

The Role of Visual Attention in Preference Formation: Urgency Promotes Affective Disengagement

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<https://hdl.handle.net/2324/4110435>

出版情報 : Kyushu University, 2020, 博士 (システム生命科学), 課程博士
バージョン :
権利関係 :

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論 文 名	The Role of Visual Attention in Preference Formation: Urgency Promotes Affective Disengagement (選好形成における視覚的注意の役割：時間的制約は感情的注意の解放を促進する)
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論 文 審 査 の 結 果 の 要 旨

In this research, two sets of experiments were performed to examine the role of visual attention in human preference formation. Preference formation refers to a form of value-based decision-making that is typically thought to be subjective, based on individual notions of attractiveness. Previous research had suggested that visual attention may serve as a precursor to value-based decision-making, such that the longer one views an object, the more likely one would be to choose the object in question. Thus, viewing leads to liking, and so measures of attention (e.g., eye movements) would serve as predictors of choice. This hypothesis is referred to as the “gradual commitment hypothesis.” In contrast, an alternative theory suggests that visual attention serves to integrate information, without a necessary connection between viewing and liking. Instead, the integration of negative information may impede preference formation, whereas the integration of positive information could promote preference formation. This hypothesis is referred to as the “information integration hypothesis.”

To test these two alternative hypotheses, the present research developed a value-based choice paradigm with cues that could attract attention and provide positive or negative information. In this paradigm, first a single cue was presented, and then two target images were presented simultaneously, one in the same location as the cue, and one in the opposite location on the screen. In the main set of experiments, subjects were asked to make choices between two abstract geometric figures, whereas the cue was a face image (with a smile for positive affect, or an expression of disgust for negative affect) or a food image (appetitive food for positive affect, or disgusting food for negative affect). The subjects’ eye movements were measured, as well as their manual choice responses. Additionally, the paradigm included a manipulation of urgency through time pressure. In separate conditions, the subjects were either given as much time as they wanted to make their decisions (self-paced), or they were given a deadline of 1.5 s (under urgency).

Taking all the data together, it was shown that subjects were more likely to choose the target that appeared at the opposite location from the cue, but only under urgency, and only if the cue had a negative value. The data proved that cues can influence the subjects' attention (as measured by the eye movements) as well as the preference formation (as measured by the manual choice responses). The results provided unambiguous support in favor of the information integration hypothesis, and further indicated that preference formation may not be a purely subjective process – instead it can be influenced by external factors that “nudge” the subject in a given direction; particularly, a negative influence under urgency. Thus, the present research provided an important contribution to our understanding of value-based decision-making.

Therefore, we conclude that this thesis deserves to be acknowledged as a doctor's thesis (Systems Life Sciences).