Cognitive Complexity and Aesthetic Preference

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ABSTRACT - The relationship between cognitive complexity and aesthetic preference is explored within the domain of literature. Using discriminant analysis, it is possible to predict which literary passages readers will prefer. Some evidence is found that requiredness, the ability to predict required structure and content, may lead to aesthetic enjoyment.

COGNITIVE COMPLEXITY AND AESTHETIC PREFERENCES

Consumers are daily exposed to information which seeks to influence their decision-making processes. They are provided with a choice among routinely purchased items (e.g., toothpaste, breakfast cereals) which must seem to them at times almost limitless. Beyond the decisions they must make about these products, consumers also establish preferences from among aesthetic products, products which are at least as overwhelming in number and variety as are those in everyday consumer markets (Holbrook, 1980). How many more songs can the consumer listen to in one day, for example, than he can buy brands of toothpaste? Since aesthetic-related decisions play such an important part in the consumer's everyday life, it seems logical to ask how these preferences for aesthetic products are formed.

In order to explain the formation of preferences for aesthetic objects, this paper will examine the structure of the aesthetic objects as well as the cognitive processes of the individual. These two components will be combined to form a theoretical explanation of aesthetic preferences which will then be tested empirically.

THE STRUCTURE OF AESTHETIC OBJECTS

Aesthetic objects or products within a particular domain may differ from one another in several ways. The artist designs aesthetic objects and art works to fit within certain constraints or structural prerequisites. The artist's task is to design structures which are understandable, but at the same time are novel and interesting. An aesthetic object, then, must meet two criteria to be enjoyed: it must be predictable, yet it must also have the element of surprise.

Requiredness is a concept that may be able to shed some light on preferences for aesthetic objects which involve a sequential string of individual components (e.g., music literature, and dance). These are objects which cannot be perceived all at once in a gestalt-type manner, but instead reveal their segments only one at a time. In a dance, for example, the movements are performed in a specific sequence, one following another. The entire dance does not appear in a single moment to the audience as would be true in another art form, such as painting. Aesthetic objects which possess this sequential string ordering may have their form partially predetermined by the style in which the artist has chosen to work.

In the field of music, for example, the composer works within a set musical form (for example a sonata or a disco tune). This form sets up certain constraints within which the composer strives to create novel patterns. After a sequence of notes has occurred, the next note or chord becomes, in a sense, required. The same applies to poetry or prose; the next word is, to a certain degree, predetermined by the pattern or...
structure of preceding words. One way that an artist may create structure in a work is by conforming to a predefined or traditional pattern (such as a sonnet or a fugue). Or, the artist can structure the work in a new way, all while leaving cues to guide the audience. To create a successful artwork, then, the artist must set up a certain structure. The audience, upon discovering this underlying structure, derives enjoyment. This component of requiredness may be what distinguishes successful or good artworks from artworks of lesser quality.

For an aesthetic object to be enjoyed, it must be predictable. However, complete predictability would lead away from, not toward, enjoyment. A string of the same note played over and over at various tempos might meet the structural criteria for a symphony, but would be very tiring. What is meant by requiredness is not this absolute level of predictability. For the phenomenon of requiredness to operate it is not necessary that an individual be able to determine which specific word or note should come next: all that is necessary is that the individual be able to identify certain characteristics which the next word or note should have. When the individual doesn't know what to expect next, but does know some of the characteristics that must be true of the next note, and when that elusive next note which fits these criteria is provided by the artist, then there is pleasure and aesthetic appreciation.

This does not mean that a person will enjoy or prefer all aesthetic objects that fit a perceived form or structure. Certainly the person who understands the form a sonnet should take does not like all sonnets. Rather, an understanding of the required Form is a necessary but not a sufficient condition for preference to develop. This understanding only need exist to the extent that the person is able to make some predictions about the next component in the string; it is not necessary that this understanding be formalized or explicit.

