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Music theory distinguishes between two types of meanings that music can impart: (1) embodied meaning, which is purely hedonic, context independent, and based on the degree of stimulation the musical sound affords, and (2) referential meaning, which is context dependent and reflects networks of semantic-laden, external world concepts. Two studies investigate which (if either) of these background music meanings influence perceptions of an advertised product and when. Findings suggest that people who engage in nonintensive processing are insensitive to either type of meaning. However, more intensive processors base their perceptions on the music's referential meaning when ad message processing requires few resources, but they use the music's embodied meaning when such processing is relatively resource demanding.

Distinguishing Between the Meanings of Music: When Background Music Affects Product Perceptions

Imagine listening to a radio advertisement for a travel agency. Would your perception of the agency's ability to provide dependable, hassle-free service differ if the muted music in the background of the advertisement were sedate rather than energetic? Relevant to this issue, extant research suggests that background music can communicate particular meanings or associations. One body of work indicates that music can affect the favorableness of people's feelings and moods (e.g., Alpert and Alpert 1990). We refer to the sheer favorableness of the feelings evoked by music's sounds as its "embodied meaning." Other research points to the semantic meanings that music can bring to mind (Boltz 2001; Hung 2001). We call this music's "referential meaning." In this article, we (1) elucidate the make-up of these two types of music-imparted meaning and (2) distinguish between them. More important, we develop theory and investigate when each of these potentially coexisting forms of musical meaning is likely to shape people's perceptions of focal product content discussed in a music-accompanied ad message.

In accordance with Meyer (1994), a top scholar of the psychology of music, we adopt a holistic versus an elemental approach to studying music. Specifically, we examine two relativistic collative aspects of music that vary its stimulation potential (i.e., its embodied meaning): the degree of energy (Experiment 1) and the degree of novelty (Experiment 2) afforded by the musical sound. We begin by elucidating the two types of meaning that music is believed to confer.

THE MEANINGS OF MUSIC

One theory contends that music's embodied meaning can arise from the patterns or relationships between patterns embodied within a given work of music (Farnsworth 1969; Meyer 1994). Embodied meaning refers to the hedonic value or positive feelings that may emerge simply from the sounds within the music (Radocy and Boyle 1997). As such, it is independent of the context in which the music occurs and any semantic content that the music may evoke.

What produces this embodied meaning? In general, greater positive hedonic value emerges when a moderate versus a high or a low level of stimulation is prompted by a stimulus such as musical sound (see North and Hargreaves 1997).[1] Such stimulation can emerge as a result of any of

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[1]Positive feelings also can emerge from semantic associations prompted by the music (e.g., nostalgic associations with a song, associations with a song's composer or performer). However, these do not constitute embodied meaning, because they result from context-dependent conceptual associations with rather than stimulation embodied within the musical sounds.

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several collative or structural properties of music (e.g., Dowling and Harwood 1986; Hargreaves 1984). One property is the energy afforded by the musical sounds (Radocy and Boyle 1997). More energetic music has a faster tempo, more abbreviated percussive sounds, and a more repetitive rhythm, whereas the opposite of each of these qualities defines sedate music (Gaston 1968). Indeed, research verifies that moderately energetic music heightens stimulation and thus positive hedonic value (Stout and Leckenby 1988). A second such collative property of music is the degree of novelty the musical sound manifests (Gaston 1968). A song performed in a style that deviates moderately from the norm heightens stimulation and thus positive hedonic value (Hargreaves and Casetell 1987; Simonton 2001).

A second theory focuses on music's referential meaning (Meyer 1994; Radocy and Boyle 1997). Referential meaning is independent of music's embodied meaning but is likely to coexist with it (Farnsworth 1969). Unlike embodied meaning, it is context dependent, obtaining meaning from the network of descriptive associations that a stimulus (e.g., music) may bring to mind (McMullen 1982; Meyer 1960). Indeed, a particular musical execution's similarity or proximal relationship to external concepts, events, or characters can reference related semantic associations (Davies 2001; Meyer 1960). For example, in general, energetic music evokes thoughts related to excited frivolity, whereas sedate music brings to mind thoughts about calm, contemplative activity (Gabrielsson and Lundstrom 2001). Figure 1 summarizes these definitions of music meaning and other critical ad components.

To reflect on the preceding notions, if music serves as a muted backdrop for verbal product claims in, for example, a travel agency advertisement, the music's referential associations might be ascribed to the product. Thus, if ad recipients were asked to assess the travel agency's provision of thoughtful, dependable service, they might perceive it as greater if the background music is sedate, which references calm contemplation, than if it is energetic, which references thoughts about excited frivolity. This follows because unlike the referential meaning of energetic music, sedate music overlaps semantically with the notion of thoughtful, dependable service (MacInnis and Park 1991). Note that this holds even though both referential meanings are quite favorable, both in an absolute sense and as they could be related to the product.

Figure 1
THEORETICAL DEFINITIONS OF THE MAJOR AD COMPONENTS

Major Ad Components	*Theoretical Subcomponents*
Focal ad content (e.g., message, visuals)	•*Central cues*: Verbal, visual, or execution-related ad content that is informative about substantive product attributes or benefits.
	•*Peripheral cues*: Verbal, visual, or execution-related ad content that bears little or no genuine informational value about substantive product attributes or benefits.
Background ad music	•*Embodied meaning of music*: The context-independent hedonic value or favorableness of feelings evoked by music due solely to the degree of stimulation afforded by the music's sounds. Discerning such embodied meaning from music requires relatively few resources.
	•*Referential meaning of music*: The networks of semantic or conceptual associations evoked by music that may be prompted by contextual factors (e.g., the place where the music airs, the musician, the instruments used) or other relationships between the music and external world concepts, events, and characters. Discerning such referential meaning from music requires many resources.

The proposition that music can possess coexisting referential and embodied meanings invites a critical question: Which, if either, meaning are ad recipients likely to use when forming their perceptions of a product in a music-accompanied advertisement? Insight into this question can be derived by considering the level of resources required by various ad elements.

First, consider the two background music meanings. Much research suggests that discerning and applying music's embodied versus referential meaning demands fewer resources (Pham et al. 2001; Stapel, Koomen, and Ruys 2002). Whereas using embodied meaning to form perceptions requires simply identifying the meaning's diffuse hedonic value and then transferring it to an evaluative continuum (i.e., scale), using referential meaning requires activating more extensive and distal associative networks in memory, charting and assessing the semantic overlap between the referential meaning and the queried perception dimension, and then mapping this perceived overlap onto an evaluative continuum.

A second consideration is the level of resources required to process the advertisement's focal verbal message. This should be especially critical for intensive ad processors, who assign more credence to seemingly diagnostic central message content (Aaker and Maheswaran 1997; see also Figure 1). Indeed, reflecting on this notion and on our previous discussion leads to a prediction about which meaning will inform product perceptions. If a verbal ad message requires few resources to process because it is presented in a direct lecture format, intensive ad processors are likely to possess ample resources to process not only the verbal message but also the background music's more taxing referential meaning. However, if the ad message itself is highly resource demanding because of its recitation in an episodic drama format (Wells 1989), intensive processors may experience resource constraints, causing them to use the music's more readily accessible embodied meaning.

To anticipate the outcomes of nonintensive ad processors, a third factor may be important: the threshold level of resources required to discern and use even the less-resource-demanding embodied meaning of the background ad music. This threshold level may not be negligible, particularly if the background music is muted and thus of low salience; if it is presented concurrently with seemingly more germane and salient verbal material; and if exposure occurs only one time, thus limiting processing opportunity.

