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Order in complexity: How Hans Eysenck brought differential psychology and aesthetics together

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ABSTRACT

Although Hans Eysenck's reputation is for the most part related to other works, empirical aesthetics was the topic of his PhD, a field in which he remained interested for a very long time, steering the domain's wheel towards the study of individual differences. In this article, we review his work and impact in the field. We first argue that his works on aesthetics demonstrate his interest for natural sciences and arts, his gestaltist views on art and psychology, as well as the influence of Burt and of his first wife, Margaret Davies, on his work. We then analyze his first factor analytic works on aesthetic preferences, leading to the discovery of the two factors of aesthetic judgment – 'T' (for taste) and 'K' (for appreciation of complexity) – and show how, in spite of his impact in other fields, he kept demonstrating concern for the measure and determinants of these two factors. Finally, we discuss the extensions and limitations of Eysenck's contribution to the field of empirical aesthetics, proposing that the 'T–K' duality sowed important seeds for a unified concept of 'Aesthetic Quotient'.

1. Introduction

Hans Eysenck's name is known for many reasons, and experimental aesthetics research is probably not the first to come to mind. Although Eysenck did his PhD on empirical aesthetics and kept a line of work in this field afterwards, he is largely portrayed as an enemy of psychoanalysis, a defender of behavior therapy, an advocate of the genetic explanations of IQ differences, or a pioneer in the scientific study of personality — for example, his obituary in *Nature* (Gray, 1997), a journal in which Eysenck also published on aesthetics (H. J. Eysenck, 1941b, 1941c), highlighted his research on personality as his most significant impact. What is less known is that Eysenck's first contributions were to the study of the aesthetic experience, and gave empirical aesthetics an individual differences psychology twist — as he did much else is touched (Corr, 2016).

2. Eysenck's projects and interests

2.1. An initial interest for 'hard' sciences

At 19 years of age, in 1935, Eysenck enrolled at University College London (UCL) with the initial intention of studying physics. But administrative circumstances, cultural differences and misunderstandings lead to his enrollment in Psychology, the only "subject on the science side" – which he had little knowledge of and did not originally consider as a science – that he could take without losing a further year, which he could not afford (Buchanan, 2010). Although Eysenck's fury dissipated, he remained fascinated by physicists – more than by psychologists, explaining that "none of them impressed [him] half as much as did the leading physicists and astronomers" (Eysenck, 1997, p. 47) – and his interest for physics and natural sciences (albeit one as a spectator) surely later influenced his works, not only on intelligence and personality, but also on empirical aesthetics.

A lot of Eysenck's work would describe him as a naturalist, and one of the most notable examples of his fascination for natural sciences can be found in how he investigated with passion the topic of aesthetic sensitivity and aesthetic preferences by likening it to a natural phenomenon. For example, he was very interested in *the absence of* cross-cultural differences in aesthetics sensitivity and preferences (Chan, Eysenck, & Götz, 1980; Eysenck, Götz, Long, Nias, & Ross, 1984; Eysenck & Iwawaki, 1971, 1975; Eysenck & Souief, 1971; Iwawaki, Eysenck, & Götz, 1979), as well as in the weakness of training or education effects in aesthetic sensitivity (Eysenck & Hawker, 1994; Eysenck et al., 1984; Götz, Borisy, Lynn, & Eysenck, 1979), allowing him to suggest notably that aesthetic sensitivity had "a genetic foundation in the structure of the nervous system" (Götz et al., 1979, p. 801). The influence of Galton and Darwin can be found behind these conclusions that 'T' has "a firm genetic basis" (Eysenck & Iwawaki, 1975, p. 11), and Eysenck expressed how he considered that genetic factors were often decried (Eysenck, 1997, p. 64), but this is also – and perhaps more importantly – an application of what Eysenck enunciated as one of his principles: the idea that body and mind are an indivisible continuum,

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and that psychologists should not leave biological factors aside (Eysenck, 1997, p. 64).

Additionally, the influence of natural sciences can be found in Eysenck's interest in the improvement of a mathematical formula of aesthetic quality, which was his initial project in the field of aesthetics (Eysenck, 1941d). Moreover, although other factors – notably Burt, Spearman and Galton's influence (Buchanan, 2010) – certainly played a role in it, another illustration of the influence of natural sciences on Eysenck's empirical aesthetics work can be found in his enthusiasm for the development of quantitative research methods in psychology, notably through his application of thorough empirical methodologies when investigating aesthetic preferences and sensitivity.

