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Gordon C. Bruner II

Music, Mood, and Marketing

That music affects human beings in various ways has probably been presumed as long as people have played music. Many marketing practitioners already accept this notion, given that music is increasingly used as a stimulus in the retail environment as well as in radio and television advertising. Yet, fewer than 20 published empirical studies in marketing have music as their focus. The author reviews the small body of marketing literature, surveys relevant literature outside marketing, and provides research propositions to guide future studies.

MUSIC has long been considered an efficient and effective means for triggering moods and communicating nonverbally. It is therefore not surprising that music has become a major component of consumer marketing, both at the point of purchase and in advertising. There is now even a trade magazine devoted exclusively to these uses of music (*Marketing Through Music*), and at least one ad agency has a vice president for music (Garfield 1988). Yet, despite being a prominent promotional tool, music is not well understood or controlled by marketers. Consequently, marketers are precariously dependent on musicians for their insight into the selection or composition of the "right" music for particular situations.

The purpose of this article is to examine the behavioral effects of music, with special emphasis on music's emotional expressionism and role as a mood influencer. The practical implications of what is currently known as well as propositions for future research are discussed.¹

¹No new theory of music's expressiveness or debate about whether such expressiveness exists is presented here. Excellent discussions of such issues are given by Hevner (1935b), Meyer (1967), Clynes (1977; Clynes and Nettheim 1982), and Langer (1976). Budd (1985) provides a review. Further, several terms have been used in the literature to refer to the affective dimension of human behavior, such as "emotion" (Holbrook and Batra 1987), "mood" (Gardner 1985), and "sentic state" (Clynes 1977). Such terms as these are used here synonymously.

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Music and Mood

That music is an especially powerful stimulus for affecting moods is no revelation; it is attested to throughout history by poets, playwrights, composers, and, in the last two centuries, researchers. Butler (1973) provides a bibliography of nearly 900 entries in seven languages, all pertaining in some way to the study of music psychology in the nineteenth century. More recently, Seidman (1981) reviewed the contributions of music to media productions (movies and educational films), concluding that cognitive and affective comprehension of stimuli can be influenced. This conclusion seems to have been long held by persons in the movie industry, as is evident in the development of elaborate suggestions for marrying music to video (Zettl 1973, ch. 15). Further, the research of Manfred Clynes (1975, 1977, 1980; Clynes and Nettheim 1982), a noted scholar in both music and neurophysiology, indicates that appropriately structured music acts on the nervous system like a key on a lock, activating brain processes with corresponding emotional reactions.

Music is not simply a generic sonic mass, but rather a complex chemistry of controllable elements. Unfortunately, no definitive taxonomy of music elements has been developed. Definitions vary and what is a primary component in one taxonomy is a subcomponent in another. Time- and pitch-related characteristics appear on almost all lists and also have some empirical confirmation (Henkin 1955, 1957; Nielzen and Cesarec 1982). Though less clear, evidence also has been found for a third factor, musical texture. For purposes of this review and discussion, time, pitch,

and texture are the three main structural factors on which music is based. (Definitions for each of these factors and for relevant “subcomponents” are given in the Appendix.)

Table 1 is a list of some propositions about the affective meaning conveyed by certain music characteristics. They illustrate the sort of beliefs held by musicians who compose, perform, and conduct music that evokes particular feelings (e.g., Cooke 1962; Zettl 1973). Many of these observations have been tested empirically, as summarized in Table 2.² Principal results of these studies are discussed next.

Time-Related Findings

Several researchers over the years have studied tempo and arrived at the same general conclusion: all other things being equal, fast music is considered to be more happy and/or pleasant than slow music (Gundlach 1935; Rigg 1940a; Scherer and Oshinsky 1977; Swanwick 1973; Watson 1942; Wedin 1972). More specifically, Hevner (1937) found that slow tempi tended to evoke tranquil, sentimental, and/or solemn sorts of descriptions; fast tempi elicited responses relating to exhilarating and/or joyous sorts of feelings.