Individuals approach an artwork with certain expectations. Once individuals begin to experience the artwork, these expectations are altered and furthered by clues they detect regarding the structure of the object. Holbrook (1978) has demonstrated the link between expectation and perception or identification. Repeated exposure to this process (expectation-identification, expectation-identification) can lead to enjoyment. As shown by Berlyne (1960), conflict is generated in an individual due to unfulfilled expectations. The reduction in conflict which follows decreases in incongruity is held to be reinforcing.

Yet people also seek variety within the artistic structure. Just as aesthetic objects vary in the complexity of their structure, so too individuals vary in their abilities to understand complex aesthetic structures.

Thus not only is there variance in the complexity of the stimulus objects, but there is also variance in individuals' cognitive abilities to understand the structures of these aesthetic objects. The discussion must therefore turn to theories of cognitive processing to explain differences in individual abilities.

COGNITIVE COMPLEXITY

Cognitive complexity refers to the number and sophistication or cognitive structures that an individual possesses (Scott, 1963). It is therefore based not on the content of cognition but rather on the presence of structures for organizing this content. For example, a person can be cognitively complex while viewing the ballet La Sylphide not because he or she remembers from previous viewings what the next scene is (stored memory of a portion of content), but rather because he or she understands the basic structure of a pas de deux of a classic story ballet.

Cognitive complexity is composed of three dimensions: differentiation, articulation, and integration (Bieri, et al., 1966; Wallendorf and Zinkhan, 1980). Differentiation refers to the number of independent dimensions The individual can use in evaluating objects in a particular domain. If a person evaluates a novel based on only one dimension (the length of the novel, for example) this individual could be classified as cognitively simple. On the other hand, a person who evaluates a novel along many dimensions (its readability, subtlety of plot development, completeness of character development, and richness of descriptive detail) could be categorized as cognitively complex. The larger the number of independent dimensions used, the more cognitively complex the individual is.

Articulation refers to the number of discrete categories the individual perceives on a dimension. In scaling terms this is the number of intervals on the scale used. The more cognitively simple the individual is, the more likely it is that the person will see dimensions as dichotomous rather than continuous. Used. The person who is cognitively complex with respect to ballet is able to make fine discriminations regarding a dancer's degree of turnout in performing a grandwhile the cognitively simpler person sees only a leap in the air with toes pointed outward.

Integration refers to the ability to link evaluative dimensions together where appropriate. By understanding these linkages, the individual is better able to evaluate the object given limited exposure or information. Individuals who are cognitively complex may be better able to predict the characteristics the next note or word must have. That is, the individual who has a richer and more complete set of cognitive structures for organizing and understanding an aesthetic object would be expected to better understand the requiredness of the object, particularly if the object has a complex structure. When the object has a very simple structure (e.g. a disco song), it may be that almost all individuals are able to understand the requiredness of the structure, and thus base their preferences on whether they find the structure stimulating and whether they find the particular patterns within that structure novel and interesting. However, when the object has a complex structure (e.g. a symphony), preferences may be partially based on whether the person is cognitively complex enough to understand the requiredness of the structure along multiple dimensions.

Yet cognitive complexity (i.e. differentiation, articulation, and integration) derives from an experiential base that contributes to the formation of these cognitive structures. That is, cognitive complexity has both a generalized and a domain-specific component. The domain specific component of cognitive complexity refers to the fact that an individual may be cognitively simple in one domain (e.g. opera) due to unfamiliarity, but cognitively complex in another (e.g. literature) due to extensive experience. However, there is also a generalized component of cognitive complexity. Exposure to a wide variety of types and forms of stimulation, including formal education, develops in the individual a set of broad evaluative criteria and problem-solving Skills that can be used in almost any domain. The individual who is exposed to stimulus variation is therefore likely to be cognitively complex in a broad array of domains (Hirschman and Wallendorf, 1979). Thus cognitive complexity derives from generalized exposure to new information as well as specialized or domain-specific experience. In order to tap both of these components, cognitive complexity must therefore be measured as a domain specific phenomenon (Bieri, et al., 1966; Schroeder, Driver and Streufert, 1976; Scott, 1963).

