

CARS PRODUCE INCONSISTENT TRAIT ATTRIBUTIONS WITH BRAND IDENTIFIERS REMOVED

MATTHEW R. NEARENTS - Brigham Young University Idaho

ABSTRACT

The purpose of this study was to examine the effect of reputation and brand bias on the anthropomorphization and trait-attribution of car fronts. Anger expression was explored to see if people favored angry-looking cars. Cronbach's alpha produced low reliability in terms of personality traits, and people showed high agreement about whether they saw a face. Traits included submissive-dominant and friendly-hostile. People showed low agreement about which facial expression was seen, and no evidence that people preferred angry-looking cars was found.

INTRODUCTION

People have made games out of finding faces and other human resemblances in clouds and various parts of our environment. According to Guthrie (1993) the acts of animating and anthropomorphizing consist of giving life and human characteristics to the non-human elements of our world respectively. Because of our tendency to animate and anthropomorphize, advertisers purposefully connect product brands with human traits (Aaker 1997). This association is known as brand personality, which, according to Aaker (1997), is defined as the humanistic qualities linked to a brand. Anthropomorphizing and animating a brand into a human-like personality by the consumer can result from interaction with the brand, whether direct or indirect (Plummer 1985). Personality characteristics are linked to brand by the type of people who use it, the brand's official representatives, celebrities who advocate use of the brand, its logo, distribution, presentation, media exposure, cost, availability, and design (Aaker 1997; Rajeev, Lehmann, and Singh 1993). For the purpose of this research, brand personality is considered a frame of reference, through which we view products. This frame of reference creates bias that may distort or enhance our appraisal of a product. Detection of patterns in our environment, even when none is present, probably stems from evolutionary adaptation for survival (Margolis, 1987). Our ability to see faces in automobiles may encourage us to view cars as lifelike. Research (Windhager et al. 2008) and the media (Walt Disney's Who Framed Roger Rabbit?, 1988) have explored and portrayed faces on car fronts. As of yet, no studies have examined what information is conveyed in the facial expression of a car when the identifying information has been removed. Elimination of stereotypes and biases associated with the car may have an influence on how we view them. This study aims to explore how traits are affected with such biases removed. Windhager et al. (2008) found very high reliability in ratings of traits of cars with known brands. One reason for high reliability might involve the stereotype associated with car makes. They also concluded that people favor angry-looking cars. Do people really favor angry looking cars, or do favored cars (such as BMW) contain other variables that affect likability? The hypotheses are fourfold: First, because of previous research, people have seen faces on cars prior to this survey. Second, without certain biases, raters will have a reduced frame of reference with which to rate personality attributes. We should therefore find low inter rater reliability. Third, I expect high inter rater reliability in terms of whether the cars have a face. And fourth, I predict low inter rater reliability concerning ratings of likability and low correlation between likability and anger expression.

METHODS

The participants were chosen from a convenience sample of Brigham Young University Idaho students and associates. 62 people who responded to an email message, 36 females and 26 males (M = 22.47, SD = 6.02) participated in the study.

Procedure

Four photographs were obtained from royalty free sources portraying the front of cars. The car fronts were manipulated with Adobe Photoshop® to eliminate logos and license plates. They were scaled to grey and placed on white backgrounds. Wind shields were tinted to the same shade of grey, eliminating interior and background elements. The cars were scaled in proportion to one another and the pictures were scaled to 504 x 360 pixels.

A survey was constructed using Qualtrics® online software. On a computer screen participants were randomly shown one of five illustrated collages of inanimate objects. Among these objects was one of five different illustrated car fronts placed in a random location. Raters were asked to



Figure 1. Alfa 147, Mazda 6, Suzuki Swift, Volkswagen Passat

click on the pictures in which faces were seen. Next, the four car front photographs were presented randomly. For each car, participants were asked if they could guess the make. They then rated the degree to which they saw a face (on-screen slider from 0 to 100), the personality traits submissive-dominant (bipolar on-screen slider. 0: submissive, 100: dominant), the personality trait friendly-hostile (bipolar slider, 0: friendly, to 100: hostile), and whether they liked the car (scale from 0 to 100). If participants had suggested they saw a face, they were asked which facial expression(s) was seen. The universal facial expressions (Ekman 1999; Ekman, Friesen, and Ellsworth 1982; Matsumoto, 1992) were displayed on sliding scales from 0 to 100. The scales had to sum to 100, whether one or multiple scales were used. The last questions asked whether the participants saw faces before the survey, were influenced by the survey to see faces, or failed to see faces on car fronts.

