

Aesthetic value and valence engage different neural processes

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How do people assess the value of objects? Evidence from behavioral economics suggests that the subjective value of an object is computed with reference to the behavioral goal the value is meant to assist. For instance, the value of a glass of juice is different if a person seeks something to drink because she is thirsty than in situations where she does not. The reason for this, as proposed by the economic theory called Process Theory, is that different behavioral contexts engage different perceptual, emotional, cognitive, and memory processes. We sought to test this hypothesis. Using fMRI (3T), we studied if judging the aesthetic value of a visual stimulus, here photographs, activated different subsets of these neural processes compared to judging the valence of it. 13 healthy subjects (7M/6F), with a mean age of 28.5, viewed 288 photographs taken from the International Affective Picture System (IAPS) dataset, each presented for 3 seconds. In alternating blocks of 6 trials they were asked to rate the photographs for either their aesthetic value (using button presses to indicate one of three types of value judgments: “beautiful”, “neutral” or “ugly”) or their valence (using button presses to indicate one of three alternative value judgments: “pleasant”, “neutral” or “unpleasant”). Comparing judgments of positive aesthetic value with judgments of positive valence we found that, indeed, the two value dimensions used to assess the value of the IAPS photographs did engage neural processes associated with perception, memory and reward differentially. This result lends support to the basic tenet of Process Theory that value is computed as a function of the sensory and memory information retrieved and attended to depending on the behavioral goal at hand – in our study assessing how aesthetic pleasing or how pleasant photographs are.