HYPOTHESES

Four hypotheses were derived for testing the relationships among cognitive complexity, aesthetic pleasure, requiredness, and domain-specific experience. The context of literary passages from classic novels was selected.

H1: The greater the amount of domain-specific experience (e.g., overall reading experience), the higher the cognitive complexity of the individual in that domain.

H2: The greater the amount of domain-specific experience, the greater the ability to anticipate structure and intent in that domain.

H3: The greater the cognitive complexity of an individual in a given domain, the greater will be that person's...
H4: The greater the ability to anticipate structure and content in a particular aesthetic object (beyond a minimum level of stimulus complexity), the greater will be that person's enjoyment of/or preference for the aesthetic object.

These hypotheses are shown in Figure 1.

METHOD

Because the aesthetic context chosen for the empirical investigation was that of prose literature, the variables measured in this study include: complexity of the stimulus object, reading experience, cognitive complexity reading enjoyment of certain passages, and preferences for certain passages. Three questionnaires were designed to measure these constructs.

Sample

In order to control for the confounding effects of widely differing levels of education and reading ability, cohort analysis was chosen (Glenn, 1977). The three questionnaires were administered on three different occasions to 88 undergraduate students at The University of Michigan. Of those with stated majors, about one half were business students and half were registered in the College of Literature, Science and the Arts.

FIGURE 1

PROPOSED THEORETICAL LINKAGES

The first and second questionnaires were administered under supervised conditions. The third questionnaire (reading enjoyment) was given to the subjects to complete at their leisure and to return within one week. This procedure seemed appropriate for a questionnaire that purported to measure reading enjoyment.

The Cloze Test

Complexity of a written stimulus object can be measured through the use of the cloze test (Taylor, 1953, 1956; Holbrook, 1978). Basically the cloze test measures an individual's ability to provide deleted words in a literary passage. Four books were chosen to represent high, medium high, medium low, and low levels of difficulty respectively from the content area of fictional writing. Fiction was selected so that no reader would be biased by previous experience in the subject area. To make up the four passages a 185-word excerpt was taken from William Faulkner's Absalom, Absalom!, a 185-word excerpt from Henry James' The Portrait of a Lady, a 186-word excerpt from Mark Twain's The Adventures of Tom Sawyer, and a 189-word excerpt from Charles Dickens' David Copperfield. In each case the passage began with the first word of the novel. Beginnings were chosen for two reasons: 1) each reader would be starting at the same point, and 2) writers tend to make opening sections of their works especially clear in order to induce readers to read further. The levels of difficulty for the four texts were determined both by the readability formula proposed in the Flesch test (Flesch, 1951) and by pooling the Judgements of three University of Michigan professors of English Language and Literature. An attempt was also made to select passages containing a minimum of proper names as, should such a name be deleted as part of the test, the subjects would find it nearly impossible to correctly replace the blanked-out word.

For each text a cloze test was given. In each of the four passages 36 words were replaced by blanks, inserted so every fifth word was deleted. In a cloze test the respondent is asked to fill in these blanks with the word that seems most appropriate given the context. In two instances the construction of the test resulted in 37 blanks, but for these passages the cloze score was computed on the basis of the first 36 blanks. The decision to delete every fifth word was based on the results of research by MacCinitie (1960) and Alderson (1979). This research indicates that a string of more than 4 words between deletions does not increase subjects' abilities to restore the deletion, strings of less than 4 words between deletions do significantly decrease subjects' abilities to restore the blanked-out words.

The responses on the cloze tests were scored by 3 different procedures: 2 exact word procedures and a procedure that allowed any closely synonymous word. For each passage, the following cloze test scores resulted:

1. Cloze 1 = the number of deleted words correctly identified on the first guess:
2. Cloze 2 = the number of deleted words correctly identified on the first and second guesses combined,
3. Cloze 3 = the number of deleted words correctly identified or closely identified on the first and second guesses combined.

As a result 12 cloze test variables were obtained, 3 for each literary passage.

