners, this treatment is quite brief. Readers wishing to learn more about feature analysis should refer to the sources cited in Table 2 and to Deutsch (2013b).

**Implications.** Because feature analysis functions similarly in everyone (Brattico, Bogert, & Jacobsen, 2013; Harwood, 1976; McDermott & Oxenham, 2008; Stevens & Byron, 2009), marketers can confidently assume that virtually all consumers will perceive the basic features of a piece of advertising music similarly. With rare exceptions (e.g., Margulis, Mlsna, Uppunda, Parrish, & Wong, 2009), consumers’ listening biographies do not affect feature analysis mechanisms. However, the perceived basic features of music that result from feature analysis are used by other mechanisms, as indicated by the downward arrow in Figure 1 and discussed below. Many of these other mechanisms often do lead to individual differences in response.

### Summary.

Feature analysis operates directly on the acoustic signal from the musical stimulus as it first reaches the ear. It is not affected by listening biography and allows the consumer to detect basic features of the ad music (rhythm, pitch, texture, etc.). These perceived basic features serve as eliciting information for the eight other mechanisms (Table 1). The risk of individual differences in response to feature analysis is very low.

### Brain Stem Reflexes

**Description.** The clearest example of a brain stem reflex is the auditory startle reflex (Brattico et al., 2013). Brain stem reflexes are elicited by sudden, loud, dissonant, or rapid changes in music, such as the sudden loud kettledrum stroke in Haydn’s “Surprise” Symphony No. 94 (Juslin, 2013). A brain stem reflex might be triggered when all instruments in a loud rock band suddenly start playing following a quiet introduction by one instrument. When two simultaneously played pitches do not blend well, the resulting sensation of “roughness” or rapid beating known as sensory dissonance (cf. Dellacherie, Roy, Hugueville, Peretz, & Samson, 2011) may also elicit a brain stem reflex. This type of sound characterizes the “threat” and “warning”
Brain stem reflexes influence the first cognitive factor in the $A_{\text{stim}}$ box in Figure 1: level and persistence of attention to music. These reflexes also influence two of $A_{\text{stim}}$’s affective elements, evoking emotions and increasing emotional arousal. For instance, Juslin, Har-}

<table>
<thead>
<tr>
<th>Mechanism</th>
<th>Description</th>
</tr>
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<tbody>
<tr>
<td>Rhythm perception</td>
<td>Detects fundamental temporal features such as the beat and whether a musical piece is a march or a waltz (Honing, 2009, 2012; Justus &amp; Bharucha, 2002; Repp, 2005, Repp &amp; Su, 2013; Winkler, Haden, Ladingin, Sziller, &amp; Honing, 2009)</td>
</tr>
<tr>
<td>Pitch perception</td>
<td>Detects how high or low a musical note is; also, detects that high “C” and low “C” are the same pitch category, and different from (high or low) “D,” for example (Justus &amp; Bharucha, 2002; McDermott &amp; Oxenham, 2008; Schellenberg &amp; Trehub, 2003)</td>
</tr>
<tr>
<td>Texture perception</td>
<td>Detects the distinct sounds of different instruments and the way those sounds are combined in the orchestration of a musical piece (McAdams, 2013)</td>
</tr>
<tr>
<td>Streaming</td>
<td>Detects whether musical notes in a series all belong to the “same” melody or to separate melodic parts or “streams” in a musical piece (Bregman, 2015)</td>
</tr>
<tr>
<td>Feature integration</td>
<td>Combines the features in a musical piece so that the listener perceives what “goes with” what; e.g., a saxophone sound goes with one melody and a piano sound goes with a different melody (Bregman, 2015)</td>
</tr>
<tr>
<td>Grouping</td>
<td>Organizes musical events into larger units with beginnings and endings; individual notes combine to form motives (brief “melodic ideas”), motives combine to form phrases, and so on up to long sections of a symphony (Bregman, 2015; Deutsch, 2013a; Narmour, 2015; Schellenberg, 1997)</td>
</tr>
<tr>
<td>Multimodal perception</td>
<td>Detects nonmusical information (visual information, speech/lyrics) and combines it with the ad music; for instance, vision directs the consumer’s attention to visible objects that “move with” the music (Cohen, 2013)</td>
</tr>
</tbody>
</table>

Brain stem reflexes are unaffected by a consumer’s listening biography and occur automatically. Although sudden, loud, dissonant, and rapid changes in music are not actually dangerous, brain stem reflexes do not “know” this; they respond instantly to any and all sounds with these characteristics, even when they occur in music.

Brain stem reflexes influence the first cognitive factor in the $A_{\text{stim}}$ box in Figure 1: level and persistence of attention to music. These reflexes also influence two of $A_{\text{stim}}$’s affective elements, evoking emotions and increasing emotional arousal. For instance, Juslin, Har-
maintained with music that is interpreted positively by other mechanisms discussed below—for instance, music perceived as arousing/relaxing (rhythmic entrainment), happy (emotional contagion), or distinctive and exciting (musical expectancy). Intuitively, the startling segment of the music should be a few seconds at most, so that listeners do not zap the ad. The exceptions would be where the commercial is designed to evoke a sense of danger that the advertised product can overcome (e.g., burglar alarms) or where emotions created such as delightful surprise can be confidently be predicted to be pleasant for most listeners.

**Summary.** Brain stem reflexes are triggered by basic musical features that signal a potentially urgent environmental event. They are not affected by listening biography, increase attention to the ad music, evoke particular emotions (e.g., surprise, fear, happiness, joy, or excitement), and heighten emotional arousal (increasing one’s heart and/or breathing rate), which are typical advertising objectives. They are a low risk for individual differences in A₁m.

### Rhythmic Entrainment

**Description.** Adults (Bernardi et al., 2009; Clayton, Sager, & Will, 2005; Etzel, Johnsen, Dickerson, Tranel, & Adolphs, 2006; Fujioka, Trainor, Large, & Ross, 2009; Harrer & Harrer, 1977; Khalfa, Roy, Rainville, Dalla Bella, & Peretz, 2008; Nozaran, Peretz, Missal, & Mouraux, 2011; Nyklicek, Thayer, & van Doornen, 1997) and infants (Phillips-Silver & Trainor, 2005; Zentner & Eerola, 2010) tend to synchronize either their heart or breathing rate to the pulse of music. Entrainment is most likely to be triggered by music with a strong pulse or beat, particularly when this is close the listener’s normal internal rhythms.

