

**The Effects of Non-Verbal Mimicry:
A Social Identity Perspective**

Christian Bretter

Submitted in accordance with the requirements for the degree of Doctor
of Philosophy

The University of Leeds

Leeds University Business School

January 2021

The candidate confirms that the work submitted is his own and that appropriate credit has been given where reference has been made to the work of others.

This copy has been supplied on the understanding that it is copyright material and that no quotation from the thesis may be published without proper acknowledgement.

Acknowledgements

A work like the following is never possible without the support and the help of many individuals who are important to the author in a myriad of ways. Just as life, in general, has its ups and downs, so too has research an inherent dynamic that makes it often challenging to stay focussed, to write, or to have the energy required for the tasks involved. Yet, it is precisely these challenges that make the journey of a PhD rewarding. To overcome moments of struggle, however, one needs others who offer support, who can offer an opinion or those who can simply lend their ear. In the following paragraphs, I would like to acknowledge the importance of several individuals who contributed to this work through a plethora of debates, discussions, and conversations. Of course, a few paragraphs will not do any justice to their contribution but I shall say here that I will always remain thankful for their impact on this work.

I would like to thank my supervisors, Prof Kerrie L. Unsworth and Dr Mark A. Robinson, for helping me to appreciate rigorous research and for providing me with the knowledge and tools required to conduct research meaningfully. Thank you, Kerrie, for making time in your busy schedule whenever I needed your opinion and for always giving me honest and useful advice. I would like to thank you, Mark, for allowing me to drop into your office at any time to ask you about anything. Thank you both for making the effort of reading this work over and over and providing me with insightful comments along the way.

I would like to thank my family, in particular my mother, my father, and my brother. Thanks for all of your support over the last few years and for giving me your honest opinion about any enquiry I had. Thank you for providing me with the right work ethic and the discipline to complete this PhD and for helping me to become the person I am today. I will always be thankful for everything you have done for me.

I also would like to thank my partner, my motivator, and my best friend, Bianca. Thank you for always being there when I needed you, for all our fruitful discussions, for distracting me when I needed it, and thank you for telling me that I should work less so that we could enjoy our life and travel around the globe. Thank you for allowing me to see things differently and for keeping me in balance. I will always be grateful for how you made me see the world.

Finally, I would like to thank all of my friends and colleagues in different parts of the world, for making life worthwhile. Thanks to you, Fabsen, Jonas, Sascha, Timbo, and Yannick. Thanks to many of my colleagues at LUBS, especially, Felix (and Lina), Sam, Jose (and Rebecca), Cristian, Anna, Dennis, Lesslie (and Jett). Without you, this journey would not have been as much fun as it was.

Abstract

Previous research suggests that non-verbal mimicry, the copying of another's body movements during interpersonal interactions, is associated with better relationships because it enhances the mimicked's perception of the mimicker. However, in light of the intergroup divisions that increasingly polarise our society, it is unclear whether such positive effects of non-verbal mimicry can be sustained when the group membership of the interacting individuals differs. Using Social Identity Theory as a theoretical framework, I examine the effects of non-verbal mimicry on how the mimickers are perceived across both intra- and intergroup contexts. I conducted two large-scale experiments to study the role of social identities in moderating the effects of non-verbal mimicry in interpersonal interactions on the one hand, and the mechanism behind the mimicry-likability effect on the other. Specifically, participants interacted directly with a role-playing experimenter demonstrating different levels of mimicry and different group affiliations across conditions and then rated the mimicker afterwards. Interestingly, the results suggest that it may not be mimicry per se that is associated with favourable perceptions of the mimicker, as suggested by the literature, but rather that a "static behaviour" control condition is associated with unfavourable perceptions. Accordingly, the mechanism by which dyadic mimicry operates appears to be different from what the literature suggests. The results also showed that social identities moderated this effect. Out-group members, but not in-group members, were judged as particularly less likeable when they displayed static behaviour compared to both neutral behaviour and mimicry. These experiments contribute to the literature not only methodologically by revealing the importance of specific control conditions, but they also indicate the importance of social group membership in judging individual behaviour.

The third experiment was conducted online with pre-recorded videos to explore the vicarious effects of non-verbal mimicry and social identities. In contrast to the interpersonal experiments, the results here suggested that vicarious mimicry was associated with greater likability and competence (and partly trustworthiness) of the mimicker, as rated by the observer (i.e., the participants) when compared with both static and neutral behaviour control conditions. Importantly, some of these effects were moderated by social groups. Specifically, though out-group members, compared to in-group members, were perceived as less competent and trustworthy in the no mimicry condition, these biases were diminished in the vicarious mimicry condition. Thus, this is the first experiment that reveals the important role of observed mimicry in reducing intergroup biases, thereby providing promising evidence for a behaviour-based reduction of prejudice. Though scholars often presuppose a dyadic nature of mimicry, this study further contributes to the literature by showing that mimicry may tap into a broader concept of social affiliation instead.

Table of Contents

A – Table of Figures

B – Table of Tables

C – List of Abbreviations

Introduction	1
The Bigger Picture	1
What This Research Is About	3
<i>Nonverbal Behaviour and Mimicry</i>	3
<i>The Purpose of This Research: Mimicry in the Context of Social Group Memberships</i>	5
<i>How This Research Contributes to the Literature</i>	7
<i>How the Work Proceeds and Clarifications</i>	8
Mimicry And Non-Verbal Behaviour	10
Mimicry	12
Effects of Mimicry	15
<i>Likability</i>	15
<i>Mimicry and Intergroup Behaviour</i>	18
<i>Further Outcomes</i>	19
The Mechanism of Mimicry	23
Summary of The Literature	25
Social Identity Theory- A Theory of Intergroup Relations	27
When Do We Categorise People?	28
What Are The Motivations of Such Categorisations?	31
What Are The Consequences of Categorisation?	33
Hypotheses Development.....	37
Likability and Competence	38
In-Group Identification.....	41
Similarity.....	42
The Effects of Mimicry When It Is Observed	45
Outcomes.....	47
Hypotheses Development.....	48
Summary	52
Method.....	53
Overview	53
<i>Dyadic Mimicry</i>	53
<i>Observed Mimicry</i>	55
<i>Methodological Idiosyncrasies Related To Mimicry Research</i>	56

Study 1	61
Design and Overview	61
Sample Size Calculation	62
Participants and Recruitment.....	62
Laboratory	64
Procedure.....	64
Measures	67
Results	68
Discussion.....	74
<i>Group Membership</i>	76
<i>The Problem With The No Mimicry Condition</i>	77
<i>Summary</i>	80
Study 2	81
Design and Overview	81
Sample Size Calculation	82
Participants and Recruitment.....	82
Procedure.....	84
Measures	86
Results	87
<i>Pre-study</i>	87
<i>Experiment</i>	88
<i>Summary</i>	103
Discussion	105
Mimicry × Group Interaction.....	105
Mediation.....	107
Further Outcomes of Mimicry	108
Mimicry vs Neutral vs Static.....	110
Limitations	112
Summary	115
Observed Mimicry- Study 3	117
Design and Overview	117
Sample Size Calculation	118
Participants and Recruitment.....	118
Procedure.....	119
Videos	119
Priming	120
Awareness	120
Measures	120
Results	122

Discussion.....	135
<i>Observed Mimicry</i>	135
<i>Effect of Group Membership</i>	138
<i>Awareness</i>	141
<i>Summary</i>	142
<i>Limitations and Future Directions</i>	144
General Discussion	149
Summary of Results.....	149
Theoretical and Empirical Implications	152
Methodological Implications.....	155
Practical Implications	157
Limitations and Future Directions	158
Conclusions.....	163
References.....	165
Appendices.....	A
Appendix A – Interview Questions Study 1	A
Appendix B – Manipulation-Check Study 1	B
Appendix C – Ethnicities Study 1.....	D
Appendix D – Interview Questions Study 2	D
Appendix E – Introductory Paragraphs Study 2	E
Appendix F – In-group Identification Study 2.....	F
Appendix G – Interactional Justice Study 2.....	G

A - Table of Figures

Figure 1 Mean likability ratings as a function of mimicry condition and group membership	72
Figure 2 Mean competence ratings as a function of mimicry condition and group membership	73
Figure 3 Estimated marginal means for in-group identification as a function of mimicry condition.....	74
Figure 4 Mean similarity ratings as a function of mimicry condition and group membership	92
Figure 5 Mean likability ratings as a function of mimicry condition and group membership	94
Figure 6 Moderated mediation model testing the mediating effect of similarity on the relationship between mimicry and liking, moderated by social group membership	95
Figure 7 Mean competence ratings as a function of mimicry condition and group membership	97
Figure 8 Moderated mediation model testing the mediating effect of similarity on the relationship between mimicry and competence, moderated by social group membership	98
Figure 9 Mean trust ratings as a function of mimicry condition and group membership	99
Figure 10 Moderated mediation model testing the mediating effect of similarity on the relationship between mimicry and trust, moderated by social group membership	100
Figure 11 Mean cooperation ratings as a function of mimicry condition and group membership	101
Figure 12 Moderated mediation model testing the mediating effect of similarity on the relationship between mimicry and cooperation, moderated by social group membership	102
Figure 13 Moderated mediation model testing the mediating effect of similarity on the relationship between mimicry and interactional justice, moderated by social group membership	103
Figure 14 Mean likability ratings as a function of mimicry condition.....	125
Figure 15 Mean competence ratings as a function of mimicry and group condition	127
Figure 16 Mean trustworthiness ratings as a function of mimicry and group condition in the no awareness condition	129
Figure 17 Mean trustworthiness ratings as a function of mimicry and group condition in the awareness condition	130
Figure 18 Mean interactional justice ratings as a function of mimicry and group condition in the no awareness condition	132
Figure 19 Mean interactional justice ratings as a function of mimicry and group condition in the awareness condition	133
Figure 20 Mean cooperation ratings as a function of mimicry and awareness condition	134

B - Table of Tables

Table 1 Correlation matrix Study 1	70
Table 2 Mean ratings of participants across conditions for each dependent variable	71
Table 3 Correlation matrix Study 2	90
Table 4 Mean ratings of participants across conditions for each dependent variable	91
Table 5 Correlation Matrix Study 3	123
Table 6 Mean ratings of participants across conditions for each dependent variable	124
Table 7 Summary of main effects across the three studies	149
Table 8 Summary of interactions across the three studies	150

C - List of Abbreviations

ANCOVA	-	Analysis of Covariance
ANOVA	-	Analysis of Variance
H _n	-	Hypothesis (numbered)
LMX	-	Leader-Member-Exchange
MANOVA	-	Multivariate Analysis of Variance
NVB	-	Non-Verbal Behaviour
RCEA	-	Relative conditional effect analysis
SCT	-	Self-Categorisation Theory
SIT	-	Social Identity Theory
VR	-	Virtual Reality

Introduction

The Bigger Picture

The world is divided. The repeated rise of the far-right party in Germany (Lees, 2018), populist movements in countries like Brazil (Romancini and Castilho, 2019) or the Philippines (Go, 2017), and, most prominently, the nationalist-populist movement of Donald Trump (Gusterson, 2017) only highlight a glimpse of how polarisations manifest themselves in societies. Divides can, and often do, refer to states of group differences (for polarisation, see also DiMaggio et al., 1996; see also Gonzales et al., 2016; Muldoon et al., 2016). Apart from the more apparent consequences of group divides such as the recent Brexit referendum (Vasilopoulou, 2016), others are psychological and thus less obvious (see Lakoff, 2010). Though the detailed psychological processes underpinning such divides will be revealed during this work, the overall psychological evidence suggests negative consequences for individuals belonging to different groups in the way they perceive each other, manifested in less trust or less likability, for instance (Tajfel and Turner, 1979; see Hogg, 2016). In contrast, research regarding such perceptions of others belonging to the same group suggests positive effects such as greater likability and trust (Tajfel and Turner, 1979; see Hogg, 2016). Accordingly, such effects are not due to social groups per se, but rather they depend on individual group membership relative to the group membership of another individual.

Additionally, it seems that the psychological processes that lead to group differences and similarities can occur on multiple levels. Social class struggles or the rise of neoliberalism against a rather socialist political point of view reflect societal levels. Examples of interpersonal levels, in contrast, can refer to increasing power differences in the manager-subordinate relationship or differences in viewpoints based on the belongingness to different football clubs. Therefore, it seems that social group memberships can divide society at multiple levels and that, independently from the level, they can result in group divides with opposing individuals differentiated by their world-views (for related review, see Fiorina and Abrams, 2008; Kleiner, 2018).

Investigating the effects of group membership at an interpersonal level seems to be a particularly relevant endeavour in current times, especially in organisations, where they can have strong implications for individuals. Interpersonal conflicts occur not only

among colleagues of different departments (Ashforth and Mael, 1989) but also between members of the same department or team (Hinds and Mortensen, 2005) and represent examples of low-level group divide related implications. Similarly, group membership related divides in the manager-subordinate relationship have also received recent scholarly attention (DeRue and Ashford, 2010; Croft et al., 2015). For example, the actions taken by a manager can result in conflicts between both manager and subordinate depending on the social group membership of the individuals (Huy, 2011). Overall, researchers appear to agree on the fundamental role of social group memberships for organisational functioning (van Knippenberg, 2000; Haslam et al., 2000), especially for manager-subordinate relationships (Chang and Johnson, 2010; Jackson and Johnson, 2012).

To date, research has surprisingly neglected how the behaviour of managers and subordinates affects their relationship from the perspective of social group memberships. Given the already articulated presence of multi-level polarisations in modern society and their consequences for how others are perceived, it rather seems important to investigate how perceptions of an individual's behaviour depend on the group membership of the individuals involved, managers and subordinates in this case. Is behaviour perceived differently depending on whether an individual perceives another to be a part of the same or a different social group? More specifically, as one of the most fundamental actions of human behaviour, it seems crucial to examine how non-verbal behaviour, understood as an important interpersonal process in a manager-subordinate interaction, is perceived depending on such social group membership.

The preceding paragraphs have positioned this work in the broader context of society. The remainder of the introduction will elaborate on the nature of this work by narrowing its focus. Despite the use of the manager-subordinate relationship in revealing the main argument, it is important to recognise that this is simply one example out of the many that were already mentioned for examining the effects of intergroup differences or intragroup similarities on non-verbal behaviour.

What This Research Is About

Nonverbal Behaviour and Mimicry

The first part has elaborated an argument outlining the importance of investigating the effect of intergroup divides and intragroup similarities on the effects of non-verbal behaviour displayed in dyadic relationships. Given the pervasiveness of interpersonal interactions in organisational life, the behaviours that occur within these interactions are of vital importance to a range of work relationships. Those are not only manager-subordinate interactions but also interactions among co-workers or team members, for example. Before I return to the effect of social group memberships on non-verbal behaviour, I will outline why non-verbal behaviour per se, as a part of communication, is important for their relationship and the organisational literature.

To manage subordinates successfully and to create sustainable relationships, managers are required to communicate effectively (Barrett, 2006). Indeed, various scholars (e.g., Clutterbuck and Hirst, 2002; Luthra and Dahiya, 2015) argue that communication is fundamental to managing people and achieving organisational goals. For instance, appropriate communication from managers has been shown to result in increased motivation and commitment of subordinates (e.g., Tourish and Hargie, 2004) but it has also been linked to greater output quality of subordinates (e.g., Clampitt and Downs, 1993; Hargie and Tourish, 2000). Similarly, effective communication is vital for co-workers and team members to enhance their performance.

The major part of overall communication, figures ranging from 66% to 93%, is conducted through non-verbal channels (e.g., Birdwhistell, 1970; Mehrabian, 1972; Tubbs and Moss, 2000; Burgoon et al., 2010). This makes non-verbal behaviour (NVB) an important tool to communicate in general (Burgoon et al., 2010) but especially inside organisations as communication is key here (e.g., Tourish and Hargie, 2004). Among other categories, NVB encompasses haptics (i.e., touch, e.g., Heslin and Alper, 1983; McDaniel and Andersen, 1998), physical appearance (e.g., Kleinke, 1986) and kinesics, often referred to as body language (e.g., Birdwhistell, 1952; Knapp and Hall, 1996). Belonging to the latter, mimicry, that is the mirroring of another's body and facial expressions, has been shown to result in positive effects for interpersonal

relationships such as increased rapport or liking for the mimicked individual (e.g., Lakin and Chartrand, 2003; Lakin et al., 2003; Chartrand et al., 2005; Lakin, 2013).

More importantly, mimicry has also been demonstrated to result in a more pro-social orientation and a changed attitude of the mimicked individual towards the mimicking individual leading to a greater relationship between the two (e.g., van Baaren et al., 2003; van Baaren, Holland, et al., 2004). Accordingly, it appears to be a useful approach to utilise mimicry in organisations to create effective working relationships. The following question might help to illustrate this point and the main focus of this work. Can an individual (e.g., a manager), by deliberately mimicking another individual (e.g., a subordinate), come across as more likeable or competent? If the answer to this question is “yes”, managers could mimic their subordinates in interpersonal interactions and subsequently increase the quality of their relationship leading to better outcomes (see leader-member-exchange theory; Graen and Uhl-Bien, 1995; Gerstner and Day, 1997).

Exploring mimicry in an organisational context seems particularly relevant for multiple reasons. First, NVB is highly present in human life. Consequently, humans have developed a sense of understanding and a routine as to how to decode different non-verbal cues (Burgoon et al., 2010). Using NVB, in particular mimicry, to enhance working relationships, therefore, might be an effective way, because it can reach and be understood by many individuals. Second, much of the NVB literature has not yet reached the organisational literature but can bring insights as a result of offering a new perspective. For example, while the leadership literature appears to be mainly concerned with how to increase organisational citizenship behaviour (Rafferty and Griffin, 2004), NVB can help to increase the relationship itself between leader and follower. Though communication is articulated as an important aspect of transformational leadership, it focusses more on verbal communication rather than non-verbal communication (Rafferty and Griffin, 2004). Similarly, leader-member-exchange theory (Graen and Uhl-Bien, 1995), though it is relationship-centred and stresses the importance of communication, it mainly focusses on conversation content (Fairhurst, 1993; Brown et al., 2019), rather than utilising NVB or mimicry to improve the relationship between leaders and subordinates. This lack of integration between both fields comes as a surprise considering that the NVB literature and the leadership

literature overlap in terms of their goal of building relationships. Therefore, bringing NVB into the organisational context appears to be of theoretical significance.

The Purpose of This Research: Mimicry in the Context of Social Group Memberships

Though research on mimicry appears to be consistent in revealing its positive effects on building relationships, this argument should be treated with care considering the previous discussion about the importance of social group memberships in perceiving the actions of others. Indeed, research has shown that individuals perceive the world differently and that such differences in perception can moderate the processing of incoming information in a way that results in distinct outcomes (Brewer and Gardner, 1996). As with polarisations, such differences in world views might place the individuals, managers and subordinates in this case, on the opposite ends of the same continuum, resulting in contrasting biases (Turner et al., 1987; Kleiner, 2018). If their world-views are aligned, however, such biases might be different, even positive, as will be shown (Turner et al., 1987). Accordingly, managers (or employees in more general terms) who mimic might enhance their relationships with some subordinates (colleagues) but might also worsen the relationship with others, dependent on whether their world-views align. Hence, how managers (employees) communicate with subordinates (their colleagues) to achieve a more effective relationship and, consequently, to achieve organisational goals might require different strategies depending on how individuals perceive their respective group memberships (see also Witherspoon, 1997).

Research has shown that group memberships are based on their self-categorisation (see Turner, 1982; 1985; Turner et al., 1987), that is, how they categorise themselves and others. Social Identity Theory (SIT) elaborates on the consequences of such categorisations for individual cognition and behaviour. Self-categorisations are cognitive processes by which the self and others are categorised into social groups, or so-called social identities, which can lead to both positive and negative biases towards other individuals dependent on whether they are perceived to be in the same social group or a different social group (see Tajfel and Turner, 1979; see also Mummendey and Schreiber, 1984). Put differently, once social groups are cognitively salient, individuals perceive their social environment through the lens of “us” versus “them” and they tend to favour others who are perceived to be in the same social category, compared to individuals who belong to a different group. These biases, in

turn, have consequences for how individuals perceive actions such as mimicry of those categorised individuals.

It is here where this research sees its purpose. Though literature exists that demonstrates how mimicry can influence relationships through changing perceptions of people, it has not considered how such effects depend on social categorisations. Whether mimicry displayed by a manager to a subordinate increases liking, for instance, might depend on whether the subordinate perceives the leader (or manager) to be in the same social group (i.e., in-group) or a different social group (i.e., out-group).

Understanding how social groups moderate the effects of mimicry has significant practical implications. Mimicry displayed by a manager who is perceived by a subordinate to be an in-group member might lead to positive consequences such as more liking and therefore to a more sustainable relationship. However, if the subordinate perceives the manager to be an out-group member the effect might change as a result of an emerging bias against the manager. Consequently, mimicry might result in different outcomes depending on social group memberships which are important for managers to consider as, despite their good intentions, mimicry might backfire. The first research question which this research aims to answer is, thus, how do social groups moderate the effect of mimicry in a dyadic interaction? In so doing, it answers the calls made by multiple researchers in the field (see Maddux et al., 2008; Miles et al., 2011; Hasler et al., 2014; Hale and Hamilton, 2016b; Tunçgenç and Cohen, 2016; Blocker and McIntosh, 2017).

This second aim of this research takes mimicry beyond its applications in dyadic interactions and thus takes the construct into a rather unexplored field. In organisations, many interactions are non-dyadic in nature. In meetings, for example, multiple individuals talk to each other and, most importantly, they watch and listen to the person who is currently talking. Though it is crucial to understand mimicry in dyadic interactions and how its effects are moderated by social groups, it is also vital to understand whether or not mimicry has vicarious effects merely when it is observed and how these effects, in turn, are moderated by social group memberships.

More specifically, if two colleagues are having an interaction and a third person is witnessing their interaction, does mimicry by one of the interacting individuals change

the way this individual is perceived by the observer? How is this effect moderated by the social group membership of the dyad relative to the observer? Answers to these questions provide significant practical implications for mimicry because they reveal a more comprehensive picture of its effects. If mimicry, when observed, has negative effects on how the mimicker is perceived, mimicry might rather be applied merely in dyadic interactions after all. As answers to such questions also respond to a call made within an exhaustive review of the literature by Chartrand and Lakin (2013), they also significantly advance the understanding of mimicry per se and are thus of theoretical importance.

How This Research Contributes to the Literature

This research contributes to the literature in several important ways. First, two studies bring together mimicry and the moderating effect of social identities in interpersonal settings. They thus help to identify whether or not and how social groups moderate the effects of mimicry, answering a call from various researchers (see Maddux et al., 2008; Miles et al., 2011; Hasler et al., 2014; Hale and Hamilton, 2016b; Tunçgenç and Cohen, 2016; Blocker and McIntosh, 2017). Second, this research will contribute to the literature on mimicry by providing empirical evidence of how mimicry elicits effects. In the literature of mimicry, it is often presupposed that mimicry, in a dyadic interaction, engenders perceptions of similarity with the mimicker, which, in turn, lead to further consequences such as liking. Within this research, such hypotheses are empirically tested to provide evidence whether such widely held beliefs hold in general but also within intergroup contexts.

Third, this work significantly contributes to the literature by investigating whether mimicry can engender effects on individuals not directly involved in the conversation, that is, observers of the conversation. The significance both theoretically and practically can be understood when considering the number of conversations that are witnessed. This research will also empirically test the role of social identities in moderating the effect of mimicry in observed interactions and therefore significantly advance the understanding of mimicry as a communicative tool. Finally, this research will contribute through a more thorough experimental design, which helps to identify which condition is driving the effect of mimicry in intergroup contexts. The empirical evidence presented by the literature on mimicry to date has not compellingly revealed whether effects of mimicry are rather driven by the no-mimicry condition or by the

actual mimicry condition. Researchers often state that there is a difference between these two conditions but not as to which one is driving the effect. Consequently, the need for control groups in mimicry research will be emphasised during this thesis. Such thorough design allows for conclusions as to which condition is driving the effect and therefore this thesis contributes to the literature by responding to calls from various researchers such as Blocker and McIntosh (2017) for control conditions (see also De Coster et al., 2013; Lumsden et al., 2014 for similar calls).

How the Work Proceeds and Clarifications

Before the review of the literature commences, it might be useful to clarify the context of this study. Though the manager-subordinate context is used for demonstrating the practical importance of the subject, it is difficult for researchers to simulate the context experimentally. Consequently, the experiments will use other important social identities such as gender rather than leader-subordinate identities. However, as SIT has been developed as a general theory for intergroup behaviour, the specific identities or groups which are utilised to generate an intergroup context should not influence the direction of the effects, because the cognitive processes and biases do not vary in direction but only in strength (Tajfel and Turner, 1979; see also Mackie et al., 2000; Scheepers and Ellemers, 2019). Therefore, investigating the moderating effect of social groups on the outcomes of mimicry through identity affiliations such as gender should lead to the same result which would have been obtained by using the manager-subordinate context or other contexts where group differences and similarities preside.

The work will proceed as follows. The next section will be a brief introduction to NVB as a whole and the place of mimicry within the overall literature on NVB. This is followed by a more detailed elaboration on where the current literature on mimicry stands. Here, the thread of the argument will commence with the literature on liking and will then proceed to the literature of mimicry in intergroup settings. The section will also outline the outcomes under investigation of this research. Consequently, social identity theory and its implications for cognitive processes and behavioural consequences will be elaborated. Based on the knowledge obtained, hypotheses for dyadic mimicry will be developed accordingly. The literature of observed mimicry, the second part of this research, will be reviewed subsequently followed by the hypotheses development. The empirical part will commence with an elaboration of the

methodology used to conduct the data collection followed by an empirical analysis as well as a discussion of the results. Finally, I will conclude by outlining theoretical, empirical, methodological, and practical implications as well as by acknowledging limitations and by pointing to future directions.

Mimicry And Non-Verbal Behaviour

Non-verbal behaviour (NVB) is known to account for the majority of communication between individuals (e.g., Birdwhistell, 1970; Mehrabian, 1972; Tubbs and Moss, 2000; Burgoon et al., 2010) with numbers ranging from 66% (Birdwhistell, 1970) to 93% (Mehrabian, 1972). Perhaps the amount of research conducted in the field of NVB is hence not a surprise. The diversity ranges from studies about social distance (e.g., Hall, 1959), personal space (e.g., Sommer, 1969), or territory (e.g., Altman, 1975), to research regarding body orientation (e.g., Mehrabian, 1967; Hargie et al., 1987), the use of time (see chronemics, e.g., Hall, 1984; Condon, 1991), kinesics, most commonly referred to as body language (e.g., Birdwhistell, 1952; Knapp and Hall, 1996), facial expressions (e.g., Biehl et al., 1997; Todorov, 2008; Calvo et al., 2014; Carragher et al., 2018), haptics (i.e., touch, e.g., Heslin and Alper, 1983; McDaniel and Andersen, 1998), physical appearance (e.g., Kleinke, 1986), and vocal cues (e.g., Ray et al., 1991; Pearson et al., 1994) among others (see Tubbs and Moss, 2000). One non-verbal cue stemming from the area of kinesics- the so-called mimicry- is the focus of this research, because it appears to be particularly effective for building relationships as the following paragraphs will demonstrate.

Behaviour has a fundamental effect on others and their emotions and therefore it also affects the way others feel about their counterparts (Carver et al., 1983; Chartrand and Bargh, 1999; Chartrand and Lakin, 2013). A lot of research on NVB has thus been concerned with the building and maintenance of relationships (see Burgoon et al., 2010). NVB, as stated before, accounts for the majority of communication (Birdwhistell, 1970; Mehrabian, 1972) and it is hence a commonly and perhaps subconsciously used tool for building and maintaining relationships within organisations (see Baumeister and Masicampo, 2010; Bargh et al., 2012; Kulesza et al., 2016). Given the importance and prevalence of communication within organisations as well as the importance of the leader-subordinate relationship (see Tubbs and Moss, 2000; Burgoon et al., 2010), investigating how NVB can be utilised deliberately to enhance the relationship with another person appears to be sensible. Enhancing the relationship with others through using NVB, for this research, means to change how the counterpart perceives the self through displaying relational cues.

Signalling such relational cues, one of the most fundamental functions of NVB, can be achieved in multiple ways (see Burgoon and Hale, 1984; see also Burgoon and Hale, 1987; Burgoon and Hale, 1988; Burgoon et al., 2010). One way, for instance, is through displaying immediacy cues such as leaning forward during a conversation which signals active engagement and therefore a desire for intimacy (see Coker and Burgoon, 1987; Burgoon et al., 2010). Another way, however, is to display signs of affiliation through nonverbal mimicry (see Chartrand and Bargh, 1999; Chartrand and van Baaren, 2009; Burgoon et al., 2010; Lakin and Chartrand, 2013).

Mimicry can be defined broadly as doing what others are doing (Stel and Vonk, 2010). More specifically, mimicry refers to the adaptation of motor movements such as arm or leg movements, the conduction of postural changes as well as the adaptation of facial expressions in response to the non-verbal actions of another individual in a way that these are somewhat aligned (Chartrand and Bargh, 1999; Chartrand and van Baaren, 2009). This alignment, however, is delayed in time and the movements themselves are rather similar than being perfectly matched (Heyes, 2011). Whilst people usually engage in mimicry subconsciously (Capella and Planalp, 1981; Dijksterhuis, 2005; Marsh et al., 2009), they can also mimic consciously (see Bandura, 1962). It is here where this research sees its purpose. Is it possible, merely as a result of consciously mimicking another person, to change how this person thinks or feels about oneself? Does this depend on whether the mimicking individual is perceived to be an in-group member or an out-group member? Can mimicry also increase perceptions of competence or change the extent of identification with a group?

The focus of this research is, however, twofold. As leader-subordinate interactions occur frequently within organisations, investigating the effect of mimicry within such dyadic, intergroup interactions is considered important. This focus represents the first focus of the research. The second focus, however, regards the effect of mimicry merely when observed in an interaction. More specifically, when one person mimics another person, does this mimicry affect perceptions of a third person, an observer, even though the mimicry was not directed towards the observer? Does this effect, in addition, depend on whether the observer perceives the dyad as part of the in-group or as part of the out-group? The following literature review will be tailored to answer the research question for the first part of the research. Later, a separate review will be conducted to elaborate on the arguments for observed mimicry.

Mimicry

Mimicry, as mentioned before, refers to the adaptation of motor movements in response to the non-verbal actions of another individual (Chartrand and Bargh, 1999; Chartrand and van Baaren, 2009). Though facial mimicry can also be conducted consciously it usually occurs subconsciously and, different to other types of mimicry, it can never be fully refrained from (e.g., Meltzoff and Moore, 1977; Dimberg and Thunberg, 1998; Dimberg et al., 2000). This section will review and discuss the relevant literature on mimicry and link the discussion to the research questions. However, three critical factors and idiosyncrasies of the literature around mimicry and its related concepts require outlining before setting the scope for the review.