The correlations between the different cloze measures for each passage are shown in Table 1. The findings here are consistent with those in other studies (Taylor, 1956; Alderson, 1979). The scores for the three cloze measures for each passage are highly consistent. No correlation is below .8 and 7 out of 16 are above .9, all are statistically significant at the p < .001 level. For this study, the second and third cloze measures seem especially appropriate since it is not really important to find out whether the subject can precisely identify the deleted word. Instead, it is more important to determine whether the subject has a good idea as to the qualities that this missing word should have. Therefore, the second and third measures on the cloze test, while highly correlated with the first, seem to reflect more properly the spirit of the requiredness theory.

TABLE 1

INTERCORRELATIONS OF CLOZE MEASURES FOR EACH PASSAGE

As a manipulation check, the mean cloze test scores (averaged across individuals for each author) were computed (shown in Table 2). No matter how the cloze test is graded (whether synonyms are counted or not, etc.), the passages rank as follows, in order of increasing complexity:

<table>
<thead>
<tr>
<th>Author</th>
<th>Passage</th>
</tr>
</thead>
<tbody>
<tr>
<td>David Copperfield</td>
<td>Charles Dickens</td>
</tr>
<tr>
<td>Tom Sawyer</td>
<td>Mark Twain</td>
</tr>
<tr>
<td>Portrait of a Lady</td>
<td>Henry James</td>
</tr>
<tr>
<td>Absalom, Absalom!</td>
<td>William Faulkner</td>
</tr>
</tbody>
</table>
Using a Scheffe test for simultaneous inference, the 4 passages are all significantly different from one another with respect to their cloze scores; the .001 level of confidence. The conclusion is that the first goal of the study has been met: subjects have been exposed to 4 passages which vary significantly in inherent complexity.

Measure of Reading Experience

A measure of reading experience was also obtained on the first questionnaire by asking the subjects to indicate which books, out of a list of 21 books (20 actual fiction works and 1 decoy work), the subjects had previously read. None of the subjects claimed to have read the decoy work, which seems to indicate that they were trying to answer the questions truthfully.

<table>
<thead>
<tr>
<th>TABLE 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>MEAN COMPLEXITY OF STIMULUS</td>
</tr>
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</table>

Cognitive Complexity Measures

Six measures of cognitive complexity were obtained by Seaman and Koenig (1974). Subjects were asked to think of a novel that they enjoyed. Once a subject had a clear idea of this novel in mind, that subject proceeded to rate the novel along 8 six-point scales. The bipolar endpoints of these scales are given below:

- Artistic vs Non-artistic
- Believable vs Unbelievable
- Argumentative vs Neutral
- Vivid vs Colorless
- Confusing vs Clear
- Humorous vs Humorless
- Energetic vs Flat
- Wordy vs Concise

These 8 scales were selected from a list of 23 descriptive pairs of adjectives, following a pretest in which 49 subjects rated the importance of these 23 adjectives. The 8 adjective pairs which were retained for the cognitive complexity questionnaire ranked high in importance (in the top 12) and were relatively independent of one another, as revealed by a cluster analysis.

After the subjects rated the novel which they enjoyed along the 8 scales, they then did the same for an unenjoyable novel, an enjoyable piece of nonfiction, and an unenjoyable piece of nonfiction.

Seaman and Koenig (1974) outline a way to convert these rating scores into cognitive complexity measures. First, scores are assigned to the ratings on each scale so that the highest scores are given to those ratings at the more favorable end of each continuum. Three cognitive complexity measures are derived from the work of Bieri, et al. (1966):

- +CC --- "positive construct complexity"
- -CC --- "negative construct complexity"
- TCC --- "total complexity score"

The latter score (TCC) is simply the sum of the former two scores. All three scores are based on the person’s ability to rate each of the objects using the scales independently. For more detailed information see Seaman and Koenig (1974).

Three additional cognitive complexity scores can be derived from the six-point scales. These are based on the work of Fiedler (1967):

- MPP --- "most preferred passage"
- LPP --- "least preferred passage"
- ASO --- "assumed similarity of opposites"

(MPP-LPP)

In this study the measures are coded so that a high cognitive complexity score indicates an individual high in cognitive complexity. In the Seaman and Koenig description, only LPP is scored in this direction. This change in coding direction has been undertaken solely for the sake of clarity.