Though these studies suggest a positive relation between affect and musical pace, there is strong evi-

dence that the relationship is not a simple monotonic one. An inverted-U preference function seems to be more likely, with 70 to 110 BPM (beats per minute) being the range of favored tempo (Dowling and Harwood 1986; Fraisse 1982; Holbrook and Anand 1988). This range of preference is likely to vary with the context (Dowling and Harwood 1986; Holbrook and Anand 1988; Konecni 1982) and may not be as important to determining preferences as musical genre (Cupchik, Rickert, and Mendelson 1982).

The rhythm aspect of the time component also has been examined in several studies. Hevner (1936) observed that firm rhythms were judged to be more sacred, serious, and/or robust; smooth-flowing rhythms were felt to be more happy, playful, and/or dreamy. Gundlach (1935) noted that music with smooth rhythm was characterized as brilliant or animated; music with uneven rhythm was perceived to express dignity or exaltation.³

For another aspect of the time factor, Wedin (1972) found that most of the variance in the “activity” dimension of the music she examined was explained by “phrasing.” Specifically, staccato-note-filled music gave the impression of liveliness, energy, and/or agitation, especially if performed with great intensity

²The number of studies using music as a stimulus variable is likely to be in the hundreds. Many fewer have music itself as the focus. This smaller group is discussed here and the most relevant studies are highlighted in Table 2.

³Though these results are reasonably similar to Hevner’s, other studies of rhythm have produced a confounding array of both rhythm descriptors and emotional expressions that make them unamenable to comparison. For additional studies, see Gabrielsson (1973), Scherer and Oshinsky (1977), and Watson (1942).

TABLE 1
Emotional Expressions Ascribed to Various Components of Music^a

Time-Related Expressions

1. Duple rhythms produce a rigid and controlled expression in comparison with triple rhythm, which is more relaxed or abandoned.
2. The faster the tempo, the more animation and happiness is expressed.
3. Even, rhythmic movement can represent the unimpeded flow of some feeling; dotted, jerky, uneven rhythms produce more complex expressions.
4. Firm rhythms suggest a serious mood whereas smooth-flowing rhythms are more playful.
5. Staccato notes give more emphasis to a passage than legato notes.

Pitch-Related Expressions

1. “Up” and “down” in pitch not only correspond to up and down in the physical world, but can also imply “out-and-in” as well as “away-and-back,” respectively.
2. Rising and falling pitch can convey a growing or diminishing intensity in a given emotional context.
3. Songs in higher keys are generally considered to be happier than songs in lower keys.
4. Music in the major mode expresses more animated and positive feelings than music in the minor mode.
5. Complex harmonies are more agitated and sad than simple harmonies, which are more serene and happy.

Texture-Related Expressions

1. Loudness can suggest animation or proximity whereas low volume implies tranquility or distance.
2. Crescendo (soft to loud) expresses an increase in force whereas diminuendo (loud to soft) suggests a decrease in power.
3. The timbre of brass instruments conveys a feeling of cold, hard force whereas reed instruments produce a lonely, melancholy expression.

^aBased on information given by Cooke (1962) and Zettl (1973).