First, the necessary terms used by mimicry scholars need to be explained. The person who is conducting the mimicry, that is, the person who is adjusting movements in response to movements of another person in an interaction, is referred to as the *mimicker* (see Stel and Vonk, 2010; Kulesza et al., 2015). The term *mimickee*, in contrast, refers to the person who is being mimicked (Stel and Vonk, 2010; Stel and Harinck, 2011). Accordingly, various studies have been conducted which aim either at investigating the outcome of mimicry for the mimicker per se (for examples of this direction of effect, see McIntosh, 2006; Stel et al., 2008; Maddux et al., 2008; Stel, Mariëlle and van Knippenberg, 2008; Tanner et al., 2008; Stel and Vonk, 2010; van der Velde et al., 2010; Stel, Blascovich, et al., 2010; Redeker et al., 2011; Stel, Mastop, et al., 2011; Inzlicht et al., 2012) or they aim to explore the outcomes of mimicry for the mimickee (for examples of this direction of effect, see Ashton-James and Chartrand, 2009; van Baaren et al., 2009; Dalton et al., 2010; Miles et al., 2010; Paladino et al., 2010; Lakens and Stel, 2011; Guéguen et al., 2012; Over et al., 2013; De Coster et al., 2013; Shaw et al., 2015; Hale and Hamilton, 2016b).

It is important to understand that these two foci are inherently distinct (for other factors, see also Davies et al., 1988; Riggio, 2006; Bonaccio et al., 2016). In the former case, mimicry is employed to change the self-view or the world-view of the mimicker, that is, mimicry has a self-serving purpose (Stel et al., 2008; Stel et al., 2009; see also van der Velde et al., 2010; Lumsden et al., 2014; Tamborini et al., 2018). In the latter case, however, mimicry is employed to change the behaviour or the world-view of the mimickees. Usually, this world-view (of the mimickee) involves in some way the

mimicker so that mimicry is deliberately employed to change the world-view of others in the mimickers' favour (Chartrand and Bargh, 1999; exp 2 of van Baaren, Dijkmans, et al., 2004; Kühn et al., 2010; Fischer-Lokou et al., 2011; Shaw et al., 2015; see also Mogan et al., 2017; Cracco et al., 2018). Though mimicry, in this case, could also be argued as self-serving for the mimicker, it is other-focussed. The aim is to influence the mimickee and not the self and therefore these two directions of effects are distinct and must not be confused. As this research solely focuses on the latter direction of the effect, the literature review in this chapter will be exclusively concerned with studies in line with the effect on the mimickee.

Second, the effects of mimicry have been investigated with two distinct foci (or causalities) which must be understood. On the one hand, scholars have studied mimicry in terms of its natural occurrence, that is, they studied the circumstances under which mimicry is more or less likely to occur naturally (see also Gump and Kulik, 1997; see Johnston, 2002; Guéguen and Martin, 2009; Stel, van Baaren, et al., 2010; Wang and Hamilton, 2012; see also Genschow et al., 2013; see Kurzius and Borkenau, 2015; Seibt et al., 2015; Blocker and McIntosh, 2016; Gleibs et al., 2016; see also Genschow and Schindler, 2016) without considering the effect of mimicry (see Salazar Kämpf et al., 2018 for one exception). On the other hand, some scholars deliberately manipulated mimicry to see what effects can arise due to its occurrence (Dabbs Jr., 1969; van Swol, 2003; Ashton–James et al., 2007; see also Miles et al., 2010; Stel, Rispens, et al., 2011; White and Argo, 2011; see Jacob et al., 2011; Leander et al., 2012; see also Müller et al., 2012; see Verbene et al., 2013; Catmur and Heyes, 2013; Neufeld and Chakrabarti, 2016). For this latter focus (or causality), mimicry is usually manipulated through a confederate who is instructed to mimic another person where this other person, the participant, is unaware of the mimicry (e.g., Chartrand and Bargh, 1999; Leander et al., 2011; Hasler et al., 2014).

Distinguishing between these two foci is important. Whilst researchers of the former are interested in when mimicry occurs in a particular situation, they are less interested in the outcomes of mimicry and therefore they are usually concerned with the mimicker and disregard the mimickee. Researchers who are interested in the latter focus are more interested in the mimickees and their reaction to the deliberately manipulated mimicry by the mimicker. Hence, the focus lies on the mimickees and how mimicry changes their behaviour or opinions regardless of how likely mimicry is to occur

naturally in a given situation. As this research is aligned with the latter focus (or causality) the literature review in this section will merely focus on how mimicry affects the mimicker.

Third, mimicry has two related concepts which are, however, inherently distinct from mimicry in terms of their conceptualisation. Whilst mimicry is inherently delayed and comprises non-identical movements, *interactional synchrony* refers to the matching of movements in both time and form (Miles et al., 2009; Wiltermuth and Heath, 2009; see Hove and Risen, 2009; Lakens, 2010; Valdesolo et al., 2010; Valdesolo and DeSteno, 2011; Lumsden et al., 2012; Tarr et al., 2014). *Imitation*, the other distinct construct, refers to the deliberate copying of movements in response to stimuli displayed on a computer (i.e., non-interactional settings; Heyes, 2011). Therefore, the outcomes scholars explore in imitation studies are, in contrast to mimicry studies, always focussed on the person conducting the movements (see Heyes et al., 2005; Mondillon et al., 2007; Over and Carpenter, 2009; see also van Leeuwen et al., 2009; see Leighton et al., 2010; Marsh et al., 2016; Rauchbauer et al., 2018). The nature inherent in these concepts is also the reason why mimicry, but not synchrony and imitation, can be applied in a conversational setting without being noticed. As the focus of this research lies on mimicry, the literature review in this section will not cover studies on synchrony or imitation for the sake of simplicity and brevity.

Finally, research on mimicry has some overlap with other areas of social psychology, particularly with research on emotions. However, I shall also point out at this stage that a review of such literature lies beyond the scope of this work for the following reason. The literature that examines mimicry and emotions altogether does not match the three aforementioned criteria of relevant literature. For example, it has largely put its emphasis on either the effects of mimicry for the mimicker as opposed to the mimicker (see Chartrand and van Baaren, 2009; Stel and Vonk, 2009; Olszanowski et al., 2020), or on the natural occurrence of mimicry depending on the emotions displayed (see Weyers et al., 2009; van der Schalk et al., 2011; Hess and Fischer 2013; Sachisthal et al., 2016; for reviews, see Hess and Fischer, 2014; Fischer and Hess, 2017). Based on the above discussion, both of these angles, though certainly valuable, do not necessarily contribute to better understanding mimicry's effects on the mimicker's perception of the mimicker. Though research that aims to understand the effect of mimicry on emotions through the lens of social identities certainly appears

to be a rewarding pursuit (see the section ‘Limitations and Future Directions’ in the chapter ‘General Discussion’), this work will, therefore, only occasionally make reference to research on emotion, where it is appropriate.

In sum, the following literature review will merely include studies which (a) consider the effects of mimicry for the mimickee, (b) concern the outcomes of mimicry rather than its natural occurrence, and (c) are investigating the concept of mimicry rather than related concepts such as imitation or synchrony. The review will cover critical outcomes of mimicry relevant for this research such as similarity, liking, or competence among other outcomes.

Effects of Mimicry

Likability is a key determinant for successful long-term relationships (Nicholson et al., 2001). For example, researchers of the leader-member exchange (LMX) have emphasised that likability is a fundamental component of high-quality LMX relationships (Nahrgang and Seo, 2014). Indeed, the empirical evidence provides strong support for this assumption by demonstrating that both managers and subordinates perceive the relationship with each other as better when they like their counterparts (Liden et al., 1993; Engle and Lord, 1997; see also Nahrgang and Seo, 2014). As this research aims at creating greater relationships through mimicry (under consideration of social groups), likability is an important variable. Due to its importance for relationships, it is not a surprise that the mimicry literature thoroughly examined the effects of mimicry on the likability of the mimicker. The review of the mimicry literature will commence with such studies before shifting the focus towards studies investigating the effects of mimicry under consideration of social groups, the main aim of this research.

Likability

Out of the vast number of studies on mimicry, only eleven have tested the effect of mimicry on liking with the causality of interest for this work (see above discussion in the section ‘Mimicry’). One of the most prominent studies conducted in the field of mimicry research stems from Chartrand and Bargh (1999). Based on the notion that individuals automatically evaluate encountered stimuli (see Fazio et al., 1986; Bargh et al., 1992; Bargh et al., 1996) which, in turn, has direct effects on individual behaviour towards these stimuli, the authors hypothesised that mimicry will result in increased

liking for the mimicker (see experiment 2 in Chartrand and Bargh, 1999). In their study, a confederate was instructed to either mimic or not mimic participants during a picture description task. The results show that participants, indeed, liked mimicking confederates more than non-mimicking confederates. Other scholars have also found that mimicry leads to more liking (e.g., Verbene et al., 2013; Hale and Hamilton, 2016b).

Across these studies, however, a theme appears to emerge suggesting that individual perception plays a strong role in how mimicry affects the likability of the mimicker. Kulesza et al. (2016), for instance, suggest that mimicry only leads to more liking for the mimicker if mimickers' do not notice the mirroring of movements (see also Bailenson et al., 2008). In further support of this notion, scholars have found that mimicry increases the likability of the mimicker even in more natural settings (see Salazar Kämpf et al., 2018) but only if positive movements such as nodding are mimicked compared to negative movements such as shrugging (Kurzius and Borkenau, 2015). Here, the individual perception of what movements are mimicked plays an important role in how mimicry affects liking. Overall, there seems to be a consensus among researchers that mimicry, compared to no mimicry, enhances likability ratings (see van Swol, 2003 for an exception), even across different fields of psychology (see Neufeld and Chakrabarti, 2016). At the same time, however, there also seems to be an influence of individual perception on the effects of mimicry.

Further support of the influence of perception on non-verbal effects can be drawn from a study by Tiedens and Fragale (2003). For each dyad, they instructed both participants to take certain postures during an experiment which either matched or did not. They measured the likability for the other person subsequently. The results did not reveal an increase of likability in the behavioural matching condition. However, this might be, because participants were aware of the behavioural manipulation in this experimental context. This argument refers back to the argument that the mere awareness of mimicry diminishes its effects (Kulesza et al., 2016). The fact that both individuals involved were asked to change their non-verbal behaviour led to non-verbal cues which were, for them, unnatural. Accordingly, they perceived the context, including the mimicry of the other, as unnatural, because they were aware of the instructions. This change in context-related perception, in turn, may have led to non-significant results. Therefore, just as the degree to which humans display mimicry

varies from individual to individual (Salazar Kämpf et al., 2018), so too does the effect of such mimicry vary dependent on individual and context-related differences in perception.

The question of how the effects of mimicry can be context-related was further explored by Dalton et al. (2010). Based on the notion that the context of an interaction dictates social norms, they found in several experiments that the effects of mimicry might depend on such context (see also Stel, Rispens, et al., 2011; Kurzius and Borkenau, 2015). For instance, they found that in a context in which mimicry is not expected, mimicry decreases performance whereas it increases performance when the context allows for expectations of mimicry. In other words, the context of the situation changes the effects of mimicry. Leander et al. (2012) confirmed this context-dependency. In their experiment, participants interacted with a mimicking or non-mimicking confederate either in an affiliative context or in a task-oriented context. In an affiliative context, individuals perceived the room temperature as lower if they have not been mimicked, compared to being mimicked (Leander et al., 2012). In a task-oriented context, however, the individual perception of the room temperature was lower when they were mimicked by the confederate compared to when they were not mimicked (Leander et al., 2012). Though these studies are not related to how the mimicked evaluates the mimicker, they demonstrate the context-dependency of the effects of mimicry. Consequently, they provide promising evidence that differences in world-views, as a consequence of context, change the effect of mimicry. However, it remains open as to whether the context also changes the effects of mimicry when the outcome variables are related to the mimicker.

Based on this notion, Stel et al. (2011) also investigated the mimicry-liking link dependent on whether mimicked were individualists or collectivists. Individualists perceive the world as rather egocentric and place a premium on themselves before regarding others whereas collectivists perceive the world as more cooperative and act in a way that maximises outcomes for the collective (see Van Lange et al., 1997). Initially, participants had to fill in a questionnaire (see Van Lange et al., 1997) to measure the social value orientation of participants. Dependent on their scores, they were either categorised as being pro-self (i.e., individualistic) or pro-social (i.e., collectivistic). In a subsequent interaction, participants were either mimicked or not mimicked by confederates. The results demonstrated that when collectivists are

mimicked compared to when they are not mimicked, they liked the confederate more whereas a difference in terms of liking for the confederate did not occur for individualists. This shows that individual differences in world-views, that is, a rather individualistic or collectivistic worldview, change the way humans react to mimicry displayed by another person.

Mimicry and Intergroup Behaviour

So far, the literature has shown that the effects of mimicry are influenced by both context-related changes in perception but also by individual differences in perception. Accordingly, it appears to be sensible to think that just as such individual differences in perception change the effect of mimicry, so too do social group-based differences in perceptions. Put differently, if the effects of mimicry are context-related, they may also differ depending on the social identities utilised in the context, that is, on social group membership. The remaining part of this section will, therefore, discuss the literature investigating the effect of mimicry through the lens of social identities.

Only two studies have investigated how social identities moderate the effect of mimicry. One of them was a virtual reality (VR) study conducted by Hale and Hamilton (2016b). Participants interacted with VR agents who were either members of the culture-related in-group or of the culture-related out-group and who either displayed mimicry or did not. Subsequently, participants were given a series of questionnaires measuring different variables such as liking, similarity, and trust among others. The analysis did not reveal any significant results. One possible reason for this is that VR mimicry might not be strong enough to elicit effects (Hale and Hamilton, 2016b). Another reason might be that the group manipulation did not work. This, however, remains unknown as the authors did not conduct a manipulation check.

The second study, also a VR study, was conducted by Hasler et al. (2014) and investigated whether Jewish participants feel greater empathy towards a Palestinian avatar (i.e., an out-group member) dependent on whether or not the avatar displayed mimicry. Their results confirmed their hypothesis that mimicry indeed leads to more empathy from Jewish participants towards a Palestinian avatar. Their findings are the first glimpse of evidence that mimicry might enhance relationships even with out-group members. These results are particularly intriguing because they suggest that mimicry

might offer ways to improve how humans interact with individuals they are negatively biased towards.

Despite such interesting findings, the literature investigating the effect of mimicry in the context of social identities does not answer the question for this research. Hasler et al. (2014) investigated an intergroup context only because participants perceived the avatar as an out-group member. Hence the design lacked an in-group condition. Therefore, they did not compare mimicry (and no mimicry) of an in-group avatar to mimicry (and no mimicry) of an out-group avatar. Consequently, the question as to how the effects of mimicry differ between in-group and out-group members, especially with regard to likability, remains unanswered by the literature. Additionally, taking the results of Hasler et al. (2014) together with the results of Hale and Hamilton (2016b), the findings of the literature regarding the effects of mimicry in intergroup settings are mixed. Further, they are based on VR studies only. As VR contexts, as of today, significantly differ from interpersonal environments (Hale and Hamilton, 2016b), it is no surprise that researchers stress the importance of researching the effects of mimicry in interpersonal settings (see also Catmur and Heyes, 2013; Hale and Hamilton, 2016b). Accordingly, this research is contributing to the literature on mimicry through shedding light on mimicry effects in interpersonal-intergroup settings and answering the call of multiple researchers (Maddux et al., 2008; see also Miles et al., 2011; Blocker and McIntosh, 2017).

Further Outcomes

Recall that this research aims to investigate whether mimicry, compared to no mimicry, can enhance the relationship between two individuals, manager and subordinate, for example. To understand the selection of dependent variables, it is important to also understand the nature of non-verbal mimicry. Given that our ancestors needed to be part of a social group to survive and mimicry signals a connection between humans, it is often thought of as an evolutionary behaviour which humans used to engage in to survive (Lakin et al., 2003). Although its purpose may have changed from survival-dependent to 'only' fostering affiliation, mimicry is still understood as a "social glue" (Lakin et al., 2003, pp.147) that is vital to create and maintain relationships (Lakin et al., 2003, see also Chartrand and van Baaren, 2009).

When we think about the organisational context, there is a range of variables that have been used to study relationships; some of which have already been used by mimicry researchers whereas others have not. Perceptions of likeability (Geys, 2014), competence (Kim et al., 2019), or trustworthiness (see Burke et al., 2007) seem to be rather obvious examples of how the quality of intra-organisational relationships may be measured. Other variables, despite their importance for relationships, may not be as obvious. For instance, the degree to which one has been treated fairly (i.e., interactionally just; see Colquitt, 2001) or the extent to which one perceives an interaction as cooperative (see also Janssen, 2003) have also been shown to be important for relationships within organisations. Given that all of these variables seem to be crucial to functioning relationships within organisations and that this research aims to examine whether mimicry may affect the perceived quality of such relationships, I will measure them as dependent variables within the experiments of this research.

However, these outcomes can also be linked more specifically to LMX. According to LMX, likability is an important factor influencing the relationship between manager and subordinate (Wayne and Ferris, 1990; Engle and Lord, 1997). However, LMX emphasises further factors that are equally important for such relationships (Nahrgang and Seo, 2014). Similar to likability, understood as an affiliation-related factor, one of the fundamental variables inherent in a high-quality LMX relationship is trust between manager and subordinate (Deluga, 1994; see also Colquitt et al., 2007; Sue-Chan et al., 2012) alongside perceptions of fair, respectful treatments (Masterson and Lensges, 2014). On the other hand, the literature has also demonstrated that perceptions of competence of the counterpart are important to the relationships (Dockery and Steiner, 1990; Day and Crain, 1992). The following paragraphs will briefly outline another rationale for selecting those additional variables. The rationale for how mimicry might affect them will be offered in the hypotheses development section.

Trust is not only an important variable for the manager-subordinate relationship but also for organisational identification (see Schaubroeck et al., 2011; Schaubroeck et al., 2013). Trust between a manager and a subordinate is essential for a working relationship (McAllister, 1995) and influences performance related-outcomes (see

Mayer and Gavin, 2005; Chen et al., 2014). Consequently, the role of mimicry in enhancing trust between two individuals, and how this effect depends on the social groups of the individuals involved, appears to be of importance. In experimental settings where individuals negotiated, Maddux et al. (2008) found that trust mediates the relationship between mimicry and reaching an agreement. Hence, they found that mimicry increases trust in the mimicker. This finding is particularly intriguing, because of its practical relevance for organisations and the manager-subordinate relationship. However, considering that there might be other forces such as social identities at work which might alter such effects (see Randel, 2002; Hogg and van Knippenberg, 2003; for moderation effects of social identities Neighbors et al., 2010), it remains open as to whether mimicry can elicit trust in such contexts.

Second is the perception of competence. Judgements of competence have been regarded as crucial for organisations, especially the manager-subordinate context (Cuddy et al., 2011). It is, therefore, no surprise that competence appears as a construct throughout the literature on leadership (see Chemers, 1997). Judgements of competence do not only affect behaviour but also affect perceptions of others on other dimensions (Cuddy et al., 2011). Given its importance for LMX relationships (see Day and Crain, 1992), it appears to be sensible to test whether competence can be affected by mimicry, particularly when one takes into account research that has shown particular non-verbal behaviour to affect competence perceptions of others (see Ridgeway, 1987; Carli et al., 1995; Peters et al., 2017). Further, it is important to understand whether, and if so how, perceptions of competence differ in intergroup contexts, compared to intragroup contexts.

Further, perceived interactional justice is a factor that has received a lot of attention in the organisational literature (Colquitt, 2001). One of the reasons might be that it has positive effects on job performance and job satisfaction (see Konovsky and Cropanzano, 1991; Swiercz et al., 1993; Janssen, 2001). As a manager's behaviour influences perceptions of interactional justice (Long et al., 2011), exploring whether mimicry increases perceptions of interactional justice and how this effect might change due to the group membership of individuals, might be a rewarding endeavour. Cooperation, in a similar vein, is understood as important for organisational success factors such as innovation (de Faria et al., 2010; Weber and Heidenreich, 2018). For

instance, the degree of cooperation among team members has been demonstrated to significantly increase team performance in competitive contexts (Tauer and Harackiewicz, 2004). Accordingly, the perception of a cooperative environment appears to be important to organisations. Consequently, it appears to be of practical value to explore whether observed mimicry in an interaction increases perceptions of a cooperative conversation.

Another outcome of interest is in-group identification, which refers to the extent to which individuals identify themselves with their own in-group. An example of an in-group identification is organisational identification, which has been linked to various job-related outcomes (see Van Knippenberg, 2000) such as job performance, job satisfaction, and job commitment (see Riketta, 2005). Further, organisational identification can be influenced by the managers' behaviour, communication, for instance (Smidts et al., 2001). Indeed, both relationships (Riley and Burke, 1995) and LMX have often been linked to organisational identification (Tse et al., 2012; Farrell and Oczkowski, 2012). Considering its importance for the organisation but also the fact intergroup relations are at the heart of this research, identification appears to be an important measure. Accordingly, it is important to investigate whether mimicry can affect in-group identification of the mimickee and how this is affected by the intergroup context.

Building on the current state of knowledge of the mimicry literature, the previous sections have demonstrated the need for more research in intergroup contexts. Two specific observations emerge. First, though the literature suggests that the context might be a moderator for the effects of mimicry, there appears to be a lack of research targeting how the context of social identities moderate such effects. Second, outcomes under investigation for this research are of particular relevance for both organisations and the manager-subordinate context. It is thus surprising that mimicry research has not yet addressed most of these variables. It is the combination of these two observations where this research sees its place in the literature. However, it will also contribute to the literature by explaining the cognitive process utilised by mimicry to engender effects. This is the focus of the following section.

The Mechanism of Mimicry

The cognitive processes involved in eliciting the effects of mimicry are important to understand mimicry itself. Surprisingly, scholars have not yet provided a clear answer to the question as to how mimicry engenders effects in others. Several authors state, or rather assume, that perceived similarity in terms of personality is the mediator between mimicry and its positive effects on the mimicked (see Byrne, 1971; see also Lakin, 2013; for a review on the mimicry literature, see Chartrand and Lakin, 2013). They do so as the more general psychological literature emphasises that individuals tend to be drawn to others who are perceived as more similar to them (see also Byrne, 1961; Byrne, 1971; Bavelas et al., 1988; Bernieri and Rosenthal, 1991; Turner, 1991; Bernieri et al., 1994; Cialdini, 2001; Byrne, 2005; Mitchell et al., 2005; Byrne, 2009).

More specifically, the argument put forward by mimicry researchers is that being mimicked creates an assimilative mindset where *physical* similarity results in a belief that the two individuals are *psychologically* similar (van Baaren et al., 2009; Clerke and Heerey, 2021). Further, research has shown that individuals may more easily process interactions with those who are perceived to be more similar to the self (for a review on decision making and information processing, see also Gigerenzer and Gaissmaier, 2011). Given that individuals tend to use information related to their own behaviours to assess actions of others (for a discussion, see also Gordon, 1992), the outcomes of mimicry such as likeability or trust may be mediated by perceived similarity precisely because it makes similar attitudes more accessible (Clerke and Heerey, 2021). In other words, perceived similarity is thought to mediate the relationship between mimicry and its outcomes because mimickers may be perceived as more related to the self which, in turn, individuals strive to see positively (see next chapter; see also Abrams and Hogg, 1988).

Though this logic appears to be sensible, empirical evidence on similarity and its mediating effect for the relationship between mimicry and its outcomes is scarce. One study on which many scholars base their assumption was conducted by Dabbs (1969). In this early research on mimicry, Dabbs (1969) employed a confederate who was supposed to mimic (or not mimic) participants. Participants were subsequently given a questionnaire to rate the confederate. Though mimicked participants, compared to non-mimicked participants, evaluated the confederate more favourably and identified

more with him, the fact that the employed measure of perceived similarity was the confederate “*thought more like they did*” (Dabbs Jr., 1969, p.337) casts doubt on whether this is a reliable and valid measure of perceived similarity.

Even more concerns arise about the Dabbs (1969) when the manipulation-check for mimicry is considered as well as the sample size. Independent observers were tasked to rate the degree of posture similarity of participants and confederates, which proved to be non-significant, i.e., mimicry did not occur, according to the manipulation check. This means that the results in terms of what the author claims to be similarity might stem from other factors but mimicry. Further, the sample size was 11 individuals per condition. Though perhaps the standard for the time when the study was conducted, the statistical knowledge of nowadays might argue that this sample is not sufficient to justify any results. For instance, even an *a priori* G*Power analysis (Faul et al., 2007) using very optimistic measures for comparing two independent groups ($d = .8$; $\alpha = .05$; power = .95; $N_2 / N_1 = 1$) reveals a minimum sample size of $n = 35$ participants per group. Considering that the effect size d of mimicry is not as high as used in the power analysis (see Stel, Rispens, et al., 2011), the required sample size must be higher than this. Finally, though the author claimed to have tested the mimicry-similarity link on which doubt was placed already, he did not conduct a mediation analysis so that the question as to whether similarity leads to further outcomes cannot be answered. For these reasons, the study by Dabbs (1969) cannot be taken as an assumption that perceived similarity mediates the relationship between mimicry and its outcomes.

There are also further studies that have attempted to explore the link between mimicry and similarity perceived by the mimickee towards the mimicker. The already discussed study by Hale and Hamilton (2016b), for example, used a confederate created through virtual reality (VR) to mimic participants. Their results did not support the mimicry-similarity link. A possible explanation is that individuals might not feel that a VR person is a real person and therefore they cannot fully relate to a person in VR. This is in line with previous VR studies which have obtained mixed results (Bailenson and Yee, 2005; Verbene et al., 2013; Verbene et al., 2015). Hale and Hamilton (2016b) themselves argued that VR mimicry might not be strong enough or that it might require more realistic expressions (Gratch et al., 2007) or emotions (Wallbott, 1995; Chartrand et al., 2005). Lastly, the authors stress the importance of further research both VR-related and interpersonal not only on the mimicry-similarity link but also on its further

outcomes, which this research is aiming for (see also Catmur and Heyes, 2013; Hale and Hamilton, 2016b).

Several conclusions can be drawn from this section with regard to the mimicry-similarity link. First, the link between mimicry and similarity perceived by the mimickee towards the mimicker has not been empirically tested in interpersonal settings and has not been supported in VR settings. Second, the mediation effect of similarity on mimicry and its outcomes has not been tested, though it is assumed by the literature. Third, neither of the studies have considered intergroup relations in pursuing the mimicry-similarity link. Therefore, the research question has not yet been answered. Given the importance of understanding how mimicry engenders effects, this finding comes as a surprise. Accordingly, this research aims to make a valuable contribution to the literature through testing whether or not similarity mediates the effect of mimicry and its outcomes and whether it does so in intergroup settings.

It is important to notice that the inclusion of similarity as an additional outcome variable does not only serve the purpose of investigating the cognitive processes through which mimicry operates. Instead, similarity also represents another variable to be considered of importance by the LMX literature to improve manager-subordinate relationships (Liden et al., 1993; Phillips and Bedeian, 1994). Indeed, in their meta-analysis, Dulebohn and colleagues (2012) found that greater perceptions of interpersonal similarity are associated with a higher LMX relationship. Accordingly, perceived similarity has two functions, one as a mediator, and one as an LMX-related outcome variable of mimicry. It has to be noted here that more studies in the overall non-verbal behaviour literature attempted to test the mediation effect of similarity. However, these studies involve either the world-view of the mimicker (rather than the mimickee), a different direction of effect, or they involved a related but different concept such as synchrony or imitation (see also Davis, 1982; Marsh et al., 2009; Lakens, 2010; Lakens and Stel, 2011).

Summary of The Literature

In general, mimicry is positively related to outcomes such as rapport, liking, or bonding (Lakin et al., 2003; van Baaren, Dijkmans, et al., 2004; van Baaren, Holland, et al., 2004; Chartrand et al., 2005; van Baaren et al., 2009; Sanchez-Burks et al., 2009; Lakin, 2013; Chartrand and Lakin, 2013). Chartrand and Bargh (1999), for instance,

coined the 'chameleon effect', suggesting that mimicry creates feelings of liking for the person who adopts the behaviour by the person whose behaviour is adopted. Though this finding is interesting, the literature still lacks empirical evidence as to whether the effect of mimicry on variables such as liking is moderated by group memberships of the individuals involved. According to the current state of knowledge, when a manager mimics a subordinate, it should lead to an increase in liking for the manager by the subordinate and vice versa. However, a plethora of studies exist demonstrating that group membership can be a powerful moderator (see Randel, 2002; Hogg and van Knippenberg, 2003; Neighbors et al., 2010). Therefore, it might also be a strong moderator for the effects that mimicry has on others, especially when considering that natural mimicry (i.e., not consciously adjusted behaviour but mimicry that occurs subconsciously) has been demonstrated already to be influenced by group membership (see Bourgeois and Hess, 2008; Blocker and McIntosh, 2017). The question, hence, remains as to whether or not the effects of mimicry, not mimicry per se, depend on the perceived group membership of the individual involved. Does mimicry, even when observed in an interaction, also lead to more positive evaluations of the mimicker, and is this moderated by the group membership of the observer and the mimicker?

In order to develop specific hypotheses for the outcomes under investigation in this research, it requires an understanding of a specific theory that describes inter-group behaviour as well as its underlying cognitive processes. This understanding is the basis for developing the hypotheses for both foci of this research. Therefore, the next section will review Social Identity Theory (SIT) to develop hypotheses for how the effects of mimicry on liking or competence among others, are moderated by social group membership in dyadic interactions. Following the hypotheses development for mimicry in interpersonal interactions, I will briefly review the scarce evidence for the vicarious effects of mimicry, the second focus of this research. Based on this review, I will then develop hypotheses for the effects of mimicry in observed interactions and how they might be moderated by social group memberships.

Social Identity Theory- A Theory of Intergroup Relations

Originally developed as a theory of intergroup relations in an attempt to explain cognitive biases such as in-group favouritism (see Tajfel, 1969 for his earlier work on categorisation), social identity theory (SIT, Tajfel and Turner, 1979) has emerged as one of the most influential theories in social psychology (Abrams and Hogg, 2010). Though its focus has loosened with time through exploring the role of the self and identity in more general psychological terms (Turner et al., 1987; Furnham and Procter, 1989; Reicher et al., 1995; Ellemers, Kortekaas, et al., 1999; Sidanius and Pratto, 1999; for research building on SIT or further developments, see Jost and Hunyadi, 2002; Hogg, 2007), intergroup relations are still at the heart of SIT (Hogg, 2016). Supporters of SIT believe that dynamics inherent in intergroup conflicts (and therefore the dynamics inherent in phenomena such as prejudice) are most appropriately understood as group processes, which, in turn, are enabled by cognitive human processes as well as human motivations (see Billig, 1976; Abrams and Hogg, 2004). Such motivations and processes, in addition, are affected by the subjective belief about the self, the society in general, and the context individuals find themselves in (Abrams and Hogg, 2004; Hogg, 2016). Consequently, individual personality differences only play a minor role in shaping values, beliefs, and actions within social interactions (see Pettigrew, 1958; Tajfel and Turner, 1979). This chapter will discuss the basics of SIT, the motivations of individuals, and the consequences for individuals based on SIT before applying the insights of SIT to the hypotheses development for mimicry in intergroup contexts.

