

Abstract

The fact that lightness perception is influenced by contingent environmental factors can be clearly illustrated by a wide range of lightness illusion examples. In this paper, we are more interested in determining whether existing knowledge in mind about an object would have an impact on one's perceived lightness towards that object.

The research conducted by Maclin and Malpass (2001, 2003) have demonstrated that categorization of races plays a substantial role in altering the representation and recognition of faces, where the proposed basis is that the faces from other-race should be processed differently than same-race faces as a result of the categorization process.

As such, in the current experiment, a methodology was devised to test how subjects' expectations associated with varying races would affect their perceived lightness of those faces. In addition, we are interested to find out if there is any difference in mixed-race facial lightness perception, especially for those ambiguous-race faces.

We consistently found significant distortion in lightness perception led by the perceived race of a sample race. Such distortion is relatively stronger when the facial features of the reference face are unambiguous. Accordingly, it shows that abstract knowledge and expectations about the relative reflectance of an object can affect its perceived lightness.