

Personal preferences, aesthetic sensitivity and personality in trained and untrained subjects

H. J. Eysenck,¹ *Institute of Psychiatry, University of London*

The study here presented is in essence a continuation of earlier work (Eysenck, 1940a, 1941a), and in part a reply to certain criticisms of this work by Child (1962, 1965). The work in question was based on theoretical views seemingly invalidated by Child's research (Eysenck, 1957).

Our hypothesis posits the existence of a "general factor" in aesthetic judgments, i.e. the view that people differ from each other along a dimension of aesthetic sensitivity or "good taste", this dimension was thought to extend over all relevant material within a given sense category (i.e. visual materials), and to be reasonably independent of intelligence.

Burt (1933) had tried to investigate such a general theory by having various groups of subjects rate or rank aesthetic stimuli in order of preference, these stimuli were very varied, ranging from genuine works of art to birthday card pictures and childish drawings. He found positive and often high correlations between rankings made by different persons, and concluded in favor of some such theory as that presented above. Eysenck (1940a) criticized Burt's work on two grounds. In the first place, the choice of material did not make possible an answer to the question Burt had put for himself: "If we could brush aside all irrelevant associations, and take a completely detached view . . . would there be any solid grounds for preference left?" (1933, p. 289). The writer argued that there were several sources of "irrelevant associations" present in the stimuli used by Burt. Some were obviously socially accepted, others not, even a subject very poorly educated would know that an old master had high prestige

¹ I am indebted to the Social Science Research Council for a grant which made this study possible, and to Miss M. Castle for collection of data

value, while a flashy birthday card had none at all. Familiarity is another such influence, some stimuli were familiar to the subjects, and known to have high prestige value, while others were quite unknown. These and other considerations caused Eysenck (1940a) to reject Burt's work as being inconclusive.

In the second place, Eysenck doubted the appropriateness of the statistical technique used. Intercorrelating and then factor analysing the rankings made by different subjects of a given set of stimuli could and did demonstrate that for this particular set of stimuli there was (or was not) agreement among the subjects in question, this did not answer the question of generality, i.e. the question of whether a given person possessed more "good taste" than another in respect of visual stimuli *in general*. To demonstrate this further point, several different tests would seem to be required, each fulfilling in content the demands set out above, and in addition each as different from the others as possible. In each test the factor loadings of a given subject on the general factor (should such a one appear) would then be his score, intercorrelating and factor analysing the different sets of scores over tests would indicate whether or not a person who most agreed with the average judgment in one test also agreed most with the average judgment in the other tests, etc. (It would of course also be possible to correlate a given person's rankings or ratings with the average of the whole group, this is mathematically similar to the alternative procedure, and with reasonably large numbers of judges the unweighted average is a close approximation to the "true" order—Eysenck, 1939). Using this "double factorial method," Eysenck (1940a) showed that when 18 different tests were used which incorporated the necessary controls over content material, a strong and powerful general factor emerged, suggesting the correctness of the theory underlying this work. A later study (Eysenck, 1941a) supported this conclusion, and added the discovery of a second important factor determining aesthetic preferences; this contrasted subjects preferring bright colors and modern pictures, to subjects preferring darker and more subdued colors and more old-fashioned pictures. The two factors were labelled T (for the general "taste" factor), and K, and later studies extended the coverage of the K factor to

general complexity as opposed to simplicity of stimuli, as well as to other sense modalities (Eysenck, 1940b, 1941b).