SIT can be viewed as a theory which is mostly concerned with group behaviour based on the collective self, also referred to as the categorical self (Turner et al., 1987; Turner et al., 1994). Self-categorisation theory (see Turner, 1985; Turner et al., 1987; Hogg, 1993; Oakes et al., 1994), though being distinct from SIT (Turner et al., 1994), re-visits and helps to explain the cognitive processes inherent in, and consequences of, social identities (see Turner et al., 1987; Abrams and Hogg, 2010). It eloquently elucidates firstly that the personal self and the social self are opposite ends of the same continuum, making them mutually exclusive (Turner, 1985; Turner et al., 1987; Turner and Oakes, 1989; Turner et al., 2006; Hornsey, 2008), and secondly how the self-process itself is solely responsible for the collective behaviours of the categorical self (Turner et al., 1994). A crucial consequence emerges from this notion, that is, the

categorical self is an equally authentic and real expression of the self as is the personal self which is normally thought of to create individual differences (see Markus, 1977; Markus and Kitayama, 1991; Turner et al., 1994; see also Cross and Madson, 1997; Turner and Onorato, 1999; Gardner et al., 1999; Mackie et al., 2000; Abrams and Hogg, 2001). Accordingly, social identities ought not to be understood as changed personal identities or as an element of such; rather they are distinct categorical selves shaped by the meaning and values of their respective categories (Turner et al., 1994).

The forthcoming sections will discuss and review the literature with regards to when individuals tend to categorise others into groups, what motivations might be behind such categorisations, and what the consequences of social categorisations are. This will subsequently lead to the development of the hypotheses to be tested. Throughout the discussion, the literature referred to will mostly be of socio-psychological nature. Though applications of the concepts to the organisational context will be made, it appears to be more valuable to utilise the more generic psychological concepts and apply them to the mimicry literature for the development of the hypotheses instead of merely using practical (i.e., organisational) applications of SIT. Therefore, the logic applied to the development of the hypotheses of how the outcomes of mimicry might be moderated by intergroup contexts can be used for all such contexts regardless of the specific level of intergroup comparison (such as gender). Further, keeping the literature more general, facilitates the operationalisation of intergroup conditions for the experiments, because it might be challenging, and therefore less precise, to artificially create a leader-subordinate context, for instance, compared to other intergroup contexts (such as gender or ethnicity among others).

When Do We Categorise People?

SIT states that people tend to categorise others into social groups which result in cognitive as well as behavioural consequences (Markus, 1977; Tajfel and Turner, 1979; Tajfel and Turner, 1986; see also Fiske and Taylor, 1991; Luthanen and Crocker, 1992; Tangney et al., 1996; Vignoles et al., 2006). Individuals who are categorised, on a relevant dimension, to the same group as the self are referred to as in-group members, whilst individuals who belong to different groups are referred to as out-group members (see Tajfel and Turner, 1979; Tajfel and Turner, 1986; Miscenko and Day, 2015; Ashforth and Schinoff, 2016). To design experiments that explore the

reaction to mimicry in an intergroup context, it is therefore important to understand not only when individuals engage in such categorisations but also, more importantly, whether they see others as in-group members or out-group members. An understanding of such categorisation processes will guide the design of the experiments in a way that leads participants to engage in the desired social categorisation and therefore ensure the categorical self as salient as well as the appropriate category itself.

Categorisation per se, that is, whether or not individuals perceive themselves as members of social categories (i.e., social categorisation resulting in social identities) or as a single individual (i.e., self-categorisation resulting in personal identities) depends on two factors (Turner et al., 1994; Oakes et al., 1994). First, it depends on the cognitive accessibility of the particular social category which is shaped by the experiences, motives, needs, goals, and expectations of the individual in a given situation (Turner et al., 1987). In other words, it reflects the 'readiness' of the individual to utilise a particular social category (Turner et al., 1987; Turner et al., 1994). The category itself is thereby required to be useful and relevant for the particular context in the specific situation (Turner et al., 1987; Turner et al., 1994). For example, men and women are more likely to categorise themselves as men and women rather than individuals (i.e., categorisation in terms of social identities) when the context required particular attention to intersex differences compared to interpersonal differences (Hogg and Turner, 1987).

The second factor is referred to as 'fit' and it can be split into two aspects (Oakes, 1987; Oakes et al., 1991). Comparative fit, on the one hand, refers to Turners (1985) notion that a random collection of stimuli tends to be perceived as an entity when, on average, the differences between them are perceived as smaller than the differences between those stimuli and further stimuli. In other words, a contrast between a group of stimuli and further stimuli is required. Thus, this principle is sometimes referred to as meta-contrast (Turner, 1985; Hogg and Turner, 1987; Oakes et al., 1991; Turner et al., 1994). The principle of meta-contrast is partly responsible for the dynamics inherent in social identities, that is, when the context varies, so might social identities and categorisations themselves vary, resulting in a fluid and heavily variable self-concept (see Wilder and Thompson, 1988; see also Gaertner et al., 1989; Turner et

al., 1994; Reynolds et al., 2001; Jetten et al., 2002; Schmitt et al., 2003; Onorato and Turner, 2004; Reicher and Haslam, 2006). Normative fit, on the other hand, is concerned with the content of stimuli and how the context matches pre-determined specifications of a respective category (Turner et al., 1994).

The following example might help to illustrate how both aspects of fit, that is, comparative and normative fit, go in hand. To perceive or categorise certain individuals out of a group of people as leaders rather than followers based on the dimension of salary, the differences in salary among the leaders must not only be smaller than the differences in salary between the leaders and the followers (i.e., comparative fit), but such differences must also go in the right direction on the relevant dimension (the salary must be higher, i.e., normative fit). Accordingly, differences, as well as similarities between stimuli, must be consistent with the social meaning inherent in the respective category (Turner et al., 1987; see also Haslam and Turner, 1992; Turner et al., 1994; Haslam and Turner, 1995 for how the meaning of categories depends on the context).

Corresponding to the two factors of categorisation, several conclusions can be drawn from this research. First, concerning fit, it needs to be experimentally ensured that individuals (i.e., participants) perceive the person who mimics (i.e., confederate) as either different or similar to themselves dependent on whether the aim is an intragroup or an intergroup context (see below, see Hogg and Turner, 1987; Oakes et al., 1991 for the argument that social identities tend to be more salient in intergroup contexts whereas personal identities tend to be more salient in intragroup contexts). This view implies that for social categorisation to occur, groups are not required to be physically present, that is, individuals can and do interact with social identities present even in dyadic encounters (see Brewer and Gardner, 1996; Abrams and Hogg, 2010). For an intragroup context, the information provided for participants about themselves and another person (i.e., confederate) must merely be sufficiently similar relative to further stimuli so that the participant perceives the other person to be in the same group. For an intergroup context, in contrast, the information provided about themselves and the other person must be sufficiently distinct so that they perceive themselves to be in a different group than the other person. Second, to allow such categorisation to occur, the particular social category must be relevant in the particular situation. Accordingly,

the experimental context must lead the participant to perceive the situation to be sufficiently relevant to engage in categorisation and the information provided must be precise enough for participants to categorise themselves in either the same or a different social group (i.e., social identity, see also Tajfel and Turner, 1979). In support of this aim, various studies (see Billig and Tajfel, 1973; Locksley et al., 1980) have shown that merely allocating individuals into groups results in social-categorisation leading to behavioural consequences such as in-group bias (see below, Ferguson and Kelley, 1964; Tajfel et al., 1971; Rabbie and Wilkens, 1971; Tajfel, 1982; Turner and Bourhis, 1996; Bourhis et al., 1997; see Reynolds and Turner, 2006 for limitations).

What Are The Motivations of Such Categorisations?

Over the years several factors have emerged as to why individuals engage in social categorisations. Arguably the most fundamental motivation for intergroup comparisons, according to SIT (Tajfel and Turner, 1979; Turner, 1985), is the need for self-enhancement through a positive intergroup distinctiveness, making social identities inherently comparative (Ashforth and Mael, 1989). In contexts of social categorisation, the self is defined as a social identity and therefore the values, thoughts, and beliefs inherent in the group membership are attached to the self (see Tajfel and Turner, 1979; Hogg, 2016). Therefore, individuals will put great effort into promoting the belief that their group, on a particular dimension, is superior or better than another group (see Schlenker, 1982; Swann, 1983 for self-verification theory; see also Hogg, 2016) leading to self-enhancement (for an overview of outcomes of social comparisons, see Wills, 1981; Kruglanski and Mayseless, 1990; Wood and Taylor, 1991; Taylor et al., 1996; Suls et al., 2002; Corcoran et al., 2011). Such self-enhancement might also reflect a basic human need for higher self-esteem (Sedikides and Strube, 1997). Consequently, dynamics of intergroup behaviour might be motivated by self-esteem itself, to the extent that low self-esteem facilitates identification with a social group which, in turn, increases self-esteem through intergroup comparisons, a concept referred to as the self-esteem hypothesis (Abrams and Hogg, 1988; Rubin and Hewstone, 1998; see also Crocker et al., 1998; for studies see Branscombe, Schmitt, et al., 1999; Leary and Baumeister, 2000; Aberson et al., 2000; Major et al., 2002; Houston and Andreopoulou, 2003; Martiny and Rubin, 2016).

In addition to self-esteem-related motivations for intergroup behaviour and social categorisation, there might also be an uncertainty-related motivation at work. Based on the notion that individuals might feel uncertain about how to act and how to perceive actions of others in a complex environment, individuals might engage in intergroup behaviour to reduce this uncertainty (for self-verification, see Swann et al., 2002; Swann et al., 2004; see also Reid and Hogg, 2005; Hogg, 2007; Hogg, 2012). Social categorisation is thought of to be particularly effective in reducing uncertainty because it facilitates sense-making through prescribing values, beliefs, and prototypical behaviours to engage in (see Dutton and Dukerich, 1991; Weick, 1993; Weick, 1995; see also Jost and Hunyadi, 2002; Ashforth et al., 2008; Alvesson et al., 2008; Hogg, 2016).

Another motivation relates to the principle of optimal distinctiveness (Brewer, 1991; Ashforth and Mael, 1996; Leonardelli et al., 2010). It refers to the notion that individuals have two basic but competing needs, the need for inclusion and the need for differentiation (see Maslow, 1943; Baumeister and Leary, 1995; Fiske, 2004; Vignoles et al., 2006; Leonardelli et al., 2010). Individuals are hereby understood to categorise themselves as group members of social groups to satisfy the need for inclusiveness. This inclusiveness, however, activates the need for differentiation leading to a continuous act of balancing such needs (Brewer, 1991; see also Pickett and Brewer, 2005; Leonardelli et al., 2010). Accordingly, to satisfy the need for inclusiveness individuals must compare themselves to people who are, on some level, an in-group member (Turner et al., 1994; Ashforth and Johnson, 2001).

Important conclusions can be drawn when this line of reasoning is applied to the organisational life. It might be expected that individuals do not only belong to one social group at a given point in time (Turner et al., 1987; see Ashforth and Johnson, 2001 for nested identities; Simon, 2004; Turner et al., 2006). Aligned with this thought, many authors, indeed, argue for the existence of multiple identities so that individuals are part of different social groups at the same time resulting in fundamental implications for their behaviour (see Ashforth and Johnson, 2001; see also Sluss and Ashforth, 2007; Sluss and Ashforth, 2008; for reviews, see Ramarajan, 2014; Miscenko and Day, 2015). Accordingly, terms such as team identity, departmental identity or, in particular, organisational identity (Allen et al., 1983; Hoelter, 1985; see also

Chattopadhyay and George, 2001; Van Dick et al., 2004; George and Chattopadhyay, 2005; Johnson et al., 2006; Richter et al., 2006; Cooper and Thatcher, 2010) arose where the definition of the in-group depends on the entity (i.e., on the department or organisation). All of these identities, however, represent a form of social identity, only varying in their definition of in-group members and out-group members (Albert and Whetten, 1985; Ashforth and Mael, 1989; Haslam, 2001).

To resolve this convoluted mix of identities inside organisations, Sluss and Ashforth (2007) argue that only the most salient social identity is accountable for individuals' motivation, behaviour and further consequences (see the following section, see also Ashforth and Johnson, 2001; Ashforth, 2007; Ramarajan, 2014). In addition, the literature and the argument of optimal distinctiveness (Brewer, 1991) argue that lower-order identities such as team identities are likely to be more salient than higher-order identities such as organisational identities (see Kramer, 1991; Lawler, 1992; Brewer, 1995). As higher-order identities are shared by every member of the organisation, individuals are not able to differentiate themselves from each other whereas lower-order identities satisfy the desire for distinctiveness (see Brewer, 1991; Ashforth and Mael, 1996). Consequently, an argument can be made that, if any, lower-level identities such as team identities are more likely to be salient than higher-level identities such as the organisational identity. Workers, then, perceive their team members as in-group members whereas they perceive both members of other teams as well as their manager as members of the out-groups.

What Are The Consequences of Categorisation?

The previous sections have elaborated as to when others are more likely to be categorised as group members and what the motivations for such categorisations might be. This section will discuss the cognitive and behavioural consequences of such categorisations which will shape the development of the hypotheses for this research.

When individuals categorise themselves and others into groups, the values and beliefs attached to the group automatically become part of the self-concept (see Tajfel and Turner, 1979). Intergroup situations are managed through belief structures prescribing the apparent nature of the dynamic between groups (Hogg and Abrams, 1988; Ellemers, 1993; Hogg and Terry, 2000). Consequently, social group membership

prescribes not only who people are, how they should behave, and what they should believe, but also how they are distinct from other groups in a particular context (Hogg, 2016). The prescription of norms and values results in a reshaped understanding of reality in which social groups are cognitively represented as pre-determined sets of attributes, referred to as prototypes (Turner et al., 1987; Turner et al., 1994; Hogg, 2016). Such prototypes are meanings, beliefs, and values associated with groups and thus capture similarities within the in-group as well as differences to out-groups (Hogg et al., 1995; Hogg, 2016) and vary heavily with the context (Turner and Oakes, 1986; Turner et al., 1987; Turner and Oakes, 1989; see also McGarty et al., 1992; Deaux, 1993; David and Turner, 1999; David and Turner, 2001). As individuals tend to make binary, oversimplified judgements, they accentuate context-dependent similarities within groups as well as differences between such groups so that in-group members appear to be more similar to self than they actually are and out-group members are perceived as more different than they really are (see Tajfel, 1959; Tajfel, 1969; Turner, 1982; see also Abrams et al., 1990; Turner et al., 1994).

It is here where the assumed mechanism of mimicry (i.e., perceived similarity) appears to be relevant for contexts with salient social identities. Specifically, there seems to be tension around the direction of the effect of both constructs, mimicry and social identity, on perceived similarity. While social identities, as elaborated above, result in greater perceived similarity with in-group members and less perceived similarity with out-group members, mimicry, on the other hand, has been suggested to only increase perceived similarity. Accordingly, theories offer mixed opinions on how mimicry will affect perceived similarity for out-group members. Though I will elaborate more on how those tensions may be resolved during the hypotheses development, it is worth noting at this stage that it is perceived similarity that links mimicry and social identity.

One consequence of social-categorisation is, therefore, that individuals do not see each other as individuals but as prototypical representatives of their respective group (Turner et al., 1987; Abrams and Hogg, 1990). In other words, individuals become depersonalised (see Haslam et al., 2000; Sluss and Ashforth, 2007; Sluss et al., 2012; Hogg, 2016). The context-dependent social-categorisation of the self results in attaching group-relevant, prototypical attributes to the self as well as engaging in group-prototypical beliefs, thoughts, and behaviours (for context-related multiple

identities, see Phinney, 1990; Shih et al., 1999; see also Tropp and Wright, 2001; Briley et al., 2005; Shih and Sanchez, 2005; Sluss and Ashforth, 2008; Hogg, 2016). Accordingly, when a leader interacts with a follower, for example, the follower attaches prototypical attributes to the leader which are believed to be universally true such as assertiveness or competitiveness whereas the leader attaches prototypical attributes to the follower such as lack of ambition. Similarly, a team member prescribes attributes to other team members that are seen as particularly true for this particular team. Therefore, the individual may perceive all team members as prototypes of an 'ideal' team member. It is important to notice that the extent of depersonalisation, though generally accepted as a concept, varies dependent on personality and personal beliefs (see Tajfel and Turner, 1979).

The cognitive representation of the environment in terms of group-specific prototypes has further consequences. As the attribution of stereotypical prototypes affects the self as much as other individuals in both in and out-groups (Simon and Hamilton, 1994; Cadinu and Rothbart, 1996; Otten, 2002; see also Wright et al., 2002), in-group members are seen as more similar. This, in turn, results in an in-group bias, or in-group favouritism (Tajfel and Turner, 1979; see also Mummendey and Schreiber, 1984; Ashforth and Mael, 1989; Bettencourt et al., 1999). For instance, perceiving the self as more similar to in-group members promotes likability and trust within groups (see Hogg, 1992; Hogg, 1993; Abrams and Hogg, 2010) and has opposite consequences towards out-group members (Haslam and Ellemers, 2005). Generally, through the strive for a positive self-view (see Tajfel and Turner, 1979; Corcoran et al., 2011), individuals will be positively biased towards the in-group and negatively biased towards the out-group (Tajfel and Turner, 1979). These biases occur implicitly, that is, individuals have no conscious control over them (see Otten and Wentura, 1999).

As they also create expectations regarding reciprocity (Brewer, 1991; Brewer, 1999), such biases are understood as the basis for further intragroup behaviour such as cooperation (see de Cremer and van Vugt, 1999) or other social phenomena (see Reicher et al., 1995; Kawakami and Dion, 1995; van Zomeren et al., 2008). In-group bias affects individual behaviour even when costs are involved. For example, an abundance of research has demonstrated how individuals voluntarily sacrifice for the sake of collective gain (see Kramer and Brewer, 1984; Brewer and Kramer, 1986;

Caporael et al., 1989). Further, the presence of an out-group is not required to create such biases. Merely being aware of an existing out-group is sufficient to create an in-group bias fostering intergroup behaviour (Billig and Tajfel, 1973; Tajfel and Turner, 1979; Tajfel, 1982).

This chapter has so far reviewed and discussed SIT as well as its implications for individual behaviour. Research to date appears to agree on a positive bias towards in-group members and a negative bias towards out-group members as a result of multiple motivational and cognitive factors. The previous chapter has also touched on mimicry as a concept signalling affiliation, among other outcomes. Further, the vast majority of research on mimicry has explored the positive outcomes of mimicry. Despite the importance of both concepts, SIT and mimicry, a lack of research exists combining them. What would the response be if the mimicker is perceived to be an out-group member compared to an in-group member? Does mimicry, compared to no-mimicry, still lead to positive, affiliative consequences in intergroup contexts or can it backfire? The next chapter will develop the hypotheses by combining SIT and the mimicry literature of dyadic interactions.

Hypotheses Development

This first part of the research is focussing on outcomes of mimicry in a dyadic interaction and how these are shaped by the social group membership of the two individuals involved. As it is challenging to simulate a leader-subordinate or a team context experimentally, other social groups such as gender will be used to create intergroup contexts. Given that mimicry has been understood as an evolutionary tool to foster relationships and that this work looks at how, through the lens of social identities, it may promote relationships, I will focus on multiple outcomes that have been shown to be important for such relationships within organisations (e.g., likeability, competence, trust; see section 'Further Outcomes'). Before hypotheses for such variables are developed, it might be useful to briefly outline that, apart from its effects on likability and its context-dependency, mimicry can be understood as both an affiliative behaviour (see Chartrand and van Baaren, 2009) and as behaviour that engenders affective responses (see Stel and Vonk, 2010). As these two properties of mimicry will feed into the development of the hypotheses, they will be elaborated upon in the following paragraphs.

Partly due to its effects on likability, as discussed in 'Effects of Mimicry' (see also Chartrand and Bargh, 1999), mimicry has been widely understood by scholars as a form of affiliative behaviour (see Lakin, 2006; Chartrand and van Baaren, 2009; Lakin and Chartrand, 2013). Studies which investigated the impact of mimicry on cognitive resources (for further research on cognitive and psychological processes, especially when individuals are excluded, see Baumeister and Tice, 1990; Leary, 1990; Leary, 2001; Baumeister et al., 2002; Twenge et al., 2003; Williams and Zadro, 2005; Twenge et al., 2007) found an effect of mimicry on self-construal (Ashton-James et al., 2007). In particular, individuals see themselves as more interdependent after their exposure to mimicry, compared to no mimicry, suggesting that mimicry leads to more affiliation (Ashton-James et al., 2007). In a similar vein, studies have shown that mimicry, compared to no mimicry, results in more pro-social behaviour towards others (see van Baaren et al., 2003; van Baaren, Holland, et al., 2004; Lakin et al., 2008). This pro-sociality extends even beyond the mimicker, that is, individuals behave more pro-socially towards third parties (see van Baaren et al., 2003; van Baaren, Holland, et al., 2004; Lakin et al., 2008).

In addition to being an affiliative behaviour and to enhance likability, mimicry has been shown to elicit further affective responses. Five-year-old children, for instance, prefer toys which were presented by a mimicking confederate, compared to a non-mimicking confederate (Over et al., 2013). In a VR setting, individuals found a mimicking avatar more persuasive compared to a non-mimicking avatar (Bailenson and Yee, 2005). Similarly, when individuals were mimicked they showed higher affective responses when they saw someone in pain compared to when they were not mimicked (De Coster et al., 2013). Further, individuals who were mimicked felt closer to others (Stel and Vonk, 2010) and were more likely to respond to intimate questions (Guéguen et al., 2012). Mimicry, through signalling affiliation (Lakin and Chartrand, 2013), appears to serve an affective function in social interactions such as the satisfaction of a need to belong (see Baumeister and Leary, 1995; see also Williams, 2001; Kouzakova, Karremans, et al., 2010). How does such a form of non-verbal cue affect individuals in an intergroup context as opposed to an intragroup context? This question remains unanswered. Based on the literature reviewed so far, however, the remainder of this section will develop hypotheses addressing this question.

Likability and Competence

Overall, the literature review revealed different characteristics of mimicry. On the one hand, the literature provided evidence that mimicry is context-dependent. Just as the occurrence of mimicry in a conversation is context-dependent (see Bourgeois and Hess, 2008), so too, are the effects of mimicry dependent on the context (see Finkel et al., 2006; Dalton et al., 2010). On the other hand, the forgone section has demonstrated that an agreement exists among scholars suggesting that mimicry can be understood as an affiliative behaviour serving affective functions (see Lakin et al., 2003). Bringing these views together, it becomes apparent that they, at least in part, stand in conflict with each other. Though mimicry seems to elicit affiliative responses such as liking, this might not be true for certain contexts. One of these contexts may be the intergroup context.

The literature on SIT (Tajfel and Turner, 1979) elaborates on the socio-psychological processes involved in such contexts. Individuals categorise themselves and others into social groups which, in turn, has drastic consequences for their behaviour and perceptions. In-group members are positively biased towards each other but

negatively biased against out-group members (Tajfel and Turner, 1979). Accordingly, individuals have a different set of expectations (see Brewer, 1991; Brewer, 1999), dependent on whether they are interacting with an in-group member or with an out-group member. When interacting with in-group members, individuals expect affiliative behaviour as a consequence of this favourability. Just as they tend to express more affiliative behaviour towards in-group members (Yabar et al., 2006; Bourgeois and Hess, 2008), they also expect more affiliative behaviour from fellow in-group members, because of expectations of reciprocity inherent in intragroup settings (Brewer, 1991; Brewer, 1999). Mimicry understood as an affiliative behaviour, then, meets such expectations whereas no mimicry does not. Combining this line of thought with the reviewed literature on the positive outcomes of mimicry (e.g., see section 'Likability'), mimicry is hypothesised to increase liking for mimickers in intragroup contexts (through a mimicry-induced increase in perceived similarity; see H₄). A similar argument can be made for competence. Although research has already shown that non-verbal behaviours can affect perceptions of competence (see Ridgeway, 1987; Carli et al., 1995; see also Peters et al., 2017; Forkin et al., 2019), research that examines the effect of mimicry on competence is rather scarce. However, once we not only consider the assumed mechanism with which mimicry operates, that is, perceived similarity (see section 'The Mechanism of Mimicry'; see also H₄) but also research that has shown that people find others more competent when they are perceived to be similar to them (see Bocian et al., 2018), we can hypothesise how mimicry may affect the perceived competence of the mimicker. In particular, mimicry, compared to no mimicry, may increase perceptions of competence for an in-group mimicker, because such in-group members are perceived to be more similar (see H₄). It follows:

H1a:

If the mimicker is perceived to be an in-group member, displays of mimicry will result in higher likability for the mimicker, compared to no displays of mimicry.

H2a:

If the mimicker is perceived to be an in-group member, displays of mimicry will result in higher perceived competency for the mimicker, compared to no displays of mimicry.

In contrast to mimicry effects in intragroup contexts, the effects of mimicry in intergroup contexts are more difficult to theorise. On the one hand, Hasler et al. (2014) found that mimicry increases empathy for out-group avatars, suggesting that mimicry might alleviate group boundaries. For the present research, however, it is argued that the study by Hasler et al. (2014) is not sufficiently relevant to digress from the elaborated rationale. There are at least two reasons for this. The first is the fact that a more recent study has tested the effect of mimicry in intergroup contexts and did not find any results suggesting that mimicry in VR settings might not be strong enough (Hale and Hamilton, 2016b). In support of this, several other studies have also obtained mixed results regarding the effect of mimicry in VR settings (Bailenson and Yee, 2005; Verbene et al., 2013; Verbene et al., 2015). Accordingly, the mimicry literature does neither offer coherent findings to support the argument of mimicry as behaviour to alleviate group boundaries, neither does it offer clear explanations. Consequently, the research question requires SIT to feed into the hypothesis. The literature on SIT, however, appears to be clear in that a threat to a group identity will not lead to affiliation.

On the other hand, intergroup contexts, inherently, involve different expectations compared to intragroup contexts (Brewer, 1991; Brewer, 1999). In out-group settings, individuals expect less affiliation from out-group members as a result of a negative out-group bias (Tajfel and Turner, 1979). Consequently, they express less affiliative behaviour towards out-group members (Yabar et al., 2006; Bourgeois and Hess, 2008; Blocker and McIntosh, 2017) and expect this to be reciprocal (Brewer, 1991; Brewer, 1999). A mimicking out-group member or, in other words, an affiliative out-group member is a contradiction to what is expected (in contrast to a non-mimicking out-group member). As a result of a strong psychological divide between social groups (Prentice and Miller, 1999), attempts to overcome such group boundaries, through affiliative behaviour, for instance, are heavily resisted or even backfire (see Hogg and Hornsey, 2006). Consequently, group boundaries are enforced and the (negative) out-group bias is strengthened (Dovidio et al., 2007). This line of argument has been recently supported by research stemming from political psychology (see Bail et al., 2018) and general psychology (see Gilead and Liberman, 2014; see also Rae et al., 2015). An exception to this argument may be observed when individuals are given the opportunity to re-categorise themselves, for instance, as a result of flexible group

boundaries (see Dovidio et al., 2007). As this research will make use of rather non-malleable group boundaries such as gender (see the section on SIT), individuals are not expected to re-categorise themselves during the study. Accordingly, the hypothesis appears to hold. Therefore, it is hypothesised that mimicry in an intergroup context, compared to no mimicry, decreases the likability of the mimicker as a result of violating expectations (see Dalton et al., 2010) and thus lower perceived similarity (see H₄). The same argument can be presented for competence ratings. Rating an out-group member as more competent (after mimicry) may be perceived as a threat to one's social identity and is thus counteracted by further differentiation from the out-group on this dimension (i.e., competence; for more details, see Branscombe et al., 1999). It follows:

H1b:

If the mimicker is perceived to be an out-group member, displays of mimicry, will result in lower likability for the mimicker, compared to no displays of mimicry.

H2b:

If the mimicker is perceived to be an out-group member, displays of mimicry will result in lower perceived competency for the mimicker, compared to no displays of mimicry.

In-Group Identification

As discussed earlier in this section, individuals who interact with an in-group member are positively biased and expect affiliative behaviour of other in-group members (Brewer, 1991; Brewer, 1999). Once this expectation is met through mimicry as an affiliative behaviour, it confirms the social group membership of the individual and creates a stronger sense of belonging (see Baumeister and Leary, 1995; see also Williams, 2001; Kouzakova, Karremans, et al., 2010). As the sense of belonging is inherently positively correlated with in-group identification (see Fiol and O'Conner, 2005), it is expected that mimicry increases in-group identification if it is directed towards in-group members.

The extent to which individuals identify with their in-group in response to mimicry by an out-group member might be similar to when an in-group member displays mimicry. As a result of a negative out-group bias, individuals express non-affiliative behaviour

and create an expectation of reciprocity (Brewer, 1991; Brewer, 1999). Affiliative behaviour by an out-group member, then, will be perceived as a threat and will lead to enforced group boundaries (Dovidio et al., 2007), as discussed for likability. Enforced group boundaries resulting from a direct threat will strengthen the sense of belonging for the in-group, thereby increasing in-group identification (see Fiol and O'Conner, 2005). It follows:

H3:

Independently of the group membership of the mimicker, displays of mimicry will result in higher in-group identification of the subject, compared to no displays of mimicry.

Similarity

The next sets of hypotheses regard the process by which mimicry functions. An understanding of the mechanisms as to how mimicry elicits its effects is important because it significantly contributes to advancing the knowledge of NVB and it also sheds light on why mimicry has its effects. The literature (as shown in the section 'The Mechanism of Mimicry'), however, clearly lacks an understanding of how the effects of mimicry occur. Some authors suppose that the effects of mimicry such as an increase of liking, for instance, are mediated by an increase in perceived similarity to the mimicker. However, the literature still lacks empirical evidence for this assumption, especially within intergroup contexts.

If the mimicker is perceived to be an in-group member, the mimicker is seen as similar to the self already as a result of a positive bias towards in-group members (see Tajfel and Turner, 1979; Hogg et al., 1995). Mimicry, compared to no mimicry, meets affiliative expectations set by group membership (see above for a more comprehensive argument). The same way that meeting such expectations results in a greater sense of belonging to the in-group, it also results in greater depersonalisation of in-group members (Haslam et al., 2000; Hogg, 2016). A greater extent of depersonalisation, in turn, leads to a strengthened in-group bias and self-stereotyping. This means that the prototypical attributes of the group are attributed to fellow in-group members to a higher degree. Accordingly, individuals feel more similar to fellow in-group members, because the extent to which they see themselves and others as prototypical group members is enhanced. It follows:

H4a:

If the mimicker is perceived to be an in-group member, displays of mimicry will result in higher perceived similarity for the subject, compared to no displays of mimicry.