2.2. An appetite for art

2.2.1. Interests towards aesthetics

Even though Eysenck was captivated by natural sciences, he has been described as having an artistic mind (Corr, 2016). The first illustration of it was his lack of excitement when Burt originally suggested that he work on the re-standardization of the Binet scale (Buchanan, 2010, p. 55); but this part of his personality found expression in empirical aesthetics. Indeed, although his approach of aesthetics was highly empirical and oriented towards the study of individual differences, his works demonstrate an interest for what was probably to him more than ordinary experimental material: art. Although his work in aesthetics encountered the resistance of artists (Eysenck, 1997, p. 72) – provoking, among "normally peaceful artists, philosophers, and aestheticians", a "pitch of uncontrolled indignation" (Eysenck, 1970b, p. 308) – his attention to art is frequently indicated in his articles, notably in the way he cites aestheticians like Kant, Porena, Fry and Bell in his seminal article on the 'T' factor (Eysenck, 1940b).

2.2.2. Building bridges with the Gestalt theory

Eysenck's interest for art is also showed in how he made efforts to build bridges between empirical findings and art theory, notably linking Koffka's Gestalt theory – a both psychological and artistic idea (Gestalt means 'shape' in German) according to which the association of elements constitutes something different than the sum of the elements – with the duality of the two principal factors of aesthetic preferences (Eysenck, 1942b).

Certainly, here again, Eysenck's works in aesthetic perception can be seen through the lens of Galton's influence, who many years before had been concerned with the measurement of perceptual abilities (e.g., Galton, 1890) and their assumed relations with intelligence, but undoubtedly Eysenck was also interested in art itself. A first example of such a "not only perceptual" conceptualization of aesthetic preferences is shown in his early interest in the field of poetry (Eysenck, 1940a), although a rather minor topic compared with his proficiency in visual aesthetics. Again, such an interest for the perception of poetry demonstrates Eysenck's gestaltist interest for the organization of units (words), rather for the units themselves.

2.2.3. The aesthetic statement behind the Visual Aesthetic Sensitivity Test

When building the Visual Aesthetic Sensitivity Test (Götz et al., 1979), which we discuss below, Eysenck became a friend of Karl Otto Götz, a West German abstract painter (Eysenck, 1997, p. 72), and built an aesthetic sensitivity measure that is only composed of abstract art (Götz et al., 1979) (Fig.1). This can, of course, be seen as a way to present stimuli that are supposedly more "purely perceptual" than other measures that reflect only representational art (Meier, 1940, 1963), but it can also be seen as an artistic statement — possibly even a political statement, considering that Eysenck had left Germany because of his opposition to the Nazi party, and that the same party had also banned Götz' paintings and exhibitions.

Indeed, building the Visual Aesthetic Sensitivity Test, Eysenck could have selected already existing works of art, used the basic polygons that he had previously used (Eysenck, 1940b, 1941d), or directly applied design principles like the Maitland Graves Design Judgment Test (Graves, 1948, 1951). Instead, he took the unconventional path, and emphasized the artistic value of the Visual Aesthetic Sensitivity Test, explaining that the test overcomes "the major drawback" of other visual aesthetic sensitivity measures that "the stimuli are clearly of low or no artistic interest" (Götz et al., 1979, p. 197).

Fig. 1. Items of the Visual Aesthetic Sensitivity Test (Götz et al., 1979).

As we later explain, the Visual Aesthetic Sensitivity Test was especially challenged for only representing one specific type of stimuli, rather than visual art in general (Gear, 1986), so Eysenck clearly paid for this assertive statement of relying solely on Götz' painting style and ability to create the test.

2.2.4. The scientist as a creator

Finally, Eysenck, indeed, just as much as a scientist, was characterized by an artistic and provocative personality (Corr, 2016). His works are those of someone who was passionate about a wide variety of topics, and who enjoyed making his scientific demonstrations have philosophical and cultural impacts, coupling empirical results with his opinions. Indeed, his empirical aesthetic formula as a product of order and complexity has been noted as a pertinent summary of Eysenck's works (Corr, 2016): In the field of aesthetics, Eysenck's efforts went in the direction of demonstrating aesthetic value (and, possibly, value in general) as high sophistication in the respect of rules — an old paradox, which, although theorized before Eysenck, is a widely used and empirically supported definition of creativity (Runco & Jaeger, 2012), to which Eysenck agreed, explaining, for example, that "a psychotic person's responses are original, in the sense of unusual, but they are hardly ever creative; they lack relevance" (Eysenck, 1995, p. 36).

2.3. Eysenck's (main) early influences

2.3.1. Burt

Being his supervisor and directing Eysenck's PhD on aesthetic preferences, Cyril Burt obviously exerted a lot of influence on his young student's thinking and work in this field. Being one of the pioneers of factor analysis (Burt, 1940), he introduced Eysenck to his methods,