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ABSTRACT

To account for cognitive and affective responses to popular music, a pilot study used an information processing model to show that affect results largely from the activation of affect-laden schemas by the music stimulus. Subjects, 196 students from an introductory course in interpersonal communication at a medium-sized university, listened to a tape of music (consisting of six songs which were expected to be familiar and six which were not) in a private listening booth, and then completed a questionnaire. Factor analysis was used to derive two dimensions of music sophistication (participation and involvement), which, along with song familiarity, were expected to relate to thoughts and feelings generated by the song segment. Findings indicated: (1) that music involvement was positively related to the number of subject thoughts for unfamiliar songs; and (2) some support for schematic processing of music. (Eleven tables of data are included, and 25 references are appended.) (MS)

Schema-Triggered Cognitive and Affective Response to Music: Applying An Information-Processing Model to Rock 'N' Roll

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Running head: SCHEMA-TRIGGERED AFFECTIVE RESPONSE TO MUSIC

Abstract

This study uses an information processing model to attempt to account for cognitive and affective responses to popular music. Affect is argued to result largely from the activation of affect-laden schemas by the music stimulus. In a quasi-experiment, subjects were played a one minute segment of music that was either a familiar hit or an unfamiliar song. Factor analysis was used to derive two dimensions of music sophistication (participation and involvement), which, along with song familiarity, were expected to relate to thoughts and feelings generated by the song segment. Music involvement was found to relate positively to the number of subject thoughts for unfamiliar songs. Other results were mixed, but some support was found for schematic processing of music. Alternate tests adduced some support hypotheses not supported in the primary tests. A more testable typology of cognitive structures and processes is needed for studies employing the information processing model.

Schema-Triggered Cognitive and Affective Response to Music: Applying An Information-Processing Model to Rock 'N' Roll

Popular music has been the subject of scholarly study for at least the past four decades. In the past 20 years, attention has focused on the effects (or lack thereof) of rock music. By nature of its endurance and almost universal appeal to youth, rock has come under great scrutiny. Typical of many studies is a socio-cultural approach that examines the role of popular music as a cultural artifact (Frith, 1981; Rosenberg, 1976). Another group of studies has examined how music preference influences and is influenced by attitudes (Whan, 1957-58; Ruffner, 1972-73; Toohey, 1982). Still other studies have adopted a uses and gratifications approach to the study of popular music consumption (Larson Kubey, 1983; Roe, 1985).

In the communication field, the verbal content of popular music -- song lyrics -- has received the most attention (Rosenbaum Prinsky, 1987; Carey, 1969; Cole, 1971; Hyden, 1983; Santiago, 1969). Some researchers have since concluded that the effect of song lyrics cannot be assessed apart from the music, and that any study that does not treat the entire music listening experience (including personal and situational factors) as an indivisible unit of analysis is likely not to be fruitful (Desmond, 1987).

Past studies into the specific affective response to music can be organized around two major themes: those that have sought to account for emotional responses as a product of configurations of musical attributes like tone, pitch and tempo (Helmholtz,

1877; Hevner, 1935; Meyer, 1956), and those which have focused disproportionately on the role of the semantic content of song lyrics in influencing attitude and behavior. The former leave cognition out of the process (or at least fail to account for its role), while the latter can offer no account of affective responses to music that may have a non-semantic origin. This paper will attempt to provide an explanation of how music may be processed while accounting for both the cognitive and the affective dimensions.

Background

Studies of rock music effects have repeatedly failed to find consistent effects across groups, or even across individuals within groups. For this reason, the most productive approach to the response to music is likely to be one that takes into account the many personal and situational variables that mediate the processing of music, and provide for a variety of possible outcomes. Information processing theory provides such a perspective.

Information processing theory specifies and elaborates the sequential stages intervening between the registering of a stimulus and its ultimate utilization. One concept that has proven particularly useful in studying how information is processed is the schema, first used in a modern context by Bartlett (1932) and defined generally as " a cognitive structure that represents organized knowledge about a given concept or type of stimulus" (Fiske Taylor, 1984, p. 140).