In an intergroup context, however, individuals are biased against out-group members (Tajfel and Turner, 1979). They do not express affiliative behaviour and expect this to be reciprocated (Brewer, 1991; Brewer, 1999). Affiliative behaviour, or mimicry, by an out-group member, is seen as a threat to the distinctiveness of one's identity because group boundaries initially start to blur through a sense of overlapping similarity (Branscombe et al., 1999). Research on intergroup threats has shown that individuals counteract threats to the distinctiveness of one's group with further differentiation from the threatening group (i.e., greater dissimilarity; see Branscombe et al., 1999). Group divides are enforced as a result of an identity threat to the distinctiveness of one's group stemming from mimicry by an out-group member (see Dovidio et al., 2007). Given that individuals see members of social groups as prototypical group members (Haslam et al., 2000; Hogg, 2016), out-group mimickers will be perceived as less similar precisely because of such strengthened intergroup boundaries that were created due to a mimicry-induced identity threat. It follows:

H4b:

If the mimicker is perceived to be an out-group member, displays of mimicry will result in lower perceived similarity for the subject, compared to no displays of mimicry.

There appears to be a consensus among scholars that individuals tend to be drawn to others who appear to be similar to them (see Bernieri and Rosenthal, 1991; Bernieri et al., 1994; Byrne, 2005; Mitchell et al., 2005; Byrne, 2009). Accordingly, it is hypothesised that perceived similarity is a mediator between mimicry and its effects on liking, competence, trust, interactional justice, and cooperation. If perceived similarity increases through mimicry of an in-group member, so will the likability, the competence of the mimicker as well as perceptions of cooperation and interactional justice. However, if it decreases through mimicry of an out-group member, perceptions on those dimensions will decrease. It follows:

H5a:

If the mimicker is perceived to be an in-group member, displays of mimicry will result in higher perceived similarity for the subject, compared to no displays of mimicry, which mediates the effect of mimicry on liking.

H5b:

If the mimicker is perceived to be an out-group member, displays of mimicry will result in lower perceived similarity for the subject, compared to no displays of mimicry, which mediates the effect of mimicry on liking.

Just as H₅ regards likability, it is also hypothesised for competence, trust, interactional justice, and cooperation.

This section has developed the hypotheses for the first part of this research, that is, how the effects of mimicry in a dyadic, intergroup interaction are moderated by social group memberships. It is worth emphasising at this point that though a rationale has been provided for the above (potential) outcomes of mimicry, the fact that many of them have not been studied before means that this work is explorative in nature. The next section will outline an even less investigated perspective of mimicry research. In particular, it will shed light on the vicarious effects of mimicry in observed interactions. Similar to the foregone part, this perspective will also be explored through the lens of social identities.

The Effects of Mimicry When It Is Observed

In practice, individuals do not only interact in dyads but also in meetings with more people involved. Therefore, individuals spend a significant part of the meeting observing other individuals interacting with each other (see Gallese, 2001). Based on the mimicry literature, it appears to be of interest and particular practical value to explore whether the mere observation of mimicry results in perceiving the mimicker as more likeable or competent, for instance. In other words, does mimicry, even if it is not directed to the self, lead to positive outcomes for the mimicker? The answer to this question will reveal another perspective on mimicry research which brings forward important support for the notion that mimicry is not only relevant for a dyadic interaction but for others in general (see a call made by Chartrand and Lakin (2013)). Moreover, to investigate whether an effect of mimicry on an observer might be moderated by intergroup contexts might be even more revealing not only for the mimicry literature but it has also important practical implications for intergroup interactions such as the leader-subordinate context. Surprisingly, the literature in this regard is very scarce so that only two studies took a similar approach (see Sanchez-Burks et al., 2009; Kavanagh et al., 2011). The study by Sanchez-Burks et al. (2009) investigated whether mimicry, compared to no mimicry, in an observed interaction, leads to different judgements of the overall conversation. They found that participants who watched a conversation that involved mimicry rated the conversation as smoother and less awkward compared to a conversation that did not involve mimicry. This finding provides promising evidence that mimicry even if it is not directed at the self can alter general perceptions of a conversation. However, it remains unclear as to whether judgements of the mimicker per se, as opposed to the overall conversation, can be influenced by mimicry in observed interactions.

Based on this, a study by Kavanagh et al. (2011) investigated whether mimicry of a disliked person changes participant's judgements of the mimicker. For this, they manipulated the attitude of the mimickee so that either condescending behaviour or cordial behaviour was displayed altering de facto his likability. The mimicker, in turn, mimicked either the condescending or cordial behaviour of the mimickee. The results only showed that participants rated mimickers as less competent when they mimicked condescending behaviour. In the cordial condition, no effects were observed. The results provide promising evidence that observing a person mimicking a negatively

perceived behaviour can alter judgements of the mimicker. More importantly, they provide support for the notion that mimicry even if it is not directed at the self can alter judgements. Observed mimicry of negatively perceived behaviour seems to have negative consequences for the judgements of observers.

This finding is intriguing because it reveals that the context has an impact on how mimicry is perceived. Just as the context moderates the effect of mimicry in dyadic interactions, it also appears to moderate the effect of mimicry in observed interactions. Despite this promising evidence, it yet remains to be seen whether mimicry in an observed interaction elicits effects if the mimicees' behaviour is not manipulated. In other words, does observed mimicry still elicit effects when it is part of a rather natural conversation (see a call made by Chartrand and Lakin (2013))? Further, it also remains unanswered as to whether and how the social group membership of the observed dyad, relative to the observer, moderate the effect of mimicry on mimicker-related judgements made by this very observer.

Before I hypothesise the effects of observed mimicry, it may be worth to briefly elaborate on why such behaviour would enhance mimicker-related evaluations. I have already discussed that mimicry has been understood as an evolutionary behaviour to foster relationships that allowed 'human survival' (see Lakin et al., 2003). Consequently, observed mimicry may signal a sense of "psychological connection" (Lakin et al., 2003, pp. 150) or may provide information about the characteristics of the mimicker (Kavanagh et al., 2011) that result in observers enhancing their mimicker-evaluations to ultimately foster group-belongingness.

Research from multiple domains in social psychology gives support to the notion that differences in observed or even imagined behaviour result in differing evaluations. Research on intergroup biases, for example, has found strong evidence for the power of imagination in reducing intergroup biases. Specifically, imagining contact with an out-group member seems to reduce intergroup prejudice (Turner et al., 2007; Crisp and Turner, 2009; Turner and Crisp, 2010). If purely imagining a scenario can elicit these effects, then observed scenarios should be even more likely to. Indeed, research supports this notion. Across three separate studies, Ambady and Rosenthal (1993) examined whether recorded videos of college teachers during their lectures would predict the observer's evaluation of the teachers and how similar such observer

evaluations are to actual student evaluations of the same teachers. They not only found that observers' evaluations of the teachers were very similar to the student evaluations but that watching a merely six-second video clip of the teachers was enough to produce such results. More importantly, they found that it was the non-verbal behaviour of those teachers that led to the convergence of the evaluations. Further research has shown that when watching video tapes, individuals use non-verbal cues to evaluate whether the observed individuals are lying (for a review, see Vrij et al., 2019; for a meta-analysis on deception judgements, see Bond Jr and DePaulo, 2006). Again, witnessing the behaviour of others seems to have consequences for how one perceives them. Accordingly, it also seems worth exploring whether observing mimicry in an interaction elicits effects on mimicker-related evaluations.

Outcomes

For this second part of the research, similar (LMX-related) outcomes as in the first part will be under investigation because the focus is still on how (observed) mimicry may change perceptions of the relationship with the mimicker by the observer, measured on various dimensions. It will be explored as to whether mimicry, compared to no mimicry, in an observed interaction results in perceiving the mimicker as more likeable, competent or trustworthy. Further, it will be explored as to whether observers perceived the conversation as just and as cooperative. Similar to the first part of the research, the moderating effect of social identities on the effects of mimicry will also be investigated. Specifically, whether the effects of mimicry depend on whether or not the individuals observed are perceived to be either in-group members or out-group members is to be explored.

In contrast to dyadic mimicry, this part of the research will not investigate the effect of mimicry on perceived similarity and in-group identification for the following reason. In a dyadic interaction, mimicry is directed at the subject under investigation (i.e., the participant). The subject will perceive mimicry either as a threat (out-group condition) or as expected affiliation (in-group condition) dependent on the condition, which, in turn, is hypothesised to affect in-group identification. In other words, the change of in-group identification in response to mimicry is a result of mimicry directed at the individual, not of mimicry per se. However, when observed, mimicry is not directed at

the observer (i.e., participant) and therefore it does not result in such threats. Consequently, mimicry in observed interactions is not thought to influence in-group identification of the subject. As the aim of this part is merely to investigate the vicarious effects mimicry can elicit in observed interactions, underlying (cognitive) processes involved in such effects (i.e., perceived similarity) will not be investigated. Yet, this might be an interesting area to explore in future research.

However, this study will also explore a third factor in addition to mimicry and group membership. The reason for this is that the data will be collected via an online survey (see method section), allowing for gathering data from many individuals, compared to in-person experiments. Many participants, in turn, give room for including another factor in the study design. Research stemming from dyadic mimicry indicates that the effects of mimicry only occur if participants are not aware of the mimicry (see Kulesza et al., 2016). It is yet unknown how such awareness affects outcomes of mimicry when it is merely observed, however, and whether awareness also interacts with the group membership of individuals.

Shedding light on the effect of awareness on the outcomes of observed mimicry has important practical implications. If, for example, mimicry has negative effects when observing participants are aware of it, individuals might refrain from mimicking others in the presence of other individuals (i.e., observers). Accordingly, this part of the research will not only investigate the effect of observed mimicry under consideration of social identities but will also explore the moderating effect of awareness.

Hypotheses Development

The basic socio-psychological processes involved here are very similar to the processes elaborated for the first part of this research. If both individuals observed are perceived to be in-group members, observers are positively biased towards both individuals (see Tajfel and Turner, 1979). Just as observers would display affiliative behaviours in such contexts (see Bourgeois and Hess, 2008; Blocker and McIntosh, 2017), they expect to observe affiliative behaviours between the individuals (Brewer, 1991; Brewer, 1999). Mimicry, compared to no mimicry, will meet such expectations and will confirm the perception of an in-group dyad (for the importance of mimicry expectations in changing outcomes, see Dalton et al., 2010). Consequently, the

mimicker, in contrast to a non-mimicker, confirms the group identity through affiliative behaviour and liking for the individual is increased. It follows:

H6a:

If the mimicker is perceived to be an in-group member, displays of mimicry to another in-group member will result in increased likability for the mimicker, compared to no displays of mimicry.

If both of the observed individuals are perceived to be out-group members, the observer is negatively biased against them (see Tajfel and Turner, 1979). Though the individuals are perceived as out-group members, observers will still expect affiliative behaviour between them, because of their common group identity. Mimicry between the observed individuals, then, compared to no mimicry, will meet such expectations and confirm the common group identity of the dyad. Naturally, then, this also confirms group boundaries between dyad and observer. In contrast to the dyadic level of mimicry (discussed in the previous chapter), mimicry here does not result in an identity threat, because it is not directed at the observer. Instead, it simply makes group boundaries salient as a result of observed affiliation between out-group members. More salient group boundaries enforce the negative bias against such out-group members (see Tajfel and Turner, 1979) and, consequently, result in less likability of the mimicker. It follows:

H6b:

If the mimicker is perceived to be an out-group member, displays of mimicry to another out-group member will result in decreased likability for the mimicker, compared to no displays of mimicry.

The same rationale applied for likability also applies to the perceived competence and trust of the mimicker. It follows:

H7a:

If the mimicker is perceived to be an in-group member, displays of mimicry to another in-group member will result in increased perceived competence for the mimicker, compared to no displays of mimicry.

H7b:

If the mimicker is perceived to be an out-group member, displays of mimicry to another out-group member will result in decreased perceived competence for the mimicker, compared to no displays of mimicry.

H8a:

If the mimicker is perceived to be an in-group member, displays of mimicry to another in-group member will result in increased trust for the mimicker, compared to no displays of mimicry.

H8b:

If the mimicker is perceived to be an out-group member, displays of mimicry to another out-group member will result in decreased trust for the mimicker, compared to no displays of mimicry.

The next hypothesis regards the perception of interactional justice. Mimicry, as elaborated already, signals affiliation and fosters relationships (see Lakin, 2006; Chartrand and van Baaren, 2009; Lakin and Chartrand, 2013). Considering that the perceived relationship with a person is related to judgements of justice (Cropanzano et al., 2002), mimicry in observed interaction may also affect perceptions of justice. Support of this notion can be found in the literature suggesting that interactions in which mimicry has been displayed were rated as smoother (see Sanchez-Burks et al., 2009). Though an interaction's perceived smoothness is not related to how 'just' an interaction is perceived, such findings show that observed behaviour influences judgements of the quality of conversations. Similar to the rationale offered above, such effects are affected by the group membership of the observed dyad, relative to the observer. It follows:

H9a:

If the mimicker is perceived to be an in-group member, displays of mimicry to another in-group member will result in an increased perception of interactional justice, compared to no displays of mimicry.

H9b:

If the mimicker is perceived to be an out-group member, displays of mimicry to another out-group member will result in a decreased perception of interactional justice, compared to no displays of mimicry.

The hypothesis for perceived cooperation in observed interactions, follow a similar rationale to the one offered in dyadic mimicry. The argument is based on the notion that individuals use non-verbal cues to judge whether others will act cooperatively or competitively (Georgiou et al., 2007; Manera et al., 2011). Mimicry, as an affiliative and pro-social signal, may therefore affect judgements of cooperation (see Lakin, 2006; Chartrand and van Baaren, 2009; Lakin and Chartrand, 2013). Evidence for this notion is offered when considering research that has demonstrated a positive relationship between affect and cooperation (Smith et al., 1995). Additionally, pro-social behaviour and cooperation are intrinsically linked (see Simpson and Willer, 2015). Accordingly, it is plausible to think that mimicry, which is strongly linked to pro-sociality (see van Baaren et al., 2003; van Baaren, Holland, et al., 2004; Lakin et al., 2008), also affects judgements of cooperation. Consequently, it is hypothesised that mimicry, compared to no mimicry, in an observed interaction, increases the perception of cooperation as a result of signalling affect. However, just as judgements of the mimicker's likeability, for instance, are hypothesised to be moderated by the group membership of the dyad, so too are judgements of cooperation. It follows:

H10a:

If the mimicker is perceived to be an in-group member, displays of mimicry to another in-group member will result in an increased perception of cooperation, compared to no displays of mimicry.

H10b:

If the mimicker is perceived to be an out-group member, displays of mimicry to another out-group member will result in a decreased perception of cooperation, compared to no displays of mimicry.

Finally, the effect of individual awareness on mimicry and its outcomes needs to be examined. As there is not much research on this factor, its inclusion is also more of explorative nature. However, in the pursuit of a hypothesis, one can make use of one

study which looked at awareness and mimicry. Specifically, scholars who investigated dyadic mimicry found that the mere awareness of mimicry as a concept diminishes its effects (Kulesza et al., 2016). The rationale offered by the literature is that knowledge of a mechanism of social influence (such as mimicry), creates resistance to such influences (Brehm, 1966). In other words, once people know that they are being influenced in a particular way, the mechanism of such influence stops to function (for the role of awareness and the detection of social influence, see Goldstein et al., 2008; Nolan et al., 2008). Though it is unknown how awareness interacts or might not interact with social groups as well as with observed mimicry per se, it is expected that the hypothesised interaction effects of mimicry and group membership, as well as the effects of mimicry per se, only occur when individuals are not aware of mimicry as a result of the mechanism just elaborated. Consequently, mimicry loses its power to subtly influence individuals. Accordingly, the hypothesis is as follows:

H11:

The interaction between mimicry and group membership and the effects of mimicry alone will only occur when individuals are not aware of the mimicry.

Summary

This section has demonstrated the scarcity of the literature with regard to the vicarious effects of mimicry (see a call for investigating the effects of observed mimicry by Chartrand and Lakin, 2013). Investigating such effects and creating an understanding of how mimicry influences perceptions of people even though it is not directed at the self, is important for practically using mimicry because many interactions occur under the observation of others (in meetings, for example). Hence, though mimicry might have positive effects for the mimicker, if it results in costs through changing perceptions of observers, mimicry might only be useful in particular situations or contexts. How such effects are moderated by intergroup relations is another important factor to consider, because social identities underlie interactions, not only in organisations. Accordingly, with regard to similar outcomes under investigation for dyadic mimicry, this section has developed hypotheses for observed mimicry. It is believed that understanding the effect of mimicry beyond the dyad and how group memberships moderate this effect will advance the understanding of mimicry as a whole.

Method

Overview

As the foci of this research are twofold, so are the methodological approaches chosen to answer the research questions for either the effects of dyadic mimicry or for observed mimicry. In line with the research reviewed earlier, in-person experiments will be used to answer questions related to the former. The nature inherent in the latter, however, allows for the use of an online experiment. This section will provide a brief overview of the research aims of the experiments and their procedures. It will conclude by outlining two methodological issues with existing mimicry research and explain how this research addresses them. The following sections will then offer a detailed description of each experiment, the data collection procedure as well as the analysis of the data. In line with the distinct foci of this research, I will also discuss the findings related to each focus separately. However, I will combine the findings of both the dyadic and observed mimicry streams in the final chapter to provide a more comprehensive understanding of mimicry as a whole whilst I will also offer various important implications of this research.

Dyadic Mimicry

The aim of this part of the research is to investigate whether the effects of mimicry in a dyadic interaction are dependent on the perceived social group membership of the mimicker relative to the mimicked. Accordingly, the focus lies on testing Hypotheses one to six. More specifically, the first experiment was conducted with the aim of testing H₁-H₃ and the second experiment replicated the first in addition to testing H₄-H₅ using different social identities.

Experiments were seen as the preferred method for the following reason. Experiments offer the opportunity to manipulate specific variables only, allowing for causal inferences (Powell et al., 2009). As the aim of the research is to manipulate solely two variables (i.e., mimicry and social identity), experiments offer the opportunity to explore these factors whilst keeping other factors constant (Shaughnessy et al., 2012), thereby increasing the internal validity of the study (see Slack and Draugalis, 2001; Eldridge et al., 2008). Accordingly, causal inferences can be made in a way that changes in the dependent variables such as liking must stem from differences in behaviour (i.e.,

mimicry), for example. Based on this rationale, it is no surprise that the vast majority of mimicry research has utilised experimental research designs.

The general procedure across the two experiments was similar. Both experiments took place in the affective laboratory of the mechanical engineering institute at the University of Leeds. Participants were recruited via emails distributed by faculty-specific student support offices and members of staff of the University of Leeds, or through posters advertised on campus. These recruitment strategies, however, did not fully disclose the purpose of the research, because participants were not supposed to know that mimicry was the focus of the experiments. The reasons for this were (a) that in real-life scenarios mimicry would occur without the other's awareness, (b) that the mere awareness of mimicry may diminish its effects (Kulesza et al., 2016), and (c) that the awareness of mimicry might have distracted participants from focussing on the experiment itself. Instead, participants were told a cover story to disguise the real purpose of the experiment, which slightly differed depending on the experiment (see Study 1 and Study 2 for more details). It was stated on the participant information sheet which was sent to participants via email once they have expressed interest in participating. Such deception is often necessary and common practice in social psychology and further disciplines (Hertwig and Ortmann, 2008; Rousu et al., 2015).

Naturally, experiments require several ethical considerations. First, because participants are not aware of the deception, they need to be fully debriefed after the experiment. Such debrief, conducted by the experimenter, fully discloses all information to participants as to what was part of the deception and why they were deceived. Thus, all participants were fully debriefed after the experiments. Second, the availability of new information requires participants to provide full consent to participate in the study. However, it would not be ethical to pressure them to provide consent without providing them with the opportunity to think through their experience and withdraw from the experiment as a result. Accordingly, they were given three weeks to re-think their participation and to withdraw from the study. The time frame was proposed by the Faculty Research Ethics Committee. All studies reported in this work went through the ethical review process and have received approval from the Faculty Research Ethics Committee. More specifically, after a draft of the proposed recruitment and experimental procedure has been submitted for ethical review, the committee provided constructive feedback and required some clarifications such as

why deception is needed. This was an iterative process through which the experimental procedures underwent some changes (e.g., the time for participants to withdraw). Upon satisfaction, the committee approved the studies, allowing the researcher to commence the recruitment of participants.

Upon arrival at the laboratory, participants were reminded of the '*purpose*' of the study via the participant information sheet (which still stated the cover story). After providing initial consent, participants were asked to click through a questionnaire that subconsciously primed their social identity. The category chosen differed depending on the experiment (see Study 1 or Study 2 for more detail). After the priming, participants had a 5-minute conversation with a confederate who either mimicked or who did not mimic their behaviour. In line with previous studies, the conversation was video-recorded to enable a later manipulation-check (see Maddux et al., 2008; Lakin et al., 2008; Stel et al., 2009; see also Stel, Blascovich, et al., 2010). Participants were aware of the recording, as this had been stated on the participant information sheet, and agreed to it. The duration of the conversation was based on prior mimicry research (for a review, see Hale and Hamilton, 2016a). Due to the priming before the conversation, participants perceived the confederate as either a member of the in-group or a member of the out-group. The content of the conversation varied depending on the experiment (see Study 1 or Study 2 for more detail). After the conversation, the confederate left the room and the participants answered a questionnaire on a screen that included the dependent variables as well as a manipulation check for social identity. Finally, in accordance with ethical procedures, participants were fully debriefed and provided final consent with the opportunity to withdraw from the study until three weeks after the experiment, allowing for a reconsideration of their choice. They were also given £5 as compensation for their time, a common research practice (see Singer et al., 1999; Groves et al., 2000; Singer and Couper, 2008).

Observed Mimicry

The second part of this research focusses on the vicarious effects of mimicry and whether these are dependent on social group membership of the dyad observed relative to the observer. Consequently, this part aims to test H₆-H₁₁. The method selected to conduct this research is an online experiment using pre-recorded videos for several reasons. The first refers to the advantages already outlined above such as the inference of causality. Second, studies that have been conducted in the field of

observed mimicry also used pre-recorded videos to manipulate the mimicry condition and, therefore, this study is methodologically aligned with prior research.

The procedure used for this study slightly differed from the procedure employed for dyadic mimicry. Participants were recruited through the online panel Prolific Academic. Prolific was chosen instead of other panels, because participants are less experienced with experimental procedures and, consequently, they tend to be a better representation of the population (Peer et al., 2017). Similar to the procedure employed in dyadic mimicry, the real purpose of the research was not fully disclosed to participants for the same reason. Instead, they were only told that the experiment was investigating how communication is perceived by others. At the start of the survey, after initial consent based on the participant information sheet was provided, social identity and awareness were manipulated (see Study 3 for more details). Subsequently, they watched either of the videos which were 3.5 minutes in length and differed in terms of behaviour displayed by the mimicker (see Study 3 for more details on the videos). Subsequently, the dependent variables were measured as well as the manipulation checks. Finally, participants were fully debriefed and had either the chance to withdraw from the study or provide final consent. The survey took roughly 10 minutes to complete. In compliance with the guidelines of Prolific, participants were given an equivalent of \$5.23 US dollars per hour.

Methodological Idiosyncrasies Related To Mimicry Research

Before the experiments are elaborated in more detail, it is useful to consider two major and recurring methodological problems which seem to strongly affect not only the mimicry literature but also the broader literature of interpersonal coordination. First, the problem of sample size will be discussed. Second, the issue of not priming social identities in studies involving social identities and the implications of this approach will be discussed. To discuss these two issues helps to appreciate the contribution that this research makes as particular attention was paid to such problems to create a robust and rigorous research design.

Sample Size

Researching mimicry requires a lot of effort. Not only the careful design of the conditions and making sure that the behaviour of confederates is as similar as possible across the conditions but also the time required to conduct the experiments

themselves. The mimicry manipulation itself is usually conducted when being involved in a conversation (for an exception, see Bailenson et al., 2008). To manipulate mimicry, one, therefore, has to engage in a conversation with participants. Though it would make the process of collecting data more efficient, mimicry researchers can, under normal circumstances, not have such conversations within groups of participants as mimicry can only be focussed towards one person (for an exception, see Dabbs Jr., 1969). Accordingly, conversations in which mimicry is manipulated have to be conducted individually per participant. The resulting effort to conduct an experiment might be one reason as to why the sample sizes are usually very low (see Button et al., 2013; Lakens and Evers, 2014, for discussions on sample sizes in psychology and neuroscience). The average total sample size out of all the mimicry papers reviewed that focus on the mimicker as opposed to the mimicked and that examine mimicry as an independent variable rather than as a dependent variable (see section 'Mimicry'; N = 36 papers) is 57 participants per study. This includes designs from a 2×1 between-factorial design (i.e., 28 participants per group) to a 2×4 between-factorial design (i.e., seven participants per group). If only those papers are considered which have a design similar to what will be used in this research (a 2×2 between-factorial design in Study 1), the average sample size per group is only 15 participants (N = 14 papers). Usually, researchers need to exclude a few participants from each group for multiple methodological reasons so that the sample used for statistical analysis is even smaller than this. Recall that, as outlined in the section 'The Mechanism of Mimicry', an optimistic G*Power analysis (see Faul et al., 2007) for a comparison of two groups reveals a required sample size of $n = 35$ participants per group.

Statistically, then, it is very difficult to justify such small sample sizes which also raises doubts about the results in general (Lumsden et al., 2014; see Lakens and Evers, 2014) but because of the effort of acquiring the data, it appears to be common practice not only in the field of mimicry but also in the field of interpersonal coordination in general. Though in a different context, Gleibs et al. (2016) have also raised this issue and aimed for at least 25 participants per condition, which was already larger than most of the sample sizes in the mimicry literature (see Chartrand and Bargh, 1999; Lakin and Chartrand, 2003) or in the literature on imitation, for instance (see Brass et al., 2001; for examples Chong et al., 2009). Despite the constraints mentioned above,

the sample size of the experiments conducted in the present research ranges from 40 participants per group to 45 participants per group, depending on the experiment. It is, therefore, the largest sample size not only in the field of mimicry (up to three times higher than the average sample size per group, see above) but also in the field of interpersonal coordination for studies with a similar design (see sections 'Participants and Recruitment' for each study). Hence, my contribution is not only limited to researching mimicry and its outcomes in intergroup contexts. It is also the unprecedented large sample size that provides these studies with higher power and sensitivity compared to other studies in the field.

The Problem of Identity Manipulations in the Field of Interpersonal Coordination

Though there are studies that include intergroup contexts in both the more general literature on interpersonal coordination as well as the mimicry literature, a recurring pattern seems present: A lack of checking the identity manipulation. In the literature on interpersonal coordination, this refers to the non-priming of an identity or the lack of a process of ensuring that an identity was salient. Researchers fail to prime an identity but still assume its salience which often leads to non-significant results (see also Rauchbauer et al., 2018).

For example, though they were interested in different outcomes and they used a VR study instead of an interpersonal setting, Hale and Hamilton (2016b, exp2) investigated whether the effect of mimicry depends on the group membership of the individuals. The social groups used were based on culture, that is, the VR avatars were either European (i.e., in-group) or East Asian (i.e., out-group). However, the authors did not prime the identity level, that is, they did not ensure that the cultural dimension was cognitively salient and therefore actually mattered to participants (see the section on SIT). Instead, the authors assumed that the social identity of interest was the salient one so that the effects found must stem from the group differences of the social identities used in the experiment.

This assumption is certainly flawed and problematic because there are simply too many identities that could be at play in engendering effects such as gender, race, or even random identities including the type of football club a person supports, for instance. This, in turn, gives rise to doubts as to how credible the results of the studies are because other factors including other identities might have influenced the results.

It is therefore difficult to evaluate or to compare findings of studies that fail to prime or to check adequately whether the manipulation worked. Hence, priming an identity level and checking whether the prime (i.e., the manipulation) worked are crucial to drawing conclusions based on social group memberships (see Shih et al., 2007; see also Smeesters et al., 2009).

The number of studies that are affected by this methodological issue relative to the studies found on group membership in the literature on interpersonal coordination and mimicry is high. Out of the studies reviewed ($N > 200$) in the field of interpersonal coordination, which includes mimicry, 25 considered the intergroup context, stressing the need for further research on intergroup contexts. Three of these primed the social identity level whereas a further three used a minimal group paradigm, a different type of priming (i.e., random allocation into small groups). Manipulations and their checks were absent in the other 19 studies. When merely the studies on mimicry are considered (i.e., not considering synchrony or imitation), which also have the same causal direction as this research, meaning that they examined both mimicry as an independent variable (rather than as a dependent variable) and the effect of mimicry on the mimickee (rather than the mimicker; see discussion in the section 'Mimicry'), only two papers in total researched intergroup contexts out of which none primed social identities (see discussion in the section 'Mimicry and Intergroup Behaviour'). This means that, so far, all of the studies on mimicry in intergroup contexts did not check their manipulation so that the conclusions drawn from those studies are questionable (see the section 'Mimicry and Intergroup Behaviour'). These numbers further emphasise the gap of intergroup mimicry research which this research attempts to close. Therefore, particular importance will be placed on an effective priming method as well as a manipulation check for the experiments in this study.

This section has provided an overview of the research design and the experimental procedures. The following sections will provide more detail for each experiment as well as the collected data, and their analysis. This section has also revealed two common issues within the research of mimicry and interpersonal coordination. In the design of the experiments, particular attention will be paid to mitigate the influence of these problems on the results. It will be done by ensuring large sample sizes compared to previous studies and by including adequate priming as well as manipulation checks. This research will therefore not only contribute to the literature through the effects

found but it will also contribute through a rigorous and robust research design which many scholars have recently called for in this field (see Hale and Hamilton, 2016b).

Study 1

Design and Overview

The first study explores the effect of mimicry on mimicker-related attitudes in a dyadic interaction and the role social identities play in moderating such effects. Accordingly, the experiment will consist of two independent variables, mimicry and social identity, each with two conditions. The factor mimicry comprises a mimicry condition and a no mimicry condition whereas social identity takes either the form of an in-group or of an out-group. Consequently, Study 1 employs a 2 × 2 between-participant design.

The manipulation of mimicry and no mimicry is based on previous literature. To manipulate mimicry, it is important to first create an interpersonal setting. Participants and the mimicker must be having a conversation enabling them to see each other to allow for the display of mimicry (or no mimicry) in response to the participant (see the procedure for more details). In the mimicry condition, the confederate will be mimicking the postures and gestures of the participant with a delay of 2-5 seconds (van Baaren et al., 2009; Leander et al., 2012). In the no mimicry condition, the confederate follows the instructions of Chartrand and Bargh (1999) who suggests that the mimicker should sit in a neutral position with both feet on the floor and hands on the lap.