A cognitive effect of ad music with many instruments playing in synchrony with a strong pulse is that it can suggest a powerful image in (see Figure 1) of communion among the performers—that is, an impression that the music is being performed by a cohesive, well-practiced, socially coordinated group of people (Hagen & Bryant, 2003). In addition, the changes in listeners’ internal body rhythms that occur during entrainment invites them to join (cognitively and affectively) in the synchrony, as audience members at a rock concert often do when they get up and dance “with” the band and with each other.

Entrainment induces general emotional arousal gradually compared to the immediate arousal response that occurs for brain stem reflexes. Consistent with the suggestion above that rhythmic entrainment may evoke the cognitive impression of communion, recent empirical work suggests that entrainment can also evoke a corresponding feeling of communion with others listening to the same music (Demos, Chaffin, Begosh, Daniels, & Marsh, 2012), as well as feelings of joy, transcendence, wonder, power, tenderness, nostalgia, sadness, peacefulness, and tension (Labbé & Grandjean, 2014). In addition, Labbé and Grandjean (2014) found that entrainment involves both feeling one’s internal body rhythms adjust to the rhythm of music and also the urge to move along with the music—to tap toes, bob the head, or dance. This urge to move is strongly associated with enjoyment of a piece of music, a phenomenon known as perceiving “the groove”; groove can also be felt directly when listeners actually move in time to music (Janata, Tomic, & Haberman, 2012).

Because it is present very early in development, the basic capacity for entrainment does not seem to depend on an individual’s listening biography. However, two findings in the literature point to a moderate risk of individual differences stemming from the rhythmic entrainment mechanism. First, Labbé and Grandjean (2014) found that people displaying higher levels of empathy—which may indicate their ability to internally experience the movements that musicians must make to produce the music’s groove—report more entrainment to music. Second, Janata et al. (2012) found a correlation between “felt groove” and accuracy in tapping along with music, suggesting that entrainment and its effects may be experienced more strongly for people with greater rhythmic ability.

**Implications.** If possible, advertisers trying to arouse listeners emotionally should seek out ad music with a beat that seems to generate positive and enjoyable “groove” responses in most listeners. Given the brief nature of most commercials (typically 15 or 30 seconds, although often longer in digital environments) and the relative slowness of this musical response, it may be effective to use music with a pulse that is close to listeners’ internal resting rhythms (roughly 60–100 beats per minute for heart rate, 12–20 breaths per minute for breathing rate). For TV, 60-second spots might be the best candidates for this approach. Longer-form digital ads might be the preferred vehicles for employing entrainment to evoke desired responses. Products affiliated with social groups (e.g., those consumed socially, items purchased for social status, lifestyle products, etc.) might wish to employ rhythmic entrainment in order to create a feeling of and even belief in communion with the social group portrayed in the ad. The involvement created by movement induced by the music’s groove might also enhance the appeal of low-involvement products.

A perfect example of ad music that activates rhythmic entrainment is the 60-second “Target Style Spring 2015: Groove is in the Heart” commercial, which maintains a lively pace and a fairly heavy beat. Similarly, GMC’s “Fastball” spot from its “Precision Counts” campaign uses The Who’s groove-heavy “Eminence Front,” a song with a beat near the high end of the normal range for heartbeat, to effectively tease an increase in emotional arousal and create positive images and emotions in listeners.
Since it is unclear whether entrainment will occur within short commercials’ time frames, marketers using traditional short-form ads wishing to induce an image of communion, emotions, and emotional arousal might wish to test for entrainment (as described in Janata et al., 2012) as well as for which specific emotions are evoked in targeted listeners.

**Summary.** Rhythmic entrainment occurs when listeners “lock in” their internal body rhythm to the music’s external rhythm, particularly the beat. This mechanism is elicited by music with a strong pulse and does not seem to be influenced by listening biography. Entrainment suggests communion among the performers and also evokes actual emotions such as “communion” as well as changes in emotional arousal. The risk of individual differences in $A_{in}$ from rhythmic entrainment is moderate.

**Evaluative Conditioning**

**Description.** Evaluative conditioning occurs when a piece of music is consistently paired with other stimuli and a conditioned association is formed between the music, which becomes a learned or conditioned stimulus, and other stimuli, which are unconditioned stimuli. Later, when the consumer hears the same music under different circumstances, she experiences her original response to the associated stimuli—even if those stimuli are no longer present. That is, she has been conditioned to respond in a particular way to the music.

Consider a jingle regularly aired during televised broadcasts of football games that consequently over time becomes strongly associated with happy, excited feelings experienced while enjoying watching football with friends. Through evaluative conditioning, the jingle can eventually evoke those same feelings without a game on or friends present. Importantly, the jingle causes the conditioned happy response even if the consumer is not consciously thinking about its prior association with good times.

Evaluative conditioning explains how emotional responses come to be associated with a piece of music. In contrast, the marketing literature has generally been more concerned with how a piece of music (e.g., Groenland & Schoormans, 1994) or an artist (Schemer, Matthes, Wirth, & Textor, 2008) that is already liked or disliked comes to be associated with a brand. Ultimately, both of these processes can work together to influence brand choice, a phenomenon called “second-order negative conditioning.” For instance, Blair and Shimp (1992) discovered that people initially exposed to music paired with an unpleasant situation later had a less favorable affective attitude toward a product that was presented with the music than did a control group that did not undergo the same conditioning.

The musical information eliciting a conditioned response is usually the entire musical piece. It also seems likely that particular features of the original music, such as the unaccompanied melody, could by themselves elicit a conditioned response. The listener is not consciously aware of the music’s past associations with the stimuli determining the conditioned response.

Evaluative conditioning leads to emotional responses to music. Music can also convey an image by triggering cognitive associations in the form of ideas, concepts, or beliefs, a process sometimes referred to as “semantic association” (Fritz & Koelsch, 2008) or “knowledge activation” (North & Hargreaves, 2008). Consider again a jingle that is regularly aired during football games. In addition to the association with the emotion of happiness from good times with friends, the jingle might stimulate thoughts about the toughness or competitiveness of the football players, which then become linked with the brand. Studies of musical stereotype activation indicate that people associate musical taste with certain personality traits (Rentfrow & Gosling, 2007; Rentfrow, McDonald, & Oldmeadow, 2009). Thus, one type of cognitive association that might arise is the personality of people who like the jingle’s musical genre or style, which can be useful in achieving the objective of crafting a particular brand personality. The risk of individual differences in conditioned responses to a piece of music is high. The cognitive and emotional associations may be quite idiosyncratic and interfere with the marketers’ attempt to build desirable associations and brand image.

**Implications.** Life is full of negative stimuli (bad dates, lonely times, death, and loss) that may be paired with familiar music for some consumers. No matter how good the copyrighted or public domain music may seem to sound, no matter how well suited to the brand the music may seem to be, there will always be listeners for whom the music evokes negative conditioned images or emotions, or else images and emotions inconsistent with the brand’s image. The musical responses from evaluative conditioning can be quite personal and idiosyncratic due to individuals’ varying listening biographies.