Also note that in this study the Seaman and Koenig cognitive complexity test has been adapted to the domain of literature. Originally, the Seaman and Koenig test applied to the realm of personal interaction. The adaptation for this study provided the necessary domain-specific measure of cognitive complexity.

Measures of Reading Enjoyment and Reading Preference

Reading enjoyment was measured by asking subjects to reread the four passages from Faulkner, James, Twain, and Dickens. Subjects received the complete, non-blanked out texts that the authors had originally written. The subjects rated each passage on a series of 5-point Likert scales that ranged from "strongly agree" to 'strongly disagree. The statements that subjects were asked to respond to were the following:

1. The passage is pleasant to read.
2. I enjoyed reading the passage.
3. The passage is artistic.
4. I would like to read more of the book that this passage came from.
5. I would like to read a book written by this author.
6. The subject matter of the passage is interesting to me.
7. I found the passage to be repetitive.
8. I'd like to know what happens next in this book.
The above variables were coded so that a high score would correspond to a high level of reading enjoyment. Once the subjects had read all the passages, relative reading preference, was measured by asking subjects to rank order the passages. These rank order scores (preference scores) were coded so that:

4 = Most Preferred
3 = Second Most Preferred
2 = Third Most Preferred
1 = Least Preferred

Thus a high preference score is equivalent to a high degree of liking.

H1: Reading Experience and Cognitive Complexity

The measure of reading experience (number of books read out of a list of 20 fiction books) was correlated with the six measures of cognitive complexity using Pearson correlation. None of the correlations were statistically significant.

Thus no relationship was found in this study between the measures of reading experience and cognitive complexity. However, in other work (Bieri, et al., 1966; Hirschman and Wallendorf, 1979; Schroeder, Driver and Streufert, 1967) prior exposure and experience have been shown to be significant components of cognitive complexity. Most likely the lack of significant results here derives from the limited measure of experience in the present study. The actual relationship remains to be explored in the future.

H2: Reading Experience and Ability to Predict Structure and Content

In order to test the second hypothesis concerning the relationship between reading experience and ability to predict structure and content, average cloze scores were computed for each individual across all 4 passages. This was done for each of the three types of cloze scores. These average cloze test scores were correlated with the number of books each subject had read (out of the possible list of 20) using Pearson correlation. These coefficients are shown in Table 3. All of the correlations are positive, indicating that a higher level of reading experience is related to a higher average cloze score. The second and third average cloze test scores are both significant at the .05 level, and the correlation for the first average cloze test score is significant at the .01 level using a one-tail test. Thus, there is some support for the notion that reading experience is related to an understanding of requiredness, even when the measure of experience is rough.

| Subjects' preference scores were correlated with their cognitive complexity scores using Pearson correlation. From the third hypothesis, the following expectations were formulated:

1. Those with high cognitive complexity scores should tend to rate Absalom, Absalom! and Portrait of a Lady highly. Conversely, those with low cognitive c. scores should tend to rate Absalom, Absalom! and Portrait of a Lady less highly. This would imply a positive correlation coefficient between the Absalom, Absalom!/Portrait of a Lady preference rankings and the cognitive complexity measures.

2. Those with low cognitive complexity scores should tend to rate David Copperfield and Tom Sawyer favorably. Those with high cognitive complexity scores should tend to rate David Copperfield and Tom Sawyer less favorably. Thus, a negative correlation coefficient between David Copperfield/Tom Sawyer preference rankings and cognitive complexity was expected.

