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An Approach to the Measurement of Music Appreciation (I)

THIS ARTICLE DESCRIBES an experiment to measure that experience that is commonly called "music appreciation."[1] Most experimental studies involving music have been concerned either with the measurement of the aural abilities needed to solve problems connected with musical sounds[2] or with the various reactions and moods evoked by short musical extracts.[3] It is the author's belief, however, that the enjoyment of music is a mental act relatively independent of the former, and more comprehensive and unitary than the latter. Since evidence supporting the first of these claims presupposes the demonstration of the second, it must await a second article. The aim of this article is to examine this second claim concerning the essentially unitary nature of musical experience by presenting and attempting to validate a test for the measurment of music appreciation.

THE NATURE OF MUSIC APPRECIATION

Teachers of music appreciation are often at pains to point out that to listen to music is to be active, rather than to passively bathe in sound. This is not the whole truth. Enjoying music seems to involve both an active and a passive element. Although an account of these two elements and their relationship to each other would be premature, it may be said that in the moments of profoundest involvement the enjoyment of music is felt as a kind of effortless awareness, more passive or receptive than active—an intuitive act which involves no discursive or reflexive process. It follows, therefore, that aesthetic perception and critical reflection have to be classed as separate activities. In general, however, this distinction does not appear to have been clearly discerned by experimental psychologists. For example, most of the tests of music appreciation described by

[1] This is the first of two articles on the measurement of music appreciation. The second article will be published in a future issue of the *JRME*.

[2] H. Wing, "Tests of Musical Ability and Appreciation," *British Journal of Psychology*, Monograph Supplement No. 27, (1948).

[3] M. Rigg, "An Experiment to Determine How Accurately College Students Can Interpret the Intended Meanings of Musical Compositions," *Journal of Experimental Psychology*, XXI (1937), 223.

Wing (1948) involve some kind of critical comparison or choice between two or more musical items. Music appreciation is defined as the ability to distinguish between what is generally accepted by experts as good and bad music. The present investigation, however, identifies music appreciation with musical enjoyment. It assumes that where there is enjoyment there is also understanding, though not necessarily technical knowledge. The enjoyment of music and knowledge about music are distinct, though usually complementary. Naturally, the acquisition of knowledge about music has a part to play in the deepening of a listener's appreciation of music; this, however, must await the second article. For present purposes it is sufficient to say that whatever the depth of enjoyment (and this, too, may vary) or the complexity of a listener's understanding of technical detail, the total experience remains in essence a simple intuition. In short, music appreciation is a complex unitary act which most laymen will perceive as a gestalt—an unfragmented whole which is more than the sum of its parts.

A Gestalt Approach

To adopt a gestalt approach need not imply a taking of sides in the dispute between Mursell[4] and Seashore.[5] In fact, the kind of gestalt outlook that is proposed acknowledges the validity of both the unitary and the atomistic approach to music testing. The term gestalt is appropriate to whatever shape in the music one cares to apply it: a note, a phrase, a theme, a chord, or a whole composition. Any of these may legitimately be considered as a gestalt heard against some other background. This study, however, is concerned with the gestalt presented to a listener by a whole movement or work—with the pattern of psychic response aroused in the listener by such a musical gestalt. Consequently, the connotation of the term gestalt has to be extended beyond that proposed by Vernon[6] to include also the shape of the psychological experience formed in response to the flow of the music. This psychic gestalt, the shape of the evolving musical experience, cannot be completely formed until the moment at which the music ceases. So, although aesthetic perception can be identified with the gestalt law of Pragnanz,[7] in music, as distinct from the visual arts, such perception may no longer be looked upon as instantaneous. An experimenter who adopts a gestalt approach to listening to music finds it necessary to formulate the concept of a dynamic gestalt—a gestalt with another dimension: time. Perls, Hefferline, and Goodman have suggested an anatomy of contact which without much modification can be adopted as a typology for a dynamic gestalt.[8]

[4] James L. Mursell, *The Psychology of Music* (New York: W. W. Norton & Co., Inc., 1937).