Child (1962) used paintings of great diversity, which he had rated for personal preference by college students; he discovered, very much in line with Eysenck's conclusion, that "the extent to which an S agrees with the consensus is a reliable individual characteristic" (p. 502). Child also provided "an external criterion of aesthetic value" by employing expert judgments, using a number of experts, he found that "degree of agreement with an aesthetic standard is an even more consistent characteristic than degree of agreement with group preferences." Child failed to obtain a positive relation between "the ordering of pictures by group preference and their ordering by judgments of aesthetic value," and "when individuals are measured for the extent to which their preferences resemble the one kind of standard or the other," a negative relation is in fact discovered. He concludes that "if aesthetic sensitivity is expressed in a tendency to prefer the aesthetically good, then agreement with group preference is in one group negatively related to aesthetic sensitivity and in the other group unrelated." (Child used two separate groups in his experiment.) Thus Child finally rejects Eysenck's interpretation of his data, which he criticizes for the lack of external criteria; when such criteria are used, as in his own research, the data contradict Eysenck's assumptions

There are two answers to these criticisms. In the first place, Child's judges were instructed to use different bases of judgment, thus confounding the possible interpretations of their choices. The lay students were asked for "preference" judgments, the experts were asked for judgments of "aesthetic value." There is no reason for believing that these two types of judgments would be identical *even within a single group*. Consider a ranking task involving two pictures, one a wrinkled old woman painted by an old Dutch master, the other a nude playgirl. A lay (male) student group, asked to rank these in order of *preference*, would perhaps prefer the nude, a group of art experts, asked to give judgments of *aesthetic value*, would perhaps prefer the old master. This does not enable us to deduce that the aesthetic sensitivities of the two groups differ, or that Eysenck's hypothesis is disproved; it merely

shows that different instructions define different tasks. This leads us to the second answer Eysenck postulated explicitly certain criteria which would have to be met in the selection of pictures or other stimuli used to test his hypothesis. "No tradition or teaching should point to one of them as superior to the others, so far as execution is concerned, they should be roughly of the same degree of excellence; and they should all be equally unknown to the subjects." As Child admits, "these criteria are not met in the present research, on the contrary, pictures were used which differed radically from each other in all three respects cited in the quotation." Eysenck's criteria would rule out the "playgirl-Dutch master" combination mentioned above, Child's would not. While it is not suggested that anything quite as obvious and indeed absurd as this particular comparison occurred in Child's material, the dangers of disregarding Eysenck's criteria in a test of Eysenck's hypothesis will be obvious.

The point made here can be illustrated from some research done by the writer on the Maitland Graves Design Judgment Test (Eysenck, 1967, 1970, 1971). Using experts and lay judges, Eysenck found that only very small differences occurred between the groups, unlike the very large differences originally reported by Graves (1948). Several of the expert judges, on being confronted with the choice problems making up the test, stated explicitly: "I know which is supposed to be the correct answer, but I prefer the other." In other words, being asked for their preference, they gave one answer, at the same time indicating that had they been asked for the aesthetic value, they would have given a different answer. Possibly Graves's subjects interpreted the instructions more in line with the "aesthetic value" criterion. However that may be, the burden of demonstrating that no confounding took place in his experiment must surely rest with Child.

In order to give some empirical substance to this point, a special experiment was carried out by A. Penny (unpublished). He had professional artists and teachers of art judge the items in the Maitland Graves Design Judgment Test twice, once with instructions to state which item they preferred, and the other time with instructions to state which item was the "correct" one. The "preference" scores averaged 48.33 ± 15.26 SD, the "knowledge" scores

averaged 69.44 ± 13.19 *SD*. The difference between the scores was significant beyond the 01 level. Clearly the two tasks are far from identical. Further information on this point, but only on lay groups, is available in articles by Child (1962, 1964) and by Child and Iwao (1968).

There is another point on which Child and the writer disagree. Child assumes the existence of a meaningful external criterion, furnished by "expert" opinion. He does not adduce any evidence on this point, and indeed admits that agreement with such criteria may have much to do with familiarity and acceptance. The writer is not willing to accept, without strict proof, the existence of such a criterion, his own view would be that possibly "experts" possess to a somewhat above-average degree high "T" scores, but that this is by no means universally true, there are many such "experts" who, in the immortal words of Thurber, "know all about art, but don't know what they like." What such experts do possess, of course, is knowledge of traditional criteria by means of which to judge traditional paintings and works of art, and when asked to perform such judgments, as in Child's test, they show good agreement. The assumption that this agreement defines good taste, or has a correlation with aesthetic sensitivity, is not one which can be made without further proof, in so far as Child's argument is dependent on this assumption, it does not amount to a disproof of Eysenck's position. It is well known that there are constant changes in this "expert" opinion, and these changes may be mirrored in the observed collapse of difference scores on the Maitland Graves test when fine art students and lay students are being compared, what was "doctrine" 30 years ago is not so any longer.