Sometimes marketers may be able to determine what stimuli have been paired with the music for many targeted consumers. For instance, for copyrighted music originally produced in conjunction with a music video, it would be wise to watch the music video to determine images that either clearly relate to a desired brand image or that might be potentially disturbing, annoying, or offensive to the target audience. For public domain music, certain desirable associations may be common to many targeted consumers (e.g., “The National Anthem” is associated with sporting events and patriotic feelings and “Pop Goes the Weasel” with playing children and nostalgic childhood memories).

The only surefire way to avoid idiosyncratic negative evaluative conditioning effects for ad music is for advertisers to create their own unique jingle or musical
Evaluative conditioning occurs when the emotion that is associated with the stimuli previously paired with the music. The risk that evaluative conditioning can lead to positive or negative associations of the tune (such as a particular persona associated with a particular musical genre) are kept while avoiding or minimizing negative evaluative conditioning effects.

In many cases, marketers may be reasonably confident that strongly negative prior associations with specific pieces of ad music will be rare. A more serious concern is that for certain consumers, entire genres of music or particular musical artists might trigger negative associations. For instance, classical music might trigger stereotypes of boring, stuffy, pompous people. Knowledge of particular audience characteristics such as age, ethnicity, social class, and so on, might help here, but generalizations are difficult to make.

As an example of evaluative conditioning at work, consider the “Coming to Your City” commercial for college football—a fast-paced, upbeat blend of country and rock music featuring Lizzy Hale of rock group Halestorm, a singer beloved of young male rock aficionados. In the ad, the music is accompanied by exciting vignettes of college football games and fans partying, kicking off ESPN’s 2015 college football season. An ad in an NFL campaign that worked similarly used the “Waiting All Day for Sunday Night” theme song by Carrie Underwood covering rock legend Joan Jett. The association of excitement and sociability—triggered in this case by the ad visuals as well as prior listening experiences in the company of others—rubs off on the NFL brand. Second-order conditioning leads to positive emotions and raises viewers’ adrenaline levels in response to the NFL brand. Even when alone, a fan would pick up the party atmosphere. Additionally, consumer stereotypes about the kind of person that likes this style of country-rock (aided by the rebellious outlaw image of rock stars Lizzy Hale and Joan Jett) lead to a similar musical image that transfers to the football brands.

Summary. Evaluative conditioning occurs when music induces a response because it has previously been paired with other stimuli. This mechanism is elicited by basic features of the ad music, depends on listening biography, and can suggest an “image” for the music through cognitive associations that can transfer to the brand’s image. Evaluative conditioning can also induce an emotional response to the music based on the emotions evoked by the stimuli previously paired with the music. The risk that evaluative conditioning can lead to individual differences in these elements of $A_{music}$ is high due to variability in individuals’ prior music–stimulus associations.

Emotion Recognition

Description. One can tell how a person feels by tuning in to acoustic features or “cues” in their tone of voice—whether they are speaking quickly or slowly, loudly or softly, abrasively or gently. The same cues are present as basic features in any musical piece, and these allow listeners to perceive the emotions expressed by the music (Juslin & Laukka, 2003; Juslin & Timmers, 2010). For instance, music with slow tempo, low volume, and dull timbre often seems sad; music with fast tempo, high volume, and sharp timbre often seems happy (Juslin & Timmers, 2010, Table 17.2 and Figure 17.2). The more voice-like features that are available in the music, the more obvious the expressed emotion will be. This works for both vocal and instrumental music; in fact, according to “super-expressive voice theory,” musical instruments are particularly expressive because they are able to exaggerate these vocal cues—for instance, a violin can play faster, louder, and higher than a person can speak or sing.

The emotion recognition mechanism is relatively unaffected by a consumer’s listening biography. Because many of the voice-like cues that signal emotions are universal, even listeners unfamiliar with music from a particular culture can recognize many of the basic emotions expressed in its music (Balkwill & Thompson, 1999; Balkwill, Thompson, & Matsunaga, 2004; Fritz et al., 2009; Laukka, Eerola, Thingjum, Yamasaki, & Beller, 2013; Thompson & Balkwill, 2010). This is one sense in which music truly serves as a “universal language.” For instance, Western listeners who are unfamiliar with Indian music nevertheless accurately perceive the intended emotion (joy, sadness, peace) of musical performances from this culture (Balkwill & Thompson, 1999).

In Juslin’s and Västfjäll’s (2008) framework, emotion recognition is part of the emotional contagion mechanism, which produces a felt or experienced emotion (see below). Because emotion recognition by itself produces cognitive effects, this article treats it separately from the emotional contagion mechanism that triggers felt emotions (Table 1). Emotion recognition allows the listener to perceive the emotion that is expressed in a piece of music, without necessarily feeling or experiencing the emotion as with emotional contagion.

Past research on the effect of basic musical features on perceived emotion has yielded mixed results (for reviews, see Bruner, 1990; Lantos & Craton, 2012). Understanding the emotion recognition mechanism helps to explain why this is so: specific features of music do tend to be associated with certain emotions, but the same cue can suggest more than one emotion (e.g., fast tempo can indicate anger or happiness), and the same emotion can be evoked by any of several cues (e.g., happiness can be induced by fast tempo or by high pitch). A given emotion is evoked unambiguously only when many features act in combination to specify it.
Current work in the area is clarifying the links between features and perceived emotions, and this work is making new discoveries. For example, Curtis and Bharucha (2010) showed that the musical interval of a minor third sounds sad because it is used in speech to convey sadness.

Some evidence suggests that individuals with high emotional intelligence (Resnicow, Salovey, & Repp, 2004) and those with music training (Castro & Lima, 2014) are somewhat better at detecting emotions in music. In addition, this ability may decrease somewhat after young adulthood, at least for negative emotions (Castro & Lima, 2014). Despite these findings, the risk of large individual differences in $A_{\text{MM}}$ due to the emotional recognition mechanism seems quite low. It is not affected by a consumer’s listening biography and operates similarly in everyone.