TABLE 2
Summary of Relevant Research Involving Music

Author (date)	Sample and Setting	Independent Variables ^a				Dependent Variables
		Time	Pitch	Texture	Other	
Marketing-Related Studies						
Alpert and Alpert (1986, 1988)	48 college students in classroom experiment	Tempo and rhythm varied	Harmony varied	Dynamics varied	Greeting card "mood"	Mood and purchase intention
Gorn (1982)	244 and 122 college students in 2-part classroom experiment				Appeal varied	Choice behavior
Holbrook and Anand (1988)	44 college students in "lab" experiment	Tempo varied	Constant	Constant		Perceived activity and appeal
Hunt (1988)	78 college students in "lab" experiment				Music presence and program content	Recall
Kellaris and Cox (1987)	302 college students in classroom experiment	Tempo similar	Modality similar	Instrumentation similar	Appeal varied	Choice behavior
Milliman (1982)	216 shoppers in supermarket experiment	Tempo varied		Volume constant		Shopping behaviors
Milliman (1986)	1392 customer groups in restaurant experiment	Tempo varied		Volume constant		In-restaurant behaviors
Park and Young (1986)	120 women in "lab" experiment				Presence of music and involvement varied	Brand attitude
Sewall and Sarel (1986)	Analysis of 832 radio ads using an average of 200 mall shoppers				Presence of music	Recall
Simkins and Smith (1974)	40 college students in "lab" experiment				Appeal varied	Audio message evaluation
Smith and Curnow (1966)	1100 shoppers in supermarket experiment			Volume varied		Music appeal and shopping behaviors
Stewart and Furse (1986)	Analysis of 1059 TV ads				Presence and form of music's use	Comprehension, persuasion, and recall
Stout and Leckenby (1988)	Analysis of 50 TV ads using average of 30 mall shoppers	Tempo examined	Mode and distinctiveness examined	Volume examined	Presence and form of music's use	Cognitive and affective responses
Wintle (1978)	77, 96, and 120 college students in 3-experiment classroom study				Compatibility of music and ads varied	Affective ratings
Yalch and Spangenberg (1988)	86 shoppers in department store experiment				Background and foreground music	Music appeal and shopping behaviors
Other Studies						
Clynes and Nettheim (1982)	189 college students and staff in unknown setting		Frequency modulated	Amplitude modulated		Emotion expressed
Gundlach (1935)	112 college students in unspecified setting	Tempo and rhythm examined	Pitch and range examined	Volume and orchestral range examined		Emotion expressed
Hevner (1935a)	205 college students in classroom experiment	Intrapair constancy	Major vs. minor mode	Intrapair constancy		Emotion expressed
Hevner (1936)	450 college students in classroom experiment	Rhythm varied	Melodic line and harmony varied	Intrapair constancy		Emotion expressed
Hevner (1937)	142 and ? college students in 2 classroom experiments	Fast vs. slow tempo	High vs. low pitch	Intrapair constancy		Emotion expressed
Heyduk (1975)	120 college students in unspecified experimental setting	Syncopation varied	Number and variety of chords varied			Preferred and perceived complexity

TABLE 2 (continued)
Summary of Relevant Research Involving Music

Author (date)	Sample and Setting	Independent Variables ^a				Dependent Variables
		Time	Pitch	Texture	Other	
Kinnear (1959; Van Stone 1960)	25 college students in classroom experiment	Tempo constant	Melody constant	Orchestration varied		Emotion expressed
Rigg (1940a)	88 college students in unspecified experimental setting	Tempo varied	Intragroup constancy	Intragroup constancy		Emotion expressed
Rigg (1940b)	84 college students in unspecified experimental setting	Intragroup constancy	Pitch varied	Intragroup constancy		Emotion expressed
Scherer and Oshinsky (1977)	48 college students in "lab" setting	Tempo and rhythm varied	Mode and pitch varied	Harmonics and amplitude varied		Emotion expressed
Smith and Cuddy (1986)	36 college students in "lab" setting	Constant	Melodic complexity varied	Constant		Pleasantness
Swanwich (1973)	400 students of various ages in unspecified setting	Tempo varied	Direction and melodic line varied			Emotion expressed
Watson (1942)	20 musicians and 600 students of various ages in unspecified settings	Tempo and rhythm examined	Pitch examined	Volume and overall "sound" examined		Emotion expressed
Wedin (1972)	5 experiments of varying sample size	Tempo and rhythm, and phrasing examined	Mode, harmony, and singability examined	Volume examined	Type and style of music examined	Emotion expressed
Vinovich (1975)	30, 30, and 100 college students in 3-experiment classroom study	Tempo and rhythm examined	Mode, pitch, and harmony examined	Volume examined		Emotion expressed

^aBlank spaces in the chart indicate that variables were not reported as being controlled, manipulated or examined.

(volume). At the other extreme, legato music (particularly with softer performances) was perceived as having a more peaceful, gentle, or dreamy character.

Pitch-Related Findings

The effect of pitch has been investigated by Gundlach (1935), Hevner (1937), Rigg (1940b), and Watson (1942). The findings are relatively consistent and suggest a strong association between pitch and perceived happiness: music with high pitch is more exciting or happy than low pitched music, which is perceived as sad.