RESULTS

The collages of random illustrations were analyzed to count the number of people who saw a face in the cars. Of the 62 participants, 47 clicked on the car (76%). Chi-square analysis, $\chi^2 (1, N = 62) = 16.5, p < .05$. Exploring whether people saw a face before the study, 43 people indicated that they saw facial expressions on cars before taking the survey, 14 indicated they were influenced by the survey to see faces on cars, and 5 indicated they did not see facial expressions on cars. Chi-square was conducted and found that people did see faces on cars before taking the survey, $\chi^2 (2, N = 62 = 38.2, p < .05$. The percentage of participants who saw faces before the survey, were influenced by the survey, and who did not see faces were 69%, 23%, and 8% respectively. Cronbach's alpha was used to determine the internal consistency of the traits submissive-dominant and friendly-hostile. Alpha coefficients showed little to no internal consistency for the two personality traits. Inter-item correlation produced negative correlations between cars. This supports the hypothesis that people will rate cars differently when brands are unknown (for mean scores of traits for each car see Table 1). Likewise I assessed the degree to which people saw a face. Alpha coefficient was .83 suggesting high agreement in support of the third hypothesis. The mean of the individual cars ranged from 64.95 to 72.60, with a mean on the total scale of 270.03 (SD = 96.97). The data was examined to assess whether people agreed about which facial expressions were present. Generally ratings were inconsistent and most scores for each expression were zero. Charts (see Figure 2) revealed only moderate agreement about which expressions were actually seen, which contrasts with the hypothesis. Cronbach's alpha was used to assess ratings of likability. Alpha coefficient for likability was .75 suggesting moderate to high reliability in ratings. The means of the individual cars ranged from 40.56 to 64.18, with a mean on the total scale of 205.52 (SD = 90.89). This shows evidence to contradict the fourth hypothesis, that we should see low reliability in ratings of liability. A regression analysis was conducted with anger expression ratings as the independent variable and likability as the dependent variable for each of the four cars. For Mazda, anger expression rating was not a significant predictor of likability, $b = .06, t(27) = .318, p > .05$, and accounted for 0.4% ($R^2 = .004$) of the variance in likability scores. For Suzuki, anger expression was not a significant predictor of likability, $b = -.02, t(17) = .063, p > .05$, and accounted for 0.02% ($R^2 = .0002$) of the variance in likability scores. Similarly for Alfa, anger expression was not a significant predictor of likability, $b = -.03, t(29) = -.171, p > .05$, and accounted for 0.1% ($R^2 = .001$) of the variance in likability scores. Finally for Volkswagen, anger expression was not a significant predictor of likability, $b = -.001, t(25) = -.003, p > .05$, and accounted for 4.3E-5% ($R^2 = 4.3E-7$) of the variance in likability scores. The lack of significance and the small percentage of variability in all four analyses support my hypothesis that people like random cars that appeal to them versus angry-looking cars.