As Table 4 shows these expectations are partially supported. For all four of the novels, one or more of the cognitive complexity measures were significantly correlated in the predicted direction with the preference score. The expectations are supported for the two less complex passages (David Copperfield and Tom Sawyer). The three correlation coefficients which are statistically significant at the p < .1 level or less for these two passages indicate that these simpler passages are preferred by those respondents who are less cognitively complex. Similarly the expectations are supported with regard to the most complex passage (Absalom, Absalom!). The two correlation coefficients which are statistically significant at the p < .05 or less for this passage indicate that the most complex passage is most preferred by those who are highly cognitively complex.

| The only findings which are mixed are those for the moderately complex passage (Portrait of a Lady). Three of the four correlation coefficients which are statistically significant at p < .1 or less are in the predicted direction. That is, they indicate that this moderately complex passage is most preferred by those who are highly cognitively complex. However, the other statistically significant correlation coefficient indicates that the relationship is in the other direction. Most likely this is the result of this passage being at or near the level of structural complexity which begins to lose some less cognitively complex individuals and heighten the stimulation of more cognitively complex individuals. This particular passage, then, appears to be near a cutoff level of structural complexity for the sample chosen.

### Table 3

**CORRELATIONS BETWEEN READING EXPERIENCE AND ABILITY TO PREDICT STRUCTURE AND CONTENT (ACROSS PASSAGES)**

### Table 4

**CORRELATIONS BETWEEN COGNITIVE COMPLEXITY AND ENJOYMENT OF PASSAGES (COLUMNS IN INCREASING ORDER OF COMPLEXITY)**
There is, then, some support for the third hypothesis. Although the correlation coefficients obtained a small amount of variance in-the data, this is not unexpected. Certainly cognitive complexity is not the only determinant of enjoyment. However, it is encouraging that all but one of the significant correlations are signed in the predicted direction. More work needs to be done in order which measures of cognitive complexity are most appropriate for the field of literature.

Discriminant analysis (Morrison, 1969; Rao, 1973), was used to further investigate the relationship between cognitive complexity and reading preference. The pool of 88 subjects was divided into two groups based on their preference rankings:

Group 1-- those who preferred Portrait of a Lady over Absalom, Absalom! (.2% of the respondents)

Group 2-- those who preferred Absalom, Absalom! over Portrait of a Lady (58% of the respondents)

These two passages were chosen because of the results from the correlation analyses.

The cognitive complexity scores of these individuals were used as independent variables. However, since one of Bierl's measures of cognitive complexity derives from the other two [TCC=(+CC)+(-CC)] and one of Fiedler's measures derives from the other two (ASO=,“PP-LPP) a reduced set of cognitive complexity measures was used.

### Table 5

**STEPWISE DISCRIMINANT ANALYSIS RESULTS FROM PREDICTING PREFERENCES FOR JAMES VS. FAULKNER PASSES BASED ON COGNITIVE COMPLEXITY MEASURES**

TCC and ASO were therefore excluded from the discriminant analysis.

A stepwise discriminant model was constructed to evaluate the probabilities that an individual would belong to Group 1 or Group 2. Three of the four measures of cognitive complexity were included in the discriminant function. The function resulted in 71.8% of the respondents correctly classified. The details of the discriminant function are shown in Table 5.

Once the discriminant function was formed, it was used to predict which of the two passages would be preferred by individuals in a cross-validation sample. This sample included 21 undergraduate students in an English class at the University of Michigan. Of this sample, 37.2% were correctly classified according to relative preference for the Faulkner vs. the James passage. This is an improvement over the expected proportional chance criterion of 51.3% correctly classified without the use of a discriminant function. This provides further evidence that cognitive complexity is positively related to reading preference and enjoyment.

H4: Ability to Predict Structure and Content and Enjoyment

Holbrook (1978) has described the cloze test as a measure of subjective verbal uncertainty. A subject who scores highly on the cloze test is in tune with the language pattern of the author (Taylor, 1953, 1956) and is better able to predict what word should come next in the passage. The theory presented earlier concerning requiredness postulates that being able to predict what word should come next leads to reading enjoyment.

In order to create an index of reading enjoyment for each passage, the eleven enjoyment items were subjected to a principal components factor analysis with the restriction that only one factor be extracted. This was done in order to create an index based on the underlying factor of enjoyment. In all cases, a high score on the enjoyment items indicated that the reader found the passage to be enjoyable. The factor loadings are shown in Table 6.