**Implications.** By imitating the human voice, music can express emotion. This can be particularly useful for global advertising transcending cultures as emotions evoked by voice-like musical qualities are universally recognized. A particularly clear example of the emotion recognition mechanism at work occurs in an ad for Guess Jeans that uses George Harrison’s “While My Guitar Gently Weeps,” a song whose lyrics and instrumentals sound like crying. Another illustration is the Volkswagen commercial “Feeling Carefree,” which uses an old ’80s song “Take on Me” by pop group A-ha. The perceived emotion evoked by the high-pitched vocals and perky instrumentation (particularly the keyboard) suggest a happy, carefree image. This nicely serves the ad’s message of VW providing carefree, no-charge scheduled maintenance. As another example, a commercial for Honda called “Snow Is Gonna Blow,” answers the question, “What’s it feel like to get a great deal at Happy Honda Deals?” Michael Bolton’s vocal performance is loud, with a forceful, insistent timbre. The driving pulse, moderate tempo, and power chords of the instrumental accompaniment all further contribute to an image of deeply felt triumph. In this case, the effect of this passionate emotional expression is intentionally humorous—after all, it is just a car!

**Summary.** Emotion recognition is a cognitive mechanism that identifies the emotions expressed in a piece of music. It is elicited by voice-like basic features in the music (pitch, rhythm, timbre, texture, etc.) and is relatively unaffected by the consumer’s listening biography. The resulting perceived features of the music—its expressed emotions—can produce a cognitive effect that leads consumers to associate the music with a particular image or “personality.” Emotion recognition does not contribute greatly to individual differences in $A_{\text{MM}}$, so that marketers may confidently exploit it to generate an image that is universally suggested by the music across cultures and subsequently associated with the brand.

**Emotional Contagion**

**Description.** As with a contagious illness, a consumer can in effect “catch” the emotion expressed by a piece of music. Emotional contagion occurs when the listener first recognizes the emotion expressed by a piece of music (emotion recognition) and then “mimics” it internally, perhaps because brain areas involved in preparation for vocalizing are automatically activated (e.g., Koelsch, Fritz, von Cramon, Müller, & Friederici, 2006). The emotional contagion mechanism is elicited by the same voice-like features used in emotion recognition.

Since the basic features in music that elicit emotional contagion are rooted in universal characteristics of speech, the emotional contagion mechanism—like the emotion recognition mechanism—is probably unaffected by one’s listening biography. However, while a number of cross-cultural studies have demonstrated that listeners can recognize emotions expressed in unfamiliar music from other cultures (see above), there is apparently only one empirical study reporting that listeners actually feel those expressed emotions. Egermann, Fernando, Chuen, and McAdams (2014) found that Canadian and Congolese Pygmy listeners experience similar levels of emotional arousal based on acoustic features (tempo, pitch, and timbre) of musical pieces from both cultures. This similarity in musical response could plausibly stem from the emotional contagion mechanism, although it might also be due to brain stem reflexes or rhythmic entrainment, the two other arousal-evoking mechanisms believed to be uninfluenced by listening biographies.

Emotional contagion can lead the listener to experience a broad range of emotions, particularly “everyday” emotions that are readily expressed in speech (e.g., happiness, sadness, anger). Recent empirical work has successfully produced a contagion reaction of sadness while ruling out the influence of other mechanisms (Juslin et al., 2014; Juslin, Barradas, & Eerola, 2015).

The finding of similar emotional arousal responses in Canadian and Congolese Pygmy listeners mentioned above (Egermann et al., 2014) suggests a low risk for individual differences from the contagion mechanism. However, subjective valence ratings were different for the two groups of listeners and specific evoked emotions were not measured. For this reason, the risk of individual differences in musical response can tentatively be considered as moderate.

**Implications.** Advertisers creating ad music for a Western audience can be reasonably confident that virtually all consumers will recognize the emotions expressed and that consumers will often experience those emotions themselves. The likelihood of eliciting similar experienced emotions across cultures seems somewhat lower, however.

Emotion recognition and emotional contagion have different effects on $A_{\text{MM}}$: emotion recognition works at the cognitive level and suggests particular emotions...
and corresponding images for ad music, while emotional contagion stirs up actual felt emotions in consumers. In this sense, contagion appears to be a more powerful mechanism for marketing than emotion recognition by itself. Contagion seems to operate only when emotion recognition first takes place, so that the emotions that consumers experience from contagion will always occur along with whatever emotion or image is first suggested by the emotion recognition mechanism. Thus, consumers viewing the Honda “Snow is Gonna Blow” commercial—described above as triggering emotion recognition mechanism—might actually experience the feeling of triumph elicited by Michael Bolton’s performance along with the powerful image it evokes, enhancing the humorous appeal of the ad. The Guess Jeans ad mentioned above is perhaps a different story: using “While My Guitar Gently Weeps” to suggest a sad, soulful image is one thing, but does Guess really want to bum out consumers with emotional contagion? This illustrates the potential conflict elicited among mechanisms operating concurrently, with one mechanism helping the advertiser to achieve a desired response but another potentially eliciting an undesired reaction.

Summary. After emotion recognition allows a listener to identify the expressed emotion in a musical piece, the emotional contagion mechanism may actually induce the emotion in the listener by causing the listener to “mimic” the emotion internally. Emotional contagion is elicited by the same voice-like features in music that are used in emotion recognition. For Western listeners, the research described above suggests that contagion is not affected consumers’ listening biographies and is unlikely to contribute greatly to individual differences in $A_{\text{am}}$. This is much less clear for listeners from different cultures, and more research is warranted.

Visual imagery

Description. Not to be confused with the image evoked by music—its cognitive associations and “personality”—a visual image is a “mental picture” that resembles what one experiences from visual perception but that occurs without a real visual stimulus. Music appears to be particularly powerful in stimulating visual imagery, although it is not yet certain what basic features of music activate this mechanism.

In a recent marketing study, Fraser (2014) nicely illustrates how some, but not all, music-evoked images (MEIs) are influence by a consumer’s listening biography. She suggests that ad music can lead to either private MEIs that are unique to a listener, or connoted MEIs that are shared by many listeners in response to particular features of a musical piece. She argues that private MEIs are unique because they are based on the listener’s idiosyncratic memories of listening to that piece (i.e., the person’s listening biography). In contrast, connoted MEIs are similar for different listeners because they are based more directly on basic features of the music. For instance, because the sound of a piccolo shares characteristics with birdsong (e.g., quick bursts of high-pitched notes), it might trigger connoted MEIs of birds for many listeners. Some evidence for private MEIs can be found in the music cognition literature. For instance, Janata, Tomic, and Rakowski (2007) found that ratings of the vividness of visual imagery from music were strongly correlated with the extent to which the music evoked salient autobiographical memories (memories of life events in someone’s past); in that study, visual images were elicited 31% of the time to music, and 25% of those were rated as very vivid. Similarly, empirically supported examples of connoted MEIs include imagery of upward and downward motion evoked by the pitch contours of a melody (Weber & Brown, 1986) and nature scenes and images of out-of-body experience evoked by spacey, synthesized electronic music (Osborne, 1989).