The manipulation of social identity utilises a characteristic common among participants. In line with a plethora of experimental studies in both the field of social psychology (for a review, see Pollet and Saxton, 2019) but also the field of mimicry (see Chartrand and Bargh, 1999), participants of Study 1 are students, in this case, from the University of Leeds (see participants and recruitment section below). Consequently, social identities used in this experiment make use of the fact that students are members of the University of Leeds and that the experiments take place on premises of the university (see below for more information about the laboratory). In the in-group condition, the mimicker is presented as a student from the University of Leeds. In the out-group condition, however, the mimicker is presented as a member of the University of Sheffield, feeding off a regional rivalry between the two leading Yorkshire universities (details as to how social identities are manipulated can be found in the procedure section).

Sample Size Calculation

Sample size calculations are essential before conducting experiments to get an indication as to how many participants are required to be able to detect the effect under investigation (Lakens, 2013). If sample sizes are too small, they provide inaccurate results about the effect size, for example (Maxwell and Delaney, 2004). Sample size calculations are therefore essential to ensure a robust research design. G*Power (version 3.1.9.4, see Faul et al., 2007) was used to calculate the sample size required *a priori* as this software is commonly used by scholars (for example, see Lumsden et al., 2014). For the calculation, however, an estimate of the effect size is required. Previous studies revealed the effects of mimicry to be medium to large in size (Stel and Vonk, 2010; $\eta^2 = .1 - .15$, see Hale and Hamilton, 2016b). Accordingly, a medium to large effect size estimate of $f = .3$ served as an input for the sample size calculation alongside a significance level of $\alpha = .05$, $df = 1$ ($df = (\text{number of groups of the first factor} - 1) * (\text{number of groups of the second factor} - 1)$), number of groups = 4, and a desired statistical power of .95. The minimum required total sample size, therefore, is $N_{\min} = 147$ participants, or roughly 37 participants per condition.

Participants and Recruitment

Participants were recruited via multiple means from various taught programmes at the University of Leeds. Predominantly, student support offices for each faculty sent out pre-formulated emails to their student cohorts. Occasionally, a call for participants was issued via a PowerPoint slide at the beginning of lectures with the help of module leaders. Further, posters calling for participants were advertised on campus. If students were interested in participating in the study, they had to sign up via email.

Independently from the means of recruitment, however, the purpose of the experiment was not fully disclosed, because disclosure might have changed their reaction to mimicry and the group manipulation might not have worked. Additionally, subconscious and automatic processes such as a change in attitude as a result of behavioural displays are only and truly understood if subjects are not aware of such manipulations (for a detailed elaboration on social information processing, see Lewicki, 1986). The cover story was also required to be aligned with the social identities to be manipulated. Consequently, participants were required to know that university membership plays an important part in the experiment. Thus, the cover story

displayed on all means of recruitment materials portrayed the purpose of the experiment as an investigation into the social value orientation of students of the University of Leeds. They were told the following:

“It is known that companies aim at recruiting their next generation of successful managers. Based on their experience, they are looking for candidates with a particular type of social value orientation. In fact, it has become apparent that most of the successful managers, tend to have one particular type of social value orientation. Therefore, the aim of this study is to find out whether individuals with the desired social value orientation can be found only at particular universities. In other words, does the social value orientation of students depend on their universities?”

Thus, the study was framed as a comparison of student’s social value orientation from multiple UK universities. If individuals with the ‘desired’ social value orientation can be found at particular universities, companies would rather seek to recruit from such universities, students were further told. As a consequence of this framing, student’s social value orientation was presented as important and in competition with other universities, therefore providing the opportunity for making comparisons to students from other universities.

The cover story, however, required a greater degree of detail. As the researcher is a student at the University of Leeds, presenting him as a student from the University of Sheffield appeared to be problematic, in case students have seen him on campus before. Similarly, the normal email address with the Leeds domain could not be used for recruitment purposes as this would have disclosed the identity of the researcher as a Leeds student. Accordingly, the study was framed to be led by research director *Steven Miller*, whereas the researcher was presented as the research assistant for the project. Finally, a new email address was created which included Steven Miller in the address name so that students thought they were in contact with Steven Miller. As a result, even if students saw the researcher before on campus, they were made to believe that he is a research assistant belonging to a project under the supervision of Steven Miller, which investigates the social value orientation of students at multiple UK universities.

Once students expressed interest through sending an email, they were sent the full participant information sheet which, again, clearly elaborated the cover story. Though the experiment was expected to take 20 minutes per participant, each participant was allocated a 30-minute time slot at the laboratory to account for late arrivals or an extraordinary degree of questions about the experiment. Throughout the recruitment process as well as the experiment itself, participants were repeatedly reminded that they could withdraw from the study at any point in time without providing explanations.

In total, 181 participants participated the study and it is, therefore, the largest study conducted in mimicry research. There are two reasons for exceeding the calculated minimum sample size. First, a buffer of several participants was required in case a few decided to withdraw from the study or if they did not fulfil the requirements for the manipulation check (see measures). Second, as the time slots were often scheduled weeks in advance, it was refrained from cancelling on participants once the required minimum sample size was reached. Based on the preceding power analysis, the experiment, therefore, had sufficient statistical power.

Laboratory

All participants were asked to come to the affective laboratory in the Faculty of Mechanical Engineering at the University of Leeds. Via email, they were given specific instructions as to how to arrive at the location in time. The laboratory consisted of a main room (A) and a small room (B) adjacent to the main room. The two rooms were separated. However, a one-way mirror in room B allowed visual access to the main room A. The experiment took place in room A. It had a desk with a chair and a computer on which participants conducted the survey and received instructions. The room also included two chairs that faced each other. These were used during the experiment for the 'interview' in which mimicry behaviour was manipulated (see procedure). The video camera was located in room B behind the one-way mirror to record the 'interviews' to serve as a manipulation-check. Though hiding the camera was not necessary, because participants were aware of the recording, not seeing the camera might have made them more comfortable.

Procedure

Once participants arrived at the laboratory, they were greeted and seated on the chair in front of the computer. Though the participant information sheet was sent to them via

email, they were presented with a physical copy on the table as well as a digital copy on the screen to remind them of the purpose of the study and their rights. After they have provided initial consent, the experimenter left the room (A) and waited in the room behind the one-way mirror (B). The experiment was run with one participant at a time.

The first stage of the questionnaire aimed at making the identity of a University of Leeds student salient. Recall that, for participants, the purpose of the study was to investigate their social value orientation and to compare it with students from other universities, because companies value a certain type of social value orientation. Considering that all participants were students from the University of Leeds, the attempt of making this identity salient may not have been necessary. However, this step was chosen to ensure such salience. To do this, they were asked to rate how important different values are to them. These values were based on the value theory by Schwartz (1992; for an overview, see Schwartz, 2012).

Though this personal-value test was real, the answers provided by participants did not matter. In line with the cover story, what mattered was that participants were told this to be a real test of their social value orientation (see also Barnum effect, Barberia et al., 2018) because the results of the test were deliberately manipulated. In response to the test, participants were told that their social value orientation matches to 76% the prototypical social value orientation of students from the University of Leeds. The number was chosen based on the premise that the manipulation should not be too obvious (i.e., too high) whilst it should be sufficiently high that students felt a sense of belonging to the University of Leeds. Further, they were told that tests have shown a pattern of social value orientation across universities. According to these tests, students of the University of Leeds tend to be, on average, less assertive compared to students from other universities. Additionally, assertiveness is an important characteristic for having a successful career and, consequently, businesses tend to look for assertiveness in their future leaders. Participants were also told that students from the University of Sheffield, among other universities, tend to be highly assertive and, consequently, more sought after by businesses who aim to recruit their next generation of successful managers. Based on their test results, they were finally asked to put on a red wristband (for a similar method, see Gleibs et al., 2016). The aim of this was to link their red wristband to their identity as a Leeds student. Further, the fact

that wristbands were available in multiple colours strengthened the illusion that different test results might have led to different wristbands and, therefore, reinforced the experimental manipulation.

The reason for providing such information was (a) to create a sense of belonging to the University of Leeds and consequently strengthening the social identity, and (b) to create a competitive context allowing for comparisons across identities. After this stage, participants were told that their experimenter will enter the room and they will be having a short interview because the researchers are interested in learning more about their experiences in Leeds. Further, they were told in the beginning that the interview will be video recorded for training purposes. The experimenter and a participant sat on two chairs facing each other. The content of the interview was irrelevant to the aims of the study. Each interview consisted of the same interview questions such as “Why did you choose Leeds as a place to study?” or “Why have you chosen the subject you are studying?” The list of questions can be found in Appendix A.

To manipulate the perceived group membership of the mimicker, that is, to create either an intragroup context or an intergroup context, the experimenter was dressed differently. Participants were randomly assigned to the two group conditions. In the in-group condition, the experimenter was wearing a red jumper from the University of Leeds with a red wristband (i.e., the same wristband as the participants). In the out-group condition, the experimenter was wearing a blue jumper from the University of Sheffield and a blue wristband. Recall that participants were told that their personality matches with the typical personality of students from Leeds and that students from the University of Sheffield were framed as more desirable compared to students from the University of Leeds as a result of their personality. In the interview which lasted approximately 5 minutes, the male experimenter displayed either mimicry in response to the participant’s behaviour or no mimicry. After the interview, the experimenter left the main room and participants filled in the survey measuring the manipulation check as well as the dependent variables and demographic information (see measures). Based on the standards in mimicry research, participants who noticed that they were mimicked, needed to be excluded because mimicry has been shown not to elicit effects once individuals are aware of it (Kulesza et al., 2016). Accordingly, the survey also included a question asking participants as to whether they have noticed anything

suspicious during the experiment, a common practice in mimicry research (see Bailenson et al., 2008).

Finally, participants were fully debriefed. All aspects of the cover story were clarified and they were offered the opportunity to ask questions. Subsequently, they provided final consent. Participants were able to withdraw from the study until three weeks after the experiment to allow them the re-consider their participation due to the deception. They were given £5 as compensation for their time. It is worth noting that the main researcher was also the experimenter in this study (and in Study 2). Though this is not ideal for reasons that will be more elaborated on in the limitations of this work (see 'Limitations'), it was required for financial and time-based considerations.

Measures

In this study, the dependent variables were perceived likability and competence of the mimicker as well as the participant's identification with the in-group (i.e., University of Leeds). Unless otherwise stated, all variables have been measured on a 7-point Likert scale from "Strongly disagree" (1) to "Strongly agree" (7).

Likability. Perceived likability of the mimicker was measured using a 5-item measure developed by Ahearne et al. (1999). "The person appears to be nice" or "The person is easy to like" represent example items of the scale. The reliability of the scale was $\alpha = .89$.

Competence. Perceived competence was measured with a 4-item scale developed by Fiske and Cuddy (2006). Example items are "The person appears to be competent" or "The person appears to be capable". The overall reliability of the scale was $\alpha = .83$.

In-group identification. A 4-item scale developed by Doosje et al. (1995) was used to measure the degree of in-group identification. The in-group term of the items was adjusted to match the in-group relevant for this research, that is, the University of Leeds. Example items include "I feel strong ties with University of Leeds students" or "I identify with other University of Leeds students". The reliability of the scale was $\alpha = .79$.

Manipulation check. The *Inclusion of Other in the Self* scale developed by Aron et al. (1992) served as a check for the group manipulation. It comprises 7 different pictures with differently overlapping circles. The original measure was adjusted to fit the

purpose of this research. On each picture, four circles were displayed. Two represent university membership for Leeds and Sheffield respectively whereas the other two represent the participant and the experimenter respectively. The measure assimilates a 7-point Likert scale as the circles overlap to a different extent on each picture. Option 1 represents a strong overlap between the experimenter and the University of Sheffield as well as a strong overlap of the participant and the University of Leeds and no overlap between participant and experimenter. Option 4 represents no overlap between any of the circles and consequently refers to the *neutral* option of a standardised 7-point Likert scale. Option 7 represents a strong overlap between the experimenter, participant and the University of Leeds. Consequently, the bottom half of the scale represents the area desired for participants in the out-group condition whereas the upper half of the scale represents the area desired for in-group members. Participants were asked which picture most accurately describes their impression of the short interview they had.

A similar approach in conducting the manipulation check was also taken by other researchers (see Reddish et al., 2016; see also Tuncgenc & Cohen, 2016 for a somewhat similar approach). Further, using such a scale as a manipulation check (for social group membership appears to be sensible because of the dynamics related to depersonalisation that are inherent in social identities. Specifically, depersonalisation results in viewing another person as a prototypical representative of a particular social group. If the person is viewed as an in-group member, then the self-other overlap must be greater, compared to the overlap with an out-group member, because the individual is perceived as being more similar to oneself (see the literature review on SIT). The scale can be found in Appendix B. In addition to the pictures, an 8th option was employed labelled “none of the above”. This was to provide participants with the opportunity to select another option in case none of the seven pictures was an accurate reflection of their experience. Participants who selected this option were excluded from the analysis, because of a lack of certainty that the group manipulation was successful.

Results

For the analysis, $n = 20$ participants needed to be excluded, because of the manipulation check (see above). Further, the data set was scanned for outliers using

absolute deviation around the median (Leys et al., 2013). Using a conservative rejection value of 3 units, 3 outliers were identified and excluded. Of the remaining participants, none noticed the mimicry manipulation. Consequently, the analysis was conducted with 158 participants (female = 88; age: 18 years = 19, 19 years = 63, 20 years = 27, 21 years = 18, 22 years = 14, 23 years = 8, 24 years = 3, ≥ 25 years = 6).

Manipulation check. A one-way between-participants analysis of variance (ANOVA) was conducted with social identity as the independent variable and the manipulation-check as the dependent variable. The results show a significant difference between the two conditions ($F(1, 156) = 104.67$; $p < .001$; $d = 1.63$; $\eta^2 = .41$). As expected, participants felt significantly more overlap between themselves and the experimenter in the in-group condition ($M = 5.20$; $SD = 1.64$; $95\% CI = [4.83, 5.57]$) compared to the out-group condition ($M = 2.57$; $SD = 1.59$; $95\% CI = [2.21, 2.93]$). Importantly, the difference between the two groups is not only significant but the groups are also on the desired side of the scale. Participants in the in-group condition are in the upper half of the scale (> 4) whereas participants in the out-group condition are in the lower half of the scale (< 4). If participants in the out-group condition had also been in the upper half of the scale, they would have perceived the experimenter still as an in-group member, despite a significant difference in the value of the scale. Accordingly, the group manipulation was successful as participants perceived differences in the overlap between the groups.

The manipulation-check for the behaviour of the mimicker was conducted in line with the literature (see Lakin et al., 2008; Tunçgenç and Cohen, 2016). A person blind to the hypotheses of the research watched half of the recorded videos (40 videos randomly selected for each of the two mimicry conditions) and rated the degree of mimicry on a 7-point Likert scale from “no mimicry at all” (1) to “full mimicry” (7). A one-way between-participants ANOVA was conducted to test whether a difference in behavioural ratings existed between the two conditions. The results show a significant effect of mimicker behaviour ($F(1, 78) = 666.39$; $p < .001$; $d = 5.76$; $\eta^2 = .89$). In the mimicry condition, the mimicker displayed more mimicry ($M = 5.80$; $SD = 1.16$; $95\% CI = [5.43, 6.17]$) than in the no mimicry condition ($M = 1.03$; $SD = 0.16$; $95\% CI = [.97, 1.08]$). Accordingly, mimicry was successfully manipulated.

Table 1 Correlation matrix Study 1

	1	2
Likability		
Competence	.52***	
In-group Identification	.03	.18*

Note. Asterisks indicate the level of significance (*** $p \leq .001$; * $p \leq .05$)

In the remainder of the analysis, the effect of mimicry on the dependent variables will be analysed alongside the moderating effect of social identities to test $H_1 - H_3$. Before univariate analyses will be conducted, I will briefly report the results of a multivariate analysis of variance (MANOVA). Here, mimicry appears to have a main effect across the three dependent variables ($F(3, 152) = 20.03$; $p < .001$; $\eta^2 = .28$), whilst the effect of group membership ($F(3, 152) = 1.06$; $p = .370$; $\eta^2 = .02$) was non-significant. Finally, a mimicry \times group membership interaction was absent ($F < 1$; $p = .773$; $\eta^2 < .01$). Below, I will report the results of a 2 (mimicry: mimicry, no mimicry) \times 2 (group membership: in-group, out-group) between-participants ANOVA for each of the dependent variables (for the correlation matrix, see Table 1). A summary of the results in terms of means, standard deviations and 95% confidence intervals is presented in Table 2.

Table 2 Mean ratings of participants across conditions for each dependent variable

Behaviour	Group	Likability			Competence		
		<i>M</i>	<i>SD</i>	95% <i>CI</i>	<i>M</i>	<i>SD</i>	95% <i>CI</i>
Mimicry	In	5.81	.79	[5.57, 6.06]	6.19	.58	[5.98, 6.39]
	Out	5.74	.76	[5.47, 6.00]	6.17	.70	[5.95, 6.39]
No Mimicry	In	4.94	.99	[4.67, 5.21]	5.83	.83	[5.60, 6.05]
	Out	4.64	.75	[4.39, 4.89]	5.84	.65	[5.62, 6.05]

		In-Group Identification		
		<i>M</i>	<i>SD</i>	95% <i>CI</i>
Mimicry	In	6.02	.65	[5.78, 6.25]
	Out	5.89	.82	[5.65, 6.15]
No Mimicry	In	5.76	.79	[5.51, 6.02]
	Out	5.75	.86	[5.51, 5.99]

Note. *M* = mean; *SD* = standard deviation; *CI* = confidence interval.

Likability. As illustrated in Figure 1, the analysis revealed a main effect of the mimicry condition on the likability of the mimicker ($F(1, 154) = 56.28$; $p < .001$; $d = 1.23$; $\eta^2 = .27$). More specifically, participants who were mimicked liked the experimenter more ($M = 5.78$; $SD = .77$; $95\% CI = [5.59, 5.96]$) than those who were not mimicked ($M = 4.78$; $SD = .88$; $95\% CI = [4.60, 4.98]$). A main effect of group membership ($F(1, 154) = 2.06$; $p = .154$; $d = .26$; $\eta^2 = .01$) and a mimicry \times group interaction ($F < 1$; $p = .398$; $\eta^2 < .01$) were not observed. An additional analysis of covariance (ANCOVA) showed that the main effect of the mimicry condition still existed ($F(1, 151) = 48.21$; $p < .001$; $d = 1.12$; $\eta^2 = .24$) when age ($F(1, 151) = 1.83$; $p = .178$; $\eta^2 = .01$), gender ($F < 1$; $p = .755$; $\eta^2 < .01$), and ethnicity¹ ($F(1, 151) = 2.63$; $p = .107$; $\eta^2 = .02$) were controlled for.

¹ Ethnicity was measured using five ethnic categories. Due to the ethnic distribution of the sample (see Appendix C), a dummy variable was created categorising the sample in ethnic majority (i.e. white) and ethnic minority (i.e. others).

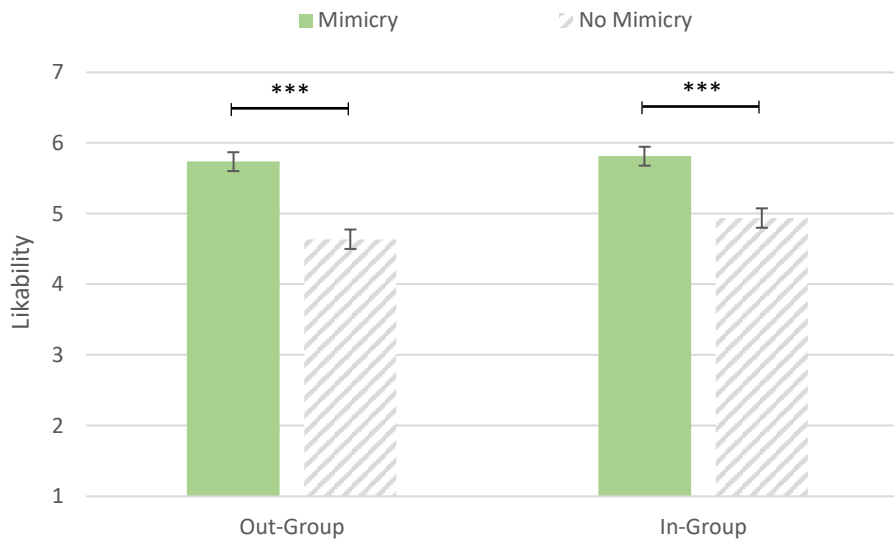


Figure 1 Mean likability ratings as a function of mimicry condition and group membership. Asterisks indicate a significant statistical difference between conditions rounded to two decimal places ($***p < .001$). Error bars represent ± 1 SE.

H_{1a} stated that mimicry, compared to no mimicry, will result in greater likability of the mimicker. Based on the analysis above, the hypothesis is fully supported due to a significant main effect of mimicry. The results, however, portray a different picture for H_{1b}. In contrast to H_{1a}, H_{1b} stated that mimicry by an out-group member, compared to no mimicry, leads to less likability. The results do not support this hypothesis. Instead, mimicry by an out-group member also resulted in greater likability. Consequently, the expected moderating effect of social group membership did not occur and H_{1b} is not supported.

Competence. The analysis revealed a main effect of mimicry on competence ratings of the mimicker ($F(1, 154) = 10.02$; $p = .002$; $d = .51$; $\eta^2 = .06$). In particular, mimicry displayed by the experimenter resulted in higher competence ratings ($M = 6.18$; $SD = .64$; $95\% CI = [6.03, 6.33]$) compared to no mimicry ($M = 5.83$; $SD = .73$; $95\% CI = [5.68, 5.99]$). Neither a main effect of group membership ($F < 1$; $p = .978$; $d = .04$; $\eta^2 < .01$) or a mimicry \times group membership interaction ($F < 1$; $p = .913$; $\eta^2 < .01$) were observed. An ANCOVA still revealed a main effect of mimicry ($F(1, 151) = 10.44$; $p = .002$; $d = .54$; $\eta^2 = .07$), when gender ($F < 1$; $p = .594$; $\eta^2 < .01$), age ($F(1, 151) = 1.74$; $p = .190$; $\eta^2 = .01$), and ethnicity ($F < 1$; $p = .694$; $\eta^2 < .01$) were controlled for. Mean competence ratings as a function of mimicry and group membership are illustrated in Figure 2.

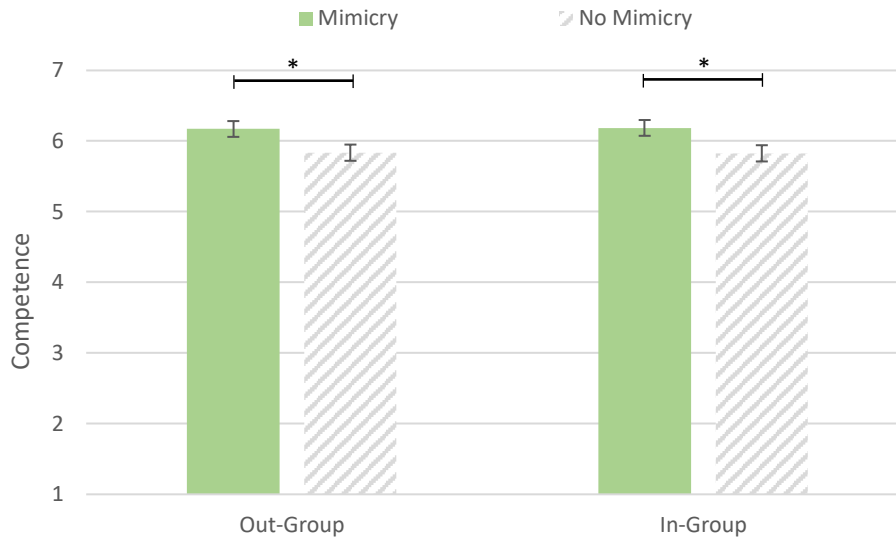


Figure 2 Mean competence ratings as a function of mimicry condition and group membership. Asterisks indicate a significant statistical difference between conditions rounded to two decimal places ($*p < .05$). Error bars represent ± 1 SE.

Recall H_{2a} which hypothesised mimicry, compared to no mimicry, to result in higher competence ratings when the mimicker is an in-group member. The main effect of mimicry supports the hypothesis. In contrast, H_{2b} hypothesised lower competence ratings in response to mimicry, compared to no mimicry, by an out-group member. This hypothesis, however, is not supported by the results, because mimicry only has the main effect on competence whereas a mimicry \times group interaction was not observed.

In-group identification. The ANOVA did not reveal any main effects of mimicry on in-group identification ($F(1, 154) = 2.57; p = .111; d = .26; \eta^2 = .02$) or of group membership on in-group identification ($F < 1; p = .584; d = .10; \eta^2 < .01$). Recall that a mimicry \times group interaction ($F < 1; p = .662; \eta^2 < .01$) was not hypothesised. However, an ANCOVA revealed a main effect of mimicry on participant's in-group identification ($F(1, 151) = 5.47; p = .021; d = .37; \eta^2 = .04$), when controlled for age ($F(1, 151) = 1.83; p = .178; \eta^2 = .01$), ethnicity ($F(1, 151) = 7.60; p = .007; \eta^2 = .05$), and gender ($F < 1; p = .856; \eta^2 < .01$). When comparing the estimated marginal means, participants identified more with their in-group after they had been mimicked ($M = 6.00; 95\% CI = [5.83, 6.17]$) compared to when they were not mimicked ($M = 5.71; 95\% CI = [5.54, 5.89]$). A main effect of group membership ($F < 1; p = .986; d < .01; \eta^2 < .01$) and a mimicry \times group membership interaction ($F < 1; p = .934; \eta^2 < .01$) were not observed, however. Figure 3 illustrates the estimated marginal means of in-group identification as a function of mimicry.

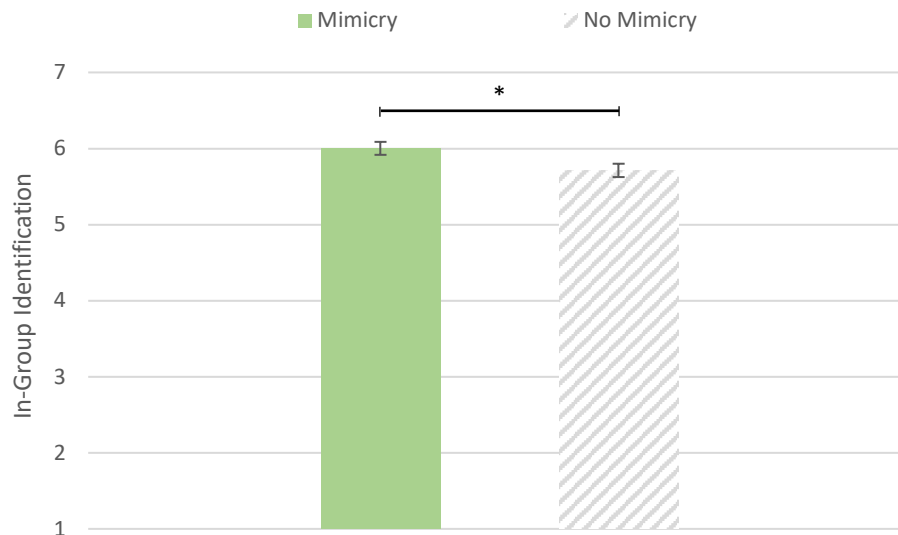


Figure 3 Estimated marginal means for in-group identification as a function of mimicry condition. Asterisks indicate a significant statistical difference between conditions rounded to two decimal places ($p < .05$). Error bars represent ± 1 SE.

In contrast to the preceding hypotheses, H₃ hypothesised a main effect of mimicry on participant's in-group identification regardless of the mimicker's group membership. Though the initial analysis did not reveal any effects, an ANCOVA showed a main effect of mimicry on in-group identification. Accordingly, H₃ is supported by the analysis.

Discussion

The aim of Study 1 was to test H₁ – H₃ using an experimental design. More specifically, Study 1 investigated whether mimicry, compared to no mimicry, affects the likability and competence of the mimicker as well as the in-group identification of the mimickee and whether these effects are dependent on the social group membership of the mimicker relative to the mimickee. The former two outcomes were hypothesised to be affected by a mimicry \times group interaction whereas in-group identification was not.

Overall, the results show a main effect of mimicry across the outcome variables. However, a mimicry \times group interaction was not observed. Accordingly, mimicry, compared to no mimicry, appears to increase the likability and competence of the mimicker as well as the in-group identification of the mimickee. Therefore, hypotheses outlining a positive effect of mimicry on likability and competence for in-group members were supported (i.e., H_{1a} and H_{2a}) alongside hypothesised main effects of mimicry on in-group identification (i.e., H₃). However, hypotheses suggesting a

negative effect of mimicry on likability and competence for out-group members were not supported (i.e., H_{1b} and H_{2b}).

The results have multiple implications for mimicry (for overall implications, see final chapter 'General Discussion'). First, the affiliative function of mimicry may extend beyond group boundaries. Contrary to the hypotheses and the literature, it seems that even out-group members are perceived as more likeable or competent when they mimic. Accordingly, mimicry may be able to actively reconcile negative intergroup biases. To this extent, the findings are similar to the results obtained by Hasler et al. (2014). On the other hand, however, the results did not support the existence of intergroup dynamics. To this end, a possibility exists that intergroup biases were absent which, in turn, prohibited the examination of a mimicry \times group membership interaction. Consequently, the conclusion offered above may not hold in situations of intergroup divides. The results require therefore further support and replication (see Study 2). Second, it appears that mimicry does not only shape affect-related outcomes such as likability but it also influences perceptions of competence. This is in line with general research on non-verbal behaviour (NVB) showing that behaviour does not only affect warmth-related outcomes but also impressions of skills (see Kraft-Todd et al., 2017). Third, mimicry appears to be able to shape the extent to which individuals identify with their group. This finding is interesting because it implies that the mere behaviour of others may influence our thinking about our group membership. Though it is appealing to interpret more into this finding, it is based on one experiment. Overall, however, it seems that mimicry has a stronger affiliative function than previously anticipated as it appears to be able to influence cognitive biases stemming from social identities as well as the extent to which individuals identify with such identities.

Despite these results, it is too early to conclude that group membership does not change the effects of mimicry, because Study 1 has at least two limitations. The first regards the chosen social category for creating in-groups and out-groups. The second regards an issue with using the traditional approach taken by many researchers regarding the no mimicry condition. The following two sections will elaborate on such limitations respectively.