[5] Carl E. Seashore, *Psychology of Music* (New York: McGraw-Hill Book Company, 1938).

[6] P. E. Vernon, "Auditory Perception I, The Gestalt Approach," *British Journal of Psychology* (1934), 123-39.

[7] H. J. Eysenck, "The Experimental Study of the 'Good Gestalt'—A New Approach," *Psychological Review*, 49 (1942), 344-64.

[8] F. S. Perls, R. F. Hefferline, and P. Goodman, *Gestalt Therapy* (New York: Julian Press, 1951), pp. 403-4.

The process of contact is a single whole, but we may conveniently divide the sequence of grounds and figures as follows:

1. Fore-contact: the body is the ground, the appetite or environmental stimulus is the figure. This is what is aware as the "given" or Id of the situation, dissolving into its possibilities.

2. Contacting: (a) the excitement of appetite becomes the ground and some "object" or set of possibilities is the figure. The body diminishes. (Or contrariwise, in pain, the body becomes the figure.) There is an emotion. (b) there is choosing and rejecting of possibilities, aggression in approaching and in overcoming obstacles, and deliberate orientation and manipulation. These are the identifications and alienations of the Ego.

3. Final Contact: against a background of unconcernful environment and body, the lively goal is the figure and is in touch. All deliberateness is relaxed and there is a spontaneous unitary action of perception, brightest, in the figure of the You.

4. Post-Contact: there is a flowing organism/environment interaction that is not a figure/background: the self diminishes.

If applied to musical experience, this passage throws light on the relationship between the active and the passive components of music appreciation already mentioned. Later, as an example of "final contact," the authors remind us how, when listening to great music, "one forgets himself and is all ears."[9] Such contact, which becomes more or less habitual in an experienced listener, is probably related to the state of contemplation known in yoga as *Samadhi*.[10] It is such an experience perhaps which T. S. Eliot has described as "music heard so deeply that it is not heard at all, but you are the music while the music lasts."[11] Lest any critic should consider this kind of music appreciation too rare to be of relevance to the ordinary music lover, a remark from an engineering student who cooperated in this experiment is quoted: "I wasn't listening to the music but it was *me* inside. I was living it—this was especially noticeable with the climaxes."

The Background of the Experiment

The experiment to be described was carried out between 1960 and 1962 at a college of technology in the West Midlands with 70 engineering students divided into two groups. These students were required to attend classes in music appreciation as a Liberal Study for one hour each week. Further details about their academic and musical abilities and their psychological characteristics become important only in the second article; at this stage they may be classified roughly as a random selection of technical students from Ordinary National Diploma courses.

It was proposed to play 22 records for these students (See Table 1), ranging from classical to pop music, and to measure their reactions by

[9] *Ibid,* p. 418.

[10] Cf. Ernest Wood, *Yoga* (New Orleans: Pelicon Publishing Co., 1969), pp. 60-61. "*Samadhi* is seeing that unity, whether in a man or other object, or a picture or a piece of music. That is why in a good picture there must not be one unnecessary stroke, and in a good piece of music not one unnecessary note."

[11] T. S. Eliot, "Four Quartets," *The Dry Salvages,* V, 27-29.