Visual imagery might lead to all sorts of cognitive associations suggesting a brand image, although this has apparently not been systematically tested. Visual imagery can also evoke a wide range of possible emotions.

Regarding the risk of individual differences, some listeners experience visual imagery frequently, while others do so rarely. It seems that, given the possible influence of consumers’ listening biographies on imagery (Fraser, 2014; Janata et al., 2007), the risk of individual differences in the content of imagery—that is, the specific content of $A_{\text{am}}$—is high for both the image suggested by music and for the emotions it evokes.

Implications. Ad music may generate visual imagery and consequent effects on $A_{\text{am}}$ regardless of marketers’ intentions. Therefore, it seems wise to consider the possible effects of this mechanism for any ad music. Fraser (2014) reported a trade-off for private versus connoted MEIs generated from ad music. Essentially, she found evidence that private MEIs can interfere with brand message processing and recall, but due to their personal relevance they may lead to prolonged processing that ultimately facilitates music-cued brand message recall. Connoted MEIs, she argues, may not interfere with brand message processing as much but may be less effective in later music-cued recall because connoted MEIs are not as personally meaningful as private MEIs. Applying these results depends, of course, on being able to predict which kind of imagery is likely to be generated by ad music, which is unfortunately very difficult.

TV and digital commercials are “multimodal”—in addition to music, they contain visual information. Intuitively, an ad’s engaging visual information might inhibit MEIs. For instance, a backdrop of descending clouds and other dynamic, surreal visual information in Amazon Kindle’s “Fly Me Away” ad suggest the image of escaping in a good Kindle book. The day-dreamy Annie Little tune in the ad’s music has a ponderous
melody that complements this message, but it seems unlikely that it would promote any escapist visual imagery in consumers who are already saturated with visual information.

Another kind of visual information that might overpower music-evoked visual imagery is the “key frame” or “signature” shot shown on screen either for a long time or frequently throughout the commercial, serving as the ad’s chief visual takeaway. The map used as a signature shot in Verizon Wireless’ “There’s a Map for That” campaign may well overpower any visual images induced by the ad’s moderately upbeat music, which sounds like it was intended instead to complement the scenes of people strolling and using their phones.

The best medium for stimulating visual images from music might be radio, which lacks competing visuals. Radio offers an empty stage in the “theatre of the mind” for advertisers to fill with rich, brand-relevant visual imagery. As an example, a radio spot from the “Coke: Real Side of Life Campaign” features music that may promote relaxing visual imagery in many consumers; along with the sound of rippling water and an announcer describing the utter ease of floating on the ocean while enjoying a Coke. The ad vividly conveys an image of Coke offering leisurely happiness in a bottle. By employing “imagery transfer,” radio advertisers can also stimulate visual imagery based on visual elements from TV commercials by using the same or a similar soundtrack in a radio commercial. For instance, when listeners hear the distinctive voice of the Geico Gecko on radio, they can visualize him from seeing him on TV ads. Likewise, ad music can be a vehicle for transferring visual imagery from TV to radio.

Summary. Visual imagery is elicited by basic features of the music and can be affected by a person’s listening biography. Visual imagery evoked by music can have the cognitive effect of suggesting a particular image for the music as well as evoke a variety of emotions. Because people’s visual imagery can be idiosyncratic, this mechanism can lead to significant individual differences in A

Episodic Memory

Description. The episodic memory mechanism is similar to evaluative conditioning. The primary difference is that with evaluative conditioning listeners need not be aware of their conditioned associations with music, whereas with episodic memory they are aware that their music-evoked autobiographical memories (MEAMs) have been triggered by the music they are listening to.

Research to date indicates that the episodic memory mechanism is frequently activated by actual excerpts from the original musical piece. For instance, Janata et al. (2007) reported that 30% of musical passages from listeners’ past caused MEAMs. Of the 32% of songs rated as very familiar, 62% elicited MEAMs. Future research may determine whether particular musical features in isolation—such as the melody of a familiar song, without instrumental accompaniment—are sufficient to trigger the episodic memory mechanism.

By definition, consumers’ listening biographies completely determine what specific episodic memories consumers recall when listening to a musical piece and whether these memories are positive or negative. However, analyses of the content of MEAMs reveal some common themes. Janata et al. (2007) found that of those songs that evoked memories, 40% elicited memories of people (especially friends and significant others; see also Baumgartner, 1992) or a period in one’s life (especially the listener’s school when the music was heard). The most common activities remembered were dancing and driving in a car.

Memories aroused by music can have a powerful cognitive effect, even if they do not evoke emotions. The memories might have connotations suggesting an image for the music, which can then become associated with the brand. A pop tune that reminds the consumer of a vacation can suggest relaxation, a Woodstock tune can suggest peaceful rebellion, a high school hit can evoke one’s coming-of-age era, and the National Anthem can suggest the first pitch of a baseball game.

The memories aroused by music can also evoke emotions and emotional memories (Janata et al., 2007; Juslin et al., 2014, 2015). Janata et al. (2007) found that MEAMs were usually associated with strongly felt, positive emotions. In their study, happiness, feelings of youthfulness, and nostalgia were the three most commonly reported emotions elicited by MEAMs; the most common negative emotions were sadness and loneliness. MEAMs may also be one reason that music is strongly connected with listeners’ sense of self or identity. Listening to music that one shared a preference for with “kindred spirits” might evoke feelings of pride or other self-relevant emotions (Huron, 2009).

Despite common themes in the content of MEAMs, the available evidence suggests that the risk of individual differences in A

Implications. Ads often generate good feelings by helping audience members recall autobiographical
The episodic memory mechanism operates... for instance, 1980's hair band rock music—could evoke nostalgic feelings in consumers who came of age when the style was popular. If so, then rather than having to acquire the rights to popular songs in order to exploit the episodic memory mechanism, advertisers could create their own original tune in the same style. Another issue for future research is whether and how MEAMS elicited by ad music can be used to reinforce self-image (self-identity) and whether this can be linked to brand image.

Summary. The episodic memory mechanism operates when familiar music triggers memories of the listener's life experiences associated with that music. Music-evoked autobiographical memories (MEAMs) are elicited by basic features of the music recognized from one's past listening experiences, and they depend entirely on the consumer's listening biography. MEAMs may have the cognitive effect of suggesting a particular image for ad music based on the content of evoked memories. Episodic memory can also evoke a wide variety of emotions and emotional memories, notably nostalgia. While content analyses of MEAMs reveal common themes such as memories of particular people or activities, differences in consumers' listening biographies may lead to significant individual differences in $A_{\text{me}}$.