All of the variables in each of the factor analyses loaded strongly on this one factor. The lowest loading (.27) is for the nonrepetitive item (#7) which is out of the range of the bulk of the loadings for the other items (.7 to .9), in three of the factor analyses the second factor which could be extracted had an eigenvalue of greater than one (David Copperfield 1.003; Tom Sawyer 1.06; Absalom, Absalom! 1.06). However, due to the similarity of the factor structures when only one factor was extracted and the marginal eigenvalues of the second factors, only the first, factors were used for computing indices of enjoyment for each of the passages.

The three cloze scores for each passage were then correlated with the enjoyment index from the factor analysis using Pearson correlation. However, only in the case of Absalom, Absalom! were the correlation coefficients significant at the .05 level. The coefficients for this passage are shown in Table 7. This particularly interesting given that Absalom, Absalom! was the most complex passage tested. It may be that the theory of requiredness can only account for differences in enjoyment when the stimulus is very complex. When a reader has to work very hard to conjure the structure of an artwork, but nevertheless is able to determine the nature of that structure, it may be then that a certain kind of enjoyment results. The same process might not operate for simpler passages, including the James passage which was found in the correlational analyses presented earlier to possess some of the characteristics of a cutoff point for this sample as they passed from simpler to more complex structures. When the structure of the artwork does not sufficiently challenge the reader, the reader may not find the passage enjoyable. This then indicates that readers want not only to understand the structure of the aesthetic object, but also want to be challenged during the process.

### Table 6

**FACTOR LOADINGS ON ENJOYMENT INDICES**

### Table 7

**CORRELATIONS BETWEEN UNDERSTANDING OF REQUIREDNESS AND READING ENJOYMENT FOR COMPLEX PASSAGE (ABSAalom, ABSALOM)**

### Discussion and Conclusions

The model postulated in the earlier part of this paper has been, for the most part, supported. Enjoyment of and preferences for aesthetic objects are at least partially determined by the complexity of the structure of the aesthetic object, the extent of domain-specific experience of the individual, and the individual's cognitive complexity. These results corroborate the findings of Munsinger and Kessen (1964) who report that the tendency for respondents to increase preference for stimulation of high variability is related to the respondents' ability to code or process variability.

There is variance in the structural complexity of stimulus objects and in the cognitive abilities of individuals to understand these structures. Domain-specific experience (reading experience in this case) leads to a better understanding of the structural properties of aesthetic objects. This is referred to here as an ability to predict structure and content.

But mere understanding of the structure of an aesthetic object is not by itself a good predictor of enjoyment or preference for an aesthetic
object. Simple structures are understood by almost everyone; yet they are not always preferred over other aesthetic objects. It appears that complex structures are understood and enjoyed by those with high levels of cognitive complexity.

Preference then emerges when the structure of the aesthetic object is sufficiently complex to challenge the individual to use his or her cognitive abilities in trying to uncover the structure of the aesthetic object.

Therefore three prerequisites of enjoyment have been explored in this paper:

1) high enough cognitive complexity to
2) understand the structure of the aesthetic object,
and
3) sufficient complexity in the structure of the stimulus object to challenge the individual without losing him or her.

These do not insure that preference will follow, but do provide several of the necessary conditions for enjoyment and preference.

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affective judgments on attractiveness are produced without cognitive process (Lindgaard et al. 2006, Damasio and Corvalho 2013) Although immediate judgments on preference are made by users, the aesthetic experiences and affective responses are processed together to form informed decisions and subjective evaluations. Leder et al. This research is an initial effort toward conceptualizing our aesthetic preferences in terms of the underlying cognitive features of our mental system. Results are discussed in terms of their relation to Complex Systems Theory. Introduction (cont.) Specifically, we looked at individuals preferences for music that varies in complexity. We found that a preference for more complex music (e.g., classical, blues, folk, jazz, and heavy metal) was positively correlated with a need for cognition, tolerance for uncertainty and working memory span. Overall, these results suggest that there is a link between cognitive ability and our preference for music. Individuals with more cognitive resources gravitate toward music that is more complex in structure, melody, and rhythm.