These observations suggest that rather than basing product perceptions on the muted background music's embodied

meaning, which only modestly reduces resource demands, nonintensive ad processors may be insensitive to either meaning imparted by the low-salience music. Instead, they may base their product perceptions on peripheral cues associated with the verbal ad data because such data are more salient, accessible, and seemingly more diagnostic than the music. More specifically, nonintensive ad processors may base their perceptions on inferences from superficial, executional aspects of the salient message, such as the expressiveness or clarity of the speaker's voice, the perceived professionalism of the ad execution, and so on.

We conducted two studies that examine whether and when people's product perceptions are influenced by either the referential or the embodied meaning of background ad music. Experiment 1 explores this issue using music that varies in energy level.

EXPERIMENT 1: OVERVIEW AND HYPOTHESES

Experiment 1 used a target radio advertisement for a travel agency and measured the intensity of recipients' processing using a need-for-cognition (NFC) scale. The verbal ad message varied in format, thus altering the level of resources required to process it. It was delivered in either a lecture or a drama format; the former demanded fewer resources (Wells 1989).

One of two executions of the same unfamiliar melody was embedded in the ad background at a low volume. One execution was performed in a moderately stimulating, energetic manner, whereas the other was performed in a more sedate fashion. We used these two executions because each should relay embodied and referential meanings with opposite valenced implications in relation to a critical dependent measure. This measure assessed product perceptions and was selected strategically so that it possessed greater semantic overlap with the referential meaning of the sedate music execution (i.e., calm contemplation versus excited frivolity), but the sedate execution possessed a less favorable embodied meaning than did the other more energetic execution. This opposition was essential because it enabled us to discern which of the alternative music execution's two meanings recipients used and when.

On the basis of our theorizing, we anticipated a three-way interaction among NFC, ad message format, and ad background music on the critical perception measure that assessed the dependable, hassle-free service offered by the travel agency. When the ad message was delivered in a low-resource-demanding lecture format, we expected intensive processors to base their perceptions of dependable, hassle-free service on the background music's fairly taxing referential meaning. Because the sedate music's referential meaning (i.e., calm, contemplative activity) possessed greater semantic overlap with the notion of dependable, hassle-free service than did the energetic music's referential meaning (i.e., excited frivolity), we expected that high-NFC people would perceive the agency's service on this dimension as greater when the ad background featured the sedate rather than the energetic music. Conversely, high-NFC people who received the high-resource-demanding drama format should base their service perceptions on the music's simpler, embodied meaning. Thus, the more favorable embodied meaning of the energetic versus sedate music should transfer to perceptions of the travel agency's dependable, hassle-free service.

H_{1a}: When the ad message is delivered in a lecture format, high-NFC people perceive that the travel agency provides more dependable, hassle-free service when the background music is sedate than when it is energetic. When the ad message is delivered in a drama format, high-NFC people perceive such service to be greater when the background music is energetic than when it is sedate.

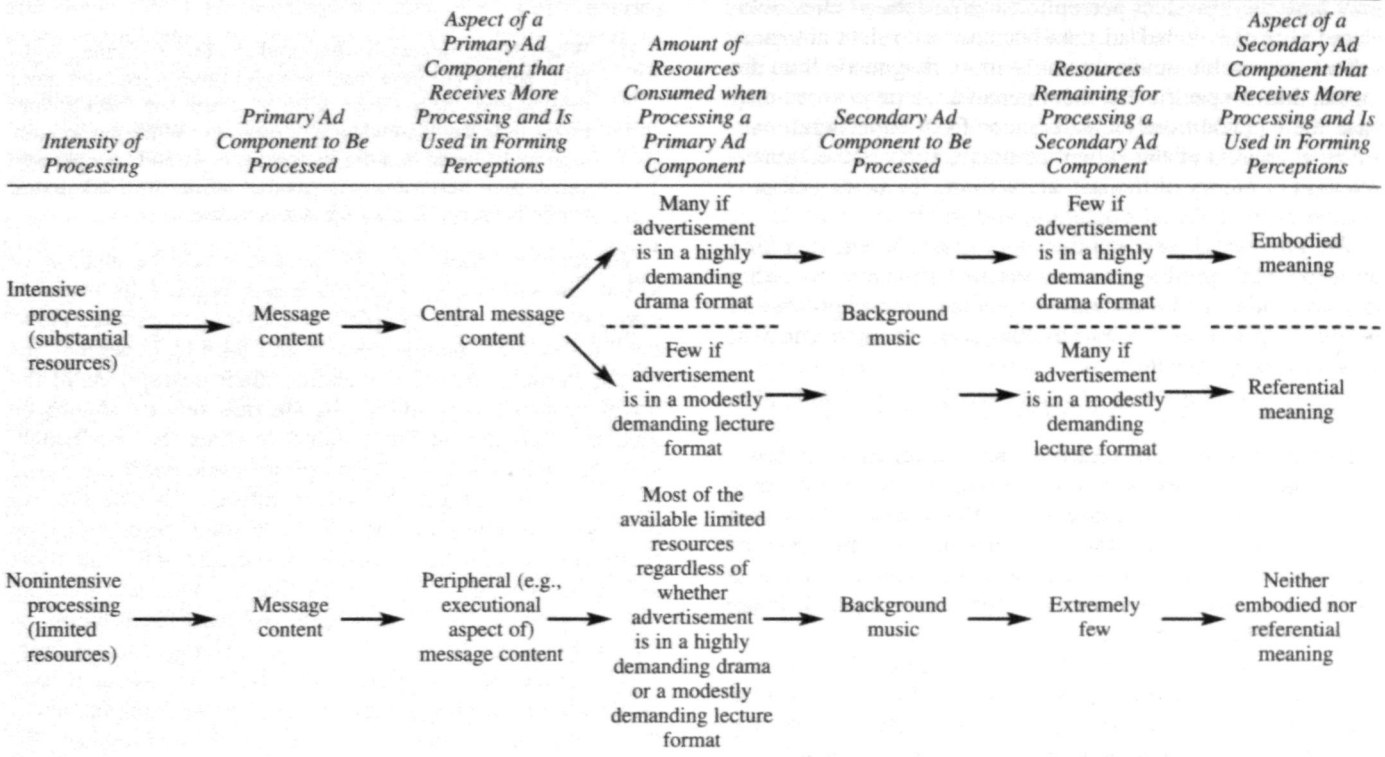
We reasoned that low-NFC people would be insensitive to the low-salience background music because its intensity may fall below such people's processing threshold. However, if low-NFC people discern and base their perceptions on the music's embodied meaning, their perceptions of the travel agency's dependable, hassle-free service should be greater when the ad background features the moderately stimulating and hedonically more favorable energetic music than when it features the sedate music. Nonetheless, we propose that low-NFC people base their perceptions on peripheral, executional features associated with the more salient ad message; this is a view that fits with data showing that, in general, low-NFC people base their assessments on relatively salient peripheral cues (e.g., Haugtvedt and Petty 1992). Evidence in support of our thesis will occur if low- rather than high-NFC people produce more thoughts about the executional characteristics of the verbal message. We review and summarize the theoretical logic underlying all of our perception predictions in Figure 2.

H_{1b}: Low-NFC people base their perceptions of the travel agency's service on peripheral, executional aspects of the ad message; thus, there are no treatment effects on their perceptions of the travel agency's dependable, hassle-free service. Rather, low-NFC people report more thoughts about peripheral, executional aspects of the ad message than do high-NFC people.

