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**THE EFFECT OF THE SHAPE OF EYEGLASSES ON  
JUDGEMENTS OF PERSONALITY**

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*Abstract*

Studies on the effects of eyeglasses on impression judgements are available, but past research has only focused on judgements of target persons who wear eyeglasses. Moreover, while some studies have focused on whether the participants' eyeglasses were full-rimmed or rimless, or whether the rim was thick or thin, little attention has been given to the influence of the *shape* of eyeglasses on judgements about personality. The present study was designed to investigate how the shape of eyeglasses relates to self-evaluation image when individuals consider wearing eyeglasses. Two pictures of round and square eyeglasses as the independent variables, and a 12-item questionnaire on personality traits as the dependent variables were used in the study. Participants were randomly divided into two conditions; evaluating round or square eyeglasses. First, they were asked to look at the style and for 30 seconds carefully imagine wearing these eyeglasses. After that, they were asked to judge their personality traits when they imagined wearing eyeglasses. A one-way ANOVA (between-participants design) was conducted to analyze the difference between the two conditions. The results showed that wearing round eyeglasses made participants feel that they were warmer, and wearing square eyeglasses made them feel more competent and stubborn. This suggests that round-warm, and square-competent or square-stubborn connections are activated in the self-evaluation of our image merely by imagining different shapes of eyeglasses. Theoretical contributions in terms of "encloded cognition" are discussed in evaluating these results.

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**Keywords:** Eyeglasses; stereotype; encloded cognition; shape and image.



## 1. Introduction

Previous studies have shown that the wearing of eyeglasses has both positive and negative influences on wearers' impressions of their facial image. Regarding the negative side, Leder, Forster, and Gerger (2011) for example, found that eyeglasses made wearers less attractive. On the positive side, Guéguen and Martin (2017) reported that passersby on the street agreed to be interviewed more often when the interviewers wore eyeglasses in actual field settings. This was because of the perceived higher conscientiousness of people wearing eyeglasses. Okamura and Ura (2017, in press) focused on the effect of the shape of face and eyeglasses on the personality judgements of others. They proposed that many personality items are influenced by eyeglass shape, especially in respect of warmth and competence traits. These are regarded as important by the perspectives covered by the stereotype contents model (SCM; Fiske, Cuddy, Glick, & Xu, 2002), and in the recognition of the universal dimensions of social cognition (Fiske, Cuddy, & Glick, 2007; Cuddy, Fiske, & Glick, 2008).

These perspectives assert that social cognition is structured from two dimensions: warmth and competence. The perspective dealing with the universal dimensions of social cognition emphasizes the primacy of warmth judgments. That is, warmth is judged before competence, and judgements of warmth carry more weight in affective and behavioral reactions (Fiske, Cuddy, & Glick, 2007). Here, Okamura and Ura (2017, in press) report two findings. First, a face wearing round eyeglasses is perceived as being warmer, whereas a face wearing square eyeglasses is perceived as being more competent. This result is explained by the activation in a metaphor-consistent manner. In Japanese, the words “*marui*” (round) and “*shikakui*” (square) are used to describe personality traits: “*marui*” means mellow, and “*shikakui*,” means competent but stubborn. These meanings are derived from metaphor. The effects of their activation in a metaphor-consistent manner have been repetitively confirmed in embodied cognition research (see Landau, Meier, & Keefer, 2010).

The second finding is that judgements of most personality traits are influenced by the shape of the eyeglasses, and not by the shape of the face, whereas only the judgement of warmth is influenced by a combination of these two components. These findings revealed the uniqueness of warmth trait, and showed that it is consistent with the idea of the primacy of warmth judgments (Fiske, Cuddy, & Glick, 2007). In fact, Okamura and Ura (2017, in press) speculated on the result in terms of processing sophistication, with warmth being considered a more important attribute than competence (e.g., Wojciszke & Abele, 2008), and warmth being more quickly recognized than competence (e.g., Ybarra, Chan, & Park, 2001) when individuals evaluate others.