Schemas have been shown to influence the processing of

information. Schemas aid the recall of information that is consistent with the schema (Hastie, 1981). Confidence of recognition is greater for schema-consistent information than for schema-inconsistent information (Cantor Mischel, 1979). Schemas can cause the mistaken "recall" of information that is consistent with the schema but was, in fact, never presented (Bower, Black, Turner, 1979).

Since music can be regarded as a form of information, it can be seen how schematic processing might influence the cognitive response to music. Configurations of musical attributes that represent a close match to an existing schema will activate that schema and make it available for further processing. What remains to be considered is whether and how schematic processing might be implicated in the affective response to music.

Schachter and Singer (1962) demonstrated that two elements are necessary for the experience of emotion, or affect: physiological arousal and cognitive evaluation. Environmental stimuli fit to a schema have been shown to receive the affect stored with the schema (Fiske, 1982). Arousal linked with a schema is cued by its activation and is re-experienced as "autonomic imagery," a perception of arousal when its physiological correlates are absent (Mandler, 1984). Because the imagery can activate both a perception of arousal and a cognitive evaluation, when triggered, it can provide a complete emotional experience rather than simply disassociated arousal.

Rationale

The cognitive evaluation associated with the schemas that

are activated in listening to music, then, is argued here to combine significantly with autonomic imagery and other sources of arousal to produce an emotional response. To the extent that a particular schema is able to be fit to a piece of music, the music will cue the affect associated with that schema. The nature of the stored affect (glee, anger, sadness, etc.) will determine the quality of the resulting emotion, while the degree of arousal will determine its intensity.

Certainly one factor that must limit the manner in which any environmental data is processed is what schemas are available to be activated. Persons with well-developed, highly differentiated music schemas are likely to use those schemas to process music to which they have not been previously exposed. Their affective responses should be largely a function of the fitting of the music to those schemas. For persons with simple music schemas, unfamiliar music should trigger less processing, using fewer and simpler cognitive and affective structures. Similarly, persons who use non-music information to process music -- the name of the group, their appearance, who likes and who dislikes them -- should have fewer cognitive and affective responses when exposed to unfamiliar music without that contextual information.

H1: Less music-sophisticated subjects should report fewer thoughts and feelings than music-sophisticated subjects do about unfamiliar music.

Persons with simple music schemas should be less able to process unfamiliar music than persons with well-developed music schemas, since fewer cognitive structures (with their associated

affect) are available for them to access.

H2: Music-sophisticated subjects should make more reference to specific music elements in thoughts and feelings than less music-sophisticated subjects do.

Processing by persons with well-developed music schemas should refer more to specific music elements (as opposed to other, non-musical, aspects of the listening experience) than processing by persons with poorly developed music schemas.

H3: More thoughts and feelings that do not refer specifically to the stimulus event should be reported for familiar music than for unfamiliar music.

Since an experience base has been established for familiar music, its processing should access more cognitive structures not directly connected to the song stimulus than the processing of unfamiliar music, which should primarily be involved with identifying and classifying the song stimulus by fitting its perceived attributes to existing schemas.

H4: The ratio of thoughts and feelings that make reference to the stimulus event over those that do not make such reference should be greater for music-sophisticated subjects than for less music-sophisticated subjects.

Persons with well-developed music schemas are more likely to process music using specific cues in the listening experience itself, since they possess cognitive structures to which those cues can be fit. Persons with poorly developed music schemas lack those structures, and so are less likely to attend to specific experiential cues when processing music.

The concept "music sophistication" is introduced here as a means of accounting for the availability of schemas for the processing of unfamiliar music. As used in this study, music sophistication is defined as evidence of knowledge and behaviors that would indicate the possession of relatively many and complex mental structures containing primarily musical information.

To summarize, the cognitive response to music is argued here to result from the activation and use in subsequent processing of schematic information structures to which the perceived attributes of the music offer a configural match. The affective response results largely from the fitting of the music to an affect-laden schema(s). If this explanation is correct, familiar music should trigger more cognitive processing and affective response than unfamiliar music. Affective response to familiar music should reflect (come from) the activation of music-based schemas in musically sophisticated processors, and from the activation of non-music based schemas in musically unsophisticated processors.