We examined ad recipients' thoughts and recall for evidence of the role played by the music's referential and embodied meanings. We anticipated a three-way interaction among NFC, ad message format, and background music on recipients' thoughts and statements reported in their recall (hereinafter called "recall remarks") that reflected each of the referential concepts implied by the alternative background music executions (e.g., calm contemplation for sedate music and excited frivolity for energetic music). A small and uniform number of such responses should be produced both when people's NFC is low and when it is high, but the drama ad message places heavy demands on resources. However, treatment effects should be evident among high-NFC people who receive the low-resource-demanding lecture format. In this condition alone, ad recipients should discern the background music's referential meaning and produce more thought and recall remarks that are related to it. Thus:

H_2: When the ad message is delivered in a lecture format, high-NFC people produce more thoughts and recall remarks that pertain to (a) calm, contemplative activity when the advertisement features sedate music than when it features energetic music and (b) excited, frivolous activity when the

Figure 2
SUMMARY OF THE DETERMINANTS AND ASPECTS OF AD COMPONENTS USED IN FORMING PERCEPTIONS



Notes: Designations of the primary versus secondary status of the ad components are based on the relative salience of these components.

advertisement features energetic music than when it features sedate music. However, no treatment effects emerge when people's NFC is low and when it is high and the ad message is in a drama format.

To capture people's sensitivity to the music's simpler, purely hedonic embodied meaning, we assessed net positive thoughts about the ad music. If, as we anticipated, intensive ad processors base their product perceptions on the music's embodied meaning only when the advertisement appears in a more-resource-demanding drama format, when they receive the drama format, such people should generate more net positive thoughts about the ad music when the background music is energetic than when it is sedate. Thus, we anticipate the following three-way interaction:

H_3: When the advertisement is delivered in a drama format, high-NFC people produce more net positive thoughts about the background music when the advertisement is accompanied by energetic music than when it is accompanied by sedate music because the former should impart a more favorable embodied meaning. However, treatment effects are absent when people's NFC is low and when it is high and the ad message is delivered in a lecture format.

Experiment 1

Stimuli. We developed two filler radio advertisements and a target advertisement for a travel agency. We recorded all the advertisements professionally in a recording studio, and we used professional talent.

We created two versions of the target advertisement's verbal message. Although each version relayed the same information using nearly identically worded statements, they differed in the resources needed to process the information. Extant research indicates that processing messages delivered in an episodic, storylike drama format rather than a straightforward lecture format is more resource demanding (Peracchio and Meyers-Levy 1997; Wells 1989). Thus, one version of the travel agency advertisement relayed the message in a lecture format in which a single announcer delivered a monologue about the product. The second version relayed the same information in a drama format in which people conversed about the product.

To verify whether the drama message format was more demanding to process than the lecture message format or whether the two ad formats were equally involving, 21 people listened to either the lecture or the drama version of the travel agency advertisement without any music. Respondents rated three items (from 1 = "not at all" to 7 = "extremely") on both their ad involvement (i.e., involved, processed carefully, and motivated; α = .82) and how resource demanding the ad processing was (i.e., difficult to understand, expended a lot of effort to comprehend, and hard to grasp; α = .86). Ad involvement was comparable across format conditions (mean = 5.12 and 5.57; $p > .30$), but the drama format was perceived to be more resource demanding (mean = 1.70) than was the lecture format (mean = 1.20; $F(1, 19) = 5.11$, $p < .05$).

We used two versions of an instrumental title song from a little-known 1977 movie in the target ad background; we played the songs at a constant low volume. In accordance with the definitions we provided previously, one execution was performed in a moderately energetic way and the other

in a sedate way. To assess the two music executions' embodied and referential meanings, 48 pretest participants listened to and assessed either the energetic or the sedate version of the song. As we expected, their familiarity with the two song versions was relatively low (mean = 2.08 and 1.64 on a seven-point scale anchored by "not at all familiar/very familiar") and equivalent ($p > .25$). Furthermore, the purely hedonic embodied meaning of the more stimulating, energetic version elicited more positive feelings (i.e., more upbeat, cheerful, happy, and likable; $\alpha = .83$; mean = 5.07) than did the sedate version (mean = 3.07; $F(1, 46) = 46.52$, $p < .001$). The two song versions also conveyed the anticipated referential meanings. Respondents perceived the energetic rendition to be more excited, energized, and frivolous ($\alpha = .77$; mean = 3.54 and 2.42; $F(1, 46) = 13.60$, $p < .001$), but they perceived the sedate rendition to be more calm, thoughtful, and reflective ($\alpha = .82$; mean = 5.09 and 3.73; $F(1, 46) = 18.39$, $p < .001$).

A final pretest ensured that the two ad music executions were equally compatible with the message. After listening to one of the two versions of the advertisement accompanied by either the energetic or the sedate background music, 47 participants assessed the compatibility, general fit, and appropriateness of the background music and message (on a scale ranging from 1 = "not at all" to 7 = "extremely"). In all four conditions, the average of these items was equal and moderate (overall mean = 4.12; $F < 1$).

Procedure. For extra course credit, 77 students participated in the study in small groups. They were told that they would hear several radio advertisements and that their thoughts and perceptions would be measured. Respondents listened to the target travel agency advertisement and two filler advertisements. Then, they completed both the perception and the thought-listing measures for the target advertisement; half the respondents completed the perception measure before the thought measure, and the other half completed the thought measure before the perception measure. After completing some filler questions, we assessed target ad recall and measured NFC.

Dependent measures. We assessed perceptions of the travel agency's dependable, hassle-free service with ratings of the travel agency's provision of seamless travel plans and stress-free customer service (1 = "extremely unlikely" and 7 = "extremely likely"). We averaged these items to form an index that corresponded to the referential meaning of the sedate music ($\alpha = .77$). We also obtained respondents' thoughts about the target product, advertisement, ad claims, and music. Then, after some filler questions, we examined target ad recall. Finally, we assessed respondents' chronic intensive-processing proclivities with an 18-item NFC scale (Cacioppo, Petty, and Kao 1984).

Results

We summed responses to the NFC scale items and classified participants as high or low in NFC using a median split. There were no main or interaction effects for the order in which participants completed the perception and thought-listing tasks. Thus, we collapsed all data across that factor and analyzed them by means of an analysis of variance as a 2 (NFC: high or low) × 2 (ad message format: lecture or drama) × 2 (background music: energetic or sedate) between-subjects factorial design. All effects appear in Table 1, and treatment means appear in Table 2; degrees of freedom for particular treatment effects were 1 and 69.

Product perceptions. Respondents' perceptions of the travel agency's dependable, hassle-free service revealed the anticipated three-way interaction among NFC, ad message format, and background music ($F = 7.42$, $p < .01$). As Figure 3 illustrates, low-NFC participants were insensitive to either meaning implied by the ad background music, regardless of message format ($F < 1$). However, high-NFC participants who received the advertisement in the less-resource-demanding lecture format perceived the travel agency's dependable, hassle-free service as greater when the background music was sedate, thus conveying a more perception-compatible referential meaning, than when it was energetic ($F = 7.01$, $p < .01$). However, when the advertisement was delivered in the more-resource-demanding drama format, participants perceived such service as greater when the background music was energetic, thus implying a hedonically more favorable embodied meaning, than when it was sedate ($F = 4.16$, $p < .05$).