Group Membership

Several possible reasons exist as to why a mimicry × group interaction was not supported by the results, despite a successful manipulation. The first regards the accessibility of the particular social identity to the individual. Self-categorisation theory (SCT) stresses the importance of accessibility of a particular category (i.e., identity) for perceiving the context through the lenses of such categories (see Oakes et al., 1994). Accessibility of a category is, however, shaped by personal experiences (Turner et al., 1987). In other words, individuals must be experienced to use a particular category (University membership, in this case), to categorise themselves and others into such categories in a given context. Though the context of the experiment allowed for such categorisations to occur, individual categorisation using these categories was not imperative. As individuals might not be used to categorise themselves and others by university membership, they did not engage into such categorisation, because they were not experienced in doing so, despite the context.

Another reason as to why a mimicry × group interaction was not observed refers to the relevance of University membership to participants. According to SCT, social categories must be relevant for a particular context to allow for such categorisations. However, though the experiment attempted to allow for contextual relevance of University membership, it is not possible to ensure the personal relevance of such categories. It, therefore, might have been possible that the University of the experimenter was not sufficiently relevant to participants personally to affect judgements of likability or competence, even though the manipulation itself might have worked. In other words, while the categorisation was distinctive it was not personally important. Put bluntly, participants might have not cared enough as to whether the experimenter was from a different University.

As already indicated in the previous section, another possible reason as to why group membership did not have any effects may have been the strength of mimicry per se. Displays of affiliation, as a result of mimicry, may overcome intergroup biases so that group membership becomes less relevant to participants. Literature showing that intergroup biases can be reduced through intergroup contact supports this notion (Hewstone et al., 2000; for review, see Hewstone et al., 2002). In particular, research demonstrating that affect-displays towards out-group members reduce intergroup biases support the findings of the present research (see Stephan and Finlay, 1999;

Galinsky and Moskowitz, 2000). Accordingly, mimicry per se might have been responsible for not finding an interaction with social group membership by making social groups less relevant.

Nonetheless, whether mimicry diminishes intergroup biases or whether social identities were simply less relevant and less accessible requires more research. Based on these possible reasons outlined, important conclusions for the group manipulation in Study 2 can be drawn. Firstly, the study must make use of more accessible, that is, more commonly used social categories. Second, such categories not only need to be relevant for the context of the study but they also must be more personally relevant to participants themselves. The design of Study 2, therefore, will pay particular attention to address these two factors.

The Problem With The No Mimicry Condition

The no mimicry condition is supposed to be the control condition against which to compare the mimicry condition. The most commonly used no mimicry condition was established by Chartrand and Bargh (1999; for applications, see Ashton-James and Chartrand, 2009; Kulesza et al., 2015). For this reason, it was also used for Study 1. The experimenter sat with both feet on the floor, both hands on his lap with an upright posture. During the execution of this no mimicry condition, concerns became apparent. Due to its nature, it might come across as very static and robotic. Accordingly, it might not represent natural behaviour, which is supposed to be the condition mimicry needs to be compared to. Therefore, the difference between mimicry and no mimicry found in Study 1 but also in other studies of the mimicry literature (see Ashton-James and Chartrand, 2009; Kulesza et al., 2015), might not stem from mimicry itself but rather from a difference between mimicry and robotic or static behaviour. Instead of mimicry to elicit positive effects, static behaviour may elicit negative effects, which are, however, disguised as positive effects of mimicry.

The debate seems to be rarely addressed by mimicry researchers (or researchers of interpersonal coordination in general, for that matter). This comes as a surprise given its importance, especially for practical applications of the research, because knowledge as to which behaviour, either mimicry or no mimicry, affects the outcome will certainly influence the choice of behaviour in which individuals will want to engage, or not engage in. One way of investigating whether or not mimicry rather than the no

mimicry (static) condition drives the effects found is through including a specific neutral control condition. Though a few researchers mentioned that the effects are driven by no mimicry rather than mimicry (for a different direction of effect, see Stel and Vonk, 2009; for an example which applies the direction of effect used for this research, see Stel, Rispens, et al., 2011), they justified this reasoning by the particular context of the study (see Dalton et al., 2010) rather than empirically testing it through including control conditions in their design. The reason for this might be the effort it takes in addition to the already high effort of mimicry research (see above). Control conditions would leave researchers with even smaller sample sizes per group and therefore they might prefer to refrain from including control groups.

From the mimicry studies reviewed (N = 36) only four have included control groups. Further, their findings regarding what is the driver of the effect, mimicry or no mimicry, contradict each other. For example, Ashton-James and Chartrand (2009) found that mimicry, compared to no mimicry, led to more convergent thinking of the mimicked suggesting an increase in creativity. However, when they included a control condition they found that it is actually no mimicry which led to a decrease of convergent thinking, i.e., less creativity, rather than mimicry increasing creativity. By including a control condition, Dalton and colleagues (2010) also found that no mimicry depletes cognitive resources rather than mimicry increasing them. However, Müller and colleagues (2012), in contrast, were interested in researching helping behaviour and found that mimicry, compared to both no mimicry and a control condition, led to an increase in helping behaviour, suggesting that the effect is driven by mimicry itself (see also Fischer-Lokou et al., 2011).

Hence, studies that have included a control condition differ in their findings. There might be a reason for that, though. Whether mimicry or no mimicry is driving the effect could depend on the outcome variable so that for some variables (such as helping behaviour, see Müller et al., 2012) mimicry is strengthening the effect and for others (such as cognitive resources, see Dalton et al., 2010) no mimicry is responsible for the effect. This is not only supported by studies that posit that effects of mimicry depend on the context of the interaction (see Stel, Rispens, et al., 2011; Kurzius and Borkenau, 2015 see also section 'Effects of Mimicry') but also by the fact that two studies which investigated cognitive outcome variables (i.e., convergent thinking and cognitive resources, see Ashton-James and Chartrand, 2009; Dalton et al., 2010 respectively)

both agreed on their findings, that is, no mimicry is driving the effects. These findings stress, however, the need for control conditions to explore, for the specific outcome variable, which conditions are driving the effects. No study that has investigated likability or competence has included control conditions. Therefore, further investigation into this will be highly valuable for the literature (see section 'Group Membership') as the need for control conditions is stressed by several authors (see also Lumsden et al., 2014).

The vast majority of researchers in this field, however, do not provide any information as to how they have operationalised the no mimicry condition². This brings the problem that scholars do not know whether the findings by such researchers reflect the difference between mimicry and static behaviour, or the difference between mimicry and neutral behaviour. Therefore, it is challenging to compare the results of different studies for similar outcome variables. This might also be the reason why multiple studies on mimicry with the same dependent variable have found different results (see section 'Mimicry And Non-Verbal Behaviour'). To ensure comparability and to make a highly valuable contribution to the literature, the following studies will thus include three manipulations of mimicry: a mimicry condition, a no mimicry condition (i.e., control condition), and the unnatural (static) condition. Accordingly, both Study 2 and 3 (observed mimicry) will target two distinct research questions. One refers to the difference between mimicry and no mimicry (neutral behaviour) whereas the other one refers to the difference between the two different types of no mimicry condition, that is, static behaviour and neutral behaviour. Consequently, the following studies will investigate not only whether the effects of mimicry exist compared to neutral behaviour for specific outcome variables such as liking but they will also investigate which effect static behaviour has on such outcomes.

This research, therefore, goes beyond merely answering a call from various researchers such as Blocker and McIntosh (2017) who stress the importance of control groups in mimicry research, especially when one looks at intergroup contexts (see

² A few researchers (see Finkel et al., 2006; Kouzakova, van Baaren, et al., 2010; Dalton et al., 2010) attempted to circumvent the problem of having to deal with static behaviour and instructed the confederates to behave normally and dynamically instead. Though these researchers ensured that they actually compared mimicry with no mimicry, they still lacked control conditions to find out whether mimicry or no mimicry is driving the effect. Additionally, they were more interested in neuropsychological phenomena and are hence of limited value to studies investigating other outcome variables.

also De Coster et al., 2013; Lumsden et al., 2014 for similar calls). Including three conditions (i.e., mimicry, no mimicry, and unnatural no mimicry) allows not only for finding out whether the effect on the dependent variables is driven by mimicry or by no mimicry in intergroup settings. It also allows for analysing how people react to unnatural behaviour and whether this might be the driving factor behind many results of mimicry research. Additionally, researchers will have to be more careful in future studies and clearly state whether they employ a no mimicry condition or a more unnatural condition

Summary

Overall, Study 1 found mimicry, compared to no mimicry, increases perceived likability and competence of the mimicker as well as in-group identification of the mimicker. Consequently, Study 1 extends the literature by demonstrating that mimicry, compared to no mimicry, can affect judgements of competence as well as in-group identification of mimickers. However, Study 1 also has several limitations. In particular, the no mimicry condition used in the study, that is, the condition utilised by many researchers might have an inherent conceptual issue. Results obtained when using this condition as the control might stem from differences between static and mimicry behaviour rather than from differences between mimicry and neutral behaviour. Accordingly, studies in the remainder of this work will include a control condition labelled no mimicry (neutral) behaviour in addition to the mimicry and the no mimicry (static) condition already used. Study 1 also did not find any effects of group membership for two possible reasons. On the one hand, the accessibility and relevance of the social groups chosen were not strong enough. On the other hand, mimicry as an affiliative behaviour may have diminished the relevance of social groups. To further investigate these two options, Study 2 will create stronger group differences.

Study 2

Design and Overview

Similar to Study 1, Study 2 will investigate the moderating effect of social groups on the effect of dyadic mimicry. However, Study 2 advances Study 1 in multiple ways. First, Study 1 revealed the possibility of effects that are thought to stem from mimicry, to actually stem from a difference between static and normal behaviour. Accordingly, Study 2 will employ three behavioural conditions: static behaviour (i.e., previously the no mimicry condition), neutral behaviour (i.e., the control condition where confederates move but do not mimic), and mimicry. Including these conditions allows for disentangling whether mimicry, compared to neutral behaviour, significantly changes mimicker-related judgements of likability, for instance. Or, whether differences in judgements stem from the static condition, the very condition which appears to be normally used by researchers as the no mimicry condition. Second, considering the possibility of not sufficiently relevant social groups in Study 1, Study 2 will utilise social groups with a more profound relevance and accessibility for participants. In particular, social identities related to gender will be used as such groups are determined by characteristics difficult to change and consequently, they are hoped to result in greater group conflict (Tajfel and Turner, 1979). Including more relevant social identities also allows for investigating whether mimicry, understood as a behaviour signalling affiliation, makes group boundaries less relevant (see Study 1).

Finally, Study 2 investigates further outcomes variables such as trust, interactional justice, and perceived cooperation in addition to those measured in Study 1. Recall that the aim of this research is whether mimicry, through the lens of SIT, can enhance relationships, as measured by mimicker-related perceptions. Thus, the selection of these variables was based on their relevance to judgements of the quality of relationships (see section 'Further Outcomes'). Study 2 will also examine the mechanism of mimicry. In particular, whether perceived similarity is the mediator between mimicry and its outcomes variables and how this might be moderated by social groups will be under investigation. Recall that similarity was argued to be the mechanism between mimicry and its effects not only because it was suggested by prior research (e.g., van Baaren et al., 2009) but also because it is thought to make the mimicker more related to the self (see the section 'The Mechanism of Mimicry');

see also Clerke and Heerey, 2021). Consequently, study two will test H₁ – H₅ with a 3 × 2 between-participant design.

Though the manipulation of mimicry is straightforward, the manipulation of social identity requires further elaboration. As the social groups selected refer to gender, gender must be a relevant theme for the experiment itself (see cover story below). Consequently, the context selected for the interview revolved around feminism for multiple reasons. First, feminism, especially among female students of the younger generation is an important and present topic (for a discussion about modern feminism, see Budgeon, 2011). This is also the reason why this experiment only aimed at female participants (see below). Second, the topic feminism gives inherent rise to gender categorisations, which are required for the nature of the study. Consequently, feminism appears to be an appropriate context for the aims of this study.

For the group manipulation itself, the study employs a similar strategy to the first study, that is, a different framing of the experimenter. The framing of the in-group condition comprises less stereotypical masculine attributes while the framing of the out-group condition comprises stereotypical masculine attributes. Rather than creating real in-group and out-group conditions, however, this approach results in two out-group conditions, one strong and one relatively weak, as the experimenter has to remain the same (and is male). However, though real in-group and out-group scenarios cannot be created, the differences between the strong out-group and the weak out-group condition are still expected to be sufficiently strong to at least assimilate the difference between the in-group and the out-group condition.

Sample Size Calculation

Similar steps used for the sample size calculation in Study 1 are applied here. Based on the same rationale, a medium-large effect size of .3, a probability value (α) of .05, and a power of .95 are used for the calculation. However, as Study 2 involves a 3 × 2 design, the numerator (df) equals 2 whilst the number of groups equals 6. Accordingly, the required total sample size is 175 participants or roughly 30 participants per group.

Participants and Recruitment

The recruitment strategies were the same as in Study 1. Similarly, participants were not supposed to be aware of the real purpose of the experiment and consequently, it

was not fully disclosed. However, as the context of the study changed, the cover story also required adjustments. The study was advertised as an investigation into how female attitudes and abilities change depending on whether they attend university. In particular, the participant information sheet stated:

It is known that universities can shape the mind and behaviour of individuals. However, the way this is done and how people are different after they have attended university is not well-known. Therefore, the aim of this study is to find out whether the particular abilities and attitudes of individuals, females in particular, change and how they change when they attend university. In other words, how does the university shape attitudes and abilities of females?

Consequently, potential participants were told that the study revolved around female world-views. Further, they were told that the study includes an interview about a randomly selected topic whilst, in fact, the topic was predecided to be feminism. The purpose of the study was deliberately held generic rather than specifically mentioning feminism. The reason for this regards the danger of participants detecting the group manipulation. Framing the entire experiment as a study around feminism and then introducing someone who is supposedly stereotypical male (for strong out-group condition) might have led to doubts regarding the credibility of the purpose of the experiment. Similar to Study 1, female students who were interested in participating sent an email to the researcher, who then replied with a copy of the participant information sheet, with a suggestion for time and date for a 30-minute slot, and with a map of how to get to the laboratory. The laboratory was the same in Study 2 as in Study 1. The research project was framed again as a study across multiple universities under the supervision of a fictive character called *John Smith*. Accordingly, students were believed to be in contact with *John* whilst the experimenter was believed to be a research assistant. Though the need to hide the university membership of the researcher did not exist in Study 2, this approach of communication was used to keep the recruitment strategies equal across the two studies.

In total, 241 participants participated in the study. Based on the sample size calculation, the number of participants is sufficient. Similar to Study 1, the reasons for exceeding the minimum sample size required are (a) uncertainty about how many

individuals would attend the experiment, decide to withdraw, or would not meet the requirements based on the manipulation check (see measures), and (b) an unwillingness to cancel experiments which were already scheduled once the minimum sample size was reached.

Procedure

The procedure of Study 2 strongly resembled the procedure elaborated in Study 1, differing only in the priming of social identities and the number of mimicry conditions.

The experiment was conducted individually. Once participants provided initial consent, the experimenter left the main room. Participants were initially asked to fill in a scale to measure to which degree they believe society is sexist as well as an indication as to whether they would describe themselves as feminists (see measures). Considering that the social groups used in this study were gender-related in the context of feminism, the purpose of taking these measures was to get an indication as to how they think about sexism and feminism and, if needed, to control for them in the analysis. For example, it is plausible that females who do not believe in sexism in society or who oppose feminism, compared to females who think differently, also perceive a stereotypical male person differently. Thus, their personal world views of society in this regard might directly affect the manipulation as a result of being related to it. Hence, an indication of their self-view on the subject matter was considered to be of importance. Accordingly, such world-views needed to be measured. To make sure they were aware of what feminism is, participants were provided with a small paragraph outlining both the general view of individuals opposing feminism and the view of individuals supporting feminism (see Appendix E for the paragraphs).

Next, participants were informed that the interview topic 'randomly' allocated to them was about feminism. Further, because of the sensitivity of the topic, they were told that they might feel more comfortable when their experimenter briefly introduces himself to them and shares information about his life. The priming, then, consisted of differently worded introductory paragraphs to which participants were randomly allocated. Previous research has shown that simply by reading a paragraph about a scenario, participants can change their attitudes towards presented stimuli such as a person (Brewer and Gardner, 1996; see also Garcia et al., 2002). In the (strong) out-group condition (i.e., stereotypical male), participants were told:

Hi, I am your experimenter for today and I want to briefly introduce myself before we will have a chat. I am currently doing a PhD in Economics. In my spare time, I like to go to the gym, play rugby, and have a pint of beer with my friends at the pub.

In contrast, the introductory paragraph for the in-group (or, weak out-group) condition stated:

Hi, I am your experimenter for today and I want to briefly introduce myself before we will have a chat. I am currently doing a PhD in Psychology. In my spare time, I like to read, go horse riding, and have a cappuccino with my friends at the café.

The goal of this manipulation was simple. The context of the interview itself (i.e., feminism), hopefully, makes gender a cognitively salient category. These paragraphs aimed to portray the mimicker as having either less stereotypical male attributes (i.e., in-group or weak out-group) or stereotypical male attributes (i.e., strong out-group). These impressions were confirmed in an online study (see pre-study) before the experiment.

After the priming stage, the experimenter entered the room and 'interviewed' the participant. To stay aligned with the cover story the interview was about feminism and lasted for approximately 5 minutes (see Appendix D for questions asked). During this time, the experimenter either mimicked the behaviour of participants, behaved naturally but did not mimic, or he sat with both feet on the floor and his hands on his lap (i.e., the former no mimicry condition, see Chartrand and Bargh, 1999). After the interview, the experimenter left the room and participants were asked to report on their experiences during the experiment by filling in a feedback questionnaire containing the dependent variables, demographic information as well as the question whether they noticed anything suspicious during the experiment (see Bailenson et al., 2008).

Finally, participants were fully debriefed, were given the opportunity once more to ask questions and provided final consent. They were also given the opportunity to still withdraw from the study within 3 weeks after the experiment. Similar to Study 1, they were given £5 as compensation for their time.

Measures

The variables measured in Study 2 correspond to H₁ – H₅. Accordingly, likability, competence, in-group identification, trust, perceived similarity, interactional justice, and perceived cooperation were measured after the interview. The perceived degree of sexism in society and the degree to which participants would describe themselves as a feminist were measured before the interview. Unless otherwise stated, all variables have been measured on a 7-point Likert scale from “Strongly disagree” (1) to “Strongly agree” (7).

Likability. Using the 5-item measure developed by Ahearne et al. (1999), likability was measured (Cronbach’s $\alpha = .88$). Two example items are “The person appears to be nice” or “The person is easy to like”.

Competence. Competence was measured using Fiske and Cuddy’s (2006) 4-item scale (Cronbach’s $\alpha = .86$). Example items are “The person appears to be competent” or “The person appears to be capable”.

In-group identification. In-group identification was measured using a 4-item scale (see Leach et al., 2008) adjusted to the in-group identity relevant to this research (female). Example items include “I am glad to be a female” or, “I think females have a lot to be proud of” (Cronbach’s $\alpha = .81$).

Similarity. The degree to which participants feel similar to the mimicker will be measured using a 1-item measure employed by Valdesolo and Desteno (2011) in their synchrony research. For this research the item states “To what extent do you feel similar in personality to the person you just had the interview with?” to be answered on a 7-point Likert scale ranging from 1 = “Strongly not similar” to 7 = “Strongly similar”.

Trust. The degree to which the mimicker comes across as trustworthy will be measured using the 4-item scale developed by Ahearne et al. (1999). “The person is someone I feel I can trust” or “The person was honest in his dealings with me” are example items (Cronbach’s $\alpha = .73$).

Interactional justice. The measure for interactional justice employed the 4-item scale developed by Colquitt (2001). “The person treated the other person in a polite manner” or “The person treated the other with respect” represent example items (Cronbach’s $\alpha = .75$).

Cooperation. The degree of perceived cooperation was measured using a slider scale (see Effron and Raj, 2019) ranging from “No degree” (0) to “Full degree” (100).

Manipulation check. Similar to Study 1, the manipulation check for social identities employs the *Inclusion of Other in the Self* scale developed by Aron et al. (1992). The identities in the seven pictures are, however, adjusted to represent identities used in this research, that is, male and female rather than University of Sheffield and the University of Leeds (see Appendix B for an illustration). To answer the question, participants were asked which of the options most accurately describes their impression of the short interview they had. Further, an eighth option labelled “None of the above” was included to provide participants with the opportunity to not select either of the pictures in case none of these represented their view of the situation. Accordingly, individuals who selected this option were excluded from the analysis.

Modern Sexism and feminism. To receive a general indication as to how sexist participants view society in general, the modern sexism scale developed by Swim et al. (1995) was employed. The scale includes 8-items. “Woman often miss out on good jobs”, “On average, people in our society treat husbands and wives equally” (reverse coded) or “It is easy to understand why women’s groups are still concerned about societal limitations of women’s opportunities” (reverse coded) represent example items (Cronbach’s $\alpha = .74$). Further, participants were asked to what extent they agree with the statement “I am a feminist” on the aforementioned 7-point Likert scale from “Strongly disagree” (1) to “Strongly agree” (7).

Results

Pre-study

The purpose of the pre-study was to test whether the group manipulation creates the desired effect. The paragraphs presented in the previous section were designed to present the experimenter either stereotypically male (i.e., out-group) or less stereotypically male (i.e., in-group, or weak out-group) by using different characteristics. Accordingly, the pre-study presented participants with either of the two paragraphs. Using a 1-item measure on a 7-point Likert scale from “Strongly Not Masculine” (1) to “Strongly Masculine” (7) participants were then asked, “How do you rate the degree of masculinity of the person?”. Participants were recruited via the

online panel *Prolific Academic* and were paid £ 0.25 to conduct the 2-minute survey (this amount is higher than the minimum reward set by *Prolific Academic*).

As Study 2 only aimed for recruiting female participants, the pre-study also included female participants only. In total, 100 individuals participated in the study. The results show a main effect of the group condition (i.e., paragraphs) on the degree of masculinity of the person ($F(1, 98) = 58.59; p < .001; d = 1.39; \eta^2 = .33$). As expected, when participants were presented with the paragraph designed for the out-group condition, they rated the person as more masculine ($M = 5.28; SD = .90; 95\% CI = [4.99, 5.57]$) compared to when they were presented with in-group paragraph ($M = 3.82; SD = 1.17; 95\% CI = [3.53, 4.11]$). Accordingly, the group manipulation appears to result in the contrast of stereotypical male and less stereotypical male. Therefore, the effect hoped for exists and the manipulation can be used in Study 2.

Experiment

Similar to Study 1, participants needed to be excluded for several reasons. First outliers were identified and removed using absolute deviation around the median (Leys et al., 2013) with a conservative rejection value of 3 units ($n = 10$). Further, individuals who did not provide final consent or subsequently withdrew from the study ($n = 5$), who detected mimicry ($n = 3$), or who did not meet the requirements regarding the manipulation check ($n = 20$) were removed for the analysis. Accordingly, data of $N = 203$ female participants were analysed (age: 18 years = 40, 19 years = 44, 20 years = 34, 21 years = 43, 22 years = 24, 23 years = 7, 24 years = 3, ≥ 25 years = 8).

Manipulation check. To check the manipulation, a one-way ANOVA was conducted with the group condition as the independent variable and the manipulation check measure as the dependent variable. As expected, the group condition significantly affected the perceived overlap between participants and experimenter ($F(1, 201) = 132.19; p < .001; d = 1.61; \eta^2 = .39$). Participants in the (strong) out-group condition perceived less overlap between themselves and the experimenter ($M = 2.79; SD = 1.29; 95\% CI = [2.50, 3.07]$) compared to participants in the in-group (or weak out-group) condition ($M = 5.14; SD = 1.61; 95\% CI = [4.85, 5.43]$). Therefore, social identities were successfully manipulated.

Similar to Study 1, the manipulation-check for mimicry was conducted In line with the literature (see Lakin et al., 2008; Tunçgenç and Cohen, 2016). A person blind to the

hypotheses of the research watched half of the recorded videos (40 videos randomly selected for each of the three behavioural conditions) and rated the degree of mimicry on a 7-point Likert scale from “no mimicry at all” (1) to “full mimicry” (7). A one-way between-participants ANOVA was conducted to test whether a difference in behavioural ratings existed between the three conditions. The results show a significant effect of mimicker behaviour ($F(2, 117) = 159.66; p < .001; \eta^2 = .73$). In the mimicry condition, the mimicker displayed more mimicry ($M = 5.03; SD = 1.67; 95\% CI = [4.67, 5.38]$) than in both the neutral condition ($M = 1.30; SD = 0.99; 95\% CI = [.95, 1.65]$), and static condition ($M = 1.00; SD < 0.01; 95\% CI = [.65, 1.35]$). Post-hoc tests showed a significant difference ($p < .001$) between the mimicry condition and both other conditions but no statistical significance between the no mimicry (neutral) and no mimicry (static) condition ($p = .458$). Accordingly, mimicry was successfully manipulated.

Modern sexism and feminism. Due to the context of the study, it might be useful to briefly outline the extent to which participants believe in a sexist society and whether they see themselves as feminists. On average, participants believed that sexism exists in society, expressed by a mean of $M = 5.36$ ($SD = 0.77$). Consequently, participants recognised gender to be an important category in society. Additionally, participants saw themselves as feminists ($M = 6.02; SD = 1.03$). This reflects their belief in a need for reconciling gender differences even before the manipulation. Presenting a stimulus to participants emphasising the gender-related prototypicality of the experimenter, then, speaks directly to such world-views. Accordingly, these measures underpin the group manipulation, because they show gender as a relevant category to participants. This relevance is reflected in a strong difference in self-other overlap revealed in the manipulation check above.

Table 3 Correlation matrix Study 2

	1	2	3	4	5	6
Likability						
Competence	.530***					
In-group Identification	.223***	.296***				
Similarity	.574***	.232***	.111			
Trust	.508***	.374***	.197**	.317***		
Interactional Justice	.374***	.387***	.242***	.205**	.480***	
Cooperation	.507***	.249***	.245***	.418***	.527***	.290***

Note. Asterisks indicate the level of significance (**p ≤ .001; *p ≤ .01).

Before the remainder of the analysis will test H₁ – H₅ through univariate tests, I will briefly report the results of a MANOVA. Here, the results show a main effect of both mimicry ($F(14, 382) = 2.65$; $p = .001$; $\eta^2 = .09$), group membership ($F(7, 191) = 12.61$; $p < .001$; $\eta^2 = .32$) and a mimicry group membership interaction ($F(14, 382) = 1.73$; $p = .048$; $\eta^2 = .06$). The remainder of the analysis will report a 3 (mimicry: mimicry, no mimicry (neutral), no mimicry (static)) × 2 (group membership: in-group, out-group) between-participants ANOVA for each of the dependent variables. For mediation analyses, SPSS process v.3.4 (Hayes, 2018) was used. Whilst Table 3 shows the correlation matrix, a summary of the results in terms of overall means, standard deviations and 95% confidence intervals for each dependent variable across the conditions is presented in Table 4.

Table 4 Mean ratings of participants across conditions for each dependent variable

Behaviour	Group	Likability			Competence		
		M	SD	95% CI	M	SD	95% CI
Mimicry	In	5.88	.63	[5.61, 6.14]	6.13	.74	[5.87, 6.39]
	Out	5.24	.79	[4.99, 5.48]	5.78	.71	[5.55, 6.02]
No Mimicry (Neutral)	In	5.75	.71	[5.49, 6.00]	6.09	.78	[5.85, 6.34]
	Out	5.36	.69	[5.11, 5.62]	6.05	.69	[5.80, 6.30]
No Mimicry (Static)	In	5.59	.87	[5.35, 5.84]	6.23	.66	[5.99, 6.47]
	Out	4.49	.75	[4.23, 4.75]	5.82	.81	[5.57, 6.07]
In-Group Identification				Trust			
		M	SD	95% CI	M	SD	95% CI
Mimicry	In	5.98	.86	[5.67, 6.29]	5.81	.66	[5.48, 6.14]
	Out	5.96	.84	[5.67, 6.25]	5.23	1.09	[4.93, 5.53]
No Mimicry (Neutral)	In	6.07	.77	[5.77, 6.37]	5.88	.83	[5.56, 6.19]
	Out	5.82	.95	[5.51, 6.12]	5.21	.98	[4.89, 5.53]
No Mimicry (Static)	In	5.80	.99	[5.50, 6.09]	5.49	.95	[5.17, 5.79]
	Out	5.79	.89	[5.48, 6.09]	5.11	1.00	[4.79, 5.43]
Interactional Justice				Similarity			
		M	SD	95% CI	M	SD	95% CI
Mimicry	In	6.51	.61	[6.28, 6.74]	5.19	.65	[4.81, 5.57]
	Out	6.46	.56	[6.25, 6.67]	4.22	1.48	[3.87, 4.56]
No Mimicry (Neutral)	In	6.63	.60	[6.41, 6.85]	5.15	.82	[4.79, 5.51]
	Out	6.42	.60	[6.20, 6.65]	4.30	1.10	[3.94, 4.67]
No Mimicry (Static)	In	6.57	.69	[6.36, 6.79]	4.94	.99	[4.59, 5.30]
	Out	6.31	.80	[6.09, 6.53]	3.12	1.11	[2.75, 3.49]
Cooperation							
		M	SD	95% CI			
Mimicry	In	90.00	10.57	[83.93, 96.07]			
	Out	78.14	17.35	[72.58, 83.69]			
No Mimicry (Neutral)	In	91.06	10.42	[85.27, 96.85]			
	Out	72.36	21.74	[66.48, 78.25]			
No Mimicry (Static)	In	83.34	17.35	[77.63, 89.05]			
	Out	69.64	21.42	[63.76, 75.52]			

Note. M = mean; SD = standard deviation; CI = confidence interval.

Similarity. The analysis revealed a main effect of mimicry on perceived similarity ($F(2, 197) = 9.19; p \leq .001; \eta^2 = .09$) as well as a main effect of group membership ($F(1, 197) = 65.11; p \leq .001; d = 1.06; \eta^2 = .25$). As expected, a mimicry \times group membership interaction was also observed ($F(2, 197) = 4.15; p = .017; \eta^2 = .04$). In the strong out-group condition, participants perceived themselves as less similar to the experimenter

in the no mimicry (static) condition ($M = 3.12$; $SD = 1.11$; $95\% CI = [2.75, 3.49]$), compared to both the no mimicry (neutral) condition ($M = 4.30$; $SD = 1.10$; $95\% CI = [3.94, 4.67]$) and mimicry condition ($M = 4.22$; $SD = 1.48$; $95\% CI = [3.87, 4.56]$). No difference was observed between the neutral and the mimicry condition, though. Similarly, no differences across the levels of mimicry were observed in the weak out-group-condition.