TABLE 1
A LIST OF RECORDS USED ARRANGED IN ORDER OF PERFORMANCE

Number	*Title*	*Composer*	*Artists/ Conductor*	*Recording*
1	Mars (The Planets Suite)	Holst	London Symphony/ Sargent	Decca CEP 544
2	Apache (current "pop")	Jerry Lordan	The Shadows	Columbia 45-DB 4484
3	Moonlight Sonata (first movement)	Beethoven	Live performance by the experimenter	
4	Hebrides Overture	Mendelssohn	New York Philharmonic/ Dimitri Mitropoulos	Phillips ABE 10006
5	"Whistlin' Rufus" (traditional jazz)	Mills	Chris Barber's Jazz Band	Pye NJE 1068
6	Concorde (modern jazz)	John Lewis	The Modern Jazz Quartet	Esquire EP 109
7	Symphony No. 5 (first movement)	Beethoven	Philharmonic Orchestra/ Klemperer	Columbia 33C 1051
8	March from Karelia Suite	Sibelius	Danish State Radio Orchestra/ Jensen	Decca CEP 542
9	"Oh, what a beautiful morning" (Oklahoma)	Rodgers	Gordon McCrae	Capitol EAP 1-595
10	"I feel pretty" (West Side Story)	Bernstein	Marlys Watters	HMV 7 EG 8429
11	"Bess, you is my woman now" (Porgy and Bess)	Gershwin	Camilla Williams and Lawrence Winters	Phillips SBF 236
12	Quartet (Rigoletto, Act 3)	Verdi	Richard Tucker, Gianna d'Abgelo, Miriam Pirazzini, and Renate Capecchi	Phillips SBF 141

TABLE 1—Continued

Number	*Title*	*Composer*	*Artists/ Conductor*	*Recording*
13	Piano Concerto (first movement)	Grieg	Moura Lympany/ Philharmonia Orchestra/ Nicolai Malko	CLP 1037
14	Trumpet Concerto (finale)	Haydn	Harry Mortimer/ Philharmonia Orchestra/ George Weldon	Columbia SCD 2005
15	Allegro from Water Music	Handel	Philadelphia Orchestra/ Ormandy*	Phillips ABE 10057
16	Allegro from Water Music	Handel	Philomusica of London/ Thurston Dart*	Oiseau-Lyre 50178
17	Hallelujah Chorus (Messiah)	Handel	London Philharmonic Choir and Orchestra/ Sir Adrian Bolt	Decca LXT 5383
18	Introduction of Act 2 (Swan Lake)	Tschaikovsky	Philadelphia Orchestra/ Ormandy	Phillips ABE 10044
19	Symphony No. 6 (second movement)	Tschaikovsky	Philharmonia Orchestra/ Guido Cantelli	ALP 1042
20	Washington Post	Sousa	Munn & Felton's Band/ Mortimer	Columbia SEG 8010
21	"An die Musik"	Schubert	Elizabeth Schwarzkopf with Edwin Fischer	Columbia SEL 1564
22	Egmont Overture	Beethoven	Hague Philharmonic Orchestra/ van Otterloo	Phillips SBR 5219

* The reason for including two different performances of one composition was to obtain data for a preliminary study of the act of critical comparison. It is still too early, however, to generalize on this point.

means of a test.[12] This test was to be constructed on the assumptions: (a) that although a great variety of ways of listening to music are possible, one—for simplicity it may be called "insight"—may be singled out as more compatible than the others with the nature of aesthetic perception; (b) that insight, the assimilation of a dynamic gestalt, should be accompanied by certain signs, observable to a listener through introspection; and (c) that to find a group of such symptoms which together formed a syndrome of music appreciation would provide an operational definition of a dynamic gestalt.

The Invention of the Test

Seven scales for the assessment of musical experience were developed from an idea of Dr. Herbert Wing. Example 1 shows four 5-point scales that he had constructed to measure the effects of music.

	2	*1*	*0*	*−1*	*−2*
A	Very interested in the music	Some interest aroused	Uninterested	Bored with the music	Dislike the music
E	Very much happier	Happier	No change	Sadder	Much sadder
T	Much more tense	More tense	No change	More relaxed	Considerably more relaxed
S	Strong desire to break out and talk	Would like to speak	No change	Want to remain quiet	Dislike of people and talk

Example 1

As part of a pilot scheme, these scales were used during the summer term of 1960. Twenty-nine engineering students were asked to listen to music by Bizet, Bach, Vaughan Williams, and Sid Phillips, and to describe the effects that the music had on them in terms of Dr. Wing's categories. An examination of the results suggested that while the nucleus of a syndrome might lie hidden in this test, it was confused by the attempt to measure the amount of each reaction as well as its direction. Three-point scales would appear adequate. Moreover, the scales did not always seem unidimensional: "dislike of people and talk," for instance, was probably out of place.