Classification of open-ended responses. We classified respondents' thoughts and recall into several categories (α ranged from .76 to .82). The first two categories captured the number of thought and recall remarks that referenced the concept of calm, contemplative activity imparted by the referential meaning of the sedate background music (e.g., "They seemed very controlled, sensible, and peaceful") and the number that referenced the excited, frivolous activity imparted by the referential meaning of the moderately energetic music (e.g., "so fast they would provide little service"). In addition, we classified thoughts into background music valence and peripheral cue categories (α = .93 and .79, respectively). The thought valence measure enabled the assessment of net positive thoughts about the background music (i.e., number of positive minus negative thoughts; e.g., "I really liked the background music") and was used to tap respondents' sensitivity to the music's purely hedonic embodied meaning. Respondents' quantity of thoughts about peripheral, execution-related aspects of the verbal ad message (e.g., "The voices were clear and easy to understand") should shed light on the degree to which low- and high-NFC people think about and use these message-related aspects to form their product perceptions.

Referential meaning indicators. Were intensive ad processors sensitive to the referential meaning of the background music when the message required relatively few resources to process it? A three-way interaction among NFC, ad message format, and background music emerged on both respondents' thoughts ($F = 4.19$, $p < .05$) and recall remarks ($F = 4.63$, $p < .05$) about the sedate background music's referential meaning. Neither low-NFC participants ($Fs < 1$) nor high-NFC participants who received the ad message in the more-resource-demanding drama format ($ps > .39$) displayed effects on either measure. However, when high-NFC participants received the travel agency ad message in a lecture format that minimized resource demands, they generated more thoughts ($F = 8.54$, $p < .01$) and recall remarks ($F = 8.68$, $p < .01$) that reflected a referential meaning of calm, contemplative activity when the background music was sedate rather than energetic.

Table 1

F VALUES FOR ALL EFFECTS IN EXPERIMENT 1

	Dependable, Hassle-Free Service	*Thoughts About Referential Meaning of Energetic Music*	*Recall About Referential Meaning of Energetic Music*	*Thoughts About Referential Meaning of Sedate Music*	*Recall About Referential Meaning of Sedate Music*	*Thoughts About Executional Aspects of Verbal Message*	*Net Positive Thoughts About Music*
NFC	3.36	6.54**	7.29**	.09	.59	11.02**	.48
Message format	.43	2.95	.35	1.82	.01	6.33**	.27
Music	.95	4.12*	8.58**	3.45	.07	.07	1.24
NFC × message format	.07	3.70	.30	1.15	1.21	.08	.24
NFC × music	1.76	2.42	.39	.53	2.62	.47	.12
Message format × music	3.95*	4.21*	3.43	.92	2.54	1.85	2.25
NFC × message format × music	7.42**	1.41	5.12*	4.19*	4.63*	.26	.02
Overall model	2.62*	3.50**	3.63**	2.16*	2.30*	2.98**	.82

*$p < .05$.
**$p < .01$.

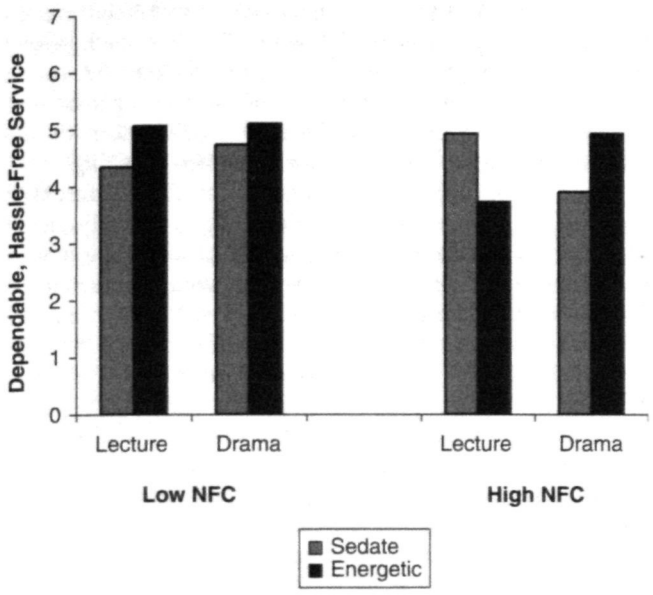
Table 2

TREATMENT MEANS FOR EXPERIMENT 1

	Low NFC				*High NFC*			
	Lecture		*Drama*		*Lecture*		*Drama*	
	Energetic Music	*Sedate Music*	*Energetic Music*	*Sedate Music*	*Energetic Music*	*Sedate Music*	*Energetic Music*	*Sedate Music*
Perceptions of dependable, hassle-free service	5.05^{a}	4.33^{a}	5.09^{a}	4.72^{a}	3.72^{a}	4.92^{b}	4.93^{b}	3.90^{a}
Thoughts about referential meaning of energetic music	$.50^{a}$	$.22^{a}$	$.36^{a}$	$.44^{a}$	2.00^{a}	$.58^{b}$	$.57^{b}$	$.50^{b}$
Recall remarks about referential meaning of energetic music	$.40^{a}$	$.11^{a}$	$.64^{a}$	$.22^{a}$	1.33^{a}	$.17^{b}$	$.71^{ab}$	$.80^{a}$
Thoughts about referential meaning of sedate music	1.10^{a}	1.11^{a}	$.73^{a}$	1.33^{a}	$.56^{a}$	2.08^{b}	$.71^{a}$	$.60^{a}$
Recall remarks about referential meaning of sedate music	$.70^{a}$	$.33^{a}$	$.82^{a}$	$.67^{a}$	$.33^{a}$	1.42^{b}	$.86^{ab}$	$.50^{a}$
Thoughts about executional aspects of verbal message	2.10^{ab}	1.44^{a}	2.36^{ab}	2.78^{b}	$.89^{a}$	$.92^{a}$	1.29^{a}	1.80^{a}
Cell size	10	9	11	9	9	12	7	10

Notes: Within a NFC condition, means within the same row that do not share a common superscript differ at $p < .05$.

Figure 3
EXPERIMENT 1: EFFECT OF NFC, MESSAGE FORMAT, AND BACKGROUND MUSIC ON PERCEPTIONS OF DEPENDABLE, HASSLE-FREE SERVICE



A three-way interaction among NFC, ad message format, and background music also emerged on respondents' recall remarks ($F = 5.12$, $p < .05$), but not on their thoughts, that tapped the energetic music's referential meaning ($ps > .24$). Nonetheless, planned contrasts supported our hypotheses on both measures. No treatment effects emerged on either measure when respondents' NFC was low ($Fs < 1$) or when it was high and the ad message was presented in the more-resource-demanding drama format ($ps > .79$). However, high-NFC respondents who heard the ad message in the less-resource-demanding lecture format generated more thoughts ($F = 12.73$, $p < .001$) and recall remarks ($F = 16.05$, $p < .001$) that reflected a referential meaning of excited frivolity when the advertisement featured the energetic rather than the sedate background music.

Embodied meaning and peripheral cue indicators. Respondents' net positive thoughts about the background music, which we expected to capture sensitivity to the music's embodied meaning, revealed no treatment effects ($ps > .14$). Such null effects may have occurred simply because respondents generated a paucity of thoughts about the ad music as a result of its unfamiliar tune and low volume. Nevertheless, respondents' thoughts about the peripheral, executional characteristics of the verbal message, which we expected to reflect their sensitivity to and use of peripheral cues associated with the verbal message, revealed the anticipated NFC main effect ($F = 11.02$, $p < .001$). That more of such thoughts were generated by low- ($M = 2.17$) than high- ($M = 1.22$) NFC respondents supports the view that low-NFC people may base product perceptions on these peripheral, executional features of the verbal message.

