

several collative or structural properties of music (e.g., tempo, pitch, and volume) were asked to assess the travel agency's provision of

likely to co-occur 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

various ad elements.

First, consider the two background music meanings. Much research suggests that discerning and applying music's embodied versus contextual meanings demands

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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

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

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. The dependent measure was recipients' perceptions of the travel agency's dependable, hassle-free service. 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) than the energetic execution, which 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 taking 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

ever, 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

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

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



The diagram illustrates the determinants and aspects of ad components used in forming perceptions. It is structured as follows:

- Determinants**
 - Cultural**
 - Values
 - Attitudes
 - Sociodemographic**
 - Age
 - Gender
 - Income
 - Education
- Aspects**
 - Visual**
 - Color
 - Image
 - Layout
 - Verbal**
 - Text
 - Sound
 - Audio**
 - Music
 - Voice

in a sedate way. To assess the two music executions' embodied and referential meanings, 40 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)

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

lous ($\alpha = .77$; 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

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

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Results

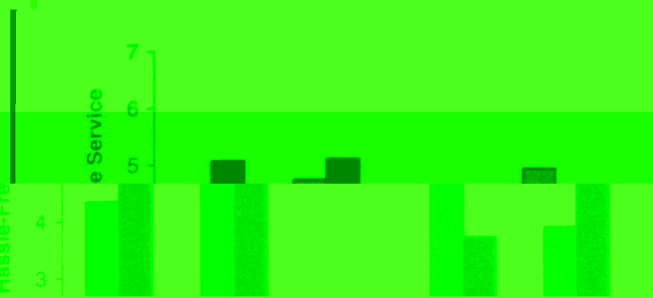
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Net Positive Thoughts About Music
.48
.27
1.24
.24
.12
2.25
.02
.82

Drama Music	Sedate Music
3.90 ^a	.50 ^b
.80 ^a	.60 ^a
.50 ^a	1.80 ^a
10	



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-

tapped embodied meaning's referential meaning ($z = 1.24$). Nonetheless, planned contrasts supported our hypotheses on both measures. No treatment effects emerged on either measure when respondents' NFC was low ($F = 0.1$) or when it was high and the ad message was presented in the more resource-demanding dramatic format ($z = 1.70$). However,

we observed a significant ($F = 2.0011$) and recall remains ($F = 16.05$, $p < .001$) 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

on either measure. This may be due to the use of a 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 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

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EXPERIMENT 2: OVERVIEW AND HYPOTHESES

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intensive processors receive verbal ad copy delivered in a

background music's referential or embodied meaning.

ment 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

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 reception and thus produce more responses for these meanings, provided that two conditions are met: (1) the ad message is delivered in a high-resource-demanding format, and (2) the music is

trains 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:

- H₇ When the advertisement is delivered in a drama format, intensive processors produce more net positive thoughts about the music when the background music is soulful than

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.

variable and analyzed it by means of an analysis of variance as a 2 (processing intensity: intensive or nonintensive) \times 2 (ad message format: lecture or drama) \times 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 book

the relatively resource-demanding drama format ($p_s > .25$) 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

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
soulful music	5.35 ^b	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	5.05 ^{bc}
soulful music	3.03 ^a	3.35 ^b	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
classical music	1.22 ^a	1.00 ^b	.50 ^b	.70 ^b	1.22 ^a	.50 ^b	2.20 ^a	.00 ^c	.25 ^{bc}	1.09 ^{bc}	.63 ^{bc}	.50 ^{bc}
message	.77 ^{ab}	.84 ^{ab}	.20 ^b	.70 ^{ab}	1.18 ^b	.88 ^{ab}	2.07 ^a	.31 ^b	.37 ^b	.52 ^b	.80 ^b	.50 ^b
classical music	1.57 ^a	1.34 ^{ab}	1.08 ^{ab}	.31 ^b	.67 ^{ab}	.33 ^{ab}	.16 ^a	3.48 ^b	.63 ^{ac}	1.40 ^c	.73 ^{ac}	1.05 ^{ac}
message	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
classical music	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
message	.36 ^a	-.40 ^a	-.02 ^a	.22 ^a	-.17 ^a	.06 ^a	-.05 ^b	-.44 ^b	.30 ^{ab}	.77 ^a	-.16 ^b	.01 ^{ab}
	9	9	8	10	9	10	10	9	8	11	8	8

Mean, 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	Thoughts About Referential Meaning of Soulful Music			Thoughts About Referential Meaning of Classical Music			Thoughts About Executional Aspects of Verbal Message			Net Positive Thoughts About Music
	Original Decor	Recall of Soulful Music	Recall of Classical Music	Recall of Soulful Music	Recall of Classical Music	Recall of Classical Music	Recall of Soulful Music	Recall of Classical Music	Recall of Classical Music	
3.40	.00	.17	.00	1.80	7.01**	4.16*	4.16*	2.13	.14	
2.61	2.32	.21	.00	6.12*	1.56	2.13	2.13	.66	.85	
.56	.84	7.28**	2.89	3.92*	.61	.65	.65	.39	4.64**	
.44	.17	.00	2.98	1.11	.12	2.18	2.18	.07	.60	
1.2	3.63*	4.87**	2.77	2.19	6.26**	.47	.47	.60	.60	
3.07*	1.55	3.95*	5.38**	4.63**	6.02**	1.17	1.17	1.41	1.41	
3.26*	.22	.67	1.82	7.51**	4.59**	1.81*	1.81*	1.41	1.41	
1.84*	2.16*	2.91**	2.33**	3.94**	4.32**	1.81*	1.81*	1.41	3.51**	

Figure 4

EXPERIMENT 2: EFFECT OF PROCESSING INTENSITY



lus (e.g., music) engenders and people's hedonic response

to that stimulus. The results of this experiment are consistent with the idea that the relationship between music and source is mediated by the hedonic response to the music. When the music is processed intensively, the hedonic response to the music is likely to be stronger, and the relationship between music and source is likely to be stronger. When the music is processed less intensively, the hedonic response to the music is likely to be weaker, and the relationship between music and source is likely to be weaker. The results of this experiment are consistent with the idea that the relationship between music and source is mediated by the hedonic response to the music. When the music is processed intensively, the hedonic response to the music is likely to be stronger, and the relationship between music and source is likely to be stronger. When the music is processed less intensively, the hedonic response to the music is likely to be weaker, and the relationship between music and source is likely to be weaker.

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