



Master Thesis Ph. D. Dissertation

Analogies between Facial Expressions and the Front View Designs of Cars

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Year Published: 2009
Field: Industrial Design
Category: Master Thesis

In car design, in addition to the functions, style is also a critical factor that influences consumers' favor. Many studies have discussed the consumers' subjective points of view in car styling, and set up design guidelines for designers. However, most of the researchers use the evaluation adjectives for the conventional product design study to evaluate the cars, such as "ancient," "modern," "streamlined," "geometric," etc. But many examples in our daily life show that the front view design of cars are similar to faces and even present the analogies between facial expressions and the car fronts.

In this research, three approaches were carried out via the concept of car's "expressions." The first step was to collect and analyze the related articles on websites and in magazines of car design communities, and pictures were chosen as samples among these cases. Second, card sorting experiments were conducted by 8 subjects individually with 40 car samples. Think aloud was applied simultaneously during this procedure and protocol analysis was followed to investigate the facial expressions concealed in these cars. Then, interviews were carried out to explore the subjective perspective from the participants towards the research topic. Finally, to verify the results of the protocol analysis, the questionnaire was applied by using the five-point Likert scale with amount of participants. This research finally submitted 25 facial expression adjectives and 4 related adjectives. The corresponding elements and features were also listed and presented by the front view contours. The results shows that the three expressions "happy," "angry," and "neutral" are the most common expressions used to describe cars while others are relatively less mentioned. Furthermore, many adjectives extracted are hard to be categorized into the basic expression categories. It appears that the basic facial

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expressions cannot fully cover the impressions of car front design. Therefore, the relation between the extracted adjectives was also discussed.

Besides, the results of the questionnaire and the protocol analysis are quite similar, which verifies the reliability of both qualitative and quantitative approaches. The results also show that the perceptive differences of different backgrounds (design and non-design) and gender (men and female) are not significant both in factor analysis and Hotelling' s T2 test.