Musical Expectancy

Description. Musical expectancies are people’s predictions about what will happen next as they listen to a piece of music. The musical expectancy mechanism forms these predictions and then generates musical responses as these predictions are confirmed, delayed, or disconfirmed (Huron, 2006; Huron & Margulis, 2010; Margulis, 2005, 2007; Meyer, 1956; Narmour, 2015; Tillmann, Bharucha, & Bigand, 2000). This mechanism is elicited continuously by the basic features of a musical piece as it progresses—melodic patterns lead to melodic expectancies and subsequent musical responses, rhythmic patterns lead to rhythmic expectancies and subsequent musical responses, and so on. For instance, melodies typically proceed in small, rather than large jumps, setting up a musical expectancy. The opening two notes of “Somewhere over the Rainbow” violate this expectation the first time a listener hears this tune; the musical response to the large melodic jump up is surprise.

Influential “statistical learning” accounts propose that most, if not all, expectations stem directly from a person's listening biography (Bharucha, 1994; Bharucha et al., 2006; Huron, 2006; Huron & Margulis, 2010; Pearce & Wiggins, 2006; Tillmann et al., 2000).
However, some expectations may be innate (Narmour, 2015; Schellenberg, 1997).

Although a large literature has documented listeners’ musical expectations (for a recent review, see Tillmann, Poulin-Charronnat, & Bigand, 2014), there is much less direct empirical evidence documenting what musical responses ensue as these expectations are confirmed, delayed, or violated. Regarding cognitive responses, it is proposed that musical expectancy influences attention, depth of processing, and the image suggested—in particular, how distinctive ad music is perceived to be. If the music violates expectations to a moderate degree, it may elicit attention, promote greater depth of processing, suggest an image of innovativeness, and be perceived as distinctive and interesting. On the other hand, music that fails to violate musical expectations at all may lose listeners’ attention, promote shallow processing, suggest an image of being “derivative,” and be perceived as undistinctive and boring. Finally, music with extreme violations of expectations may demand attention and promote greater depth of processing but might create an image of weirdness or rebelliousness and be perceived to be so distinctive as to be off-putting or distasteful.

Regarding affective responses, musical expectancy evokes certain emotions and influences emotional arousal and hedonic response. Juslin et al. (2014) evoked listener irritation by randomly altering the notes in a piece to make it more unconventional. Steinbeis, Koelsch, and Sloboda (2006) reported increases in tension and emotionality ratings for musical excerpts that violate expectations. Huron (2006) proposed that correctly predicting what will happen next in a musical piece leads to a positive hedonic response, which he calls a “prediction effect”; incorrect predictions lead to a negative hedonic response. Consistent with this, predictable music is rated as more pleasant (Koelsch, Fritz, & Schlaug, 2008), more liked (Craton, Juergens, Michalak, & Poirier, 2016), and more positive and less arousing (Egermann, Pearce, Wiggins, & McAdams, 2013) than less predictable music. Other expectancy-based affective responses that have been proposed but are largely untested include interest, anxiety, surprise, thrills/chills, hope, and disappointment (Huron & Margulis, 2010; Juslin, 2013).

The risk of individual differences from the musical expectancy mechanism appears to be moderate. On the one hand, broad similarities in all the music from a given culture lead to similarities in people’s listening biographies and, consequently, shared musical expectations. On the other hand, differences between styles of music between cultures and (perhaps more subtle) differences within a particular culture lead to individual differences in listening biographies and, consequently, musical expectations that are specific to the styles with which people are most familiar (Huron, 2006).

Implications. The prediction effect seems to argue for a conservative strategy of using highly predictable music in order to generate positive hedonic consumer listener responses. Marketers seem to understand this intuitively; advertising music is rarely very adventurous. However, ad music that challenges consumers’ musical expectations just a little bit might be better at attracting attention, promote more depth of processing, make it moderately distinctive and thus more memorable as well as perhaps creating an image of innovativeness.

In fact, playful violation of musical expectations has been long been employed in ads. Salem cigarettes famously did this in an era when tobacco companies were permitted to run TV commercials, using the jingle “You can take Salem out of the country, but you can’t take the country out of Salem.” After airing these commercials for a good while, Salem employed an ad using the first half of this line, ending with “but” followed by a musical ping, resulting in a minor violation of expectations. This sustained consumers’ attention as they inevitably finished the jingle in their minds, thereby heightening their message involvement. The ad projected an image of playful creativity and distinctiveness, and it likely evoked a positive hedonic response in consumers as they confirmed their own expectations by mentally finishing the jingle.

A similar, more recent good-humored violation of expectation occurs in a Nationwide Insurance commercial featuring Peyton Manning repeatedly singing the famous “Nationwide Is on Your Side” tune. Each time he repeats a stanza, he inserts unique lyrics describing what he is currently doing. Finally, at the ad’s conclusion an off-camera vocalist sings the correct lyrics, which viewers have likely been playing in their heads each time Manning sings his own unique lyrics.

The VW “Feeling Carefree” commercial discussed above playfully violates both specific expectations based on consumers’ prior exposure to the ad song and general musical expectations based on their history of exposure to music. Recall that the ad abruptly breaks from the recording “Take on Me” to show a carefree worker absent-mindedly singing the tune within earshot of his co-workers. This transition to the “new” vocalist of course violates specific expectations based on memories of the original version. General expectations about music are also violated: pop tunes do not ordinarily transition suddenly to a new unaccompanied vocalist, and the worker is slightly flat (out of tune) when singing the song’s climactic high note. Having aroused listeners’ attention, the ad presents them with the pleasantly surprising message that the worker’s absentmindedness is due to his carefree attitude toward car maintenance, thanks to VW’s free scheduled maintenance.

None of these examples involve extreme violations of expectations. Although it may seem like a risky strategy, music that strongly violates expectations might remain interesting and pleasurable with repetition, thereby avoiding advertising “wearout” while achieving higher recall due to repetition. Highly adventurous ad music would also have the virtue of being perceived as distinctive and hence more tightly linked to the brand, and it could help craft a creative brand image.
Summary. The musical expectancy mechanism generates predictions about what will happen next in a musical piece and evokes either desirable or undesirable responses when some feature of the music violates, delays, or confirms the listener’s predictions. Theorists agree that the musical expectancy mechanism is continually activated by basic features of a musical piece as these unfold over time and that it is strongly influenced by a consumer’s listening biography. The responses can be cognitive, influencing the listener’s level of attention and suggesting a brand image, particularly whether the piece is perceived as distinctive and innovative. To date, however, theorists and researchers have emphasized affective responses—especially that musical expectancy evokes emotions and influences emotional arousal and hedonic response. Because many musical expectations are style-specific and listeners differ in their familiarity with and preference for specific styles, there is a moderate risk of individual differences in $\text{Am}$ from the musical expectancy mechanism.