METHOD

Pilot Study

A pilot study was conducted (1) to test a variety of questions about music involvement, consumption and education for possible inclusion in a music sophistication scale, and (2) to determine what length music segment should be used in the full study. Because of the fluidity of schema structures, theory suggested that the best time to measure the schemas activated by a particular stimulus is soon after its introduction, when

environmental attention is still high, and before cognitive processing has a chance to "bury" those schemas too deeply under (and in) subsequent ones. An exposure of one minute was found to be the briefest segment that would still yield a sufficient number of responses for analysis.

Subjects

Subjects were recruited from an introductory course in interpersonal communication at a medium-sized university, and were offered extra credit for participating in the study. The total number of students participating was 199, of which two did not complete enough of the questionnaire to be used, leaving a final N of 196. The sample included 108 females and 88 males, 145 whites and 51 non-whites, and had a mean age of 22 (though 62 percent of the sample was age 18-20).

Design and Procedure

Subjects reported to the college media lab at pre-appointed times during a two-week period. After obtaining a cassette tape and a questionnaire from the attendant, subjects listened to the tape in a private listening booth, and then completed the questionnaire. Each subject listened to a one-minute segment of a single song. The songs were rotated so that every twelfth subject heard the same song, and every other subject heard a song with the same familiarity status (familiar or unfamiliar).

Twelve songs were used in the study: six songs that had been #1 on the Billboard pop record chart at some point in the previous twelve months and were expected to be familiar to subjects, and six songs selected to be in the pop/rock music

style, but which had not received appreciable public exposure and which subjects were expected not to have heard.

Insert Table 1 about here

As a quasi-experiment, this study measured song familiarity as a manipulation check. Subjects were asked whether they had heard the song before, with responses ranging on a four-level scale from "Yes, I'm sure I have" (1) to "No, I'm sure I have NOT heard it" (4). Familiarity means are given in Table 1. As a group, the "familiar" songs differed significantly from the "unfamiliar" songs on this measure ($F=634.46$, $p.<.01$). As an additional check, a Scheffe test was performed on all pairs of songs using the familiarity measure. At the .05 level, all possible pairs of one "familiar" song with one "unfamiliar" song were significantly different in familiarity, but no "familiar" song was significantly different from any other "familiar" song. Similarly, no "unfamiliar" song was significantly different from any other "unfamiliar" song, with one exception: Song 8 was significantly different from Song 12.

After playing the song segment, subjects were instructed to write down all the thoughts that had come to mind while listening to the music, and what might have brought that thought to mind. They were instructed to list all the feelings they felt while listening, and if possible, to give the source of the feeling. To control for a possible order effect, half of the subjects (every other one) gave thoughts before feelings; the other half

gave feelings before thoughts. A third open-ended response section asked subjects to give all the reasons they liked or disliked the piece.

The open-ended responses for thoughts and feelings were content-analyzed. For the thought section, each listed "thought" combined with its paired "what brought thought to mind" was treated as a single response unit. For the feeling section, each "feeling" combined with its paired "possible reason for feeling" was treated as a single response unit. Each response unit was coded into one of two mutually exclusive categories:

Stimulus event referred to: Response unit contains explicit or readily implied reference to the song or the testing situation (listening booth, equipment, lab personnel — anything about the immediate listening experience). Pronouns (like "it") are sufficient reference.

Stimulus event not referred to: Response unit contains no explicit or readily implied reference to the song or the testing situation (as defined above).

In addition, each response unit for thoughts, feelings, and reasons why song was liked/disliked was coded into the following category, if applicable:

Reference to specific music elements: Makes at least one reference to a particular (named) musical or sound element of the song. Includes voice, vocals and singing, but excludes reference only to lyrics. General or vague references to the song as a whole are excluded; specific element/s of the song must be named.

In addition to the open-ended items, the questionnaire included a series of Likert items designed to measure the occurrence of specific kinds of thoughts that may or may not have been mentioned by subjects in the open-ended responses, including thoughts about rhythm, melody, lyrics, the song's video, other musical artists, mental imagery, past memories, and friends. Finally, subjects answered the items pertaining to music involvement, consumption and education.

