Aesthetics: It's beautiful to me

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Beauty judgments, at least in part, determine what we wear, where we eat, and who we swipe right on Tinder. However, beauty judgments vary greatly across individuals, and a new study highlights the importance of assessing these individual differences.

You and I like different things, so we cannot characterize the idiosyncrasies of taste by averaging across a population (Figure 1). Yet, researchers typically use sample means to study beauty. A new study by Chen and colleagues[1] published in this issue of *Current Biology* is helping to shift the beauty-judgment investigation from sample means to individual differences (and see Vessel *et al.*[2], Brielmann *et al.*[3], and Leder *et al.*[4] for related work).

Beauty science may sound oxymoronic, but ever since Fechner in 1876[5], many have done rigorous scientific work on the experience of beauty. The scientific study of beauty can be divided into approaches that focus on the stimulus or the response[6]. On the one hand, work within the stimulus-focused approach is concerned with finding specific perceptual features that enhance aesthetic preference. For example, researchers have consistently found a preference for curved over angular contours[7], and symmetric over asymmetric stimuli[8], except among art experts[9]. And other research shows that specific color combinations, the golden ratio, or certain spatial compositions are generally preferred[10]. On the other hand, research within the response-focused approach is concerned with understanding the underlying mechanisms of aesthetic experience, like characterizing the temporal dynamics of aesthetic response[11,12], and understanding the relationship between beauty and pleasure[3].

The large individual differences of beauty judgment severely limit the prospects of the stimulus-focused approach as the sole predictor of aesthetic judgment. We each have a different favorite movie star, drink, and playlist. Our idiosyncratic taste is part of our identity. When describing ourselves, besides our skills and personal history, we also mention our likes and dislikes. The study of individual differences in perceived beauty is response-focused. Specifically, Chen and her colleagues calculate aesthetic 'taste typicality' by comparing individual ratings to the group mean. For a set of objects and a group of participants, a participant's taste *typicality* is the correlation, across objects, of the participant's rating with the group-mean. Participants rated the appeal of photographs of commonplace objects or scenes and excerpts of commonly encountered sounds. This emphasis on everyday stimuli is refreshingly unlike the typical aesthetics-research emphasis on paintings and music. Comparing sensory domains, they find that people who tend to have atypical taste in the visual modality also have atypical taste in the auditory modality. Their work is an example of how rigorous experiments and analysis can lead to conclusions about taste while recognizing its subjectivity and variance across participants.

Knowing taste typicality can be useful. A film director and a political candidate might be wise to consult advisers with typical taste to predict how the public will receive the film and candidacy, respectively. Knowing individual differences also enables tailoring of experience to suit the individual. Companies like YouTube, Netflix, and Spotify use personal taste to make song and movie recommendations and customize the user experience. Given the finding by Chen and colleagues that taste typicality is conserved across sensory modalities, perhaps Spotify's music recommendations are predictive of Netflix's movie recommendations. The industry of using individual differences to give different users different products is growing, exemplifying the need to study such individual differences.

Individual differences in beauty judgment may provide an alternative answer to a commonly asked question: What does beauty have to do with perception? Many suppose that understanding beauty should be left to philosophers. The timeless saying that 'beauty is in the eye of the beholder' might seem to foreclose any empirical science of beauty. However, beauty judgments are like other perceptual judgments in many ways. For example, perceptual order effects are comparable to those in beauty[13,14], and beauty experiences, like perceptual experiences, are correlated with activity in particular brain regions[15]. Beauty-guided decisions seem to be perceptual decisions with high individual differences. It is clear that beauty involves perception, but we wonder whether beauty is entirely part of perception.

As a researcher, you've likely felt the pull of beauty in optimizing your figures for publication, and you have likely used the word 'beautiful' to describe an influential scientific experiment or a mathematical equation. You may be surprised to learn that these experiences have been studied empirically, finding that beautiful data visualizations are trusted more[16], that beautiful experiments tend to discover or disrupt knowledge[17], and that judging the beauty of an equation or that of an artwork produces similar brain activity[18].

Figure 1. Beauty is in the eye of the beholder.
Different cartoon reflections of the same girl illustrate the idea that each of us sees the world differently, especially when it comes to beauty. (Image 534186936 from The Image Bank via Getty Images, edited by Maria Pombo.)

Beauty matters, and individual differences are inherent. Understanding idiosyncratic taste will help tailor experiences to maximize pleasure and may reveal the place of beauty in perception.

DECLARATION OF INTERESTS

The authors declare no competing interests.

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