Discussion

The results of Experiment 1 support the notion that ad background music communicates two types of meaning: embodied and referential. Which, if either, meaning people use when forming their perceptions seems to depend on two factors: the intensity of ad recipients' processing and the resource demands of the ad message. If such demands are high, this can usurp resources otherwise used to discern the music's more taxing referential (versus embodied) meaning.

Our data indicate that when respondents used non-intensive processing, they were insensitive to either meaning implied by the advertisement's muted background music, presumably because available resources were below the threshold level required to discern even the music's less-resource-demanding embodied meaning. In such cases, respondents appeared to use peripheral, executional aspects of the more salient verbal message to form their perceptions.

However, ad recipients exhibited sensitivity to alternative meanings of the background music when they engaged in more-resource-intensive ad processing. Intensive processors discerned and used the ad background music's referential meaning to form their product perceptions when the focal message was presented in a lecture format that required relatively few resources to process. Conversely, they used the music's simpler, purely hedonic embodied meaning when the message was presented in a drama format that imposed greater resource demands.

Still, certain limitations exist. One is the null effect on net positive music thoughts, which failed to support the notion that people use the music's embodied meaning. This finding may stem from ad recipients' limited thoughts about the muted and unfamiliar background music. Another limitation is the absence of a no-music control condition, which might enhance the rigor of our theory test.

In a second study, we addressed these issues and altered several factors. Specifically, we used a known song in the ad background, we added no-music control conditions, and we manipulated (rather than measured) processing intensity. Moreover, to manipulate the embodied meaning of music, we used a different collative property of music that has been shown to affect stimulation potential. The background music in the target advertisement was performed in either a familiar (i.e., nonnovel) or a moderately novel style (Radocy and Boyle 1997), and we assessed perceptions of the advertised product, a bookstore, on two measures that tapped both background music versions' referential meanings. The use of a second, ancillary perception measure was valuable because, as we explain subsequently, it should reveal different treatment effects.

EXPERIMENT 2: OVERVIEW AND HYPOTHESES

We developed a target advertisement for a bookstore. It featured a song of strong classical heritage in the background. This song was performed either in a relatively nonnovel, classical style or in the moderately novel genre of soul music. Because a moderate level of novelty produces a higher level of stimulation than does a low level of novelty, the soulful version of the music should possess a more favorable embodied meaning than the nonnovel, classical version (Simonton 1987).

In addition, Cook (1998), a musicologist, offers insight into the referential meanings that are likely to be conferred by the two ad music renditions. In line with his analysis of a youth-targeted advertisement that parallels ours, Cook suggests that classical music should reference associations with a concerned and benevolent paternalistic figure (e.g., a well-meaning father), whereas the more contemporary and novel soulful music should reference youths' quintessential yearning to differentiate by adopting a unique but genuine identity. Because alternative styles of music served as a backdrop for our advertisement, these referential meanings might be ascribed to the bookstore. Specifically, when intensive processors receive verbal ad copy delivered in a less taxing lecture format, their perceptions of the bookstore should reflect the semantic overlap between the music's referential meaning and the queried bookstore dimension. Thus, if people must assess whether the bookstore has a caring atmosphere, the atmosphere should be perceived as more caring if the ad music style is classical and relays a referential meaning of high overlap with the notion of a caring atmosphere (i.e., benevolent paternalism) than if it is soulful and relays a low-overlap meaning (i.e., genuine uniqueness) or, alternatively, if no background music is present. However, if such people are asked to assess the originality of the bookstore's decor, they should perceive it as more original if the background music is soulful in style and relays a referential meaning of high semantic overlap with this dimension (i.e., genuine uniqueness) than if the music is classical and relays a low-overlap meaning (i.e., benevolent paternalism) or if no background music is present.

After participants listened to the target and filler advertisements, we assessed their perceptions of the target bookstore on the two preceding dimensions that reflected the music versions' referential meanings. Again, views of the bookstore's caring atmosphere should tap associations with the classical music's referential meaning of benevolent paternalism, whereas the secondary measure, the originality of the bookstore decor, should tap the relatively novel soulful music's referential meaning of genuine uniqueness.

On the basis of our theorizing, we anticipated a three-way interaction among processing intensity, ad message format, and background music on respondents' perceptions of the bookstore's caring atmosphere. Similar to Experiment 1, we expected nonintensive processors to be insensitive to either meaning of the muted background music and to display null effects. Conversely, intensive ad processors' perceptions should be sensitive to one of the two meanings of the ad music. They should base their perceptions of the bookstore's caring atmosphere on the music's referential meaning when the less-resource-demanding lecture format was presented, but they should base their perceptions on the background music's purely hedonic embodied meaning when the ad message is delivered in a more-resource-demanding drama format. Thus:

H_4: When the ad message is presented in a lecture format, intensive ad processors perceive the bookstore atmosphere as more caring when the background music is played in a classical style than when it is played in a soulful style or when no background music is present. However, when the ad message appears in a drama format, such processors perceive the atmosphere as more caring when the background music features more stimulating and thus more hedonically favorable (i.e., moderately novel) soulful music than when it features either classical music or no music. There are no treatment effects on nonintensive processors' perceptions.

The secondary measure, respondents' perceptions of the originality of the bookstore's decor, should reveal quite different outcomes. Here, we expect only a two-way interaction between processing intensity and ad background music. As we explain subsequently, this follows because a common pattern of outcomes should emerge regardless of whether intensive processors base their perceptions on the background music's referential or embodied meaning.

Specifically, unlike the classical music's referential meaning of benevolent paternalism, the relatively novel soulful music's referential meaning of genuine uniqueness should exhibit high semantic overlap with the notion of decor originality. Similarly, compared with the nonnovel classical music, the relatively novel soulful music's stimulation level and thus hedonic embodied meaning should also be more favorable and prompt more favorable perceptions of the originality of the decor. Thus, regardless of whether intensive processors base their product perceptions on the music's referential meaning (i.e., the lecture format condition) or on its embodied meaning (i.e., the drama format condition), they should perceive the bookstore's decor as more original when the ad background features the novel soulful music than when it features either the classical music or no background music. In contrast, nonintensive processors' product perceptions should be insensitive to variations in the muted background music. Thus:

H_5: Regardless of the ad message format, intensive processors' perceptions of the originality of the bookstore's decor are greater when the ad background features the soulful music than when it features either the classical music or no background music. However, nonintensive processors' perceptions should be insensitive to the background music.

As evidence of the process that underlies the preceding effects, we expected three-way interactions among processing intensity, ad format, and background music on respondents' thought and recall remarks that reflect each of the referential meanings imparted by the classical (i.e., benevolent paternalism) and the soulful (i.e., genuine uniqueness) background music versions. Nonintensive processors should be insensitive to the referential meanings of the background music, displaying an equal and relatively small number of such responses across treatments. However, intensive processors should be sensitive to the referential meanings of each background music execution and thus produce more responses for these meanings, provided that two conditions are met: (1) the ad message is delivered in a less-resource-demanding lecture format rather than the drama format and (2) the background music imparts a referential meaning that overlaps semantically with the particular concept that the type of response assesses. Thus:

H_6: When the ad message is delivered in a lecture format, intensive processors produce (a) more thoughts and recall remarks that reflect the referential concept of benevolent paternalism when the advertisement features classical music than when it features either soulful or no music and (b) more thoughts and recall remarks that reflect the concept of genuine uniqueness when the advertisement con-

tains soulful music than when it features either classical or no music. However, these differences are absent when the ad message is presented in a drama format and when respondents' processing is nonintensive.

