

Bachelor's thesis review – Opponent's evaluation

Title: *What do people with prosopagnosia find attractive?*

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Ms. Trnková studied the question whether prosopagnosia influences the importance of physical attractiveness in mate choice. Physical appearance, in particular facial attractiveness, is a characteristic of a potential partner that has evolutionary significance. It signals youth and fertility. People with prosopagnosia have difficulty perceiving and remembering faces. Therefore, it is a logical and very interesting question to ask what people find desirable in a potential partner if their facial recognition is impaired. Ms. Trnková studied this question through the comparison of prosopagnosic people with healthy controls.

Theoretical part

The rationale of the theoretical part was to introduce evolutionarily important characteristics of mate choice, such as physical attractiveness and status. Afterwards, prosopagnosia and its definitions and diagnostic criteria were discussed. In the first part, the topics covered were sometimes only indirectly related to physical attractiveness (e.g., status, personality). The author mentioned many characteristics overall, but the discussion feels superficial. In the section on “sexual dimorphism”, mostly testosterone levels and its negative influence on mating were mentioned. I missed a more nuanced discussion here on bodily features discriminating men and women. The structure of the Introduction was sometimes confusing. For example, the “Healthy skin” section mentions the importance of hair as well. Some structuring was certainly in place, but perhaps the author tried to cover too many subsections without going into detail and grasping complexity. The author sometimes made grand statements, such as “we know nothing about what cognitively impaired and blind individuals find attractive” (p. 7), which is not true, there are studies on blind people's partner preferences. I also missed a reference to the originating paper on the short- versus long-term mating topic (p. 13, that should be Buss & Schmitt, 1993). The part on prosopagnosia was sometimes redundant (e.g., repeated explanation of the Greek origin of the word, p. 17 and 19) and rushed (e.g., written in one- or two-sentence paragraphs, p. 19).

Empirical part

Unfortunately, the empirical part was similar to the theoretical part. It was inconsistent and redundant. Several parts were mentioned multiple times, while other parts were left out and difficult to follow. However, the hypotheses were rational and logically following the theoretical part. The Method section had a very unconventional structure. There was no subsection of “Participants” and “Procedure”. It was difficult to learn about the subgroup sizes, sex ratio of the participants, age, or other demographic characteristics. It is not clear what nationality the participants were, it is not explicitly said, that the data collection was done in English (not trivial).

In general, the participant numbers and inclusion criteria were confusing, and/or did not add up. Different subgroup sizes were reported throughout the study (i.e., prosopagnosia group with 45, 47, or 48 participants, control group with 93 or 94 participants, etc.).

The Measures section only briefly mentioned the questions asked and referred to Appendix 1 for further details. The reported information in the main text was not sufficient to comprehend the performed study. Unfortunately, the appendix did not provide enough details either for a firm comprehension of the measurements made. For example, questions 14 and 17 were very easily confused while interpreting the Results, also, question 16 was not sufficiently explained. I gained the impression only by the end of the Results section that those question 16 items were measured on a 0 to 9 scale, without a clear and explicit explanation/presentation of this. I am also concerned about the explicit and detailed information provided in the introduction for the questionnaire. I wonder if the exact aims published influenced the participants' responses.

The Results and analyses were often confusing. There was no mention of regression analyses in the Data analysis section, so it was unclear to me why it was needed, how exactly it was performed (the mentioned chi-squared tests would have been sufficient to test those questions). Many parts were redundant (e.g., subgroup details mentioned multiple times, p. 27, 28, 29, 38). Not all the tables were referenced in the text (Table 2, 3), or was referenced with wrong number (Table 4) with the title misplaced somewhere else. The testing of hypothesis 3 was very confusing, it is not entirely clear from the Methods which questionnaire item was analyzed there. The analysis of hypothesis 6 referred to wrong item numbers. Sometimes the reported data showed signs of reporting mistakes. For example, Figure 9 did not correspond with the numbers indicated in the text, or Table 4 (without a title, p. 37) had identical means for control males and prosopagnosic females in 6 characteristics, probably by accident. Tables 3 and 5 were the exact same. The Results section had many parts of interpretation of the results which belong to the Discussion. Relatedly, the Discussion was rather short, since some parts of it were in the Results. On the other hand, Ms. Trnková systematically listed many interesting future directions for the study.

Formatting

The thesis had many formatting issues. Neither the thesis overall, nor the Abstract followed the IMRaD structure. There were phrasing mistakes (e.g., "...we compared answers of non-prosopagnosic subjects to healthy subject.", p. 4). The Abstract did not follow the thesis findings, for example it mentioned "female bias" which was in fact not present or discussed in the thesis. The Introduction had many referencing issues, such as no page number provided for exact quotations, or exact quotation was not copied with quotation marks (p. 7, second paragraph, citing Foo et al., 2017). Or, for example, the author dedicated the study of waist-to-hip ratio to David Buss (without a date, p.10), while it was Devendra Singh who established this new area of research. Another example of this is on page 12: Buss certainly was not the first one suggesting that mating with dissimilar MHC genes can be beneficial for offspring immune system, so citing him for these

claims can be misleading. Dates of references were missing at many places (e.g., Corrow, Dalrymple, Barton on p. 17, Buss on p. 41).

Summary

The studied question was very interesting and could provide a better understanding of people with impaired facial recognition. The author did a great job at choosing and laying down evolutionary foundations for testing and interpreting partner perception of prosopagnosic people. She also reviewed the different ways people acquire prosopagnosia and the existing ways to measure and diagnose it. On the other hand, the thesis was rather messy and superficial, and had many formatting and reporting mistakes. For this reason, I recommend a grade 2 or 3, depending on the defense.

Questions for the defense

People living with schizophrenia often have trouble with the hollow/rotating mask illusion. How could this have a link with the reported higher rates of also being affected with prosopagnosia?

Is it possible to train people with prosopagnosia to better recognize and remember faces?

Why did you expect/test sex differences in how much your participants are affected by prosopagnosia? Why do you think your male participants were more affected?

How do you think the study aims specified for participants in the questionnaire influenced the results?

In Prague, September 10th 2024

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