Table 1

| <i>Mean Scores of Individual Traits - M (SD)</i> | | | | | |
|--|---------------------|------------------|---------------|---------------|---------------|
| Measures | Submissive-Dominant | Friendly-Hostile | Face? | Likability | Anger |
| Mazda | 58.69 (24.07) | 52.35 (26.78) | 65.85 (30.10) | 59.79 (29.75) | 16.60 (24.54) |
| Suzuki | 43.32 (24.71) | 34.21 (23.40) | 64.95 (30.60) | 40.56 (29.54) | 7.42 (16.76) |
| Alfa 147 | 55.84 (28.05) | 55.35 (22.42) | 72.60 (27.56) | 40.98 (31.89) | 18.38 (21.82) |
| Volkswagen | 53.39 (24.47) | 41.18 (24.68) | 66.63 (30.36) | 64.18 (29.25) | 10.66 (19.35) |

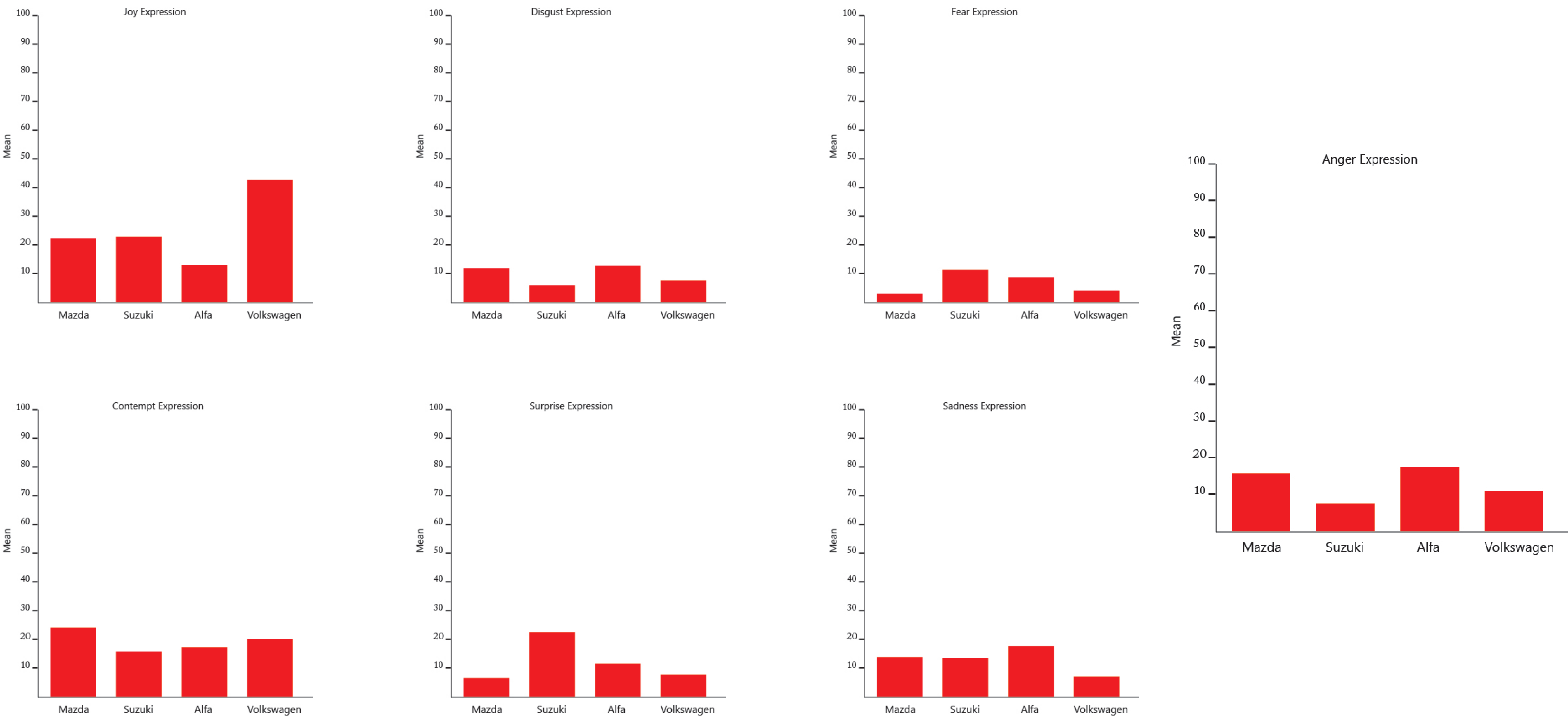


Figure 2. Mean Expression Scores for Cars by Expression Type

DISCUSSION

The present study examined the role brands play in trait attribution on car fronts and how anger expression affected likability. First, the Chi-square suggested people see faces on cars as indicated by their choosing the illustrated car within the collages. I feel the use of an illustration as opposed to a photograph was acceptable. In the study of human faces, much research (Cuceloglu, 1970; Aronoff, Barclay, & Stevenson, 1988; Eastwood, Smilek, and Merikle, 2001; Evans et al. 2008) found the use of schematic faces (outlines with only eyes, eyebrows, and mouth) very appropriate. My assessment of whether people were influenced by the survey did reveal significance and supported my hypothesis. However, it is difficult to assess truthfulness with only one question on a self report survey. It is impossible to tell if this finding generalizes across all cars that exist in the world.

I found low agreement concerning trait attribution in support of my hypothesis. Participants rated, without knowing the make of the car, two personality traits. This suggests that each participant, without identifying information as their guide, rated the cars based on whatever information they could gather, whether it be guesswork, the physical appearance of the car, the facial expression or other factors. Ekman (1999) suggests that facial expressions deliver information about the context of a facial expression. For example, when we see an expression of joy, we know something happened to arouse the expression, we have an idea of how the person must be feeling, and how the person may act in the future (re-engage in stimulus). It could be that we may interpret similar information from a non-human expression, such as that of a car front. Of course a car facial expression is taken out of context (there was nothing to evoke its expression, nor any possibility of feeling or re-engaging), but humans may anthropomorphize such information upon the vehicle. Maybe a certain expression creates a fictitious reputation by which we make assessments. This may give drivers confidence to drive a certain way on the road. Small and Verrochi (2009) found significant increases in charitable giving when children portrayed sad faces in charity advertisements. If human behavior can be modified by the facial expression of another human, perhaps it can be modified by the expression seen on an inanimate object. Atzwanger (1995) found that the physical features of a car can affect the way people change lanes. However no evidence exists in this survey to associate a certain expression with any specific attribute.