We anticipated the same three-way interaction on net positive thoughts about the background music; we used this to tap respondents' sensitivity to the background music's simpler embodied meaning. Because people should use music's embodied meaning only when both their processing is intensive and the ad message is fairly demanding to process, treatment differences on net positive thoughts about the music should emerge only under such conditions. Thus:

H_7: When the advertisement is delivered in a drama format, intensive processors produce more net positive thoughts about the music when the background music is performed in a novel soulful way (producing the most favorable embodied meaning) than when it is performed in a nonnovel classical way or no music is present. However, such differences are absent when the advertisement is delivered in a lecture format and when processing is nonintensive.

Finally, given our logic that nonintensive processors base their product perceptions on peripheral, execution-related aspects of the ad message, we anticipated a main effect of processing intensity on respondents' thoughts about such peripheral characteristics of the advertisement. Thus:

H_8: Nonintensive processors produce more thoughts about peripheral, executional aspects of the ad message than do intensive processors.

Experiment 2

For Experiment 2, we recruited 109 undergraduates. It was similar to the previous study with the exception of four modifications: (1) We manipulated rather than measured the intensity of processing, (2) the target ad background featured a known song of classical heritage played in either a moderately novel (i.e., soulful) or a nonnovel (i.e., classical) style, (3) we used two product perception measures to tap each of the music versions' referential meanings, and (4) we added no-music control conditions.

Stimuli and manipulations. We manipulated respondents' intensity of processing. In the intensive-processing condition, we told respondents that they were part of a select group of people whose input about several radio advertisements would be used to help determine how the advertised products should be marketed. In the nonintensive-processing condition, we told respondents that they were part of a large group of people whose views might be considered for this purpose.

We used the same filler advertisements from Experiment 1, but we created a new target radio advertisement for a bookstore. The ad message discussed many of the bookstore's features, such as its books on topics ranging from careers to spirituality, book-reading events, classes, a cappuccino bar, and a Web site. The message was presented in a lecture and a drama format, both using nearly identically worded statements.

As in Experiment 1, a pretest verified that the bookstore ad message was more resource demanding to process when it was relayed in the drama format than when it was relayed in the lecture format, even though the two ad formats were equally involving. Specifically, 18 respondents reported comparable levels of involvement with the drama and lecture formats (mean = 5.37 and 5.07; $F < 1$), but they found the drama format to be more effortful to process (mean = 3.11 and 1.81; $F(1, 16) = 4.35$, $p < .05$).

The background of the target ad versions featured Bach's hymn *Jesu, Joy of Man's Desiring* at a constant low volume, but the executions of this song varied. In one case, the song was performed in a relatively conventional classical style (i.e., Walter Carlos, *Switched-On Bach*, Columbia, MS 7194, Side 1, No. 6). In the second case, it was performed in a relatively novel soulful style on a single acoustic guitar (i.e., Leo Kottke, *12 String Guitar*, Takoma Records, C-1024, Side 2, No. 2). In addition, we created a no-music control version of the advertisement in each format.

In a pretest, 35 respondents verified that, overall, familiarity with the background song was greater than it was for the song we used in Experiment 1 (mean = 3.83 and 1.88; $F(1, 81) = 23.86$, $p < .001$), and the classical execution of the song was more familiar than the soulful version (mean = 4.96 and 2.48, respectively, on the same seven-point scale we used in Experiment 1; $F(1, 30) = 12.11$, $p < .01$). The two song renditions also appeared to impart the expected referential meanings; respondents perceived the classical version as conveying benevolent paternalism (i.e., benign, at ease, and comforting; $\alpha = .71$; mean = 5.13 and 4.46; $F(1, 30) = 4.36$, $p < .05$) and the more novel soulful rendition as conveying genuine uniqueness (i.e., interesting, provocative, and "cool"; $\alpha = .73$; mean = 3.51 and 2.39; $F(1, 30) = 7.60$, $p < .01$). The two music executions also imparted the anticipated embodied meanings; the moderately novel soulful execution evoked more positive feelings than did the conventional classical execution (using Experiment 1 measures; mean = 4.14 and 3.48; $F(1, 30) = 5.40$, $p < .05$). Finally, a pretest that featured the ad message in one of the two formats and was accompanied by one of the background musical executions revealed that the executions were equally compatible with the message (overall mean = 4.27, $p > .22$).

Dependent measures. We used two product perception measures. To tap the classical background music's referential meaning of benevolent paternalism, we examined the bookstore's caring atmosphere by asking how likely it was that the sales staff behaved in a civilized versus pushy manner and was friendly. To tap the soulful background music's referential meaning of genuine uniqueness, we used an ancillary measure to inquire as to what extent the bookstore's decor was original and how likely it was that the decor was both fresh and offbeat. We assessed perceptions of these items on a scale ranging from 1 ("extremely unlikely") to 7 ("extremely likely"). We averaged the two items that examined each type of perception to form separate indexes for caring atmosphere ($\alpha = .79$) and original decor ($\alpha = .74$). We also administered thought-listing and recall measures.

Results

Because the order in which we administered the perception and thought-listing tasks revealed no significant interaction or main effects, we collapsed the data across this

variable and analyzed it by means of an analysis of variance as a 2 (processing intensity: intensive or nonintensive) ×2 (ad message format: lecture or drama) × 3 (background music: classical, soulful, or no music) between-subjects factorial design. Treatment means appear in Table 3, and all effects appear in Table 4.

Product perceptions. Perceptions of the bookstore's caring atmosphere revealed the expected interaction among processing intensity, ad message format, and ad background music ($F(2, 96) = 3.07$, $p < .05$). As Figure 4 shows, nonintensive processors' perceptions were insensitive to the background music, regardless of ad message format ($F < 1$). This was not the case for intensive processors. When intensive processors heard the ad message in the less demanding lecture format, they perceived the bookstore's caring atmosphere as greater when the ad background featured the classical music (i.e., with a high overlap referential meaning of benevolent paternalism) than when it featured the more novel soulful music (i.e., with a low-overlap referential meaning of genuine uniqueness; $F(1, 96) = 4.08$, $p < .05$) or no music ($F(1, 96) = 3.82$, $p < .05$). However, when they received the advertisement in a drama format, they perceived the atmosphere as more caring when the ad background featured the more stimulating and thus more favorably regarded soulful music than when it featured the classical music ($F(1, 96) = 4.20$, $p < .05$). Perceptions were equal in the soulful and no-music conditions ($p > .41$).

Next, we examined perceptions of the originality of the bookstore's decor on the ancillary measure. As we expected, only a two-way interaction between processing intensity and ad background music emerged ($F(2, 96) = 3.63$, $p < .05$). Intensive processors perceived the bookstore's decor as more original when the ad background featured the soulful music, which possessed both a more semantically consistent referential meaning (i.e., genuine uniqueness) and a more favorable embodied meaning (mean = 4.16), than when it featured the relatively inconsistent and less favorably regarded classical music (mean = 3.27; $F(1, 96) = 5.71$, $p < .05$) or no music (mean = 3.43; $F(1, 96) = 3.69$, $p < .05$). However, nonintensive processors perceived the bookstore's decor equally across all conditions ($ps > .13$).

