Research Traineeship 2020

Title of the project:

Walking or talking in other's shoes: Studying the role of virtual embodiment and conversational experience on interlocutors' feelings of compassion and empathy

Project coordinators

Debby Damen – Department of Communication and Cognition (DCC)

Debby is a postdoctoral researcher at DCC and the ETZ hospital in Tilburg. She will defend her PhD dissertation entitled "Taking Perspective in Communication" on November 4th, 2020. In her PhD research, she studied conversational partners' ability and propensity to change perspectives. As a postdoctoral researcher, she is involved in two projects that focus on patient-care provider communication, and how digital communication tools improve the quality of healthcare.

Lisa E. Rombout - Department Cognitive Science and Artificial Intelligence (DCA)

Lisa is a PhD candidate and lecturer in DCA. She studies how embodiment arises from sensory experiences and how this influences social interactions, particularly in the area of speech. In this context, she often uses virtual reality technologies to establish embodiment illusions.

Project summary

Project outline and objectives

Seeing the world from someone else's perspective can be very difficult. Even though we are able to attribute desires, feelings, thoughts and beliefs to others, we do not necessarily consider that another person's mental state can differ from our own. When communicating, we often do not take into account that our interlocutors might be paying attention to different things or evaluate things differently than we do (e.g., Epley, 2014). As perceivers of other minds, we find it difficult to appreciate another person's different perspective because our own personal worldview biases our ability to do so (e.g., Damen, Van Amelsvoort et al., 2019; Damen, Van der Wijst, et al., 2019, 2020). Our ability to truly understand and empathize with those around is, therefore, to a certain extent limited.

There is ample research on what it takes to increase people's interpersonal accuracy, most of it concluding that people need more explicit insight into other people's experiences before they can assess how others truly think or feel (e.g., Epley & Eyal, 2019; Eyal, Steffel, & Epley, 2018; Damen, Van der Wijst, et al., 2020, for an overview). One explicit, straightforward manner to gain interpersonal insight is by *asking* others about their experiences. However, research shows that we are not always inclined to use this obvious strategy to our benefit. On the contrary, we rather rely on our own intuitions to judge what others are thinking or feeling than engage in conversation about what goes around in other people's minds (Eyal, Steffel, & Epley, 2018). The underlying mechanisms that drive these decisions around gaining interpersonal accuracy are not clear. Therefore, the first aim of this project is to explore whether and how people can be incited to get another person's perspective through conversation, and how this affects interpersonal understanding.

The second aim of this project is to investigate how these conversational experiences relate to more intrusive methods to gain interpersonal insight, such as virtual embodiment. Virtual reality is sometimes regarded as *the* solution to solving the other minds problem. Literally putting yourself in someone else's shoes and seeing the world through their eyes would allow us to feel like we *are* the other person (e.g., Kilteni et al., 2017). This theory is underlined by impressive results: even short virtual experiences can deeply affect behavior and ingrained personal characteristics, such as implicit racial biases (e.g., Peck et al., 2013, Banakou et al., 2016). However, there are some indications that our preconceived notions are still with us in the virtual space, and that our sense of interpersonal understanding might be a false one (Kilteni et al., 2013). In some situations, virtually experiencing another person's worldview could even be counterproductive to trying to understand their perspective. After all, would you ask about other's experience or listen to what they have to say if you feel like you have already experienced *being* them? We aim to examine the extent to which virtual embodiment impacts interpersonal understanding differently (or similarly) to engaging in conversation. Hereby, we believe that is important to make a clear distinction between different components of perspective-taking. Perspective-taking (also termed empathy), is a multidimensional construct that consists of an affective trait (being able to feel and share other people's feelings) and a cognitive trait (being able to understand other people's feelings, including that they might feel or

think differently than we do; e.g., Cohen & Strayer, 1996). We believe that past research has undervalued the difference (and commonality) between these two traits in their relation to gaining interpersonal understanding. We hypothesize that virtual embodiment experiences increase affective empathy (which we term empathy), and that conversational experiences increase cognitive empathy (which we term compassion/perspective-taking). Hence, the overarching goal of this project is to test this theory in one (or more) virtual reality and social psychology experiments, and to summarize these findings in a scientific paper that can be submitted to a scientific conference or journal.
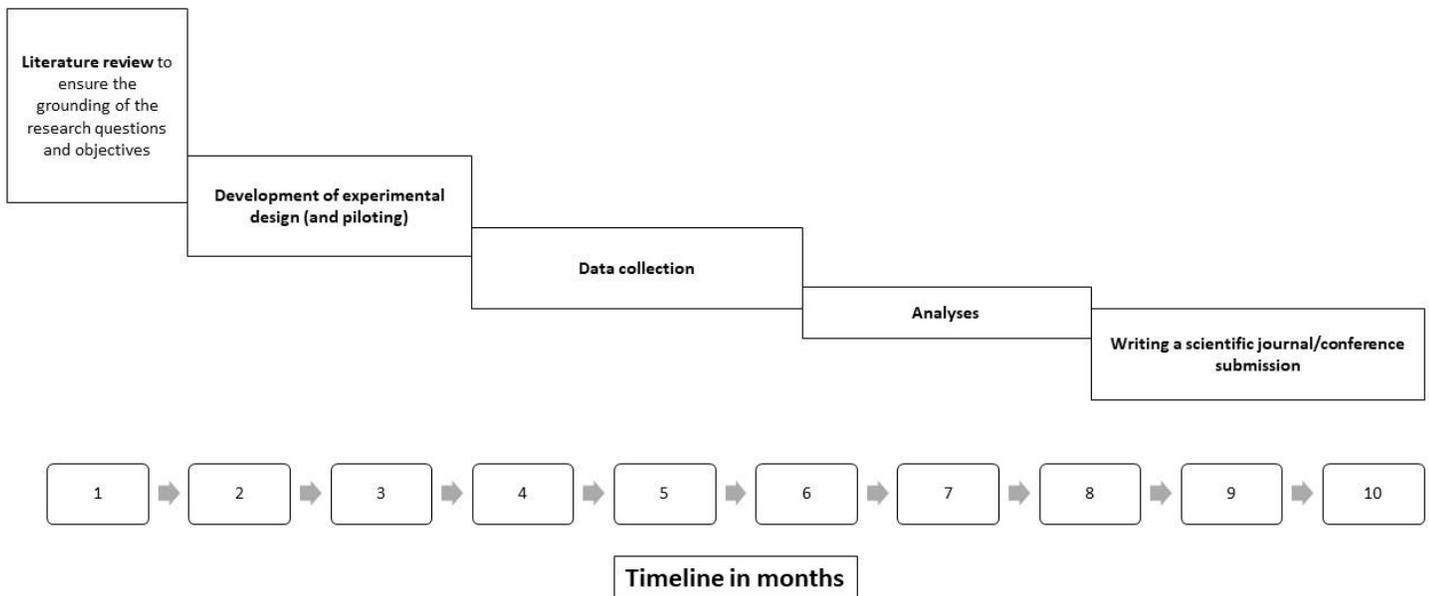
Methods of data collection
Data will be collected through experiments with human subjects. The subjects will most likely experience either a virtual reality embodiment experience or a (face-to-face or virtual) conversational experience. The measurements will likely be tasks that test implicit biases, combined with questionnaires and perhaps physiological measurements with sensors.