Further, the (strong)out-group experimenter consistently received lower similarity ratings across the three mimicry conditions (no mimicry (static): $t(66) = -7.09$, $p \leq .001$, $d = 1.74$); no mimicry (neutral): $t(65) = -3.54$, $p \leq .001$; $d = .88$); mimicry: $t(66) = -3.63$; $p \leq .001$; $d = .82$). Figure 4 illustrates perceived similarity ratings across the conditions. An ANCOVA confirmed the main effect of mimicry ($F(2, 194) = 8.85$; $p \leq .001$; $\eta^2 = .08$), group membership ($F(1, 194) = 64.70$; $p \leq .001$; $d = 1.07$; $\eta^2 = .25$), and the mimicry \times group interaction ($F(2, 194) = 4.24$; $p = .016$; $\eta^2 = .04$) when age ($F < 1$; $p = .965$; $\eta^2 \leq .01$), ethnicity ($F < 1$; $p = .448$; $\eta^2 \leq .01$), and sexist beliefs ($F < 1$; $p = .505$; $\eta^2 \leq .01$) were controlled for.

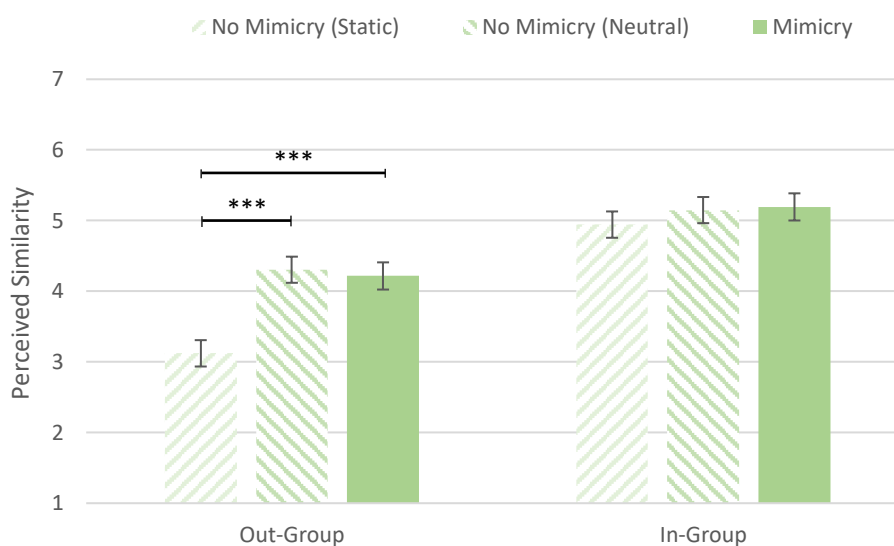


Figure 4 Mean similarity ratings as a function of mimicry condition and group membership. Asterisks indicate a significant statistical difference between conditions rounded to two decimal places ($***p \leq .001$). Error bars represent $\pm 1 SE$.

H4 stated that perceived similarity for (weak) out-group members is higher in response to mimicry (H4a), compared to no mimicry, whereas it is hypothesised to be lower in response to mimicry, compared to no mimicry, for strong out-group members (H4b). First, the results demonstrate significantly less similarity for strong out-group members, compared to (weak) out-group members. However, for (weak) out-group

members, perceived similarity did not vary across the mimicry conditions, rejecting H_{4a}. For strong out-group members, the analysis shows that perceived similarity is higher for participants in response to mimicry, compared to the no mimicry (static) condition, rejecting H_{4b}. Though it initially may seem like mimicry increases similarity; when the no mimicry (neutral) condition is taken into account, the condition that mimicry needs to be compared to, mimicry does not appear to affect perceived similarity. Instead, compared to neutral behaviour and mimicry, static behaviour does have a negative effect. Recall that similarity is hypothesised by the literature to be the mediating link between mimicry and its outcomes. Accordingly, the results suggest the static condition, as opposed to the mimicry condition, to be the driving force behind the mediation.

Likability. The analysis showed a main effect of mimicry on likability of the experimenter ($F(2, 197) = 10.62; p \leq .001; \eta^2 = .10$) alongside a main effect of group membership ($F(1, 197) = 45.29; p \leq .001; d = .87; \eta^2 = .19$) and a mimicry \times group membership interaction ($F(2, 197) = 4.01; p = .020; \eta^2 = .04$), as illustrated by Figure 5. Only when participants perceived the experimenter as a strong out-group member, did likability ratings differ across the mimicry conditions. In particular, participants liked the experimenter the least in the no mimicry (static) condition ($M = 4.49; SD = .75; 95\% CI = [4.23, 4.75]$), compared to the no mimicry (neutral) condition ($M = 5.36; SD = .69; 95\% CI = [5.11, 5.62]$) and the mimicry condition ($M = 5.24; SD = .79; 95\% CI = [4.99, 5.48]$). The difference between no mimicry (neutral) and mimicry was not statistically significant ($p > .05$). Further, when comparing (weak) out-group ratings with strong out-group ratings for each mimicry condition separately, differences were significant. The out-group experimenter consistently received lower likability ratings across the three mimicry conditions (no mimicry (static): $t(66) = -5.62, p \leq .001, d = 1.36$; no mimicry (neutral): $t(65) = -2.23, p = .029, d = .54$; mimicry: $t(66) = -3.701; p \leq .001; d = .89$). Using an ANCOVA and, therefore, controlling for age ($F < 1; p = .364; \eta^2 \leq .01$), ethnicity ($F < 1; p = .505; \eta^2 \leq .01$), and sexist beliefs ($F(1, 194) = 1.79; p = .183; \eta^2 \leq .01$), main effects of mimicry ($F(2, 194) = 10.05; p \leq .001; \eta^2 = .09$) and group membership ($F(1, 194) = 43.26; p \leq .001; d = .87; \eta^2 = .18$) as well as the interaction of the two ($F(2, 194) = 3.96; p = .021; \eta^2 = .04$) were still observed.

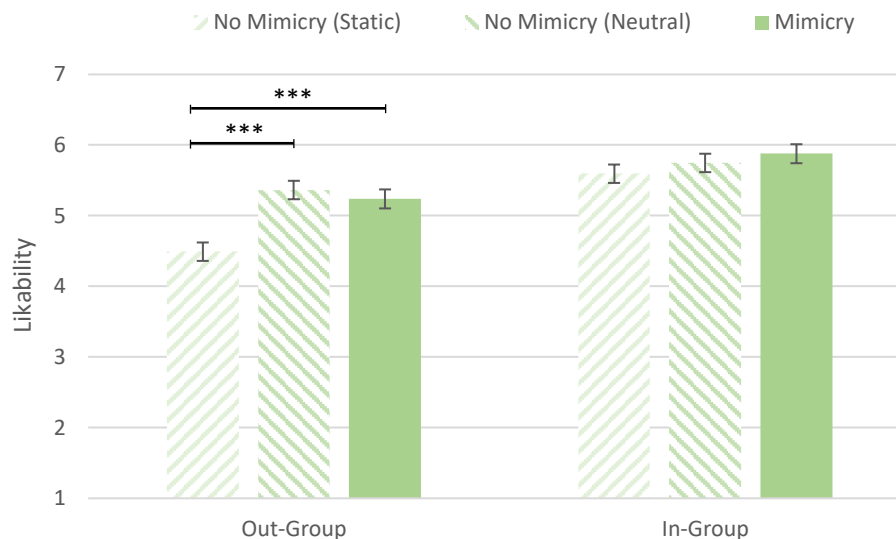


Figure 5 Mean likability ratings as a function of mimicry condition and group membership. Asterisks indicate a significant statistical difference between conditions rounded to two decimal places ($***p \leq .001$). Error bars represent ± 1 SE.

In the same way as similarity ratings, H_1 stated that mimicry, compared to no mimicry, results in greater likability of the mimicker for (weak) out-groups (H_{1a}) but lower likability for strong out-groups (H_{1b}). For (weak) out-groups, the analysis revealed no effects for mimicry and, consequently, H_{1a} is not supported. In contrast to H_{1b} , mimicry does not have an effect on likability for strong out-group members when it is compared to no mimicry (natural). Only when mimicry is compared to no mimicry (static), the very condition assumed by the literature to be the control condition, then mimicry appears to result in higher, as opposed to lower, likability ratings.

To test the mediating effect of similarity between mimicry and likability, SPSS process v.3.4 (Hayes, 2018) was used. Based on the literature reviewed, a moderated mediation was hypothesised. Accordingly, a multi-categorical moderated mediation model (model 7, see Figure 6) is used for the analysis. Through having a multi-categorical predictor variable, two regressions are required, one to compare mimicry with no mimicry (static) and another for comparing mimicry with no mimicry (neutral). Coefficients regarding the former will be referred to as β_1 whereas coefficients regarding the latter will be referred to as β_2 . To generate the model, all variables were standardised.

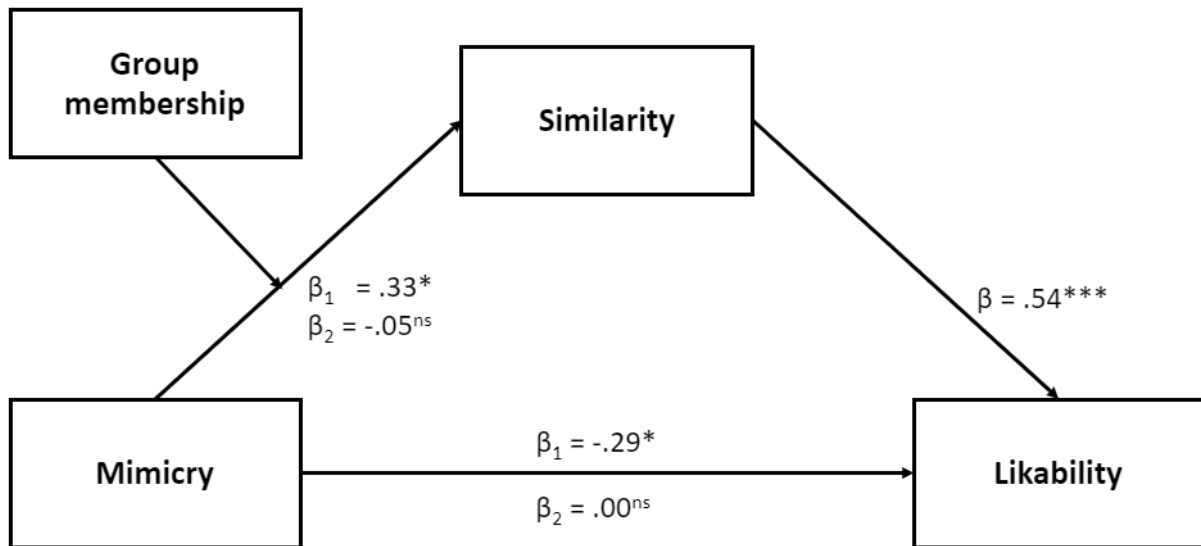


Figure 6 Moderated mediation model testing the mediating effect of similarity on the relationship between mimicry and liking, moderated by social group membership. β = standardised coefficient. β_1 = coefficient for path comparing mimicry and no mimicry (static); β_2 = coefficient for path comparing no mimicry (neutral) and mimicry. ns = non significant. Asterisks indicate a statistical significant coefficient (*** $p \leq .001$; * $p \leq .05$).

As indicated already by the analysis regarding the effect of mimicry on similarity, the model confirms an effect of the mimicry variable on perceived similarity but only when the mimicry condition is compared to the no mimicry (static) condition ($\beta_1 = .33$; $p = .023$), as opposed to the no mimicry (neutral) condition ($\beta_2 = -.05$; $p = .719$). Further, this effect is significant for the strong out-group experimenter ($t = -4.27$; $p < .001$) but not for experimenters perceived as (weak) out-group members ($t = .34$; $p = .735$). Likability, in turn, is significantly predicted by similarity ($\beta = .54$; $p < .001$) indicating a mediation. However, as shown already, the difference between no mimicry (static) behaviour and mimicry also predicts likability ($\beta_1 = -.29$; $p = .044$) but not the difference between mimicry and no mimicry (neutral) behaviour ($\beta_2 < .01$; $p = .979$). Finally, a relative conditional effect analysis (RCEA) confirmed the overall indirect effect ($\beta_1 = -.47$; 95% CI = $[-.7665, -.1931]$)³. These results remain unchanged when age, ethnicity, or sexist beliefs are inserted into the model as covariates.

H₅ hypothesised that similarity is the mediating link for the effect of mimicry on likability and that, for in-groups, mimicry increases perceptions of similarity leading to an increase in likability (H_{5a}). For strong out-groups, mimicry was hypothesised to result in less similarity which, in turn, should lead to less likability (H_{5b}). First, mimicry, in

³ Relative conditional effect analysis was preferred to a Sobel test (Sobel, 1982) for two reasons. First, a Sobel test is only appropriate for large sample sizes (see Preacher and Hayes, 2004). Second, RCEA includes Bootstrapping and, consequently, does not rely on sample-related assumptions, in contrast to the Sobel test (Preacher and Hayes, 2004).

particular the no mimicry (static) condition, affects likability directly, indicating a partial rather than a full mediation. Second, it is not mimicry per se but rather the no mimicry (static) condition resulting in less similarity. Additionally, this effect was only observed among strong out-group members, thus rejecting H_{5a}. Consequently, though the perceived similarity is lower for strong out-groups which, in turn, results in less likability for strong out-groups, it is not the result of mimicking but rather of static behaviour. Accordingly, H₅ must be rejected.

Competence. The analysis showed a main effect of group membership of competency ratings ($F(1, 197) = 6.70; p = .010; d = .37; \eta^2 = .03$) but no effect of mimicry ($F < 1; p = .645; \eta^2 \leq .01$). In particular, separate comparisons showed that differences in competency ratings between (weak) out -group and strong out-group condition for the no mimicry (static) condition ($t(66) = -2.29, p = .025, d = .57$) as well as for the mimicry condition ($t(66) = -1.96, p = .054, d = .48$) but not for the no mimicry (neutral) condition ($t(65) = -.24, p = .813, d = .05$). More specifically, in the no mimicry (static) condition, participants rated the competence of a strong out-group member lower ($M = 5.82; SD = .81; 95\% CI = [5.57, 6.07]$) compared to the competence of a (weak) out -group member ($M = 6.23; SD = .66; 95\% CI = [5.99, 6.47]$). A similar pattern was observed in the mimicry condition. Participants rated the competence higher for (weak) out -group members ($M = 6.13; SD = .74; 95\% CI = [5.87, 6.39]$) compared to strong out-group members ($M = 5.78; SD = .71; 95\% CI = [5.55, 6.02]$). A mimicry \times group membership interaction was also not observed ($F(2, 197) = 1.21; p = .300; \eta^2 \leq .01$). Figure 7 illustrates mean competence ratings across mimicry and group conditions. These results remain unchanged (group membership: $F(1, 194) = 7.92; p = .005; d = .39; \eta^2 = .04$) when an ANCOVA is conducted controlling for age ($F(1, 194) = 3.62; p = .059; \eta^2 = .02$), sexist beliefs ($F(1, 194) = 1.29; p = .256; \eta^2 \leq .01$), and ethnicity ($F(1, 194) = 1.07; p = .302; \eta^2 \leq .01$).

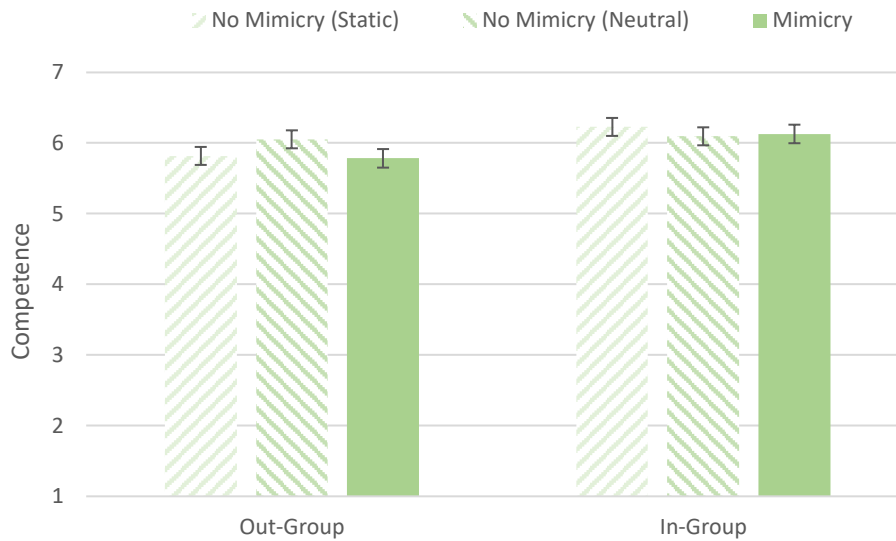


Figure 7 Mean competence ratings as a function of mimicy condition and group membership. Error bars represent ± 1 SE.

The hypothesised mediating function of perceived similarity on the relationship between mimicy and competence was analysed using the same method as for likability. Further, the first part of the mediation (i.e., the effect of mimicy on similarity mediated by group membership), is not discussed here, because it was already discussed in the previous section. The model can be seen in Figure 8.

For the second part of the mediation analysis, the results revealed that perceived similarity significantly predicts competence ratings ($\beta = .25$; $p \leq .001$). In support of a full mediation, mimicy does not predict competence ($\beta_1 = .24$; $p = .168$; $\beta_2 = .16$; $p = .322$). The relative conditional effect analysis confirmed the overall indirect effect, that is, the mediation ($\beta_1 = -.21$; 95% CI = [-.4230, -.0632]). These results remain unchanged when age, ethnicity, or sexist beliefs are controlled for.

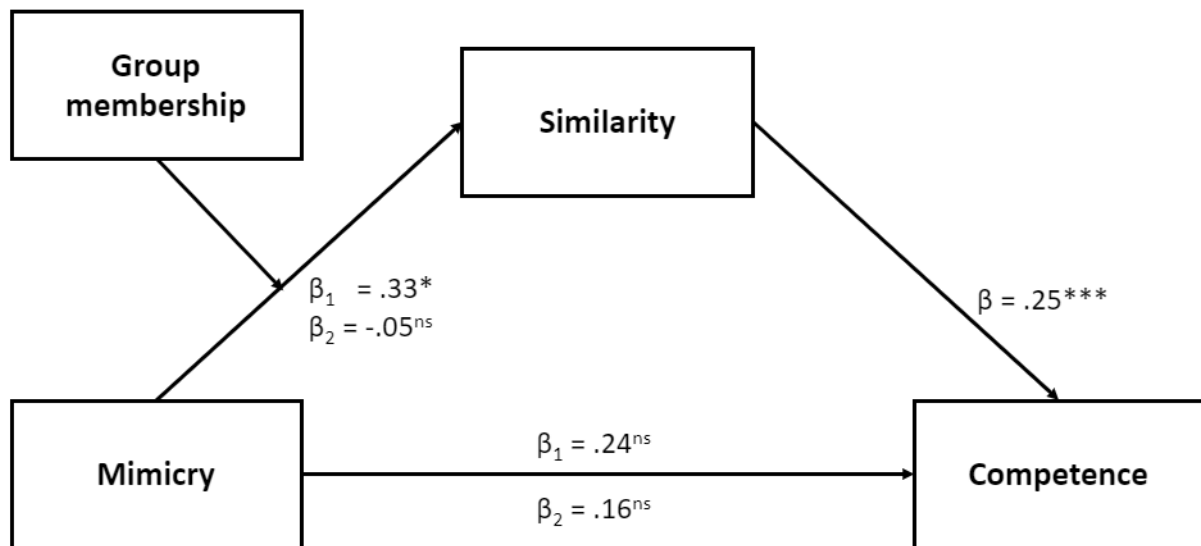


Figure 8 Moderated mediation model testing the mediating effect of similarity on the relationship between mimicry and competence, moderated by social group membership. β = standardised coefficient. β_1 = coefficient for path comparing mimicry and no mimicry (static); β_2 = coefficient for path comparing no mimicry (neutral) and mimicry. ns = non significant. Asterisks indicate a statistical significant coefficient (*** $p \leq .001$; * $p \leq .05$).

Though Study 2 revealed a main effect of group membership, mimicry did not have any direct effect. Further, a mimicry \times group interaction was not observed and, therefore, Study 2 rejects H₂. In support of the hypothesised mediation, similarity significantly predicts competence ratings whilst mimicry does not have a direct effect on competence. However, as mentioned before, the no mimicry (static) condition predicts similarity as opposed to mimicry itself. Though a mediational effect exists, H₅ thus needs to be rejected.

In-group identification. The analysis did neither reveal any main effect of mimicry or group membership on in-group identification, nor did it reveal a mimicry \times group membership interaction ($F_s < 1$; $p_s > .05$; $\eta_s^2 \leq .01$). These results did not change, when an ANCOVA was conducted, controlling for age ($F(1, 194) = 2.17$; $p = .143$; $\eta^2 = .01$), sexist beliefs ($F(1, 194) = 1.65$; $p = .200$; $\eta^2 \leq .01$), and ethnicity ($F < 1$; $p = .596$; $\eta^2 \leq .01$). Accordingly, H₃ not supported. Further, an exploratory mediation analysis did not reveal any significant results so that the overall indirect path did not exist ($\beta_1 = -.09$; 95% CI = [-.2459, .0571]). The model with the coefficients is illustrated in Appendix F alongside with the bar-diagram displaying the means across the conditions.

Trust. Results show a main effect of group membership on trust ($F(1, 197) = 16.81$; $p < .001$; $d = .57$; $\eta^2 = .08$) but no effect mimicry ($F(2, 197) = 1.432$ $p = .241$; $\eta^2 \leq .01$). Further, a mimicry \times group interaction was also not observed ($F < 1$; $p = .667$; $\eta^2 \leq$

.01). Separate comparisons showed a difference in trust ratings between (weak) out-group and strong out-group conditions in the no mimicry (neutral) condition ($t(65) = -2.99, p = .004, d = .74$) and in the mimicry condition ($t(66) = -2.67, p = .010, d = .63$) but not in the no mimicry (static) condition. Specifically, participants trusted the experimenter less in the strong out-group condition (mimicry: $M = 5.23; SD = 1.09; 95\% CI = [4.93, 5.53]$; no mimicry (neutral): $M = 5.21; SD = .98; 95\% CI = [4.89, 5.53]$) compared to the (weak) out-group condition (mimicry: $M = 5.81; SD = .66; 95\% CI = [5.48, 6.14]$; no mimicry (neutral): $M = 5.88; SD = .83; 95\% CI = [5.56, 6.19]$). When an ANCOVA was conducted to control for age ($F(1, 194) = 1.79; p = .183; \eta^2 = .01$), sexist beliefs ($F < 1; p = .899; \eta^2 \leq .01$), and ethnicity ($F(1, 194) = 1.65; p = .201; \eta^2 = .01$), group membership still had an effect on trust ($F(1, 194) = 18.27; p \leq .001; d = .60; \eta^2 = .09$). Mean trust ratings across the conditions are illustrated in Figure 9.



Figure 9 Mean trust ratings as a function of mimicry condition and group membership. Error bars represent ± 1 SE.

In support of the mediation model (see Figure 10), similarity significantly predicts trust ($\beta = .31; p \leq .001$) whilst mimicry does not have an effect on trust ($\beta_1 = -.05; p = .762; \beta_2 = .04; p = .805$). The mediation was confirmed by relative conditional effect analysis ($\beta_1 = -.27; 95\% CI = [-.4633, -.0994]$). Importantly, this effect still exists when age, sexist beliefs and ethnicity are used as covariates.

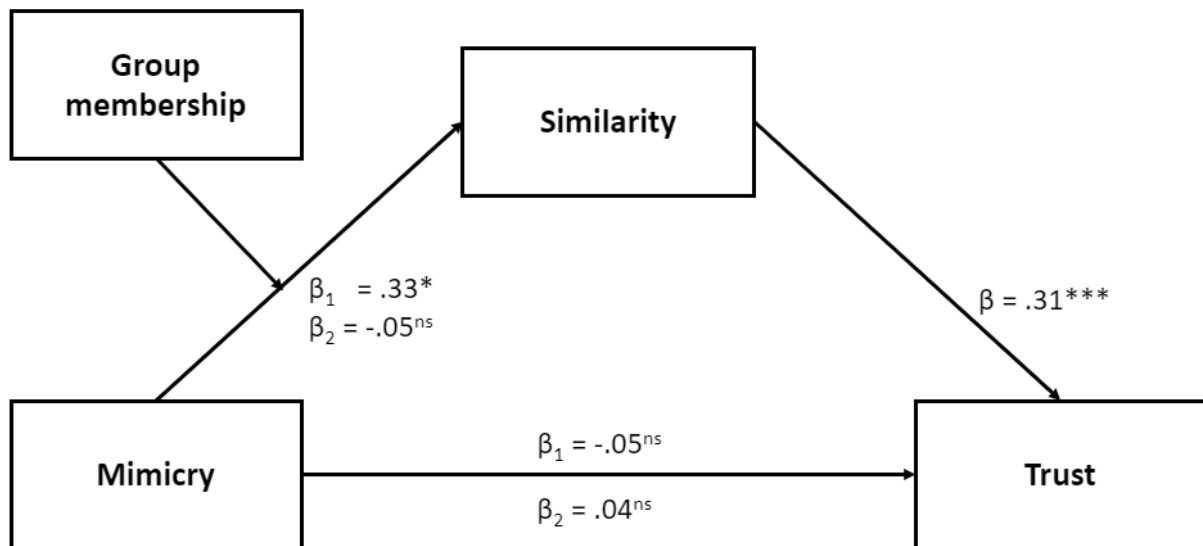


Figure 10 Moderated mediation model testing the mediating effect of similarity on the relationship between mimicry and trust, moderated by social group membership. β = standardised coefficient. β_1 = coefficient for path comparing mimicry and no mimicry (static); β_2 = coefficient for path comparing no mimicry (neutral) and mimicry. ns = non significant. Asterisks indicate a statistical significant coefficient (*** $p \leq .001$; * $p \leq .05$).

Similar to the preceding mediation analyses and in support of the hypothesis, similarity appears to mediate the relationship between mimicry and trust. However, the fact that similarity is only affected by the no mimicry (static) condition rather than mimicry rejects the hypothesis that mimicry per se increases trust through an increase in similarity (see similarity measure). Accordingly, H₅ for trust needs to be rejected.

Cooperation. The analysis revealed a main effect of mimicry ($F(2, 197) = 3.47$; $p = .033$; $\eta^2 = .03$) and group membership ($F(1, 197) = 37.54$; $p \leq .001$; $d = .84$; $\eta^2 = .16$) on perceived cooperation but not a mimicry \times group membership interaction ($F < 1$; $p = .491$; $\eta^2 \leq .01$). In the no mimicry (static) condition, participants experienced the least cooperation ($M = 76.49$; $SD = 20.48$; $95\% CI = [72.39, 80.59]$) compared to both the no mimicry (neutral) condition ($M = 81.71$; $SD = 19.29$; $95\% CI = [77.58, 85.84]$) and mimicry condition ($M = 84.07$; $SD = 15.72$; $95\% CI = [79.96, 88.18]$). Post-hoc comparisons showed that only the comparison between no mimicry (static) condition and mimicry is statistically significant ($p = .054$).

Further, separate group comparisons show that only in the (weak) out-group condition, cooperation ratings differed significantly ($t(67) = 2.25$, $p = .029$, $d = .54$). Specifically, cooperation ratings were lower in the no mimicry (static) condition ($M = 83.34$; $SD = 17.35$; $95\% CI = [77.63, 89.05]$) compared to the no mimicry (neutral) condition ($M = 91.06$; $SD = 10.42$; $95\% CI = [85.27, 96.85]$). Generally, participants in the strong out-group condition perceived the interaction as less cooperative ($M =$

73.38; $SD = 20.29$; 95% $CI = [70.05, 76.71]$) compared to participants in the (weak) out -group condition ($M = 88.13$; $SD = 13.62$; 95% $CI = [84.75, 91.52]$). The mean cooperation ratings are illustrated in Figure 11. The results remained unchanged when an ANCOVA controlled for age ($F < 1$; $p = .808$; $\eta^2 \leq .01$), ethnicity ($F(1, 194) = 2.75$; $p = .099$; $\eta^2 \leq .01$), and sexist beliefs ($F(1, 194) = 1.91$; $p = .169$; $\eta^2 \leq .01$).



Figure 11 Mean cooperation ratings as a function of mimiry condition and group membership. Asterisks indicate a significant statistical difference between conditions rounded to two decimal places ($*p \leq .05$). Error bars represent ± 1 SE.

According to the mediation model (see Figure 12), similarity significantly predicts cooperation ($\beta = .41$; $p \leq .001$) whilst mimiry does not have an effect on cooperation ($\beta_1 = -.17$; $p = .277$; $\beta_2 = -.11$; $p = .475$). The mediation was confirmed by relative conditional effect analysis ($\beta_1 = -.35$; 95% $CI = [-.5897, -.1454]$). Importantly, this effect still exists when age, sexist beliefs and ethnicity are used as covariates. In support of the hypothesis, similarity appears to mediate the relationship between mimiry and cooperation. However, considering that only the no mimiry (static) condition affects similarity (rather than the mimiry condition per se), H_5 for cooperation needs to be rejected.

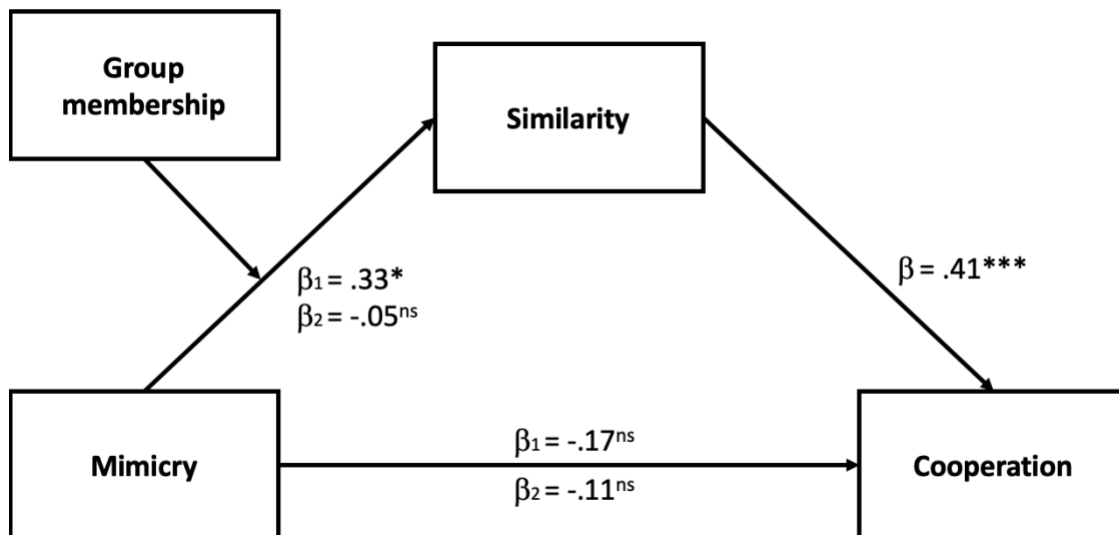


Figure 12 Moderated mediation model testing the mediating effect of similarity on the relationship between mimicry and cooperation, moderated by social group membership. β = standardised coefficient. β_1 = coefficient for path comparing mimicry and no mimicry (static); β_2 = coefficient for path comparing no mimicry (neutral) and mimicry. ns = non significant. Asterisks indicate a statistical significant coefficient (*** $p \leq .001$; * $p \leq .05$).