Creating and Selecting Ad Music That “Works”

The survey above has identified eight mechanisms that can operate simultaneously and have distinct effects on $\text{Am}$ (feature analysis is excluded from this list because its effects are virtually identical for all listeners). This section offers some preliminary conclusions for marketers given the between- and within-consumer variability in $\text{Am}$ highlighted by the multimechanism framework. It then uses three examples of successful ads to show how marketers can in principle analyze ad music in terms of the music-processing mechanisms it triggers, in order to understand and predict its effects on $\text{Am}$.

Between-consumer Variability in $\text{Am}$

The survey indicates that six of the eight mechanisms determining consumers’ response to ad music have a moderate-to-high risk of individual differences in $\text{Am}$. This supports the view, defended by two of the authors elsewhere (Craton & Lantos, 2011; Lantos & Craton, 2012), that individual differences in musical response are the rule rather than the exception. Consequently, marketers should exercise caution in drawing generalizations regarding musical response. The best way to anticipate variability across consumers in their reactions to advertising music, arguably, is to know the potential commonalities as well as variability in the target audience’s listening biographies. As noted earlier, the challenge is that consumers’ listening biographies are becoming increasingly diverse and hence difficult to predict, especially for younger consumers growing up in a more diverse musical environment.

The mechanisms whose effects on musical response marketers can be most confident about—that is, that lead to the least risk of between-consumer variability—are brain stem reflexes and emotion recognition. In fact, it would appear that these are the two music-processing mechanisms that advertisers employ the most, perhaps because they intuitively understand that their operation is fairly predictable. Regarding brain stem reflexes, sudden, loud, dissonant, and fast changes in music are commonly used to attract and hold attention. These are also used to evoke emotion and emotional arousal for low-involvement products advertised in cluttered commercial pods and fast-paced, information-overloaded digital environments. Concerning emotion recognition, any negative affect created by the startle elicited by brain stem reflexes can be counteracted with positive voice-like basic features often found in commercials, such as fast tempo, high volume, and sharp timbre to suggest positive affect such as happiness or excitement, which is appropriate for many hedonic products.

Within-consumer Variability in $\text{Am}$

The simultaneous operation of the various mechanisms leads to within-consumer variability in $\text{Am}$. How much within-consumer variability is there likely to be for ad music? At one hypothetical extreme, all eight music-processing mechanisms could be activated, with each of them leading to a distinct, contrasting response in $\text{Am}$. At the other hypothetical extreme, all activated mechanisms could have a single, uniform effect on $\text{Am}$. Both of these extremes are logically possible, but unlikely—the reality for most pieces of ad music is probably somewhere between the two. Many kinds of within-consumer variability are possible; most have yet to be explored empirically. The exception is two studies that found that mixed emotions were reported 13% (Gabrielson, 2010) and 11% (Juslin, Liljestrom, Laukka, Västfjäll, & Lundqvist, 2011) of the time that music evoked emotions in listeners. It appears that researchers have only begun to explore the many possible combinations of cognitive and affective responses in musical response that are possible.

Intuitively, it might seem that music will best serve the ad message if it leads to unmixed responses in individual listeners—provided, of course, that these responses are consistent with the advertiser’s goals. If this assumption is valid, then an advertiser needs to strive for consistency among the responses elicited by the various mechanisms that are likely to be activated in a particular target audience. This seems like a challenging task, indeed! For instance, because the emotion recognition mechanism operates similarly for different listeners, marketers could successfully select a piece of ad music with voice-like features that suggest a happy image. If the responses elicited by other mechanisms also elicit a happy image, then the music will have successfully minimized within-consumer variability. Nevertheless, it seems likely that there will be some consumers who concurrently experience sad thoughts and feelings—due, for instance, to idiosyncratic episodic
memories evoked by the piece. This would lead to a “bittersweet” feeling in those consumers, a familiar type of mixed emotional response to music. Indeed, any of the six mechanisms that are moderate or high risk for individual differences in $A_{am}$ might create undesirable, mixed responses in particular consumers.

But perhaps the assumption that uniform responding is always better is invalid. Depending on their goals, marketers may in some circumstances want to embrace the power of music to evoke rich, multifaceted responses such as a bittersweet feeling. Another familiar example of mixed emotional response to music is the paradox of “pleasurable sadness”—people usually avoid experiences that cause sadness, but they often enjoy sad music. This can be understood and exploited by marketers as a situation in which one mechanism, such as emotional contagion, evokes sadness while another mechanism, perhaps musical expectancy, simultaneously evokes a positive hedonic response. The song “Arms of an Angel” is quite effective in evoking sadness in the listener, perhaps because of its vocal characteristics (emotional contagion); however, for many listeners it is also enjoyable, perhaps because it is familiar, simple, and predictable in a way that confirms listeners’ musical expectations (musical expectancy). The pleasurable sadness it evokes in many listeners makes it a brilliant choice for the BC SPCA “End Animal Cruelty” campaign (despite the misgivings expressed earlier in discussing the episodic memory mechanism).

Given the reality of low-involvement listeners in the case of most ad music and the difficulties of selecting music that is much enjoyed by all listeners, the most promising strategy may be to grab and sustain consumers’ attention with music that is irresistibly catchy. Marketers may be willing to settle for a mixed musical response in which their ad music is experienced as a “guilty pleasure,” a type of mixed response in which a mechanism such as rhythmic entrainment leads to a positive hedonic response, perhaps from a catchy beat, but musical expectancy simultaneously suggests that the music is not at all distinctive but rather predictable.

Predicting $A_{am}$ through Mechanism Analysis

From the perspective presented in this article, a reasonable first step in predicting targeted consumers’ $A_{am}$ is to analyze the mechanisms that will be elicited by ad music and the impact of each on the cognitive and affective $A_{am}$ components. As an example of effective ad music, consider the MINI Coupe TV commercial “Sunday in Rio” from the 2011 “Another Day, Another Adventure” campaign portraying the new MINI Coupé as the ideal companion for every adventure. In this spot for the sporty two-seater, the driving fun and adventure of the car are displayed as a man picks up and drives a native through Rio de Janeiro’s festive carnival atmosphere while a high-energy, percussive samba plays in the background. Seven seconds into the 60-second spot, screeching tires followed by the sudden onset of carnival music might trigger brain stem reflexes eliciting attention and perhaps increasing emotional arousal. Rhythmic entrainment from the groove-heavy funk/samba music builds throughout the ad, contributing to the feeling of shared festivity and increasing emotional arousal. As always, it is difficult to predict the effects of the evaluative conditioning and episodic memory mechanisms because advertisers are not privy to consumers’ unique listening biographies. However, because many consumers have been exposed to frequent repetition of this commercial, the samba music may trigger prior associations (evaluative conditioning) and memories (episodic memory) of adventure and excitement based on prior exposure to the ad. Emotional recognition and emotional contagion from the raucous, exuberant horns and percussion suggest an image of, and perhaps feelings of, joy and abandon as the car careens through the city streets—a true carnival thrill ride! The ad visuals are powerful and perhaps inhibit visual imagery, although it is possible that consumers produce their own festive imagery reinforcing the visuals. Whenever there is ad music, the musical expectancy mechanism is at work (Huron, 2006); here, listeners will expect the festival dance groove to continue unabated and will experience the pleasant positive hedonic response that comes from this prediction being confirmed. As discussed above, marketers can be most certain of musical responses due to brain stem reflex and emotion recognition; the predicted responses to the other three mechanisms are more tenuous. This type of multimechanism analysis can be done for any ad containing music.