As the above studies indicate, reports on the effect of eyeglasses on impression judgements of others are not uniform. For example, in seeking to understand how individuals evaluate themselves when they imagine wearing eyeglasses, little in fact is known about their effect in terms of “enclothed cognition” (Adam & Galinsky, 2012) concept. “Enclothed cognition” is used to describe the systematic influence that wearing something has on the wearer’s psychological processes. The present study was designed to investigate whether the shape of eyeglasses influences participants’ ratings of their own personality traits when they imagine wearing them. By studying the embodied effects of the shape of eyeglasses on self- evaluation, we may offer new insight into metaphor research. It was hypothesized that

round eyeglasses would make participants feel themselves to be warmer in personality terms, whereas square eyeglasses would make them feel competent and stubborn in a metaphor-consistent manner.

## 2. Methods

### 2.1. Participants

Convenience sampling was used in this study. Participants were undergraduate university students (10 men and 29 women), who participated in exchange for partial course credits. Each received a questionnaire and was asked to complete it during a lecture. Participants were informed that they could drop out of the study at any time during the survey and their informed consent was obtained before taking part in the study.

### 2.2. Stimuli and Design

Two pictures of round and square eyeglasses (the independent variables), and a questionnaire on personality traits (the dependent variables) were used. The traits were selected from Study 2 by Swami and Barrett (2011) and Study 4 by Leder, Forster, and Gerger (2011). A one-way ANOVA (between-participants design) was used to analyze the difference between the two conditions.

### 2.3. Procedure

Participants were randomly divided into two conditions; round ( $N = 23$ ) or square ( $N = 16$ ) eyeglasses. First, the participants were asked to look at either style and for 30 seconds carefully imagine wearing them. After that, they were asked to judge their own personality traits while they were imagining themselves wearing the eyeglasses. This evaluation was structured in terms of 12 items (friendliness, likability, warmth, cooperativeness, competence, intelligence, successfulness, trustworthiness, stubbornness, diligence, uncompromisingness, and inflexibility). All items were rated on a 7-point Likert scale ranging between 1 (*strongly disagree*) and 7 (*strongly agree*). The presentation order of the 12 items was randomized by presenting the materials in a block-wise manner.

## 3. Results

We conducted an exploratory factor analysis using maximum likelihood estimation and promax rotation on the 12 items used for the estimation of personality. According to our theoretical perspective, the factor structure was assumed to consist of three dimensions (warmth, competence, stubbornness). The results indicated that the factor structure has low fitness, CFI = .935, RMSEA = .103, AIC = 130.317, and that one item, inflexibility, has high loading on two factors. We excluded the double loaded item and conducted the exploratory factor analysis again on the remaining 11 items. The results showed that fitness was improved, CFI = .974, RMSEA = .071, AIC = 96.463. The three dimensions revealed were interpreted as meaning warmth ( $\alpha = .77$ ), competence ( $\alpha = .87$ ), and stubbornness ( $\alpha = .71$ ) respectively. For each group, the mean values and standard errors are presented in Table 1. The ANOVAs results

showed that wearing round eyeglasses made participants feel themselves as warmer people, and wearing square eyeglasses made them feel more competent and stubborn.<sup>1</sup>

**Table 01.** Descriptive statistics and results of the ANOVAs for the three traits

|              | <b>Round</b>  | <b>Square</b> | <b>ANOVA</b> |          |          |
|--------------|---------------|---------------|--------------|----------|----------|
|              | <i>M (SE)</i> | <i>M (SE)</i> | F            | <i>p</i> | $\eta^2$ |
| Warmth       | 4.25 (.24)    | 3.39 (.28)    | 5.46         | .025     | .13      |
| Competence   | 3.87 (.25)    | 4.96 (.30)    | 7.55         | .009     | .17      |
| Stubbornness | 4.00 (.21)    | 5.00 (.23)    | 8.10         | .007     | .18      |