After discussion with the students the test was reconstructed. A warning to avoid the "0" response wherever possible was added in view of the number of times this had been used. Example 2 shows the "syndrome test."

The reason for calling this the syndrome test is that further reflection on gestalt theory, and introspection of the author's own states of con-

[12] The range of musical items in this list was intended to be as comprehensive as possible. Certain omissions were, however, inevitable; there is no Bach or earlier music, no atonal music, for example. The actual choice of items was conditioned by the availability of recordings and the desire not to overtax the patience of the engineering students with too much unfamiliar or, for them, difficult music.

SYNDROME TEST

Scale L

Disliked very much	1
Disliked	2
Disliked a little	3
Undecided	4
Liked a little	5
Liked	6
Liked very much	7

Scale	+	*0*	−
I	Interested	Indifferent	Bored
M	Happier	No change	Sadder
T	More tense	No change	More relaxed
V	Desire to talk	No change	Desire to remain quiet
S	Satisfied	No change	Confused
P	Mental pictures	None	—
	Any other comments:		

Example 2

sciousness when listening to music, led to the formulation of the following hypothesis: The complete assimilation of a musical composition by a listener could be inferred from the appearance in the test of the following seven-point syndrome:

L	I	M	T	V	S	P
6-7	+	+	−	−	+	0

The extent to which this hypothesis is tenable is demonstrated later by statistical means.

EXAMPLES OF THE SYNDROME

Quotations from Technical Students

These students not only produced this sysdrome in response to music of considerable diversity, but also added comments illuminating the nature of the experience thus recorded.

1. Record 5 (Whistlin' Rufus: Chris Barber's Jazz Band)

L	I	M	T	V	S	P
7	+	+	−	−	+	0

"Mind completely at rest and relaxed. Very enjoyable piece of music."

2. Record 7 (first movement of Beethoven's Symphony No. 5)

L	I	M	T	V	S	P
6	+	+	−	−	+	0

"Was completely absorbed with the music during the whole of the time it was played. I think there is a tendency for the brain to become slightly exhausted after listening to music."

3. Record 11 (Bess, you is my woman now—Gershwin)

L	I	M	T	V	S	P
6	+	+	−	−	+	0

"No mental pictures, just a strong desire to relax completely and leave my mind a blank."

4. Record 13 (first movement of Grieg's Piano Concerto)

L	I	M	T	V	S	P
7	+	+	−	−	+	0

"A truly wonderful piece that does not need any comments. It absorbs one completely, so much so that it was several seconds before I realized that it had finished; this is possibly the reason for feeling more relaxed afterwards and the desire to remain quiet."

Responses from University Music Students

While admitting that the syndrome tends to appear among technical students who become absorbed in listening to music, it might still be argued that there are insufficient grounds for assuming that the presence of the syndrome presupposes a strictly *musical* act of appreciation—that psychological satisfaction implies musical understanding—unless the syndrome may also be found even more frequently among the responses of those who have received musical training. Only one example is selected to illustrate this: the responses of 29 students from the music department of a university after listening to Schubert's "An die Musik" (record 21). Sixteen of these students produced the complete syndrome; eight had only one response incorrect; four had two; one had three; none responded with less than four-sevenths of the syndrome.

