

# The Role of Closeness in the Relationship Between Nonverbal Mimicry and Cooperation

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## INTRODUCTION

Information obtained from suspects and/or witnesses play a crucial role in the crime solving process. As such, when a suspect or witness is apprehended there is an urgent need for investigators to elicit intelligence successfully and reliably.

The overarching aim of the current doctoral thesis was to investigate whether nonverbal mimicry could be used to increase cooperation, measured as information disclosure, and the underlying psychological mechanisms through which it works to do so.

Across four studies, we identified interpersonal closeness as one of the psychological mechanisms through which mimicry works to increase cooperation, as well as the regions of mimicry (discreet body movements) that are related to closeness. Extending beyond the dyad, we also examined whether nonverbal mimicry observed by a third-party effects willingness to cooperate.

## NONVERBAL MIMICRY

Nonverbal mimicry (NVM) refers to when a person imitates the nonverbal behaviour of a conversational partner while they interact. This mimicry typically occurs without conscious awareness, such that if person A is standing with their hand on their hip, person B may then adopt this same posture without realising that they are mimicking.

NVM is often considered a ‘social glue’, due to its ability to help bind people together and facilitate harmonious interpersonal interactions. In fact, it is well established that NVM leads to several positive behavioural consequences.

When looking to explain why nonverbal mimicry effects behaviour, some research has pointed to interpersonal closeness. However, in these studies, a robust measurement of nonverbal mimicry and closeness is absent, making it impossible to confidently argue that the observed mimicry resulted from increased closeness and not a third factor.

Likewise, without a reliable measure of nonverbal mimicry it is not possible to determine that nonverbal mimicry was manipulated sufficiently. This thesis addresses this by testing the impact of nonverbal mimicry on cooperation through closeness, using rigorous measures.



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## STUDY ONE

In study 1 we used high-resolution motion tracking—Xsens MVN systems—to examine how mimicry in face-to-face interactions manifests across relationships that differ in degrees of interpersonal closeness.

Findings showed that as feelings of interpersonal closeness increased, levels of NVM increased. Moreover, when broken down into mimicry of discreet body parts, the right leg, left leg, the head, and the torso individually were significantly related to increased feelings of closeness, as what upper body NVM when considered as a whole. Prior to this thesis, no research had examined the distinct regions of mimicry and their relation to closeness, this is a novel contribution to the field.

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## STUDY TWO AND THREE

In study 2 and 3, we extended the focus to examine the role of closeness as the process through which mimicry leads to cooperation. The chapter examined whether being mimicked to varying degrees—a large amount



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(hard mimicry), a subtle amount (soft mimicry), or not being mimicked at all—affected cooperation.

In these studies, we created tailored mimicry training videos and guidelines based on the nonverbal behaviours that showed the highest frequency of being mimicked in study 1. Study 3 was originally intended to be carried out in-person, but due to social distancing and national lockdown restrictions, this study was carried out virtually over Microsoft teams and the behaviour list was adapted to include only upper body mimicry.

### Study 2:

We measured cooperation in two ways: through exchanges in an economic context (i.e., a behavioural measure of cooperation) and disclosure of personal information. However, the measures of cooperation in this experiment were binary and involved participants being given the option to cooperate or not cooperate, thus it was not possible to examine how mimicry or closeness affected the degree of information disclosure.

### Study 3:

The limitations of study 2 were addressed and in this study, we examined the degree of information disclosure when participants were exposed to mimicry in varying degrees; a large amount (hard mimicry), a subtle amount (soft mimicry), or not being mimicked at all, where information disclosure was amount of information revealed.

Results showed that nonverbal mimicry during interpersonal interactions increases willingness to disclose information with the mimicker, compared to not engaging in nonverbal mimicry. There was a linear increase in the number of units disclosed according to mimicry condition, participants disclosed a greater number of information units. This effect was mediated by interpersonal closeness.

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## STUDY FOUR

Study 4 extended beyond mimicry within the dyad by examining whether third-party observations of NVM between dyads would impact one's willingness to cooperate with the interacting dyad. In this study, we also examined whether the effects of NVM worked through the same social processes as mimicry within the dyad.

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Results showed that participants were more willing to engage in conversation with observed dyads when the dyads engaged in more mimicry. My results also showed closeness as a mediator of the effects of NVM on judgments. This thesis is the first work in the academic literature to demonstrate this and these findings have important implications for multi-party online interactions.

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## FINDINGS

- This thesis provides robust evidence that nonverbal mimicry is positively associated with increased cooperation.
- Nonverbal mimicry works to increase cooperation through the process of closeness, i.e., the strength of this effect is mediated by interpersonal closeness.
- Across previous research it is unclear whether there are regions of mimicry (discreet body movements) more significantly related to closeness than others. When broken down by body part, we found a difference in strength of effect between conditions in movement of the head and torso, legs, and arms.
- The evolved ‘social glue’ function of NVM extends to third-party observations of NVM, and the effects of NVM may work through the same social processes as mimicry within the dyad.

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## FURTHER READING

Aron, A., & Aron, E. N. (1986). *Love and the expansion of self: Understanding attraction and satisfaction*. Hemisphere Publishing Corp/Harper & Row Publishers.

Aron, A., & Fraley, B. (1999). Relationship closeness as including other in the self: Cognitive underpinnings and measures. *Social Cognition*, 17(2), 140-160. <https://doi.org/10.1521/soco.1999.17.2.140>

Aron, A., Aron, E. N., Tudor, M., & Nelson, G. (1991). Close relationships as including other in the self. *Journal of Personality and Social Psychology*, 60, 241–253. <https://doi.org/10.1037/0022-3514.60.2.241>

Boone, R. T., & Buck, R. (2003). Emotional expressivity and trustworthiness: The role of nonverbal behavior in the evolution of cooperation. *Journal of Nonverbal Behavior*, 27(3), 163-182. <https://doi.org/10.1023/A:1025341931128>

Chartrand, T. L., & Bargh, J. A. (1999). The chameleon effect: The perception-behavior link and social interaction. *Journal of Personality and Social Psychology*, 76(6), 893-910. [doi:10.1037/0022-3514.76.6.893](https://doi.org/10.1037/0022-3514.76.6.893)

Chartrand, T. L., & Lakin, J. L. (2013). The antecedents and consequences of human behavioral mimicry. *Annual review of psychology*, 64, 285-308. <https://doi.org/10.1146/annurev-psych-113011-143754>

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## ABOUT THE AUTHOR

Dr. Abbie Maroño is a behavioural scientist and the Director of education at Social-Engineer, LLC. As well as this, Abbie is a perception management and leadership coach, and a lecturer in Psychology. Abbie specializes in nonverbal communication, trust, and the psychological mechanisms underpinning human decision making.

For more information on this research and its implications, please contact Dr. Maroño, directly through: [www.abbiemarono.com](http://www.abbiemarono.com).

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## ABOUT THIS RESEARCH

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