The differences between Child and Eysenck are not easily made the subject of an experimental attack as they derive from different assumptions, if we are willing to accept without proof that "experts" know best, and can define aesthetic value, then nothing more requires to be said. If such an axiomatic approach does not satisfy, and we begin rather with the axiom that no a priori judgments are to be accepted in this field, then an approach closer to Eysenck's seems appropriate. Even then, of course, it remains a point of interest to see just how trained artists differ in their preference judgments (not value judgments!) from lay

persons of similar intelligence, it is such a comparison which has been undertaken in the experiments here reported. The tests used were 3 in number (1) A test fulfilling Child's requirements, but not Eysenck's (The test used was in fact part of that designed by Child himself for the purpose of his series of studies, and kindly furnished us by him) (2) A test fulfilling Eysenck's requirements, but not Child's. (The test was Birkhoff's (1932) set of polygons, used on several occasions by Eysenck (1941b, 1968, Eysenck & Castle, 1970a)) (3) A test widely used in the past as a measure of aesthetic ability, and recommended for selection of students for art training courses, the Maitland Graves Design Judgment Test (1948.) In addition, tests of intelligence and personality were given in order to investigate the relationship of these variables to such measures as might be concerned with aesthetic sensitivity. This investigation does not claim to decide in any way the divergence of opinion between Child and Eysenck, it may serve to provide some useful information on the bases for aesthetic judgments made by expert and lay judges

METHOD

Subjects The design of the study called for groups of at least 100 male artists, male controls, female artists and female controls, the numbers returning complete sets of scores were. 155 male controls (MC), 108 female controls (FC), 103 male artists (MA) and 107 female artists (FA). A detailed description of the composition of artist and control groups used in our experiments has been given elsewhere (Eysenck & Castle, 1970a), the control group is made up of students taking courses quite unconcerned with artistic subjects (engineering, law, languages, accounting, etc), while the artist group is made up of students taking courses in various fine arts subjects (painting and sculpture), design, and photography. Also included in the artist group were several postgraduate students and professional artists. Ages of both groups averaged about 21. The majority came from London colleges (The use of the term "artists" to designate two of our groups might be considered misconceived. The term carries no acknowledged technical meaning; it is here used simply to designate students who have been formally instructed in the principles of composition and design, who have engaged in some form of creative work in the visual arts, and who intend to take up some form of such work after grad-

uation It does not signify any high standard of competence, such as one might usually expect in "artists", in this sense the term may be badly chosen)

Tests. Two intelligence tests were used, one verbal, the other perceptual, as it was thought that aesthetic ability in the visual sphere might be more closely related to the latter than to the former The verbal test used was Raven's Mill Hill Vocabulary test, the perceptual test was Penrose's Pattern Perception Test The former calls for a choice of synonym, the latter presents series of perceptual patterns which have to be continued Both tests have been standardized on English populations, and used in this country

Two personality scales were used, viz the extraversion and the neuroticism scales from the E.P.I (Eysenck & Eysenck, 1964) These too have been standardized and widely used in England, and do not require detailed description here