RESULTS

Three trained coders applied the open-ended response categories to a 15 percent sample of randomly chosen questionnaires. Reliability estimates presented in Table 2 were computed using Krippendorff's (1980) method for measuring agreement in content analysis. This method was chosen because it yields a coefficient that represents the probability of coder agreement above chance levels, which can vary depending on the natural occurrence of the category being coded.

Insert Table 2 about here

The questionnaire items relating to music involvement, consumption and education were submitted to principal components factor analysis and varimax rotation. The factor analysis of the music items is presented in Table 3. Five variables not listed were eliminated during the course of analysis either because of low communalities (less than 0.2) or conceptual duplication of other variables.

Insert Table 3 about here

A two-factor solution for the music involvement, consumption and education items was derived after considering factor eigenvalues, scree plots, and factor interpretability. From their highest loading variables, the first derived factor might be labeled a music Participation factor, and the second might be labeled a music Involvement factor. Two variables double-loaded: "number of concerts attended" and "how often read about music." Both of these were the lowest loading variables on their primary factors, and their double loading was judged not to be a concern.

Before testing hypotheses, means of the open-ended responses were examined. As described earlier, response categories were alternated to test for a possible order effect: after listening to the music segment, half of the subjects listed thoughts before feelings, the other half listed feelings before thoughts. Persons who listed thoughts before feelings listed significantly more thoughts ($M=5.9$) than those who listed thoughts second ($M=4.6$, $F=14.93$, $p.<.01$). Because of this primacy effect, it was decided to include response order as a variable in the analyses involving thoughts and feelings.

Hypothesis One, which predicted that less music-sophisticated subjects should report fewer thoughts and feelings than music-sophisticated subjects do about unfamiliar music, was tested using hierarchical regression. This test related the total number of thoughts (Table 4) and total feelings

(Table 5) to the two music sophistication factors for the half of the sample that listened to "unfamiliar" songs. The order variable was entered into the equation first to remove any variance for which it might have been responsible.

Insert tables 4 5 about here

The regression for number of thoughts listed in Table 4 show a significant effect for order: subjects who listed thoughts before feelings (low value on "order") had more thoughts than those who listed feelings before thoughts. Additionally, there is a significant ($p.<.01$) amount of variance in the number of thoughts listed accounted for by the score on the music factors (specifically, the Involvement factor) for subjects who heard unfamiliar music, in the direction predicted. No such relationships exists for the familiar music condition, or for the combined sample.

Table 5 shows that neither the order variable nor the music factors account for significant variance in the number of feelings listed. Hypothesis One is supported for thoughts, but not supported for feelings.

Hypothesis Two, which predicted that music-sophisticated subjects should make more reference to specific music elements in thoughts and feelings than less music-sophisticated subjects do, was also tested in a regression equation to relate reference to specific music elements in thoughts and feelings to the two music sophistication factors.

Insert tables 6 7 about here

Table 6 shows that the order variable accounted for significant variance in the dependent variable for thoughts; i.e., people who listed thoughts first made more references to specific music elements in their thoughts. It is likely that this effect is simply a consequence of the fact that people who listed thoughts first listed more of them, and some of those "extra" thoughts referred to specific music elements. Additionally, Table 6 shows that people who listened to the "unfamiliar" songs made significantly more references to specific music elements in their thoughts than people who heard "familiar" songs. But Tables 6 and 7 show that neither music factor accounts for significant variance in references to specific music elements in thoughts or feelings.

For purposes of comparison, the same analysis was performed using the third section of open-ended responses: reasons given for liking or disliking the song. The order variable was not included in this analysis because subjects using both forms responded to this section at the same point in the questionnaire. Results of this regression presented in Table 8 show that the effects that were predicted for thoughts and feelings were found instead for reasons given why the song was liked or disliked.

Insert Table 8 about here

Hypothesis Three predicted that more thoughts and feelings that do not refer specifically to the stimulus event should be reported for familiar music than for unfamiliar music.