Classification of open-ended responses. We classified thoughts and recall remarks according to the number that reflected the classical background music's referential meaning of benevolent paternalism (e.g., "a relaxing, comforting atmosphere") and the number that reflected the moderately novel soulful music's referential meaning of genuine uniqueness (e.g., "like Barnes & Noble but way more cool"; $\alpha = .70$ to $.82$). In addition, we categorized thoughts into valence categories that enabled the assessment of participants' net positive thoughts about the background music (i.e., to capture the music's embodied meaning) and a category that captured thoughts about peripheral, executional aspects of the verbal ad message ($\alpha = .92$ and $.93$).

Referential meaning indicators. Three-way interactions among processing intensity, ad message format, and background music emerged on the number of respondents' thoughts ($F(2, 96) = 7.51$, $p < .001$) and recall remarks ($F(2, 96) = 4.59$, $p < .01$) that reflected the classical background music's referential meaning of benevolent paternalism. As we anticipated, both nonintensive processors ($Fs < 1$) and intensive processors who received the ad message in the relatively resource-demanding drama format ($ps > .25$) generated equal quantities of such responses regardless of their treatment condition. However, when intensive processors received the ad message in a lecture format that imposed few demands, they produced more thoughts and recall remarks that pertained to the referential meaning of the classical background music when the music was executed in a classical style than when it was executed in a soulful style (thoughts: $F(1, 96) = 30.55$, $p < .001$; recall: $F(1, 96) = 24.02$, $p < .001$) or when no music was present (thoughts: $F(1, 96) = 20.04$, $p < .001$; recall: $F(1, 96) = 20.72$, $p < .001$).

Although the anticipated three-way interaction failed to emerge on both respondents' thoughts and their recall remarks for the relatively novel soulful music's referential meaning of genuine uniqueness ($ps > .17$), planned contrasts supported our predictions. Treatment effects neither emerged nor were expected on either measure for nonintensive processors ($Fs < 1$) or for intensive processors who received the ad message in a more-resource-demanding drama format ($ps > .21$). However, when intensive processors received the bookstore ad message in a lecture format, which imposed few demands on resources, they generated more thoughts and recall remarks that reflected a referential meaning of genuine uniqueness when the background music was performed in a relatively novel soulful style than when it was performed in a classical style (thoughts: $F(1, 96) = 22.36$, $p < .001$; recall: $F(1, 96) = 16.49$, $p < .001$) or when no music was present (thoughts: $F(1, 96) = 16.73$, $p < .001$; recall: $F(1, 96) = 14.54$, $p < .001$).

Embodied meaning and peripheral cue indicators. Although net positive thoughts about the background music, which we used to tap respondents' sensitivity to the music's embodied meaning, failed to reveal any effects ($ps > .25$), planned contrasts largely supported our predictions. They suggested that when the ad message was presented in the more-resource-demanding drama format, intensive processors were indeed sensitive to the background music's embodied meaning. Specifically, intensive processors in this condition produced more net positive thoughts about the music when the ad background music was performed in a novel soulful style than when it was performed in a nonnovel classical style ($F(1, 96) = 5.29$, $p < .05$) or when no music was present ($F(1, 96) = 3.48$, $p < .10$). Treatment effects neither emerged nor were expected among nonintensive processors ($ps > .22$) or for intensive processors who received the message in the less demanding lecture format ($ps > .22$).

Finally, respondents' thoughts about peripheral, executional aspects of the ad message revealed only the anticipated main effect of processing intensity ($F(1, 96) = 4.16$, $p < .05$). Nonintensive ad processors produced more such thoughts (mean = 1.98) than did intensive ad processors (mean = 1.44), suggesting that the former used inferences associated with such aspects of the ad message to form their product perceptions.

GENERAL DISCUSSION

The findings from both studies support the view that ad background music can confer either referential or embodied meanings Which, if either, meaning people discern and use when forming their product perceptions appears to depend

Table 3

TREATMENT MEANS FOR EXPERIMENT 2

	Nonintensive Processing						*Intensive Processing*					
	Lecture			*Drama*			*Lecture*			*Drama*		
	Soulful Music	*Classical Music*	*No Music*	*Soulful Music*	*Classical Music*	*No Music*	*Soulful Music*	*Classical Music*	*No Music*	*Soulful Music*	*Classical Music*	*No Music*
Perceptions of a caring atmosphere	5.35^{a}	4.97^{a}	5.20^{a}	4.91^{a}	4.80^{a}	5.18^{a}	4.51^{ac}	5.59^{b}	4.63^{ac}	4.62^{bc}	3.53^{a}	5.06^{bc}
Perceptions of original decor	3.03^{a}	3.35^{a}	4.10^{a}	3.67^{a}	3.81^{a}	3.77^{a}	3.66^{ab}	3.16^{a}	3.39^{a}	4.67^{b}	3.38^{a}	3.47^{a}
Thoughts about referential meaning of soulful music	1.22^{a}	1.00^{a}	$.50^{a}$	$.70^{a}$	1.22^{a}	$.50^{a}$	2.20^{a}	$.00^{c}$	$.25^{bc}$	1.09^{b}	$.63^{bc}$	$.50^{bc}$
Recall remarks about referential meaning of soulful music	$.77^{ab}$	$.84^{ab}$	$.20^{a}$	$.70^{ab}$	1.18^{b}	$.88^{ab}$	2.07^{a}	$.31^{b}$	$.37^{b}$	$.52^{b}$	$.80^{b}$	$.50^{b}$
Thoughts about referential meaning of classical music	1.57^{a}	1.34^{ab}	1.08^{ab}	$.31^{b}$	$.67^{ab}$	$.33^{ab}$	$.10^{a}$	3.48^{b}	$.63^{ac}$	1.40^{c}	$.73^{ac}$	1.00^{ac}
Recall remarks about referential meaning of classical music	1.54^{a}	$.88^{ab}$	1.04^{ab}	1.19^{ab}	$.43^{b}$	$.87^{ab}$	$.80^{a}$	3.18^{b}	$.87^{a}$	1.42^{a}	1.14^{a}	1.75^{a}
Thoughts about executional aspects of verbal message	1.24^{a}	2.12^{ab}	2.34^{ab}	1.91^{ab}	2.67^{b}	1.63^{ab}	1.10^{a}	$.93^{a}$	1.38^{ab}	1.86^{ab}	1.11^{ab}	2.52^{b}
Net positive thoughts about background music	$.36^{a}$	$-.40^{a}$	$-.02^{a}$	$.22^{a}$	$-.17^{a}$	$.06^{a}$	$-.05^{b}$	$-.44^{b}$	$.30^{ab}$	$.77^{a}$	$-.16^{b}$	$.01^{ab}$
Cell size	9	9	8	10	9	10	10	9	8	11	8	8

Notes: Within a processing-intensity condition, means within the same row that do not share a common superscript differ at $p < .05$.