I found high agreement in the degree to which a car has a face, supportive of my hypothesis. Raters were generally in agreement about how much of a face they saw. In order to assess which features of the car correspond most to facial expressions is to be determined by future research. Likability showed moderate to high reliability, contradicting the fourth hypothesis that people like random cars that appeal to them. This could have to do with the specific cars chosen for the study (BMW vs Suzuki). The linear regression between each car and its ratings of anger revealed no significant correlation between likability and anger expression which supported the fourth hypothesis. Which features of the car produce higher ratings of likability is unknown. Perhaps features of the car related to facial expression are most attractive. The opposite could also be true. An Isolated assessment of anger specifically may help us understand better the relationship between appeal and angry-looking cars.

The convenience sample used in this study is a limitation. I received an imbalanced ratio of female to male participants (36 to 26 respectively). A sample more representative of the typical consumer is preferred. Another limitation of the survey design was my inability to completely standardize the photos used. Pictures retrieved had different resolutions, were shot through different lenses, and reflections and shadows were not standardized (expect for windshield tint). Artifacts could have affected ratings. However care was taken to procure photos that looked very similar in all of these aspects.

One limitation may be due to guesswork made by raters. Five people guessed Volkswagen, six people guessed the mazda, one person guessed the Suzuki, and no one guessed the Alfa. Many wrong guesses were also written. The assumption is made that whether raters were correct or incorrect, they were confident in their guess since the question asked them only to guess if they were sure they knew the brand. This means that those who guessed were using some frame of reference, either for the correct brand or some incorrect brand, to answer the survey questions. Such frame of reference can distort trait attribution, even when one is thinking Nissan while looking at a Volkswagen.

The facial expressions used in this study were based on human expression. Further study should be done to assess expressions specific to cars. For example, can a car really show contempt or do people choose it due to limited number of options?

Using cars unknown to participants helps remove many biasing variables. Cross-cultural research using cultures without automobiles to rate car fronts may reveal more detailed information about whether a car has a face, what expressions are seen, and what expressions are appealing.

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