At least two studies have been conducted to test conventional thinking among musicians in Western culture that the major mode makes dynamic and positive expressions whereas the minor mode produces the opposite feelings. The results seem to support the conventional wisdom: the minor mode has plaintive, angry, or mysterious qualities in contrast to the more happy, bright, or playful expressions of the major mode (Hevner 1935a; Scherer and Oshinsky 1977).

The expressive tendencies of harmony have been studied by Hevner (1936), Watson (1942), and Wedin (1972). In general, consonant harmonies can be described as playful, happy, or serene. Dissonant harmonies seem to be perceived as more agitating, ominous, or sad.

Two other pitch-related characteristics are direc-

tion of melodic line and note range. Hevner (1936) found a tendency for ascending melodic lines to be viewed as more dignified or solemn whereas the descending ones were more exhilarating or serene. The findings on note range indicate that compositions with the greatest range (more than an octave) may be perceived as more brilliant than those with less than an octave range of notes, which may be viewed as more mournful (Gundlach 1935).

Texture-Related Findings

Musical texture has been studied less than pitch- and time-related characteristics. However, an early study focusing on orchestration showed that brass instruments carried the melody in songs characterized as triumphant and/or grotesque, woodwinds expressed awkward and/or mournful feelings, melodies on a piano were perceived as brilliant and/or tranquil, and string sounds were associated with pieces characterized as glad (Gundlach 1935). Kinnear (1959; Van Stone 1960) reports that woodwind instrumentation was very often judged to be whimsical whereas brass treatments were considered serious and/or majestic regardless of the music being performed. String versions of songs did not seem to represent any one particular mood category, but were equally effective in expressing various moods.

Volume is the only other textural element that has

been examined. Gundlach (1935) found the loudest pieces in his study were described as triumphant and/or animated, whereas the softest pieces were judged to be delicate and/or tranquil. Watson (1942) also studied volume, finding it to be loudest for songs characterized as very exciting or very happy and softest for pieces perceived as peaceful or serious.

Other Relevant Findings

Considerable though not universal support for an optimal complexity model as it pertains to music is noted in a literature review by Walker (1981). This model suggests that when someone expresses a degree of liking for a range of music compositions, including some more complex and others less complex than optimal, an inverted-U function tends to be found. Further, this function is likely to shift to the right over time as a piece becomes more familiar. Support for this notion can be found in the theories of Berlyne (1960, 1971) and Meyer (1967) and empirical support in a musical context is found in a variety of studies (e.g., Holbrook and Anand 1988; Krugman 1943; Smith and Cuddy 1986). Apparently, repetition can lead to perceived changes in complexity with resulting influences on affect when patterns in the music become predictable.

In a series of experiments, Vinovich (1975) investigated the communicative relationship between the information imparted by the video portion of a television/cinema "drama" and its musical score. Results indicated that different musical moods produced different interpretations of the same video stimulus. The conclusion was that viewers tend to create a predictable cognitive interpretation of an ambiguous video drama that logically corresponds to the "feeling" of the music in order to justify their affective reactions.

Marketing-Related Studies

Little music-related research has been performed in marketing and it has examined issues other than the influence of music components on mood. The following discussion first reviews the few studies on non-behavioral outcomes of music in marketing contexts (e.g., changes in affect, purchase intention, and recall), then reviews studies examining behavioral issues (e.g., sales volume, product selection, shopping time).

Nonbehavioral Studies

A series of experiments by Wintle (1978) provided empirical support for conventional thinking that music can significantly affect the emotional response to television commercials. Specifically, Wintle's data indicated that music and television commercials share three dimensions of subjective expression: an activity factor, a pleasantness factor, and a potency/personal rel-

evance factor. Further, she demonstrated that supporting music seems to intensify whereas counteracting music reduces the intensity of the dimension being characterized positively in the ad.

Simpkins and Smith (1974) were concerned with the effect of background music in commercial messages on the evaluation of a message's source. Their data supported the notion that the compatibility of background music with the preference of the audience significantly affects the evaluation of a message's source. Also, persons for whom the music was incompatible evaluated the credibility of the sponsor significantly lower than those who heard the message without music. However, little appeared to be gained in source evaluation by the use of compatible music.

