

Analogies and Understanding Intentions
PhD Thesis of Luiza Shahbazyan
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Reviewer statement from Professor Andrew M. Colman

I have read the extended resumé and the thesis itself with interest. I shall arrange my comments under the headings that were provided to me as guidelines for preparing my reviewer statement.

1. Significance of the research topic in terms of basic science and applied science

The research topic could hardly be more significant in terms of basic science, in the social domain at least, because it focuses on the most fundamental question: how do people read one another's minds, and in particular how do they judge one another's intentions? Human social interaction as we know it depends on mindreading, and the research reported in this thesis attacks this question head-on, using the phenomenon of analogy-making as potentially relevant mechanism. It also has potential significance in applied science, but that is harder to anticipate.

2. Rationale and motivation for the goals and research objectives in the thesis

My understanding of the rationale and motivation are as follows. The role of relational knowledge in understanding other people's intentions has not been systematically investigated by previous researchers, but testable predictions about inference generation can be formulated. Understanding others' intentions and analogy-making both involve relational knowledge, and both processes involve generating inferences on the basis of the perceived similarity between a target situation and some pre-existing knowledge. The principal objective of the research reported in the thesis is to investigate, using standard experimental methods, what role analogy-making plays in generating understanding of others' intentions, and subsidiary objectives are to discover some of the specific ways in which this phenomenon might occur.

3. Appropriateness (suitability) of the methodology and techniques chosen for the research in terms of the goals and research objectives of the thesis

The methodology is basically experimental, and this seems obviously the right way to investigate the problem in hand. The specific experimental techniques used in the research, including the experimental designs and data analysis techniques seem entirely appropriate, and quite standard for this type of research. My only reservation relates to the manner in which the positivity/negativity of analogs was manipulated. Some unexpected findings, which are difficult to understand and explain, may perhaps be tied to the particular way in which positive and negative analogs were implemented (further comments on this issue below).

4. Basic and applied contributions of the thesis (description and evaluation)

First, the research reported in the thesis provides some support for the hypothesized role of relationally similar episodes functioning as analogies and generating inferences about others'

intentions in ambiguous situations. Inferences are shown to be based on analogous prior situations influence the interpretation of people's intentions in ambiguous situation. Second, the effect of such inferences are shown to interact with three other factors (depth of processing, evaluation, and activated stereotypes) in generating inferences. These are solid and useful findings. Third, two interesting effects are revealed by the data: the so-called inverted effect and stereotype-consistent inferences. The inverted effect is the finding that under certain conditions, participants are more likely to attribute a negative intention to the actor in an ambiguous situation if the ambiguous situation is preceded by a analogous situation in which the person's intention is positive. This is an unexpected finding – the opposite of what one might predict – and seems difficult to explain; in fact, I am not convinced that it is fully understood and explained in the thesis.

5. Assessment of the publications related to the thesis – their number and the nature of the publication venues

Coming from an entirely different university system, I may not be best placed to judge the publications, and of course I have not read them. But, in comparison with a typical PhD student in Psychology in a UK university, the four publications cited would not look out of place or inadequate. I think they are probably fine.

6. Citations by other authors, scientific media reactions, etc.

Most of the relevant literature is competently cited in the thesis, as far as I can judge. I am somewhat familiar with the topic, but it is not my own narrow specialist research field, so I am not fully knowledgeable and up to date with all the literature, but I know enough to form the impression that the coverage is competent and comprehensive, in general. I shall detail in the following section a small number of specific comments about additional publications that could profitably have been cited.

7. Opinions, recommendations, notes

Extended resumé

- (a). In the extended resumé, numerous publications are cited, but the list of references at the back contains only the student's own publications, which are not cited in the text. If the extended resumé is supposed to be a self-contained document, it would be helpful, if the rules permit it, to have a separate list of references for publications cited in the text.
- (b). p. 6, line 3: for whom it is ...
- (c). p. 6, line 6: is (not are)
- (d). p. 8, line 1: movements of the person's body
- (e). p. 8, line 3: Under limited circumstances (not While under limited circumstances)
- (f). p. 8, line 10: both Zacks and Tversky are misspelled
- (g). p. 9, line 1: activation

- (h). p.9, line 3 from bottom: Lewicki, 1985)
- (i). p. 12, line 12: Yoveva, 1996
- (j). p. 15, line 10: “either well or ill-intended” (better)
- (k). p. 29, the first paragraph breaks off before its end and is incomplete.
- (l). p. 32, line 7 from bottom: inconsistencies do not lead ...