Another TV ad successfully incorporating music is Baileys’ “Pour Spectacular.” The musical “splash” at the beginning, as an ice cube is seen from above splashing into a glass of Baileys, could trigger brain stem reflexes that draw attention and induce arousal. Rhythmic entrainment and its positive effects are likely as the slightly upbeat music, with its busy groove-oriented instrumentation, continues. However, if the featured ’80s pop-rock tune “Rapture” by Blondie has negative associations for some listeners (perhaps “Rapture” was played at someone’s horrible ’80s prom experience), evaluative conditioning and episodic memory could work against these other mechanisms. The way the vocals slowly slide around suggests dreamy relaxation through emotion recognition and perhaps visual imagery, and this may even evoke those feelings through emotional contagion—all complementing the powerful ad visual images of silk-clad women transforming into silky-smooth Baileys. For consumers familiar with the song, musical expectancy will lead to a positive hedonic response as predictions are confirmed. At the same time, the tune has unusual features that provide moderate violations of expectations even upon repeated listening: the melody jumps around distinctively and breaks into a rap halfway through the ad, after which a rock guitar solo—somewhat unexpected for a club/dance tune—crescendos before Debbie Harry’s
smooth vocals return and fade, singing “rapture . . .” Here again, advertisers can be most confident of the results predicted by brain stem reflexes and emotional recognition.

A final example comes from successful use of rap music in an Evian “Water Babies” TV ad. The analysis in this case is restricted to evaluative conditioning, in order to make a point about music stereotypes. The juxtaposition of rap and visuals of cute rollerblading babies in this ad is irresistibly funny. It would seem that it is not just the cuteness of the babies that carries the day. The ad succeeds brilliantly because, through evaluative conditioning, the music activates cognitive stereotypes of tough, urban rappers. Even avid rap-haters must surely find this contrast amusing!

Although the above examples of mechanism analysis are post hoc, they suggest that predicting consumer musical response based on the mechanisms at work may be fruitful—but always, at least at this point, tentative. They also make it clear that even for successful ad music, the assumption that some musical stimuli have near-universal appeal and so can be incorporated into ads without risking a negative consumer response is difficult to defend. In even the best cases, there is likely to be a lot of within- and between-consumer variability in consumer responses to ad music. Marketers can be most confident about musical responses from brain stem reflexes and emotion recognition, largely because these mechanisms are relatively unaffected by consumers’ listening biographies.

Advertisers already use many of the ideas above intuitively. However, intuition alone is rarely a justifiable or optimal basis for business decision-making. While case studies are certainly useful (e.g., Jackson, Jankovich, & Sheinkop, 2013), a multimechanism framework appears to offer a promising new tool for making practical decision-making more systematic than either intuition or anecdote.

DIRECTIONS FOR FUTURE RESEARCH

The multimechanism framework in this article, and its application to ad music, is intended not as a fully developed theory of consumer musical response but rather as an organizing framework to help marketers understand and predict consumer musical response and to help researchers develop hypotheses for future research. Although the selective review of the literature provided points to steady progress in the field, much remains to be investigated before advertisers can confidently implement the multimechanism framework.

A reasonable practical approach for marketers is to analyze the musical content of ads in terms of the eight music-processing mechanisms, in order to flush out the many possible combinations of effects on $A_{am}$ within and between individuals. In contrast, however, researchers seeking to advance our understanding of the effects of particular mechanisms will need to develop methods for isolating them experimentally. This could be accomplished by creating musical stimuli that trigger only one mechanism at a time, perhaps by creating a “standard” or baseline musical stimulus which is then edited in various ways to target particular mechanisms. For instance, inserting a loud noise in the middle of the musical stimulus could target brain stem reflexes. Presenting the same melody as played by a musician on an expressive, voice-like instrument such as a violin, may trigger the emotion recognition and emotion contagion mechanisms—at least more than a computer-generated keyboard would. Researchers could use both self-report and physiological measures to see if these manipulations have effects that would be predicted by the multimechanism account reviewed above. If they do, these stimuli could be incorporated into experiments testing that test response to advertisements employing relevant marketing measures such as $A_{am}$, $A_{ad}$, message reception, recall, acceptance, brand attitudes, and so on.

A related approach that researchers might take is to focus on the causes of negative musical response, a phenomenon that advertisers typically hope to avoid (Craton & Lantos, 2011). Hypothetically, any particular music-processing mechanism might elicit negative $A_{am}$ in some listeners. Researchers could isolate mechanisms as described above as a way of discovering exactly what features of ad music are off-putting to consumer listeners and determining what the particular negative effects are.

To date, the marketing literature on the effects of ad music has tended to focus on finding direct links between basic features of music, such as tempo, and consumer response (Allan, 2007; Bruner, 1990; Kellaris, 2008). This strategy falls short of explaining why particular musical responses occur and, in particular, why both between- and within-consumer variability in musical response occur. Recent work on psychometric correlates of musical preferences such as personality (Rentfrow, 2012; Rentfrow et al., 2012) and musical intelligence (Krishnan et al., 2014) promise to be part of the explanation; however, whether these correlates can be linked to responses to ads with music remains unclear (e.g., Kupfer, in press). As a complement to the “micro” level of basic musical features and the “macro” level of psychometric and demographic variables, the multimechanism framework offers to a middle-level of analysis that identifies a range of underlying music-processing mechanisms influencing musical response. This framework merits further empirical investigation using advertising music to better inform marketers and researchers alike on the whys of consumer response to ad music.

REFERENCES


Correspondence regarding this article should be sent to: Lincoln G. Craton, Stonehill College, 320 Washington St., Easton, MA 02357, (508) 565-1486 (lcraton@stonehill.edu).