The first aesthetic sensitivity test to be used was the Maitland Graves Design Judgment test (1948), which calls for a choice between 2 (or more rarely 3) specially drawn designs meant to illustrate good and poor design respectively, there are 90 such pairs or triplets Eysenck & Castle (1970a) and Eysenck (1970) have shown that the claims of the originator of the test to be able to discriminate at a high level of accuracy between art- and non-art students could not be justified in terms of the samples of English students tested, only minimal differences were found, with the scores of the artists approximating those of Graves's control subjects Eysenck (1967) also demonstrated that Graves's assumption that all the 90 items measured one and the same ability was unjustified, factor analysis of the intercorrelations between the items disclosed several independent factors. Three of these factors were separately scored for the purpose of this investigation, and are given in addition to a total score, the items scored for these 3 factors are as indicated in Eysenck's (1967) paper. The 3 factors may be interpreted as. (1) symmetrical vs asymmetrical designs, (2) three-dimensional design, (3) complex designs, the differences between which are not capable of being discussed in terms of symmetry vs. asymmetry. (The terms "complexity" and "simplicity" are used with some dubiety, Eysenck & Castle, 1970b, have shown that when the items in the Barron-Welsh, 1952, scale were factor analysed, 4 independent factors emerged of which one could be identified as dealing with preference for "simple" drawings, while 3 factors dealt with different aspects of "complexity" Such findings should make us careful not to suggest that complexity and simplicity are necessarily unitary and opposed aspects of aesthetic

design, and liked or disliked as if they were the ends of a single continuum) The 4 scores from this test will be designated M G (T), M G. (I), M G (II), and M G (III)

The second aesthetic sensitivity test to be used was the 120-item test constructed and evaluated by Child (1965), only the first 83 items were used here Pairs of pictures are presented to the subject who was instructed to judge "which of the two works of art you like better—we want a judgment of your personal preference" The criterion used was the judgment of the experts Child had consulted in constructing his test

The third test used was a set of polygonal figures, photographed from the original drawing of Birkhoff (1932) and put on slides There are 90 of these, and subjects were required to rate these for aesthetic pleasantness from 7 (the most pleasing) down to 1 (the least pleasing). The scoring system used was developed on the basis of earlier results (Eysenck, 1968, Eysenck & Castle, 1970a) in which it was found that factorial analysis of the ratings disclosed two main dimensions along which judgments could be evaluated These dimensions are similar to the T and K factors of Eysenck's earlier work. T represents the consensus within the various art and non-art groups, while K represents preferences for simple as opposed to complex polygons It was found that there was very high agreement between art and non-art groups on T, but that artists preferred simple, non-artists complex stimuli Eighteen pairs of polygons were chosen such that one of them (arbitrarily called A) was well liked, while the other (arbitrarily called B) was not so well liked. Preference for A was thus evidence of agreement with the consensus, and a scoring system was arranged such that 2 points were scored when $A > B$, 1 point when $A = B$, and 0 points when $A < B$ Similarly, 18 pairs of polygons were chosen such that one of them (arbitrarily called A) was simple, while the other (arbitrarily called B) was complex, scoring was similar to that described above, for T Thus there is a maximum score of 36 for either T or K, with a minimum score of 0, it was expected that these scores would be uncorrelated.

The data derived from these tests were evaluated along two lines. In the first place, analyses of variance were carried out over groups to discover significant sources of variance associated with sex, art vs. non-art background, or the interaction of these two factors In the second place, tests were intercorrelated by means of product-moment correlations for each of the four groups separately, in order to study possible differences in the relationship of the variables between groups.

Table 1. Means and SDs of male and female artists and controls on various tests of personality, intelligence and aesthetic sensitivity