Thesis

- (a). p. 15, line 2: complimented (nor complemented)
- (b). p. 16, line 3: another culture
- (c). P. 18, line 2: 2009 or 2010? Compare list of references
- (d). p. 23, line 9: “What is it?” and “What is it like?”
- (e). p. 24, Line 2: Tversky
- (f). p. 24, first paragraph: The research on attributing intentions to inanimate objects moving on a screen is most prominently associated with the book by Michotte below. Although Heider’s paper predated it, it was based on a knowledge of Michotte’s work. It would be good to cite Michotte:
Michotte, A. (1945). *La perception de la causalité* [The perception of causality]. Louvain: Editions de l’Institut Supérieur de Philosophie.
- (g). p. 25, line 3: Tversky
- (h). p. 32, line 7: red wine
- (i). p. 33, second paragraph. Most relevant to social projection is the so-called false-consensus effect. The concept was introduced by Ross et al in 1977 (see reference below). They reported four experiments, including the following most well-known one in which Stanford University students were asked whether they would be willing to walk around the campus for 30 minutes wearing a sandwich board inscribed with the message REPENT; those who agreed to do this estimated, on average, that 63.50 per cent of their fellow students would also agree, and those who refused estimated that 76.67 per cent of their fellow students would also refuse. It would be good to cite this work:
Ross, L. (1977). The false consensus effect: An egocentric bias in social perception and attribution processes. *Journal of Experimental Social Psychology* 13(3), 279–301.
- (j). p. 54, eight lines from bottom: bear (not bare)
- (k). p. 59, 11 lines from bottom: This poses the question as to whether there is a better candidate
- (l). p. 61, line *: A tendency to infer ...

- (m). p. 62, lines 7–8: ... five studies which systematically varies ...
- (n). p. 62, line 2 from bottom: Cited publication not in list of references
- (o). p. 63, line 1: Cited publication not in list of references
- (p). p. 61, line 3 of text: either (better than “both”)
- (q). p. 79: Wrong figure – Figure 3 is negative intention; Figure 4 applies here. The mix-up of figures needs to be corrected. Also on p. 81, line 2, the wrong figure (Figure 4) is mentioned.
- (r). p. 85, line 1 and 7: Cited publications not in list of references (three publications)
- (s). p. 86, line 6 from bottom: Cited publication not in list of references
- (t). p. 94, first paragraph: This may be why the reverse effect was found. I wonder whether ghosts are assumed to have positive intentions. At some future date, this could be checked by using a more obviously positive analog, such as a best friend or close family member.
- (u). p. 107, line 12: 2012 or 2013? Compare list of references.
- (v). p. 134, 3 lines from the bottom: Cited publication not in list of references
- (w). p. 135, lines 11 and 16 (first citation): Cited publications not in list of references (two publications)
- (x). p. 136, line 3: Cited publication not in list of references
- (y). p. 162, 7 lines from bottom: You met a boy ...

8. Conclusion with a clearly formulated positive or negative evaluation of the thesis

My opinion is that this is a good piece of work that clearly advances our understanding of mind-reading, and especially the role of analogical thinking in inferring the intentions of others. It contains at least two or three potential journal articles, and I would encourage the student to start work immediately on writing up her findings. Using that as a rough criterion, I think it passes the threshold of a PhD and deserves to be awarded. The most puzzling, and perhaps the most interesting, findings concern the reverse effect, whereby a positive analogy has the opposite effect on participants inferences of the intentions of ambiguous actors, does not seem to me to be fully explained, and I think it deserves further research, using more unambiguously positive analogs than ghosts. But all good theses leave open questions and unsolved puzzles, and I don't think the failure of this research to solve this mystery is a reason to criticize it.