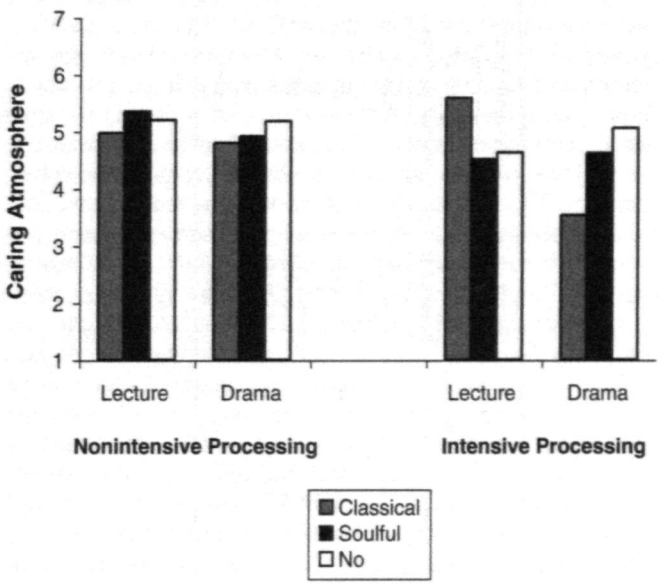
Table 4

F VALUES FOR ALL EFFECTS IN EXPERIMENT 2

	Caring Atmosphere	*Original Decor*	*Thoughts About Referential Meaning of Soulful Music*	*Recall About Referential Meaning of Soulful Music*	*Thoughts About Referential Meaning of Classical Music*	*Recall about Referential Meaning of Classical Music*	*Thoughts About Executional Aspects of Verbal Message*	*Net Positive Thoughts About Music*
Processing intensity	3.40	.00	.17	.00	1.80	7.01**	4.16*	.14
Message format	2.61	2.32	.21	.00	6.12*	1.56	2.13	.85
Music	.56	.84	7.28**	2.89	3.92*	.61	.66	4.64**
Processing intensity × message format	.44	.17	.00	2.98	1.11	.12	.65	.39
Processing intensity × music	.12	3.63*	4.87**	2.77	2.19	6.26**	2.18	.07
Message format × music	3.07*	1.55	3.95*	5.38**	4.63**	6.02**	.47	.60
Processing intensity × message format × music	3.26*	.22	.67	1.82	7.51**	4.59**	1.17	1.41
Overall model	1.84*	2.16*	2.91**	2.33**	3.94**	4.32**	1.81*	3.51**

*$p < .05$.
**$p < .01$.

Figure 4
EXPERIMENT 2: EFFECT OF PROCESSING INTENSITY, MESSAGE FORMAT, AND BACKGROUND MUSIC ON PERCEPTIONS OF A CARING ATMOSPHERE



on how intensively they process the advertisement and the resource demands imposed by the verbal ad material. When the advertisement is processed nonintensively, recipients appeared to be insensitive to either meaning imparted by the background music. Instead, they seemed to base their perceptions on peripheral, executional aspects of the ad message that presumably were more salient and accessible than was the ad music.

Conversely, when recipients processed the advertisement intensively, they appeared to discern and use one of the two meanings imparted by the music: When the ad message was delivered in a lecture format that imposed minimal demands on their resources, these respondents' product perceptions, cognitions, and recall reflected the background music's referential meaning, which was rather taxing to discern. However, when the message was delivered in a more-resource-demanding drama format, their responses reflected the use of the background music's less onerous embodied meaning. Not only did these outcomes occur even though both ad message formats relayed virtually identical information, but the findings also were reliable across two studies that used different products, alternative types of background music, and several different measures.

This research makes several important theoretical contributions. First, it appears to explain why people often experience a positive, hedonic feeling about certain forms of music, even if such music is entirely devoid of any associated referential meaning. These hedonic feelings arise from the music's embodied meaning, which reflects the degree of stimulation elicited by patterns inherent to the musical sound (e.g., its energetic versus sedate properties, moderately novel versus conventional style). As previous research in music and other domains suggests, a nonmonotonic relationship ensues between the amount of stimulation a stimulus (e.g., music) engenders and people's hedonic response to that stimulus.

Second, this research confirms music theorists' claim that music can impart both purely hedonic embodied meaning and semantic-laden referential meaning (e.g., Meyer 1960). More important, however, our work suggests a way to disentangle which of these meanings people actually use in a given circumstance. We show that this can be accomplished by assessing carefully selected perceptions for which the referential and embodied meanings of alternative musical selections imply opposing inferences.

Third, this work addresses when and why people's perceptions of products that are promoted in music-infused advertisements can be sensitive to either (or neither) of the meanings imparted by the background music. Which, if either, meaning influences people's perceptions appears to depend on how intensively they process various ad components (e.g., the advertisement's central message content, its background music) and the resource demands imposed by these components. If people expend scant resources processing an advertisement nonintensively, they are likely to be insensitive to either meaning imparted by the music. However, when they process the advertisement intensively, the music's referential meaning is likely to be discerned and used if the central components of the advertisement require few resources to process, thus enabling people to devote ample resources to the music's fairly onerous referential meaning. Conversely, the music's simpler embodied meaning is apt to be discerned and used if the advertisement's central components are demanding to process, because this limits the available resources that might otherwise be directed to the background music's referential meaning (for further clarification of the process, see Figure 2). Thus, it appears that, similar to verbal information, the types of meaning extracted from music can vary depending on how intensively the data are processed.

Our findings offer valuable and practical insights. They suggest that before selecting background music for an advertisement, practitioners should consider both whether the targeted consumers are likely to process the advertisement intensively and whether the goal is for such music to convey to consumers a simple, hedonically positive embodied meaning or a descriptive referential meaning. If the target audience is expected to process the advertisement nonintensively, the choice of which background music to use is far less critical than are decisions related to the advertisement's more salient executional characteristics (e.g., the vocal expressiveness of ad announcers). However, if the targeted audience is expected to process the advertisement intensively, marketers must skillfully orchestrate the resource demands that are imposed by the ad message and the properties of the background music that engender the music's desired embodied meaning (e.g., the music's stimulating or sedate execution, novel or nonnovel style) or referential meaning (e.g., the semantic associations elicited by the melody). If the goal for the background music is to relay a favorable embodied meaning, the verbal ad message should be presented in a fairly resource-demanding way (e.g., a drama format) and the music should be performed in a moderately energetic or novel style (versus a sedate or nonnovel style). However, if the goal for the music is to

relay a particular referential meaning, perhaps one that complements the product positioning, the verbal message should be presented in a less-resource-demanding way (e.g., a lecture format), and alternative renditions of music should be assessed to ascertain empirically which rendition best relays the desired conceptual meaning.

Nonetheless, the current research possesses certain limitations that preclude answers to important questions. Some of these issues are related to our proposed underlying mechanisms. For example, during resource-demanding conditions, were intensive processors insensitive to the background music's referential meaning because discerning this meaning was too onerous or because applying it to perceptions was too burdensome? Would nonintensive processors have used the music's embodied meaning had the background music simply been louder and thus more accessible? Would the hedonic favorableness of our background music have been altered if ad recipients had been exposed to the advertisements repeatedly? Under what conditions does music serve as a central versus a peripheral cue? Were the meanings of the background music we used discerned during ad encoding or when retrieval processes were prompted by queries about respondents' product perceptions?

Other limitations of our work reflect practical issues that were not examined. For example, will our findings generalize to advertisements presented in pictorially rich (e.g., television, Web) contexts? Two possibilities seem plausible here: (1) Null effects will emerge because visually rich contexts might overwhelm the influence of music, or (2) outcomes will differ because the resources devoted to inferring the types of meaning of the background music will be unaffected by those required to process the visual data, because these two types of stimuli draw on different resource pools dedicated to visual or auditory modalities (Tavassoli 1998). Finally, it is uncertain whether differences in peoples' preferences for particular modalities of information (e.g., visual, verbal, auditory) moderate the outcomes reported in this research. These and many other critical questions must await future inquiry.

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