Another aspect of background music was studied by Park and Young (1986). Their focus was on the impact of involvement (high cognitive, high affective, or low involvement) and music (presence or absence) on brand attitude formation. Their results indicated that music had a facilitative effect on persons in the low involvement condition but a distracting effect for those in the high cognitive involvement condition. The effect on those in the high affective involvement condition was unclear.

The effect of music on moods and purchase intentions has been studied recently by Alpert and Alpert (1986, 1988). One finding was that happy music produced happier moods in subjects, but sad music produced the highest purchase intentions. The authors concluded that structure and expressiveness of background music can evoke different moods and purchase intentions toward advertised products.

Holbrook and Anand (1988; Anand and Holbrook 1985) studied the relationship between musical tempo and affect. They observed that as tempo increased, so did affect up to a point, then it decreased, producing an inverted-U preference function. Because general arousal was anticipated to vary with the context, the study also examined the moderating role of situational arousal on preferred musical pace. The findings were somewhat mixed, but the authors concluded that the inverted-U preference function shifts to the right under conditions of higher arousal.

Several content analyses of commercials have been conducted to shed light on the role of music in advertising. The largest study of this kind was by Stewart and Furse (1986), who analyzed more than 1000 commercials. A music-related factor (auditory memory device) was found to have a significant positive relationship with recall and comprehension, and the association was stronger for new than for established products (p. 76, 82).

More detailed coding of music components was used in a recent study by Stout and Leckenby (1988). They found that mode had the most impact on re-

sponses of all music components examined. Specifically, respondents appeared to learn more from, indicate greater behavioral intent toward, and make more personal connections with ads using the major or mixed modes. Commercials with music in the minor mode were rated as more irritating and generally scored less favorably. Faster tempo was linked with generally positive comments whereas ads with moderate or slow tempi received less favorable responses.

In a content analysis of radio commercials, the presence of music was not found to have a particularly salient impact on recall in comparison with other variables, such as product category and number of brand mentions (Sewall and Sarel 1986). Very different results were observed by Hunt (1988). His findings support the notion that music-based radio commercials tend to achieve higher recall scores than ads using a straight announcement format, regardless of the programming context.

Behavior-Related Studies

An early study with behavioral implications for marketing was conducted in two grocery stores where music was either “soft” or “loud” (Smith and Curnow 1966). The results indicated that the volume level of the music was correlated negatively with shopping time but not associated with average sales per person or customers’ reported satisfaction with the music. The implication was that the sales per minute were significantly higher under the loud music condition.

In an application of classical conditioning, Gorn (1982) examined the influence of music in advertising on product choice. He found that the simple association between a picture of a pen (conditioned stimulus) and liked music (unconditioned stimulus) could significantly affect a pen selection decision, particularly for subjects not aware that they would be asked to make a decision. However, these results have been questioned recently on methodological grounds.⁴

Milliman (1982, 1986) performed two separate experiments in which music tempo was manipulated, one in a supermarket and the other in a restaurant. The results of his first study (1982) indicated that in-store traffic flow was significantly slower with slow music (72 BPM or less) than with fast music (94 BPM or more). Similarly, sales volume was significantly higher with slow music than with fast music. Among the

findings in his second study (1986) was that customers in the slow-music condition took more time to eat their meals and leave than those in the fast-music treatment. Likewise, there was a significantly longer waiting time for tables in the slow-music treatment. Customer bar bills were found to be much greater in the slow-music condition.

Recently, Yalch and Spangenberg (1988; Yalch 1988) conducted research that builds on the Milliman studies. They compared the effects of foreground music (Top 40) and background music (instrumental “easy listening”) as well as a no-music treatment in a department store setting. One of the only behavior-related differences between the two music treatments was that younger shoppers (under 25) thought they had spent more time shopping in the easy listening condition whereas older shoppers perceived they had shopped longer when the Top 40 was being played. From these findings, the researchers speculated that when shoppers encounter nontypical environmental factors (e.g., unfamiliar music), time appears to slow down.

Discussion

On the basis of the studies in both marketing and other fields, the following postulates summarize in general terms what can be safely concluded.