Statistical Analysis of the Scores

Two principal components analyses were carried out,[13] based on sets of scores representing the responses of two groups of technical students to the 22 records previously listed. The first group, tested in 1960-61, consisted of 37 students; the second, tested in 1961-62, contained 33 students. Each of the seven constituents of the proposed syndrome was treated as a separate test. The total scores on scale L, out of a possible score of 154, were calculated for each student; likewise, for each of the remaining six constituents, the total number of correct responses out of a possible 22 were counted. To this battery was added an eighth column: the total number of complete syndromes achieved by each student. It was not overlooked that the introduction of dependent scores into this kind of analysis is illegitimate; the justification for it lay in the axiom of gestalt psychology already stated: that the unfragmented whole is greater than the sum of its parts. In other words, seven correct answers occurring together should represent a new kind of unity that may be counted as such. For the purpose of counting the number of syndromes, only scores

[13] For access to a computer and for assistance with the arrangement and presentation of the statistical data, the author is greatly indebted to Professor G. E. R. Burroughs of the University of Birmingham.

TABLE 2
ROTATED LOADINGS 1960–61

Test	*I*	*II*	*III*	*IV*	*V*
L	91*	18	14	−24	9
I	91*	15	10	−11	23
M	48*	−11	30	−33	69*
T	16	9	94*	−11	20
V	21	95*	7	−8	10
S	63*	15	49*	−6	38
P	−26	−5	−8	95*	0
G	17	48*	22	23	76*
Percent	30.6	15.3	16.2	14.4	16.4

* Highest loadings
Key: L = Liking
I = Interest
M = Happiness
T = Relaxation
V = Desire to remain quiet
S = Satisfaction
P = Absence of mental pictures
G = Number of syndromes

of 6 or 7 on scale L were admitted. Five components were then extracted, and a Varimax Rotation of the loadings carried out (See Tables 2 and 3). The highest loadings, upon which the psychological definition of the factors depends, are marked. The components in the second analysis have been placed out of numerical order and aligned with what appear to be the corresponding components from the first analysis. In this way the general similarity of the two analyses is more apparent.

Since the final position of all the axes is determined in this kind of rotation by purely mathematical considerations, such a general correspondence between these two sets of five components suggests that certain stable psychological factors are probably in operation; it will be the purpose of the following section to try to identify and comment on these.

TABLE 3
ROTATED LOADINGS 1961–62

Test	*I*	*II*	*V*	*III*	*IV*
L	89*	17	13	−18	13
I	92*	7	23	2	8
M	17	17	41	−23	78*
T	3	89*	25	19	11
V	21	82*	−5	−2	37
S	43*	13	83*	−4	21
P	−9	13	−2	96*	4
G	−9	36	−1	36	79*
Percent	24.0	21.1	12.4	14.76	18.02

* Highest loadings
Key: L = Liking
I = Interest
M = Happiness
T = Relaxation
V = Desire to remain quiet
S = Satisfaction
P = Absence of mental pictures
G = Number of syndromes

Identification of Factors

Factor I (component I in both tables)

This factor is characterized by high loadings on L and I and fairly high loadings on S in both tables, together with a small loading on M in Table 2 only. Restricting attention to those tests which have significant loadings in both analyses, this factor is determined by a constellation of L, I, and S (Liking, Interest, and Satisfaction).

The seven-point scale of liking was included in the test on the assumption that "to like" is the same as "to respond to aesthetically": an axiom of empirical aesthetics since Helmholtz, Wundt, and Stumpf. However, only responses of 6 or 7 were allowed as contributing to the syndrome test for G, on the grounds that a lower rating would imply a certain inhibition in a listener's self-surrender to the music.

Scale I was included on the hypothesis that interest is an essential characteristic of good gestalt formation, and probably the psychological aspect of physiological excitement. Interest is certainly evidence of contact. During the formation of a dynamic gestalt it may be supposed that interest will increase until the moment of "final contact"; in a musical experience this should coincide with the climaxes, though in the case of experienced listeners, it may be sustained for longer periods.