A series of ANOVAS was run to test Hypothesis Three. For the dependent variable, various representations of reference to the stimulus event were tested, including: total number of thoughts referring to stimulus event, total number of thoughts not referring to stimulus event, total number of feelings referring to stimulus event, total number of feelings not referring to stimulus event, proportion of references to stimulus event over non-references to stimulus event for thoughts and for feelings. The intention was to examine any variable that reflected some aspect of reference to stimulus and/or non-reference to stimulus.

Independent variables for the ANOVAS were (1) whether the song was familiar or unfamiliar, and (2) whether the subject listed thoughts first or feelings first.

In a series of ANOVAS, a main effect for order was occasionally found, but no significant main effects or interactions involving familiarity were found on any of the representations of stimulus-reference tried as dependent variables. These tests did not adduce support for this hypothesis.

In order to provide an alternative test, an additional operationalization of cognitive processing was developed. It was mentioned previously that subjects were also asked to respond to a series of Likert items designed to measure how much during the

song they thought about friends, the song's melody, past memories, mental images, other artists, the song's rhythm, the song's lyrics, and the song's video. Those items were specifically included in the event that the coding of subjects' open-ended responses did not yield reliable and conceptually useful categories. Responses to those eight items were submitted to principal components factor analysis, the results of which are presented in Table 9.

Insert Table 9 about here

After considering scree plots, factor eigenvalues and interpretability of several solutions, a two-factor solution was accepted. The first factor contained thoughts about rhythm and melody, and might be labeled a "music focus" factor. The other factor had thoughts about memories from the past as its highest loading variable, followed by thoughts about the song's lyrics loaded negatively, followed by thoughts about friends, followed by thoughts of other musical artists, also loaded negatively. This factor might be labeled an "experience focus" factor.

It can be seen how these two factors might be better indices of cognitive processing than the "reference to stimulus event" variables. A high score on the music focus scale would indicate processing that accessed music schemas. A high score on the experience focus scale would indicate processing that activated memory and familiar person schemas, while not activating schemas involving lyrics or other musical artists.

Since familiar songs have a potential base of experiential schemas to which they may be cognitively linked, this hypothesis would predict the experience focus factor score to be higher for familiar songs than for unfamiliar ones. It would also predict the music focus score to be higher for unfamiliar songs than for familiar ones, since the lack of other (experiential) schemas connecting to music one has not heard before would leave few cognitive structures available to access in the course of processing except those that involve specific music attributes. These two predictions are tested by the ANOVAS in tables 10 and 11.

Insert Tables 10 11 about here

The order variable was not included in this analysis because the Likert items were answered after the sections where the two forms differed. As predicted, familiarity had a significant main effect on the experience focus ($F=14.34$, $p.<.01$) and the music focus ($F=5.30$, $p.<.05$) factor scores, both in the specified direction. The post hoc nature of this analysis disqualifies it as a true hypothesis test, though its outcome may be heuristic.

Finally, Hypothesis Four predicted that the ratio of thoughts and feelings which make reference to the stimulus event to those which do not make such reference should be greater for music- sophisticated subjects than for less music-sophisticated subjects.

Hierarchical regression was used to relate the percentage of

thoughts making reference to the stimulus and the percentage of feelings making reference to the stimulus to the two music sophistication factors. Once again, the order variable was entered into the equation first to remove any variance for which it might have been responsible. The two music sophistication factors were entered simultaneously in the second block, and familiarity was entered in the last block.

Neither music factor accounts for significant variance in the percentage of thoughts or feelings making reference to the stimulus. In an alternate test, the two Likert factor scores were substituted as dependent variables, but neither of the music sophistication factors produced a significant effect upon either Likert factor. Hypothesis Four was not supported.

DISCUSSION

This study produced mixed evidence of the schematic processing of music and cuing of affect. Its findings, while having important implications for theory, call for careful interpretation.

Subjects who were more involved in music (read about and discussed it) had more thoughts about unfamiliar music than those who were less involved. This finding supports the idea that music-sophisticated persons have more schemas available for the processing of unfamiliar music. It may be instructive to point out that the relationship between music sophistication and number of thoughts is contingent upon the familiarity of the music, with less sophisticated subjects reporting significantly fewer thoughts than the more sophisticated subjects only in the unfamiliar music

condition.