- Human beings nonrandomly assign emotional meaning to music.
- Human beings experience nonrandom affective reactions to music.
- Music used in marketing-related contexts is capable of evoking nonrandom affective and behavioral responses in consumers.

These postulates lead to the conclusion that music is an important stimulus for marketers to study, understand, and employ—especially when affective reactions to marketer-controlled stimuli are a chief concern. However, if they are to be of great practical value, more specific issues must be addressed in future research. The following propositions are suggested by past studies but warrant further testing, particularly in marketing contexts.

- P₁: The components of music are capable of having main as well as interaction effects on moods, cognitions, and behaviors of interest in marketers.

Though attempts have been made over the years to understand the *main* effects of music components (e.g., tempo), the *interaction* effects have received much less attention. Some emotions speculated as being expressed through the interaction of several components are given in Table 3 and warrant examination in future research.

- P₂: The structural nature of music is related to its ability to achieve various purposes.

⁴Kellaris and Cox (1987), among others (Allen and Madden 1985), have pointed out several weaknesses in Gorn’s study. They replicated his study but with a few changes in the music and cover story to overcome the weaknesses. No significant association was found between pen selection and music heard, regardless of the cover story subjects received. In a further nonexperimental replication of Gorn’s study, Kellaris and Cox (1988) found a high rate of hypothesis guessing, which indicates that an apparent conditioning effect could be produced in the absence of conditioning stimuli.

TABLE 3
Musical Characteristics for Producing Various Emotional Expressions^a

Musical Element	Emotional Expression								
	Serious	Sad	Sentimental	Serene	Humorous	Happy	Exciting	Majestic	Frightening
Mode	Major	Minor	Minor	Major	Major	Major	Major	Major	Minor
Tempo	Slow	Slow	Slow	Slow	Fast	Fast	Fast	Medium	Slow
Pitch	Low	Low	Medium	Medium	High	High	Medium	Medium	Low
Rhythm	Firm	Firm	Flowing	Flowing	Flowing	Flowing	Uneven	Firm	Uneven
Harmony	Consonant	Dissonant	Consonant	Consonant	Consonant	Consonant	Dissonant	Dissonant	Dissonant
Volume	Medium	Soft	Soft	Soft	Medium	Medium	Loud	Loud	Varied

^aDeveloped primarily from Hevner (1937), Kinnear (1959), and Vinovich (1975) with additional information from Gundlach (1935), Scherer and Oshinsky (1977), Watson (1942), and Wedin (1972).

As discussed by Hecker (1984), music can play many roles of interest to marketers. However, the music effectively used to serve one purpose may be inappropriate for another. To explore these various purposes, marketers might attempt to match the emotion of some music to that expressed in the visual and/or verbal portion of an ad (e.g., Vinovich 1975; Wintle 1978); counteract, intensify, or change the prevailing mood of consumers (Parrott 1982; Shatin 1970; Wheeler 1985); or stimulate retrieval of mood-congruent cognitions (e.g., Gardner 1985).

P₃: The emotions perceived to be expressed in musical stimuli are capable of evoking corresponding affective reactions in listeners.

There is little debate that music can be perceived as expressing emotion-like qualities. It is more radical to suggest that properly structured music can generate particular emotions. Yet, theory and supporting evidence indicate that there are dynamic forms of expression specific to each emotion, and the ability of a stimulus to evoke an emotion depends heavily on the *purity* of the expression (e.g., Clynes 1977, 1982).

P₄: The influence of music on persuasiveness is greatest under conditions of peripheral route processing and low cognitive involvement.⁵

This proposition is suggested by the elaboration likelihood model (e.g., Cacioppo and Petty 1989; Petty and Cacioppo 1986) and more specifically by such studies as Gorn's (1982) and Park and Young's (1986). Though music's role is likely to be greatest under conditions of high affective involvement and low cognitive involvement, it might also have a role even under conditions of high cognitive involvement. Specifically, the direction and amount of issue-relevant thinking could be influenced if music makes "mood

congruent" thoughts more accessible in memory (e.g., Gardner 1985).

P₅: Several variables moderate the relationships between music and consumer responses.