After completion of the experience, enquiry should still produce a positive response to the music, since "interest" is still available as pleasurable memory. According to gestalt theory, boredom arises when attention is deliberately paid to an object lacking in interest, while that which is the true object of spontaneous concern is suppressed.[14] In such a case the real source of interest needs to be sought, attention given to it, and that gestalt completed before interest in any new experience can be roused.

The similarity between the loadings of L and I in both tables is rather surprising, but its implication must be accepted: in future research the more complex scale L may be omitted and the simpler scale I retained in preference to it.

Satisfaction is thought of as the successful culmination to an experience of which interest represents the beginning. It is dubious whether any intellectual evaluation of a composition unaccompanied by emotional satisfaction can be described as music appreciation at all. More, however, will be said about scale S in the discussion of factor III. For the present it is suggested that the first factor be described as "sustained interest."

Factor II (component II in both tables)

The test which has a high loading for the second component in both analyses is V, a test of verbalization in which the expected response (V-) indicates a "desire to remain quiet." This second factor may therefore be described as a "desire for silence." External silence is a necessary condition for listening to music. If the experience is to have depth, internal silence—that is the cessation of discursive thinking (for looked at introspectively, thinking is nothing other than subvocal speech)—is also necessary.

[14] Perls, Hefferline, and Goodman, pp. 53 ff.

The supreme aesthetic delight is ineffable, and can only be recorded, albeit inadequately, as V-. "I have put V-," a student wrote, "because in my thoughts I did not wish to spoil the stillness." It is part of the poverty of language that words such as silence stand only for the absence of sound, and that our vocabulary is lacking in words to denote the positive and contemplative aspects of silence.

The contrary response (V+) may indicate any of a range of psychological conditions falling short of contemplative silence. At the lowest level of awareness such a response indicates a desire to talk during the music. At a higher level it may mean "that the desire to talk came after the music had finished in order to break the silence." In either case there may be an accompanying emotional catharsis, the listener finding himself "liable to say things I otherwise would not." At its most creative, V+ signifies a desire to talk about the music itself. In these instances V+ expresses a need to reinforce the structuring of a newly perceived insight by verbalization, or to continue growth through analysis and criticism. In the case of record 9 (Oh, what a beautiful morning) and record 17 (Hallelujah Chorus) a few students responded V+ with the remark, "A desire to join in and sing."

V+ is also used to express a need to participate actively. Listening to music rather than actively participating in it seems to be a comparatively late development in the social evolution of the art: music as an adjunct to action, to work, to war and religion, precedes music made solely for the contemplation of others. Jazz provides a recent illustration of this. It began as improvisation for the players, then later it was arranged for dancing; the latest modern jazz is composed seriously and received by its audience with a respectful silence similar to that of the audience at a recital of classical chamber music. Likewise, as a listener matures, his participation becomes more exclusively internal, his desire to join in is replaced by a desire to listen in silence: this is of course a creative adjustment and should not be confused with idle passivity.

It will be noted from Table 3 that in the 1961-62 analysis, test T also had a very high loading in component II. This association of T and V, however, is not evident among the 1960-61 students, among whom, as Table 2 shows, test T correlates very highly with a hypothetical third force.

Factor III (component III in Table 2; component V in Table 3)

This third factor can be identified rather less convincingly than the rest for, as stated above, in the first analysis it is closely related to test T (a scale of tension on which the expected answer is "more relaxed"), while in the second analysis the highest loading is on test S.

The expected answer on test S is "satisfied." Some confusion may perhaps have been caused by a difference in interpretation of this response. In so far as test S contributes to factor I, "satisfied" has probably been taken by the students, as it was originally intended, to refer to satisfaction as of an appetite. But the high loading on S in the fifth component of

Table 3 suggests an alternative interpretation: here "satisfied" may have been understood to mean no more than "satisfactory." Such an explanation is compatible with a few very individualistic scores on test S among the 1961-62 students. For instance, in one case a score of 20 out of 22 correct answers on S was coupled with only 7 on L and 11 on I. A tendency to interpret "satisfied" as "satisfactory" may also explain the loading on S on component III Table 2). The distribution of S between the first and third factors, and the proportionate significance of the loadings to each other in each of the tables are in keeping with a dual interpretation of the word "satisfied." If this explanation is correct, Table 2 would be the better guide to the identification of factor III. It may therefore be labeled tentatively as a factor of "relaxation."