	Male artists (103)	Female artists (107)	Male controls (155)	Female controls (108)
N	12 18 ± 4 22	13 22 ± 3 48	10 07 ± 4 00	12 38 ± 4 76
E	12 09 ± 4 03	12 06 ± 3 46	13 57 ± 3 91	12 84 ± 4 38
Mill Hill Vocabulary	20 04 ± 3 79	20 39 ± 3 80	17.98 ± 4.51	17 94 ± 4 11
Penrose Pattern				
Perception	49 59 ± 7 52	49 85 ± 6 53	47.85 ± 8 56	49 59 ± 6 67
Maitland Graves, Total	59 20 ± 10 81	57 65 ± 9 47	52.47 ± 12 89	58 25 ± 12 12
Maitland Graves I	10 08 ± 5 35	9 47 ± 2 43	7.50 ± 3 74	8 65 ± 3 36
Maitland Graves II	7 01 ± 2 02	7 02 ± 1 91	6.59 ± 2 03	7 23 ± 1 91
Maitland Graves III	3 82 ± 1 71	3 43 ± 1 86	3 51 ± 1 84	3 17 ± 1 99
Child Test	44 70 ± 7 30	48.32 ± 7 20	40 62 ± 5 02	40 79 ± 6 93
Polygons T	24 91 ± 4.71	25 31 ± 4.70	24 74 ± 4.41	26.29 ± 3.93
Polygons K	22 14 ± 6 86	20.25 ± 5 88	14 70 ± 5 40	13 49 ± 5 68

RESULTS

Means and SDs of our four groups of subjects are given in Table 1. The data show that artists and non-artists differ with respect to personality, artists are higher on N and lower on E ($p < .001$ and $< .01$ respectively). Similarly, and in accordance with much previous work, women are higher on N and lower on E than men ($p < .001$ and ns respectively) Thus artists, slightly resemble women in their personality make-up, controls resemble men, this finding is in good accord with much theorizing that artistic pursuits are "feminine" None of the interactions were significant. As regards intelligence, the artists had higher scores on the vocabulary test ($p < .001$), there were no differences on the Pattern Perception test. No sex differences were significant. While many of the personality and ability differences noted above were significant, this significance is statistical, and due largely to the relatively large numbers involved ($N = 473$), in absolute amount the differences are not large, and should not be over-interpreted. Selecting artists and non-artists from a random sample on the basis of scores on these tests would not produce results very much above the chance level.

Turning next to the aesthetic sensitivity tests, we find that there are only small differences on the Maitland Graves (Total) test; artists are significantly better than non-artists ($p < .001$), and women do slightly better than men ($p < .01$.) The inter-

action is significant, but does not seem to have much psychological meaning ($p < .01$) On M G.(I) the artists are significantly superior to the non-artists ($p < .001$), this is in good accord with our previous work. There are no significant differences on M G (II) and M G (III), this too accords with our previous experience (Eysenck, 1970). On the Child test the artists have significantly higher scores than the controls ($p < .001$), the difference amounts to almost one *SD*, and is thus quite marked. Women are superior to men ($p < .001$) The Polygon T score shows no trace of any difference between artists and controls, but women are superior to men ($p < .05$) The Polygon K score differentiates the artists very clearly from the controls ($p < .001$), the difference is well above one *SD*, and thus more marked than those achieved with the Child test This result is in good accord with our previous work (Eysenck & Castle, 1970a), and with results reported by Brighouse (1939).

Product-moment correlations were run between all our scores, for each of the 4 groups separately. For the male controls, correlations above .16 would be significant at the 5 percent level, and above .21 at the 1 percent level, for the other groups the corresponding levels of significance would be .19 and .25. The personality tests and the ability tests were almost uncorrelated except that N showed slight negative correlations with both the Vocabulary and the Pattern Perception Test, only 3 out of 8 were significant, and the average was $-.12$. N and E did not correlate, but the two ability tests did of course correlate, although never above .45 (probably due to restriction of range). Neither ability nor personality measures showed much in the way of correlation with the aesthetic sensitivity tests. M G (T) correlated positively with both ability tests, with 4 correlations significant or very significant, this suggests that the relation may be replicable. M.G.(I) has 3 very significant correlations (positive) with the ability measures, but 3 correlations are negative, although quite low and insignificant. At best, therefore, the relationship between intelligence and aesthetic ability in our sample is very tenuous, it might be more marked in groups having a greater range of ability. The Child test has no significant correlations with either

ability or personality, there are not even any discernible trends connected with either set of variables