Among the most important moderators to evaluate are the familiarity of the music to listeners (e.g., Fontaine and Schwalm 1979; Hilliard and Tonlin 1979), music enjoyment (e.g., Gorn 1982; Wheeler 1985), and prior mood (e.g., Eagle 1971; Goldberg and Gorn 1987).

P₆: Some responses to music are learned whereas others are inherent.

Responses to music are not likely to be determined solely by the learning environment or by human nature, but rather by some interaction of the two. For instance, evidence of cross-cultural similarity in music expressiveness has been found (e.g., Clynes 1977; Gundlach 1932). The key word, however, is "similarity," because wide ranges of perceived expressions are found even within samples from the same culture. Therefore, greater understanding is needed of which structural elements we respond to similarly as a result of our nature and which ones we respond to differently as a result of learning.

Methodological Recommendations

With an increasing concern in marketing about affective behavior, music-related research is likely to become more common in the future. If so, several changes in methodology are recommended to improve the reliability and validity of the findings.

First, efforts must be made to raise the level of experimental sophistication to account for the complex workings of the musical stimulus. Significant new knowledge will not be acquired until individual components of music are manipulated, examined, and/or controlled. Music has been treated too generally in most past marketing studies, with interest merely in its presence or absence in some treatment. Even in studies in which a structural element was manipulated, control of other musical components was rarely adequate.

This observation does not mean a component should

⁵The music itself is assumed not to be the product or an integral part of it (as in records, concerts, and plays). If music is part of the product, for many people it would represent high affective involvement and central route processing because what they *feel* about the music would be one of the main issues being evaluated (Cacioppo and Petty 1989, p. 81, 82).

be studied independently of its normal context, but that greater use should be made of experimental designs that can discern the main and interaction effects of the various structural components of music (P_1).⁶ A simple but variation-prone application of this approach is to make separate recordings of a song played repeatedly on some instrument, manipulating the variable of interest from one playing to the next (e.g., Hevner 1935b; Holbrook and Bertges 1981). Better yet, music hardware and software (synthesizers, samplers, and sequencers) now allow complex orchestrated music to be programmed and numerous "treatments" to be produced that vary solely in some predetermined manner. Further, unlike conventional recording techniques, these methods allow the music components to be manipulated independently (e.g., increasing the tempo of playback would *not* automatically increase the pitch). Already some simple uses of this technology have been reported (Holbrook and Anand 1988; Holbrook and Corfman 1985).

Second, future research should control for the effect of music familiarity. If the influence of familiarity is of interest, it could be measured and treated as a predictor or moderator variable. If there is no interest in familiarity, its potential influence could be reduced by using either original compositions (e.g., Heyduk 1975; Holbrook et al. 1985) or pieces that pretesting indicates should be unfamiliar to listeners (e.g., Holbrook and Bertges 1981).

Third, the influence of liking music should be accounted for in research designs. One approach is to use a nonrecursive structural model of halo effects (Holbrook 1983). Such a model is capable of accounting for the influence of individual musical components on perceptions and affect while estimating the distortion due to liking alone. "Affective overtones" may not always be a significant source of distortion, but such a model should be used to test for such bias.

Fourth, methodology should be robust enough to account for nonmonotonic relationships between music components and affect. Evidence is now sufficient to lead one to expect *a priori* an inverted-U function between several music variables and affect. Given this expectation, the testing of only two levels of a music component may not adequately capture the true relationship between the variables of interest if it is nonmonotonic.

The growing attention to the affective realm of consumer behavior brings with it a corresponding need for assessment of and improvement in the quality of the measures employed. Some promising develop-

ments have been made in recent studies (Aaker, Stayman, and Hagerty 1986; Holbrook and Batra 1988; Madden, Allen, and Twible 1988). Yet, some researchers argue that these measures are still too verbally oriented and are unable to capture adequately the distinct nature of affective responses (Batra 1986; Stewart and Hecker 1988).

Managerial Implications

A primary decision faced by marketing managers is whether or not to use music in such settings as the retail environment and in commercials. Music is likely to have its greatest effect when consumers have high affective and/or low cognitive involvement with the product. Product categories fitting this description for most consumers include jewelry, sportswear, cosmetics, and beer. Music would tend to have less effect when consumers experience high cognitive involvement, such as when buying cars, appliances, PCs, cameras, and insurance.