#### 4. Conclusion

Our findings are consistent with previous studies showing that round eyeglasses are connected to a perception of warmth trait, and that square eyeglasses are connected to a competence and stubbornness trait in a metaphor-consistent manner. These results thus support our hypothesis. Also, the results suggest that these connections are activated in self-evaluation by merely imagining wearing eyeglasses. However, the results are apparently inconsistent with the theory that posits that embodying the clothing's symbolic meaning by wearing it is a critical factor in encloded cognition. For example, it was reported that no effect from attire was found when participants simply saw the clothing throughout the experiment (Adam & Galinsky, 2012). From their results, Adam and Galinsky (2012) concluded that two independent factors co-occurred in the process of encloded cognition: the symbolic meaning of the clothes and the physical experience of wearing them. However, imagining is virtual bodily movement and associated neurologic activity without muscular movements (Tsukimoto, 2001, 2005). For example, Porro et al. (1996) found that the same regions in the brain are co-activated in both actual bodily movements and imaginary movements. And Okamura (2017) reported that the mere recollection of food, the same as an actual food intake, reduces altruistic behavior. Thus, positing that recollection or imagination has the same effect as actual behavior, we are able to validate that imagining wearing eyeglasses and actually-wearing them has the same effect in embodying eyeglasses' symbolic meaning, and the present data thus offer further corroboration of the findings of encloded cognition theory.

Two conclusions emerge from the findings of this study. One is that shape priming changes our self-evaluation in a metaphor-consistent manner, and the other is that embodied effects occur even when imagining the movements, which have implications on the general population. The uniqueness of this paper lies in combining shape priming, which has not been researched, with embodied effects using

<sup>1</sup> It was possible that if participants wore eyeglasses ordinarily, and if the shape of their ordinary eyeglasses was the same as our stimulus eyeglasses, this would influence the trait judgement. Therefore, we asked participants whether they ordinarily wore eyeglasses. If yes, they were further asked whether their eyeglasses are round or square shaped. Based on the answer to these questions, we coded the match or mismatch between the shape of eyeglasses participants ordinarily wear, and the stimulus eyeglasses: match = + 1, mismatch = -1, wearing no eyeglasses ordinarily = 0. The results of ANCOVA, including the index of the match or mismatch as a covariate, indicated that the index did not influence personality judgements in any traits (warmth:  $F(1,36) = .32, p = .58, n.s.$ , competence:  $F(1,36) = 1.28, p = .27, n.s.$ , stubbornness:  $F(1,36) = .15, p = .70, n.s.$ ). Therefore, the results reported here are ones of ANOVA, and do not include the covariate. Moreover, we conducted ANCOVA to confirm whether sex differences influenced the result after we coded participants as male=1, female=2. The results of ANCOVA, including the index of the male or female as covariate, indicated that the index did not influence personality judgements about any of the traits (warmth:  $F(1,36) = 1.64, p = .21, n.s.$ , competence:  $F(1,36) = .12, p = .73, n.s.$ , stubbornness:  $F(1,36) = 1.67, p = .20, n.s.$ ). Therefore, the results reported here are ones of ANOVA, and do not include the covariate.

eyeglasses as experimental stimuli. The study is important in that it offers new insight into metaphor and embodied research.

The study has some limitations that need to be addressed. The results are limited to a relatively small number of samples ( $N = 39$ ), and need to be replicated in larger samples. In addition to this point, it might be necessary to enhance ecological validity in future studies. Do the same personality judgements occur in people imagining wearing eyeglasses as when looking at their own face wearing them in a mirror? Do the effects of personality judgements on those wearing eyeglasses change as people become habituated to them? Answering these questions should boost research on encloded cognition.

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## Appendix



**Figure 01.** Round eyeglasses



**Figure 02.** Square eyeglasses