This suggests that familiar music may be processed similarly by sophisticates and non-sophisticates, and that experiential schemas may prevail under those conditions. In the case of popular music, there may be no substantial difference between the way a college music major processes a hit song and the way a business major does. Only if the song is unfamiliar may the former draw upon his or her knowledge of music. This speculation is supported by a related finding: subjects who heard unfamiliar music made significantly more references to specific music elements in their listed thoughts than subjects who heard familiar music, even after accounting for the effects of order and music sophistication.

While it was also expected that music-sophisticated persons would report more feelings about unfamiliar music than non-sophisticates, such was not the case. From a cognitive perspective, this may argue for a division between schemas that are tagged with an affective response and those that are not, at least for the processing of music. If the only operating rule were simply that a certain percentage of schemas cue affect, then affect should increase as the number of accessed schemas increases.

It was expected that music-sophisticated subjects would make more reference to specific music elements in thoughts and feelings than less music-sophisticated subjects would, that effect was found instead in the reasons given why the song was liked or disliked. In naming those reasons, subjects who scored

higher on the music participation index referred to more specific music elements (tempo, instrumentation, etc.) in their responses than low scorers on that index. The fact that this same relationship was not found for thoughts and feelings may argue that the "reasons why like/dislike" section, which was completed after the subjects listed thoughts and feelings, evoked an evaluative set that differed from the mental set that was in place when the music was listened to. It may also argue that the ordinary processing of music by high scorers on the music participation index probably does not differ significantly from non-participants, unless they are called upon to evaluate it.

In the alternate test of Hypothesis Three using the Likert factors as dependents, music-focused processing was highest for unfamiliar songs, and experience-focused processing was highest for familiar songs. Even with the post hoc qualification, the strength of these two relationships would appear to give support to the notion that music-based schemas are activated in the processing of music depending on their availability and the listening context.

Hypothesis Four, however, found no support in either its original test or its alternative test using Likert measures. The study failed to find a direct relationship between level of music sophistication and processing, for either the thoughts, feelings, or reasons like/dislike sections. If the Likert factors can be taken as valid indicators of cognitive processing, this finding does not support the position that a person's level of music sophistication is related to whether he or she accesses primarily

musical or experiential cognitive structures when listening to music. Instead, whether or not the song is familiar (as just discussed) appears to have more effect on the nature of those cognitions.

But while a positive finding for Hypothesis Four (particularly for feelings) would have supported the involvement of schemas in processing and in affective response, the lack of such a finding in this case provides no clear support for any specific competing theory of affect. In light of the findings just discussed, it is reasonable to speculate that the relationship between music sophistication and processing is mediated by other contextual factors, like familiarity, and that an omnibus test of that relationship without controlling for its mediators is likely not to find evidence of it.

Perhaps the most important caveat for future tests of the cognitive contribution to affect is proper specification of the path taken by processing. One of the tenets of information processing theory is that processing is highly context-specific, with results potentially being mediated by a variety of situational and other factors. The disadvantage of such specificity may be the apparent riskiness of proposing that effect A will occur only under conditions X, Y and Z. The advantage, however, is that any study able to specify and then support so statistically improbable a model will have provided strong support for theory. Future inquirers are encouraged to take that risk.

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Table 1

Mean Familiarity Ratings of Songs

Songs	Mean	Standard Deviation	N
"Familiar" Songs (overall)	1.15	63	99
I Wanna Dance With Somebody	1.12	.49	17
Here I Go Again	1.18	.73	17
Get Outa My Dreams	1.00	.00	16
Need You Tonight	1.44	1.03	16
Father Figure	1.19	.75	16
Got My Mind Set On You	1.00	.00	17
"Unfamiliar" Songs overall	3.55	.71	97
Common Ground	3.56	.73	16
Copy Me	3.69	.60	16
Burning In Her Fire	3.69	.60	16
For Tonight	2.94	.93	16
Harmony	3.50	.63	16
Anything Can Happen	3.94	.24	17