If the decision is made to use music, a choice must be made between developing music specifically for the occasion, using unfamiliar but previously written music, or employing well-known hits. At least in the advertising context, the choice has increasingly been to use hit songs (Rosenbluth 1988). In many instances, using hits is undoubtedly an effective way to draw attention and evoke positive responses. For at least two reasons, however, caution is justified before rushing to use well-known music. First, as discussed before, research on repetition suggests that what has been considered pleasant at one point in time can become much less enjoyable if repetition makes it too familiar. Indeed, recent empirical work shows this effect occurs with contemporary pop songs (Russell 1987). Second, musicians are increasingly sensitive and vocal about the perceived misuse of their songs in commercials (Magiera 1988; Stroud 1988).

If the decision is made to use previously written though unfamiliar music, information like that summarized in Table 3 can be helpful. Such information gives the marketer objective criteria that can be useful in selecting music most likely to express a particular mood. This process has been employed successfully under research conditions (e.g., Alpert and Alpert 1988; Vinovich 1975) and some companies profess to be providing this service on a commercial basis (e.g., Buddy and McCormick 1987; Rosenfeld 1985).

When developing original music, marketers will draw upon professional musicians' intuition and training. However, marketers need not be as dependent on musicians as they have been in the past. Computerization and synthesizers eventually will enable even nonmusicians to compose "free from the considerations of musical notation and yet not without guiding order" (Clynes and Nettheim 1982). The work of

⁶Similar attention to greater methodological sophistication also is needed for content analyses because a lack of detailed codes for music characteristics can distort statistical relationships and lead to questionable findings (e.g., Haley, Richardson, and Baldwin 1984).

Clynes and others (e.g., Stipp 1988) indicates that in the future, distinction between a musician and a non-musician may have more to do with one's profession than with the ability to make expressive music.

Though it has been long accepted that music affects human beings in various ways, only recently have researchers attempted to explore the presumed relationships empirically in marketing contexts. At this time the relevant body of literature is still meager. Because the desire to understand human moods and their role in consumer behavior is likely to become ever more important, music, as a powerful emotional stimulus, should be studied more thoroughly. This review and the suggestions offered are hoped to encourage research on this subject.

Appendix

Many terms commonly are used to describe music. The following definitions are given to aid in understanding which variables have been linked with each of three basic factors (time, pitch, and texture).

Time

Rhythm is the pattern of accents given to beats or notes in a song. *Tempo* (plural *tempi*) is the speed or rate at which a rhythm progresses. *Phrasing* is the length of time a note sounds in comparison with the rhythmic period it occupies. For example, a staccato note sounds for only a small part of a bar whereas a legato note may be sustained until the next note sounds.

Pitch

Melody is the succession of notes occurring over time throughout a song. Changes in melody can be either ascending (up in pitch) or descending (down in pitch). Leaps in pitch are possible, as are repetitions of single notes. Melodies can be played in a variety of *keys*, which are referred to by one of the first seven letters of the alphabet plus an indication of sharp or flat.

Mode refers to the series of notes, arranged in a scale of ascending pitch, which provides the tonal substance of a song (Apel 1969, p. 535). In any given key, several modes are possible; the two best known in contemporary Western culture are the major and the minor modes.

If melody is viewed as being "horizontal" because it occurs over time, *harmony* should be viewed as "vertical" because it refers to notes played simultaneously. Harmonies can be *consonant* or *dissonant*; the former refers to notes or chords producing an agreeable subjective reaction whereas the latter refers to sounds evoking an unpleasant reaction.

Texture

Though the time- and pitch-related components are likely to be the most essential features of music, it is texture that provides the "color" and aesthetic richness. *Timbre* is part of music's texture and refers to the distinctiveness in tone that makes one instrument sound different from another even if they both play the same melody. *Orchestration* (or instrumentation) is the art of weaving together the unique sonic properties of multiple instruments to produce the complex textural fabric of a musical work.

Finally, *volume* also contributes to the texture of music. It can be used to make one note louder than others around it, to make a passage of notes louder than other passages (*dynamics*), or to make a whole song louder than others.

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