Correlations between the test of aesthetic sensitivity are uniformly low, and mostly insignificant. Correlations between M G (T) and the Child test are small and inconsistent, so are correlations between M G.(I) and the Child test. Both M.G. scores fail to correlate consistently with the Polygon T test, but correlate fairly consistently (and in 2 cases very significantly) negatively with the K score. This is not surprising as the K score measures liking for order, and the M G. test measures departure from symmetry in design. The Child test does not correlate with either score on the Polygon test. The two scores on the Polygon test show low positive correlations averaging below .2, they are thus almost completely independent.

DISCUSSION

Our analysis is more informative on differences between art-trained subjects and controls than it is on the relationships between the variables studied. Clearly artists tend to show the "artistic temperament" so often hypothesized, linking their answer patterns on personality questionnaires with feminine responses. (The "male syndrome"—stable extraversion—has been found particularly strongly in commandoes and parachutists, according to some unpublished findings from the British army.) Differences between artists and non-artists on intelligence are slight, and fail to emerge where one might have expected them to, namely in relation to the Pattern Perception Test. There are clear-cut differences on the 3 aesthetic sensitivity tests; artists score higher on the Maitland Graves (I) test, they score higher on the Child test, and they score higher on the Polygon K test. These results suggest two hypotheses. Scores on these 3 tests might be indicative of Eysenck's general factor of aesthetic sensitivity, or else one or all might be due to the special training received by the artists. If the former hypothesis were true, then one would expect positive correlations between subjects within each of our four groups, no such correlations were in fact observed. Variance due to training, on the other hand, would not give rise to within-group correlations where training within groups was held reason-

ably constant. It may therefore be concluded provisionally that the observed differences on these 3 tests could be accounted for in terms of specific training received by the art subjects

This conclusion receives some support from the fact that the Polygon T score did not discriminate between artists and non-artists. It will be remembered that this test was constructed by choosing items on whose aesthetic appeal there was agreement between artists and non-artists, such a test, therefore, would almost by definition be relatively independent of specific training. It is of relevance, therefore, that this score did not correlate with the other three tests, and did not differentiate between artists and non-artists. It is of course quite possible that this test may be quite specific, relating entirely to aesthetic sensitivity to polygonal figures. This does not appear likely in view of the fact that subjects receiving high scores on this test also received high scores on a test using other visual material, viz designs and devices (Eysenck, 1971). Against this interpretation speaks the fact that in a recent study of the development of aesthetic sensitivity in children, Eysenck (unpublished) used the M G test and found that development seemed due entirely to maturation, rather than to art teaching. Clearly this type of study is not designed to unravel the complex strands of causation.

However this may be, our results would seem to show that it is not possible at present to argue that any of the suggested measures of aesthetic sensitivity is superior to the others, or even that there is one such ability to be investigated. The Maitland Graves, the Child and Birkhoff Polygon tests all have some a priori claim to be regarded as measures of aesthetic sensitivity, and all three tests can produce scores which significantly divide art students from non-art students. Yet within groups these tests do not intercorrelate, and hence it must be concluded that they measure three different sensitivities—or none! The possibility should certainly not be excluded that there may be no unitary single ability rightly called “aesthetic sensitivity”, instead we may be dealing with fragmented and partial “sensitivities.” This study is clearly insufficient to establish such a conclusion, and findings reviewed elsewhere (Eysenck, 1957, 1940a, Granger, 1956), point in quite

a different direction. Much work remains to be done before the facts of the situation can be regarded as firmly established.