Tension is, of course, an essential part of a musical experience. Maximum tension, as in the act of love, coincides with the climax; but it is in the release that follows that the act is consummated. A negative response (T-) therefore indicates the fulfillment of a musical experience. Fay,[15] pointing out that "the tensions and relaxations induced in us by music are counterparts of those disturbances we feel in actual experience," emphasized that musical development is a "synonym of fulfillment." Bingham[16] showed by experiment that the end of a phrase in a melody corresponds to a condition of muscular relaxation (*Lösung*) in the musician. How much more should one expect a sympathetic listener's response at the end of a whole composition to be one of organized, balanced muscular resolution!

The contrary response (T+) combined with a low L score is presumably an index of dislike and irritation; with a high L it probably indicates that the listener is clinging to the excitement of the climax, not trusting that other satisfactions await him, but can be experienced only on condition that he lets go and allows the present gestalt to complete itself.

Factor IV (component IV in Table 2; component III in Table 3)

This factor can be identified from the very high loading on test P in both tables; it is the "absence of mental pictures." Weld[17] arrived, after experiment, at two conclusions that are in line with the author's assumption that "0" is the correct response to scale P: "music is powerless to portray a definite picture in any uniform or universal sense" and "visual imagery seems to be entirely unnecessary so far as the enjoyment of music is concern." Higginson[18] showed that mental pictures are not essential to the musical enjoyment of school children. Vernon[19] demonstrated

[15] R. V. Fay, "Tension and Development as Principles in Musical Composition," *Journal of Musicology,* V (1943-47), 1.

[16] W. V. Bingham, "Studies in Melody," *Psychological Review,* Monograph 12, No. 50 (1910), 81.

[17] H. P. Weld, "An Experimental Study of Musical Enjoyment," *American Journal of Psychology,* 23 (1912), 245-308.

[18] J. H. Higginson, "The Associational Aspect of Musical Response in School Children," *Journal of Educational Psychology,* XXVII (1936), 572-80.

[19] P. E. Vernon, "The Phenomena of Attention and Visualization in the Psychology of Musical Appreciation," *British Journal of Psychology,* XXI (1930), 50-63.

that visual imagery tends to be inhibited by the more musical of listeners. A comparison between the answers given by technical students and university music students to a short questionnaire about mental pictures points in the same direction.[20] Notwithstanding the apparent contrary views of Lundin and Yingling, it is therefore asserted that mental pictures play no part in the highest form of music appreciation. This is not, of course, to argue that the P: "0" response, outside the context of the syndrome, may not be open to several interpretations, nor that, at a certain level, mental pictures may not contribute to musical enjoyment. For many a music lover the spontaneous creations of his imagination under the stimulation of a tonal flow is one of the main pleasures of listening to music. Nevertheless, the highest aesthetic rapture demands the silence of the imagination (P: "0") as well as of verbalization (V-). Since spontaneous daydreaming evoked by music may often be a beginner's first experience of integrated awareness, a teacher should neither encourage nor suppress mental pictures.

As a listener develops a more strictly musical kind of attention, the pictures will gradually cease to appear. There is, however, some evidence of a picture-making type. One such student wrote, "Music in itself is just a collection of sounds, which when arranged in a certain order arouse in this listener mental pictures. It is these pictures which determine whether the listener enjoys the music. I invariably associate a mental picture with music." Most listeners, on the other hand, are quickly weaned from the habit of picture-making. Sometimes the last pictures to persist are images of "the instrumentalists performing the music," although the visual interest of a live performance has been known to dissolve these. Finally, the following was written by a student who had just listened to the first movement of Beethoven's *Fifth Symphony*:

> Throughout the piece of music I tried to concentrate entirely on the music itself and to exclude mental pictures. To my knowledge it is the first time that I have concentrated 100% on the music itself when a piece is played, and it had surprised me somewhat that the piece becomes much more interesting. It is surprising too that when one's mind "wanders" into mental pictures the actual beauty of the music escapes one and only surface music is absorbed.