Collaborative aspect
This project combines communication-focused research on perspective taking (DCC), and more human technology interaction-focused research on virtual reality and embodiment (DCA). We believe that the current perspective-taking/empathy research has a fragmented view on the subject, approaching it from either a cognitive or a social science approach. We therefore strive for an interdisciplinary approach, as we feel that this allows us to come to an integrative understanding.

Project timeline

Literature review to ensure the grounding of the research questions and objectives

Development of experimental design (and piloting)

Data collection

Analyses

Writing a scientific journal/conference submission

| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |

Timeline in months

Research Trainee Profile

We are looking for an enthusiastic and motivated master student from TSHD, with a background in communication and/or cognitive sciences. Our preference goes out to a research master student, but master students with a demonstrable affinity with scientific research are also more than welcome to apply. Besides data collection, our research trainee will have significant input on creating the experimental design and writing up the findings in a scientific report that is submittable to a scientific conference (e.g., ICA/CogSci) and/or journal. We are therefore looking for a conscientious trainee with a specific interest in the research topics outlined in this project. The applying student is not required to have any pre-existing technical skills related to virtual reality content creation or hardware, but must be willing to work with and learn about them.

Application Information

Applicants can apply by sending their resume and a one-page motivational letter to both Debby Damen (d.j.damen@uvt.nl) and Lisa E. Rombout (l.e.rombout@uvt.nl) before **August 17th 2020.**

References

Banakou, D., Hanumanthu, P. D., & Slater, M. (2016). Virtual embodiment of white people in a black virtual body leads to a sustained reduction in their implicit racial bias. *Frontiers in Human Neuroscience*, *10*, 601.

Cohen, D., & Strayer, J. (1996). Empathy in conduct-disordered and comparison youth. *Developmental Psychology*, *32*(6), 988–998

Damen, D., van Amelsvoort, M., van der Wijst, P., & Krahmer, E. (2019). Changing views: The effect of explicit perception-focus instructions on perspective-taking. *Journal of Cognitive Psychology*, *31*(3), 353-369.

Damen, D., van der Wijst, P., van Amelsvoort, M., & Krahmer, E. (2019). Perspective-taking in referential communication: Does stimulated attention to addressees' perspective influence speakers' reference production? *Journal of Psycholinguistic Research*, *48*(2), 257-288.

Damen, D., van der Wijst, van Amelsvoort, M., & Krahmer, E. (2020). Can the curse of knowing be lifted? The influence of explicit perspective-focus instructions on readers' perspective-taking. *Journal of Experimental Psychology: Learning, Memory and Cognition*. Advance online publication: https://doi.org/10.1037/xlm0000830

Epley, N. (2014). *Mindwise: How we understand what others think, believe, feel, and want*. New York: Knopf.

Epley, N., & Eyal, T. (2019). Through a looking glass, darkly: Using mechanisms of mind perception to identify accuracy, overconfidence, and underappreciated means for improvement. *Advances in Experimental Social Psychology*, In press.

Eyal, T., Steffel, M., & Epley, N. (2018). Perspective mistaking: Accurately understanding the mind of another requires getting perspective, not taking perspective. *Journal of Personality and Social Psychology*, *114*(4), 547–571.

Kilteni, K., Bergstrom, I., & Slater, M. (2013). Drumming in immersive virtual reality: the body shapes the way we play. *IEEE transactions on visualization and computer graphics*, *19*(4), 597-605.

Kilteni, K., Groten, R., & Slater, M. (2012). The sense of embodiment in virtual reality. *Presence: Teleoperators and Virtual Environments*, *21*(4), 373-387.

Peck, T. C., Seinfeld, S., Aglioti, S. M., & Slater, M. (2013). Putting yourself in the skin of a black avatar reduces implicit racial bias. *Consciousness and cognition*, *22*(3), 779-787.