SUMMARY

Male and female artists (students of visual arts, design, etc.) and male and female controls (students of non-art subjects) were administered tests of personality and intelligence, and three tests of aesthetic sensitivity (1) Maitland Graves's Design Judgment Test, (2) Child's Paintings Choice test, and (3) Birkhoff's Polygon Test. Artists were significantly more introverted and neurotic, thus showing some resemblance to the female rather than the male norms. They were superior in their scores on all three tests of aesthetic sensitivity, although much less markedly so than previous research had led one to suppose. Within-group correlations were quite small, and mostly insignificant, there is no evidence to suggest that the three tests of aesthetic sensitivity measured the same factor within each of our four groups. It seems possible that the tests measure the effects of specialized teaching, rather than aesthetic sensitivity.

REFERENCES

- Barron, F., & Welsh, G. S. Artistic perception as a possible factor in personality style. Its measurement by a figure preference test. *Journal of Psychology*, 1952, **33**, 199-203
- Birkhoff, G. D. *Aesthetic measure*. Cambridge, Harvard University Press, 1932
- Brighthouse, G. Variability in preference for simple forms. *Psychological Monographs*, 1939, **51**, No. 5
- Burt, C. The psychology of art. In C. Burt, E. Jones, & W. Moodie, *How the mind works*. London: Allen & Unwin, 1933.
- Child, I. L. Personal preferences as an expression of aesthetic sensitivity. *Journal of Personality*, 1962, **30**, 496-512
- Child, I. L. Observations on the meaning of some measures of aesthetic sensitivity. *Journal of Psychology*, 1964, **57**, 49-64
- Child, I. L., & Iwao, S. Personality and aesthetic sensitivity: Extension of findings to younger age and to different culture. *Journal of Personality & Social Psychology*, 1968, **8**, 308-312
- Eysenck, H. J. The validity of judgments as a function of the number of judges. *Journal of Experimental Psychology*, 1939, **25**, 650-659
- Eysenck, H. J. The general factor in aesthetic judgments. *British Journal of Psychology*, 1940, **31**, 94-102 (a)
- Eysenck, H. J. Some factors in the appreciation of poetry and their relation to temperamental qualities. *Character & Personality*, 1940, **8**, 160-167 (b)
- Eysenck, H. J. "Type"-factors in aesthetic judgments. *British Journal of Psychology*, 1941, **31**, 262-270 (a)
- Eysenck, H. J. The empirical determination of an aesthetic formula. *Psychological Review*, 1941, **48**, 83-92. (b)

- Eysenck, H J The psychology of aesthetics In H J Eysenck, *Sense and non-sense in psychology* London Penguon Books, 1957
- Eysenck, H J Factor-analytic study of the Matland Graves Design Judgment Test *Perception and Motor Skills*, 1967, **24**, 73-74
- Eysenck, H J An experimental study of aesthetic preference for polygonal figures *Journal of General Psychology*, 1968, **79**, 3-17
- Eysenck, H J Application of the Matland Graves Design Judgment Test to professional artists *Perception and Motor Skills*, 1970, **30**, 589-590
- Eysenck, H J Factors determining aesthetic preferences for geometrical designs and devices *British Journal of Aesthetics*, 1971, **11**, 154-166
- Eysenck, H J, & Castle, M Training in art as a factor in the determination of preference judgments for polygons *British Journal of Psychology*, 1970, **61**, 65-81 (a)
- Eysenck, H J, & Castle, M A factor-analytic study of the Barron Welsh Art Scale *The Psychological Record*, 1970, **20**, 523-525 (b)
- Eysenck, H J, & Castle, M A validation study of the Matland Graves Design Judgment Test *Journal of Applied Psychology*, 1971, in press
- Eysenck, H J, & Eysenck, S B G *Eysenck personality inventory* London University of London Press, 1964
- Granger, G W Expériences récentes d'esthétique visuelle *Revue d'Esthétique*, 1956, **8**, 10-49
- Graves, M *Design judgement test* New York Psychological Corporation, 1948

Manuscript received July 15, 1971

This document is a scanned copy of a printed document. No warranty is given about the accuracy of the copy. Users should refer to the original published version of the material.

This document is a scanned copy of a printed document. No warranty is given about the accuracy of the copy. Users should refer to the original published version of the material.