Factor V (component V in Table 2; component IV in Table 3)

The fifth factor can be identified from its high loadings on test G in both tables with the syndrome itself. This factor, more than any other, provides empirical evidence in favor of the syndrome hypothesis and the gestalt assumption that the whole is greater than the sum of its parts. It is also true, however, that almost equally high loadings are to be found in test M. This suggests that the key question in the syndrome test is that which asks whether a listener is "happier" after listening to the music. This is a conclusion that could in turn be cited as experimental support for a whole intuitivist aesthetics of the kind implied by such

[20] L. Crickmore, "Passivity, Pictures and the Piano," *The Vocational Aspect of Secondary and Further Education,* XVIII (1966), 27-34.

remarks as Santayana's "the value of art lies in making people happy."[21] To expound a perennial philosophy of art and the contemplative life, however, is beyond the scope of this article, but the interested reader is referred to the writings of Josef Pieper,[22] and a related paper of the author.[23]

The hypothesis that a positive response on test M is always to be considered correct regardless of any emotional content of the music is unlikely to be accepted without criticism. In practice a negative response is not uncommon even among trained musicians for certain kinds of music (for example, record 19, second movement of Tschaikovsky's *Sixth Symphony*). It could also be argued that Rigg[24] found that sadness as well as joy was an emotion that could be recognized in music to a degree approaching reliability. But then, as Hampton[25] reported, an undercurrent of pleasure is identifiable in all kinds of music. One would suppose that psychologists would prefer to give priority of attention to the positive rather than the negative elements in musical experience. In any case, underlying the present test of music appreciation is the assumption that music is not in any precise way a language of the emotions, but its value lies in making people happy.

Those who say that they feel sadder at the end of a musical experience are probably indicating that they have appreciated a specific rhetorical attitude adopted by the composer, but that they have somewhat interrupted the experience so that the sad emotion persists instead of being resolved in the pleasure of a consummated experience; thus the sad emotion is seen as a gestalt in itself instead of as a ground against which the joy is felt. A listener could, of course, mistakenly be recording what he felt during the music rather than what he feels immediately afterward. M- might also refer to the emotion of some unfinished situation in the personal life of the listener which has been abreacted by the music. One situation in which M+ proved an unreliable guide to aesthetic enjoyment is illustrated by the remark, "I was happy it had ended." On the other hand, the saddest of music sometimes elicited the full syndrome.

In conclusion, the factors identified in this study of music appreciation may be listed:

I. Sustained interest
II. Desire for silence
III. Relaxation (?)
IV. Absence of mental pictures
V. A syndrome of all previous factors combined with a feeling of increased happiness.

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[21] G. Santayana, *The Life of Reason* (London: Constable, 1954) p. 375.

[22] J. Pieper, *Happiness and Contemplation* (London: Faber & Faber, Ltd., 1959).

[23] L. Crickmore, "Neo-Thomism as a Basis for the Teaching of Music," *British Journal of Educational Studies,* XIV (1966), 36-44.

[24] Rigg, *op. cit.*

[25] P. J. Hampton, "The Emotional Element in Music," *Journal of General Psychology* (1943), 261.

If, as has been recommended, scale L is omitted from the test in favor of scale I, and if allowance is made for some uncertainty over scale S, then these five factors correspond, broadly speaking, to the remaining constituents of the syndrome: I, V, T, P, M. It is the author's feeling that this is adequate validation for the syndrome hypothesis.

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