1 = I'm sure I have heard the song before

4 = I'm sure I have NOT heard the song before

Table 2

Reliability Agreement Coefficients: Open-Ended Items

	Thoughts	Feelings	Reasons for Dis/Liking
Reference to stimulus event	.78	.70	--a
Reference to music element(s)	.87	.85	.81

a not applicable; reference to stimulus event assumed

Table 3

Music Sophistication Principal Components/Varimax Factor Analysis

Variable	Commun-ality	Partici-pation	Involve-ment
Years played in group	.58	.76	.02
Play musical instrument	.56	.75	-.06
Number of records owned	.40	.62	.14
Number of concerts attended	.59	.58	.50
How often listen to music	.54	-.02	.73
How often discuss music	.52	.27	.67
How often watch music videos	.42	-.08	.64
How often read about music	.57	.48	.58
Eigenvalue		2.84	1.34
Pct. of variance		35.5%	16.7%

N=196

Table 4

Number of Thoughts regressed upon Questionnaire Order and Music Sophistication Factors for "Familiar" Songs

Step	VARIABLE Entered	Beta In	R2 Change	F Change	F Equation
1	order	-.25*	.06	6.02*	6.02*
2	participation	.11			
	involvement	.28**	.09	4.57*	5.21**

N=92 ** p.<.01 * p.<.05

Table 5

Number of Feelings regressed upon Questionnaire Order and Music Sophistication Factors for "Familiar" Songs

Step	VARIABLE Entered	Beta In	R2 Change	F Change	F Equation
1	order	-.02	.00	0.05	0.05
2	participation	.01			
	involvement	.16	.03	1.22	0.83

N=92 ** p.<.01 * p.<.05

Table 6

Number of Thoughts regressed upon Questionnaire Order, Music Sophistication Factors and Familiarity for All Songs

Step	VARIABLE Entered	Beta In	R2 Change	F Change	F Equation
1	order	-.26**	.07	13.38**	13.38**
2	participation	.06			
	involvement	.00	.01	.68	4.90**
3	familiarity	-.18*	.03	6.30*	5.36**

N=186 ** p.<.01 * p.<.05

Table 7

Number of Feelings regressed upon Questionnaire Order, Music Sophistication Factors and Familiarity for All Songs

Step	VARIABLE Entered	Beta In	R2 Change	F Change	F Equation
1	order	.12	.01	2.73	2.73
2	participation	-.06			
	involvement	.01	.00	0.32	1.12
3	familiarity	-.09	.01	1.49	1.21

N=186

Table 8

Number of Reasons for Liking/Disliking regressed upon Music Sophistication Factors and Familiarity for All Songs

Step	VARIABLE Entered	Beta In	R2 Change	F Change	F Equation
1	participation	.30**			
	involvement	.06	.09	9.27**	9.27**
2	familiarity	-.21**	.04	8.95**	9.43**

N=186 ** p.<.01 * p.<.05

Table 9

Likert Item Post-Hoc Principle Components Factor Analysis with Varimax Rotation

Variable	Commun-ality	Music Focus	Experience Focus
How much thought about...			
rhythm	.73	.85	-.13
melody	.68	.81	.15
memories	.52	.02	.72
lyrics	.28	-.11	-.52
friends	.22	-.01	.47
other artists	.23	.24	-.41
Eigenvalue		1.45	1.21
Pct. of variance		24.1%	20.2%

Table 10

Hypothesis Three: ANOVA: Alternative Test One

Dependent: Experience focus factor score

Independent: Familiarity

	<Mean>	<S.D.>	<N>
"Familiar" Songs	.26	.97	99
"Unfamiliar" Songs	-.27	.97	96

ANOVA F: 14.34**

** p.<.01

Table 11

Hypothesis Three: ANOVA: Alternative Test Two

Dependent: Music focus factor score

Independent: Familiarity

	<Mean>	<S.D.>	<N>
"Familiar" Songs	-.16	.95	99
"Unfamiliar" Songs	.17	1.02	96

ANOVA F: 5.30 *

* p.<.05