Interactional Justice. The analysis did not reveal an effect of mimicry ($F < 1$; $p = .737$; $\eta^2 \leq .01$) and group membership ($F(1, 197) = 3.57$; $p = .060$; $d = .26$; $\eta^2 = .02$) on interactional justice. Neither did it reveal a mimicry x group interaction ($F < 1$; $p = .613$; $\eta^2 \leq .01$). The bar chart illustrating mean justice ratings across the conditions can be found in Appendix G. An ANCOVA controlling for age ($F(1, 194) = 4.79$; $p = .030$; $\eta^2 = .02$), sexist beliefs ($F(1, 194) = 5.92$; $p = .016$; $\eta^2 = .03$), and ethnicity ($F(1, 194) = 1.49$; $p = .222$; $\eta^2 \leq .01$), showed a main effect of group membership ($F(1, 194) = 4.89$; $p = .028$; $\eta^2 = .03$) but not for mimicry ($F < 1$; $p = .453$; $\eta^2 \leq .01$).

In support of the mediation model (see Figure 13), similarity significantly predicts interactional justice ($\beta = .20$; $p = .005$) whilst mimicry does not ($\beta_1 = .04$; $p = .816$; $\beta_2 = .06$; $p = .710$). The mediation was confirmed by relative conditional effect analysis ($\beta_1 = -.18$; 95% CI = [-.3846, -.0348]). Importantly, this effect still exists when age, sexist beliefs and ethnicity are used as covariates. Nonetheless, H₅ for interactional justice needs to be rejected because, like with the preceding mediation models, the mediation is driven by the no mimicry (static) condition and not by the mimicry condition.

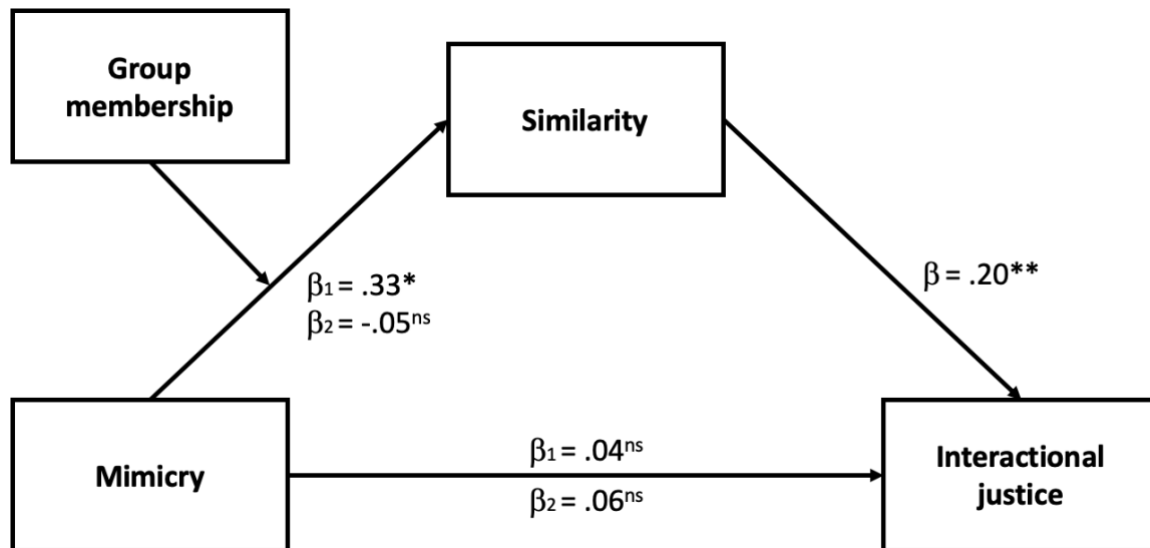


Figure 13 Moderated mediation model testing the mediating effect of similarity on the relationship between mimicry and interactional justice, moderated by social group membership. β = standardised coefficient. β_1 = coefficient for path comparing mimicry and no mimicry (static); β_2 = coefficient for path comparing no mimicry (neutral) and mimicry. ns = non significant. Asterisks indicate a statistical significant coefficient (*** $p \leq .001$; ** $p \leq .01$; * $p \leq .05$).

Summary

The aim of Study 2 was to extend Study 1 through testing H₁ – H₅, therefore exploring whether or not social groups moderate the effect of mimicry on outcomes such as likability, competence, or trust. Another aim was to test the widely held assumption that perceived similarity with the mimicker mediates those effects. As Study 1 did not find a mimicry \times group membership interaction due to a possible lack of relevance and accessibility of the categorisation variable for participants, Study 2 utilised gender as a more relevant and accessible categorisation factor. Finally, Study 2 explored two distinct foci concerning the effect of mimicry. The first regarded a comparison between mimicry and neutral behaviour, the condition mimicry is required to be compared to. This enables an investigation as to whether mimicry compared to normal behaviour has effects. The second, in contrast, is comparing mimicry with static behaviour, the condition used in Study 1 and mostly used by mimicry researchers. This focus allows for an investigation into the locus of mimicry effects. In particular, whether effects observed in Study 1 and other studies of mimicry are likely to stem not from mimicry itself but rather from a difference of static behaviour compared to both neutral behaviour and mimicry.

Overall, the analysis only showed the hypothesised mimicry × group membership interaction for perceived similarity and likability. Mimicry, as a variable, only had a main effect on cooperation, likability, and similarity. Importantly, however, mimicry has been shown to have no effects when it is compared to neutral behaviour whereas the effect of mimicry as a variable stems from the negative effect of the static condition. Group membership had a main effect on most variables, indicating strong group boundaries. The mediation analysis initially showed that mimicry had an effect on similarity which is the mediating link to outcomes such as likability, trust, competence, interactional justice and cooperation. These effects are, however, driven by the static condition so that mimicry, compared to neutral behaviour, does not have an effect. Additionally, the mediation was only observed among (strong) out-group members. In summary, then, static behaviour, compared to both neutral behaviour and mimicry, decreases perceived similarity to the mimicker. The latter, in turn, leads to less trust towards, and less perceived competence and likability of, the mimicker (alongside perceptions of justice and cooperation). These mediations were only found for (strong) out-group members but not for (weak) out-group members.

Discussion

This chapter discusses the findings of Study 1 and Study 2 with the broader literature. However, the important theoretical, empirical, methodological, and practical implications of the findings for our general understanding of mimicry will be discussed after Study 3 in the chapter 'General Discussion' to create a more holistic and comprehensive view of mimicry. At this stage, I shall also refer to Table 7 and Table 8 in the chapter 'General Discussion', which provide an overview of the findings of this work and may be used as a guide throughout the remaining chapters.

Mimicry × Group Interaction

Whilst the hypothesised mimicry × group interaction was not observed in Study 1, it was observed in Study 2 through employing more accessible and relevant social groups based on gender. Specifically, the interaction was observed for the similarity and likability measure but not for trust and competence. However, this interaction was different from what has been hypothesised. Mimicry, compared to no mimicry, was expected to increase likability for (weak) out-group members whereas it was expected to decrease likability for strong out-group members. Contrary to these hypotheses, the results revealed that the mimicry variable only affected participants in the strong out-group condition and that static behaviour rather than mimicry was the driver of the effect.

One reason for this particular finding might be the strong influence of group boundaries, on the one hand. In the pursuit of more salient group boundaries through making categories more relevant and accessible, Study 2 found strong main effects of group membership for most variables. Strong group boundaries might make effects of mimicry, or non-verbal behaviour, insufficient for (weak) out-group members. In other words, as a result of highly important group categories, biases towards a (weak) out-group experimenter are strong to such extent that both non-verbal confirmations and violations (i.e., mimicry or no mimicry) of such biases were overlooked. In contrast, when participants interacted with strong out-group members, affiliative behaviour, i.e., mimicry, is overlooked due to strong negative biases against such individuals. Instead, only behaviour confirming such negative attitudes, that is, static behaviour, is evaluated and even strengthens negative biases. This notion is strongly supported by both the literature emphasising that individuals prefer attitude-aligned information on

the one hand (Knobloch-Westerwick and Meng, 2011), and literature concerning confirmation bias on the other hand (see Donsbach, 2009; Knobloch-Westerwick et al., 2020).

Similar support may be obtained when considering research that suggests that the extent to which individuals trust in-group members, once biases are sufficiently strong (Reicher et al., 1995), is not influenced by their behaviour, whereas the behaviour of out-group members does affect their trustworthiness (Tanis and Postmes, 2005). When group boundaries become too strong, perceptions of others are de-individualised so that judgements are merely based on group membership (Reicher et al., 1995; Postmes et al., 1998). Taken this way, it appears to be possible that individuals were strongly biased towards (weak) out-group members to an extent where behaviour becomes irrelevant for judging others (see also Reicher et al., 1995; Postmes et al., 1998) whereas the strong negative biases towards (strong) out-group members only make bias-consistent behaviour relevant for judgements (for another reason as to why mimicry per se did not affect out-group members, see Simon et al., 2015). The rationale as to why the mimicry \times group interaction was observed in Study 2 for likability (and similarity) but not in Study 1, may be the same as to why the observed interaction was different than expected: The difference of relevance and accessibility of the group category which resulted in (too) strong group boundaries.

On the other hand, there may be another, perhaps more plausible reason. I outlined in Study 1 that mimicry, compared to no mimicry, may overcome perceived group barriers. In Study 2, however, mimicry per se did not elicit any effects. Thus, it may be that static behaviour, compared to mimicry and neutral behaviour, reinforces group boundaries in the (strong) out-group condition (i.e., negative group biases). In other words, mimicry and neutral behaviour by (strong) out-group members may be perceived as positive or at least neutral (rather than being overlooked) whereas static behaviour is seen as particularly negative. This view is shared by Hasler et al. (2014) who found that mimicry by out-group members increases positive affect. Further, it is in line with research on social identities showing that positive contact with out-group members increases positive affect towards them (Kenworthy et al., 2005; Dasgupta and Rivera, 2008; see also Pettigrew and Tropp, 2008; Rhiannon N. Turner and Crisp, 2010; Dovidio et al., 2017). I will return to this argument when discussing the results of Study 3.

Finally, one reason as to why mimicry did not elicit positive effects on likability (or similarity) for in-group members may be that the in-group condition was conceptualised as a weak out-group condition. Despite being in the ‘in-group’, participants may have perceived the experimenter as a (weak) out-group member. Accordingly, though the manipulation checks were successful, Study 2 may have not been able to fully resemble an intragroup context. I will further elaborate on this argument in the limitations of this work.

Mediation

Study 2 was testing the mediating effect of similarity of the outcomes of mimicry. Though mediating effects of similarity were initially supported, the analysis revealed that the static condition negatively impacts perceived similarity instead of the hypothesised positive effect of mimicry. Further, the effect only exists if the mimicker is perceived to be a (strong) out-group member. Though this finding is contradictory to both what authors in the mimicry literature assume (see Catmur and Heyes, 2013; Hale and Hamilton, 2016b) and to what authors in the more general literature on interpersonal coordination found (Morry et al., 2011; Boer et al., 2011; Valdesolo and DeSteno, 2011), there may be explanations for this. One possible reason may be the strength of group identities in the experiment as already outlined above. Another possible reason, however, may be that the effects of mimicry are not mediated by similarity (for a more detailed argument, see ‘General Discussion’). Support for this notion can be obtained when considering the more general literature on social psychology. Research suggests that competence perceptions are significantly predicted by perceptions of likability, rather than similarity (for more information, see Judd et al., 2005; Singh et al., 2007; Kervyn et al., 2009; Collisson and Howell, 2014). In the context of marketing, for example, the extent to which participants trusted salespeople was significantly predicted by their likability (Swan et al., 1999; Wood et al., 2008). The findings, though unsupportive of the hypotheses, are still valuable to the literature of mimicry because they may be the first glimpse of evidence that mimicry may function in different ways than expected. It is the responsibility of further research to investigate whether likability mediates the effects of mimicry⁴.

⁴ The analysis has shown that static behaviour rather than mimicry affects likability. Though I could test a mediation model with likability as a mediator, it would not be of value to the question as to whether the effects of mimicry are mediated by likability. It could only answer the question as to whether the

Further Outcomes of Mimicry

The third aim of the studies was to extend the literature by investigating previously unexplored outcomes of mimicry. In particular, competence, in-group identification, trust, interactional justice, and perceived cooperation have been explored. This section briefly elaborates as to whether the findings appear to be aligned with the literature.

Concerning competence, Study 1 found a direct effect of mimicry whereas Study 2 did not. Though this difference, as elaborated above, might stem from the difference in relevance and accessibility of group category between experiments, the finding also points to the importance of how the no mimicry condition is operationalised (see next section). Still, general support for the potential impact of mimicry on competence ratings can be obtained by considering the general literature on NVB. For example, high power postures, compared to low power postures, have been associated with higher competence ratings (Keane et al., 1983). However, more research is required to test the link between mimicry and competence in general.

Contradictory to the literature on mimicry in negotiations (see also Maddux et al., 2008), Study 2 did not reveal any effects of mimicry on trust. However, one explanation may be that the present research did not involve any negotiations and hence the trust was differently conceptualised. In the present research, trust was based on individual, interpersonal trust, whereas in the research of Maddux and colleagues it was based on buyer-seller trust. On the other hand, a plethora of authors in social psychology argue and demonstrate that even marginal behavioural cues can have an impact on trust (Tanis and Postmes, 2005). Accordingly, strong group boundaries alongside of not having a 'real' in-group condition may have been responsible for not finding an effect of mimicry on trust. With regard to a mediational effect, research supports the notion that likability predicts trust (Wu and Tsang, 2008). Further support of this notion is found when considering the literature on trust, which argues that trust has an inherent affective component (McAllister, 1995). For example, likability has been shown to facilitate trust-building in relationships (Nicholson et al., 2001). Some scholars even argue that likability is the strongest predictor of trust (Doney and Cannon, 1997). Overall, then, it seems plausible that mimicry as a variable affects the

negative effects of static behaviour are mediated by likability which is, however, not the focus of this research.

trustworthiness of the mimicker by affecting the likability. However, this mediation has not been tested and further research is required to support this argument.

Study 2 also hypothesised and explored the indirect effects of mimicry (via similarity) on interactional justice and cooperation as outcome variables of mimicry. Literature posits that the behaviour of others is a core antecedent for perceptions such as interactional justice (Greenberg and Baron, 2003). Consequently, perceptions of interactional justice are inherently based on how individuals are treated (Colquitt, 2001). Mimicry, seen as an affiliative behaviour to maintain social relationships (Lakin et al., 2003), was thus hypothesised to affect perceptions of interactional justice and cooperation through perceived similarity. However, the results did not support the hypotheses. One of the reasons for this may be the aforementioned strength of social identities in Study 2. Though research on cooperation suggests that the relationship between individuals and psychological attachment, in particular, is a core antecedent of perceived cooperation (Smith et al., 1995; Yilmaz and Hunt, 2001), the strong group boundaries of Study 2 may have hindered a stronger effect of mimicry, as indicated above (see also the next section). Accordingly, more research is needed in this regard.

Finally, both studies explored the effect of mimicry on the in-group identification of mimickers. Study 1 revealed a main effect of mimicry on participants in-group identification suggesting that mimicry, compared to no mimicry, results in greater identification with the in-group, regardless of the group membership of the mimicker. Study 2, in contrast, did not find any effects on in-group identification. Again, this emphasises both the importance of group relevance and of carefully operationalising the no mimicry condition in mimicry research (see chapter 'General Discussion'). Though evidence from the mimicry literature regarding in-group identification does not exist, the more general socio-psychological literature provides an indication that links positive affect to in-group identification. Specifically, Kessler and Hollbach (2005) have demonstrated that emotions towards others are a determinant of the degree to which individuals identify with their group. As behaviour (i.e., mimicry) may elicit emotions (Chartrand and van Baaren, 2009; Stel and Vonk, 2009) alongside judgements, it appears to be sensible to think that behaviour can also affect identification with the in-group (for discussions around how in-group identification is impacted by interactions with out-group members, see Spears et al., 1997; Branscombe, Ellemers, et al., 1999; Voci, 2006; Scheepers et al., 2009). Further research is needed to explore such links

with a particular focus on whether the static condition or mimicry is responsible for the effects.

Overall, comparing the present findings with the literature appears to be a challenging endeavour as a result of the unprecedented inclusion of a static condition. However, it is this inclusion that may change our understanding of mimicry as a concept alongside important methodological implications (see 'General Discussion' chapter). The next section will compare the three mimicry conditions.

Mimicry vs Neutral vs Static

In Study 1, results showed that mimicry, compared to no mimicry, increases likability and competence ratings of the mimicker, as well as in-group identification of the mimicked. However, based on conceptual idiosyncrasies of the no mimicry condition regularly applied by mimicry researchers as well as in Study 1, Study 2 explored the locus of mimicry effects through an additional no mimicry (neutral) condition. Therefore, the experimental design consisted of the mimicry condition, the former no mimicry condition referred to as no mimicry (static), and the no mimicry (neutral) condition representing the new control condition.

Recall that the difference between no mimicry (static) and no mimicry (neutral) lies in the behavioural dynamics of the experimenter. In the former, the experimenter sat with both feet on the floor and both hands on his lap. As this behaviour might lack dynamic and might be perceived as awkward, effects found in Study 1 might stem from a difference of dynamic behaviour (i.e., mimicry) and static behaviour, which are, however, disguised as effects of mimicry. Accordingly, the no mimicry (neutral) condition introduced in Study 2 consisted of natural movements by the experimenter that allowed for movements to sit comfortably. In contrast to the no mimicry (static) condition, this new condition enabled the experimenter to cross or uncross his legs or change the posture, for instance. Therefore, employing these three conditions provided the opportunity to explore two different research questions. The first regards the effects of mimicry compared to no mimicry (neutral) on the outcomes variables. The second allows for a comparison to see whether the former no mimicry condition (i.e., no mimicry (static)) is the driver behind the effects found.

A comparison between the mimicry condition and the mimicry (neutral) condition suggest that, contrary to expectations, no effects were found. This is a first indication

that the effects found in Study 1 might not be the result of mimicry itself but of a negative effect from the traditional no mimicry control condition. When comparing the no mimicry (neutral) condition with the no mimicry (static) condition, two main effects and mimicry \times group membership interactions were revealed. In particular, likability and similarity ratings were lower when participants were in the no mimicry (static) condition but only if they were in the (strong) out-group condition.

Accordingly, the very condition that is used by many researchers as the control condition which mimicry is compared to, appears to have negative effects on likability and similarity. It is important to realise, at this stage, that if the neutral condition had not been included, the effects found would have been assigned to mimicry and therefore, a type I error would have occurred confirming the hypothesis that mimicry, compared to no mimicry, increases likability or similarity. Overall, then, Study 1 suggested an effect of mimicry itself on likability, competence and in-group identification whereas Study 2 revealed that such effects might rather stem from the control condition (i.e., no mimicry (static)).

This result appears to be aligned with assumptions made by other researchers. In their work, Stel et al. (2011) argued that the effects of mimicry in their study are due to the negative effects of the no mimicry condition. However, the authors particularly looked at how a participant's self-view influenced their reaction to mimicry, compared to no mimicry, regardless of a third control condition. They found that independent individuals are not affected by mimicry whereas interdependent individuals like a person less when the person does not display mimicry. The findings of Study 2, in contrast, go beyond this self-view related assumption. Through the inclusion of a neutral control condition, Study 2 suggests that, at least in situations of strong group biases, mimicry does not have any effects when it is compared to neutral behaviour, regardless of individuals involved. It is merely the static condition that is driving the effects. Consequently, this study also provides an important limitation for the use of the traditional no mimicry condition.

There might be other reasons, however, as to why Study 2 did not find any effects of mimicry per se. One might be the already discussed strength of group boundaries. An argument was elaborated that individuals are only affected by the behaviour of others if it is consistent with prototypical information of their group categories (see Tanis and

Postmes, 2005). Accordingly, when group boundaries become too strong, individuals make judgements aligned with group boundaries and, therefore, judge the behaviour of others if it strengthens the biased worldview (Knobloch-Westerwick and Meng, 2011). Consequently, static behaviour of (strong) out-group members is perceived particularly negatively, because it confirms already negative biases whereas mimicry may be disregarded (see Simon et al., 2015; see also literature on confirmation bias, e.g., Knobloch-Westerwick et al., 2020).

Another reason might be that the experiment did not make use of a real in-group condition (see limitations). It might have been the case that even in the 'in-group condition', participants perceived the male experimenter still as a (weak) out-group member, simply because of his gender. Consequently, they might have had negative, though weaker, biases against him. Thus, mimicry per se did not have an effect (in the in-group condition), because it is not consistent with the prototypical information of the experimenter (see Tanis and Postmes, 2005).

Though the presented findings are certainly important to evaluate the potential and implications of dyadic mimicry, this is the first study that utilised three behavioural conditions including an explicit control condition. Hence, care must be taken in not over-interpreting the findings. Thus, more research is required in dyadic mimicry using moderately strong group boundaries and the same three behavioural conditions. Only then the findings of this work can be evaluated and put into perspective.

Limitations

In addition to the limitations of Study 1 which led to the inclusion of the additional mimicry condition as well as more accessible and relevant group boundaries, Study 2 has also limitations affecting the generalisability of the findings.

One limitation relates to the social categories chosen. Feminism, as the context of the interview, was hoped to make gender a salient cognitive category. To strengthen this effect, the sample consisted of female participants, because feminism and sexism are inherently related and females suffer from sexism so that they were expected to perceive feminism as more relevant (for a detailed discussion around feminism, see Budgeon, 2011). Based on gender as a social category, the in-group condition would have required a female experimenter whilst the out-group condition would have required a male experimenter. Due to resource constraints, however, the experiments

were conducted with a male experimenter. Though this allowed for an adequate out-group condition, the experiment required an extra step to assimilate an in-group condition. Thus, the experimenter was introduced as a non-stereotypical male person so that he was perceived as less of an out-group member (i.e., a weak out-group member). In the corresponding (strong) out-group condition, the experimenter was introduced as a stereotypical male person. Therefore, the experiment in Study 2 did not employ a real in-group condition. Consequently, the mimicry \times group interaction found might not represent an interaction comparing real in-groups with out-groups but rather assimilated in-groups with out-groups. Accordingly, more research is required with more representative and real group conditions.

Another limitation emerges when the effect sizes revealed are compared to the sample size. Though a sample size calculation was employed which resulted in the largest mimicry studies to date (see section 'Sample size' in the chapter 'Method'), it utilised effect size estimates of previous mimicry studies. However, as the studies reported here were the first to test a mimicry \times group membership interaction, estimates of effect sizes regarding such interaction did not exist. Accordingly, a conservative effect size estimate for the main effect of mimicry on liking was used to calculate the minimum sample size. A comparison between the effect sizes used for the calculations and the effect sizes found in Study 2 demonstrates that the latter are, to some extent, lower. On the one hand, the effect sizes of the main effects are equal in size to the estimates meaning that the analysis had enough statistical power to detect such effects and they are not overestimated. On the other hand, when examining the effect sizes of the mimicry \times group interaction, one can see that they are rather small compared with a medium effect size estimate used for the calculation. Accordingly, the experiment might not have had enough statistical power to detect such a small effect size, despite being the largest mimicry study to date. In other words, the effect of the interaction might be overestimated. Equally, one reason as to why Study 1 did not detect a mimicry \times group interaction might relate to the sample size. It might be the case that the interaction effects are too small to be detected by the sample chosen. Accordingly, only greater samples can detect such interactions. Though such issues are common in experimental research designs, more research is thus required to confirm a mimicry \times group interaction.

One limitation of both studies relates to the experimenter. As he was aware of the hypotheses, his behaviour might have, even unconsciously, differed depending on the condition. Accordingly, differences in outcomes variables might, in part, be caused by such behavioural differences limiting the internal validity of the experiment. However, this limitation, similar to the above, is common in mimicry research (see Wieber et al., 2014) and although more research is required with experimenters who are unaware of the hypotheses to evaluate the results found in this work, the approach chosen also has a particular advantage. As stated above, a female experimenter would have been required to create the intragroup context more adequately. However, conducting the experiments with two confederates instead of one would have also added additional variance to the data. This variance, attributable to between-experimenter differences, would have statistically affected the variance between the group conditions and thus made the analysis more vulnerable to errors.

Another limitation relates to the inference of causality in Study 2. Though a mediation analysis was employed to explore whether mimicry results in similarity which, in turn, results in likability, for instance, the data collected did not allow for such a conclusion. In particular, causality has an inherent temporal component where the predictor variable precedes the outcome variable (see Mooney Marini and Singer, 1988). However, the mediator (i.e., similarity) and the outcome variables (e.g., likability) were measured at the same time, effectively prohibiting a 'real' causal analysis. Consequently, the causal direction of the mediation is assumed rather than demonstrated.

Finally, the presence of omitted variable bias represents another limitation of this work, particularly with regard to the behavioural manipulations. For example, the differences between the mimicry condition and the no mimicry (neutral) condition as well as between the no mimicry (neutral) and no mimicry (static) condition may not solely relate to differences in behaviour but they may represent further differences that have not been measured, such as differences in the experimenter's motivation. In a similar vein, though participants may have perceived a static experimenter as less natural, compared to a neutrally behaving experimenter, such discrepancy was not measured directly. Accordingly, more investigation is required into the differences between the three behavioural conditions to exclude alternative explanations for the effects found. More general limitations of this research are provided in the General Discussion.

Summary

This work commenced with the aim of exploring the effect of dyadic mimicry in interpersonal interactions mostly on mimicker-related attitudes and how such effects are moderated by social identities. In pursuit of this, two experiments were conducted which, despite the limitations, are important in several ways. First, both studies support the literature in suggesting that likability is affected by behaviour but they also extend the literature by illuminating multiple behaviour-related alterations of judgements. Specifically, Study 1 has shown that judgements of likability, competence and in-group identification can be affected by the mimicry variable. Study 2 supported the notion of behavioural effects (though not mimicry per se) on likability in addition to similarity. Consequently, Study 2 extends the reach of the non-verbal behaviour literature.

Second, Study 2 revealed possible issues when comparing the no mimicry condition often used by researchers (i.e., no mimicry (static)) with the mimicry condition. Instead of being a control condition and representing neutral behaviour, the no mimicry (static) condition appears to drive the effects revealed. Therefore, Study 2 shows that this static condition has negative effects on mimicker-related judgements and that, more importantly, mimicry itself, when compared to neutral behaviour, does not have effects.

Third, the study has explored the process by which mimicry elicits its effects through testing the widely held assumption that mimicry increases perceived similarity which, in turn, mediates the relationship between mimicry and its outcomes. The results show that, in fact, similarity does not appear to be the mediating link for mimicry. Instead, it mediates the effect of static behaviour on likability which, however, does not mean that it mediates a potential effect of mimicry.

Finally, this study is the first which revealed moderating effects of social identities on mimicry-related consequences (though not mimicry per se). In particular, similarity and likability are both moderated by social group membership in a way that static behaviour influences these dimensions only for (strong) out-group members. Therefore, this work supports the relevance of social identities in shaping the perception of behaviour.

Based on the limitations, researchers are encouraged to further investigate mimicry. Considering the rather controversial finding of the driving static condition, more research is required to explore the context in which mimicry itself has effects and the context in which it might be less relevant (such as strong intergroup contexts). Further,

researchers are encouraged, despite the effort it takes, to conduct experiments with a control condition representing neutral behaviour. It also appears to be of interest to test the role of likability as a mediator between mimicry and its effects. In a similar vein, sample sizes must be sufficiently high in experiments to ensure that effect sizes are not over-estimated and that small effect sizes can be found. Mimicry research should also employ experimenters who are unaware of the hypotheses (see Guéguen et al., 2012) to increase the internal validity of the experiments. Finally, researchers should attempt to conduct mimicry research with different social groups. Our understanding of not only mimicry but non-verbal behaviour, in general, would benefit from how its effects differ, dependent on the strength of social identities utilised.

Observed Mimicry- Study 3

Design and Overview

In contrast to Studies 1 and 2, which explored the effects of dyadic mimicry and how social identities moderate such effects, Study 3 investigates the effects of mimicry when it is merely observed, rather than personally experienced, as well as the role social identities play in moderating such effects. In particular, it explores whether mimicker-related judgements made by an observer differ depending on the social group membership of the observed dyad rather than only the mimicker. Additionally, Study 3 also investigates the role of the observer's awareness in moderating such effects. Accordingly, Study 3 represents the second focus of this work and tests hypotheses H₆ - H₁₁. Similar to Study 2, this study employs three mimicry conditions and it can, thus, also be split into two different research questions. The first explores the effect of mimicry, compared to no mimicry (neutral) whereas the second compares no mimicry (neutral) with no mimicry (static). Considering that the study comprises an in-group and an out-group condition as well as an awareness and no awareness condition in addition to the three mimicry conditions, it will consist of a 3 × 2 × 2 between-participants design.

The change of perspective required by Study 3 necessitates a change in the methodological approach. As participants need to observe an interaction, as opposed to being part of it, an in-person experiment appears to be challenging. Instead, participants will be shown pre-recorded videos that show two individuals having a conversation (see below for more detail). This approach is not only aligned with the few studies investigating a similar phenomenon (e.g., Sanchez-Burks et al., 2009; Kavanagh et al., 2011) but it also has another advantage. Corresponding to the limitation of Studies 1 and 2, using pre-recorded videos increases the internal validity of the experiment as a result of not only keeping individual behaviour constant between conditions but also keeping the content of the conversation constant across conditions (for a discussion, see Podsakoff et al., 2013). Another advantage of employing pre-recorded videos is that data collection can be conducted online (see below) enabling many participants to be recruited which, in turn, allowed for the additional factor of awareness.

The manipulation of social identities will be conducted based on research suggesting that imagining a particular situation can lead to the same cognitive consequences as actually experiencing such a context (see Bargh et al., 1996; Garcia et al., 2002; see also Meleady and Crisp, 2017). The content of the conversation will be business-related and the individuals holding the conversation are introduced as employees of a business. To manipulate group membership, in turn, participants are asked to imagine themselves taking on a particular role inside this business when observing the individuals (see below). The following sections will elaborate on the sample chosen and the procedure more thoroughly before the analysis and the results are presented, followed by a discussion.

Sample Size Calculation

Similar to the preceding studies, the required minimum sample size was calculated *a priori* using G*Power (v. 3.1.9.7, see Faul et al., 2007). The sample size estimate was based on previous studies which indicated medium to large effect sizes ($d = .7$, see Sanchez-Burks et al., 2009; $\eta^2 = .1$, see Hale and Hamilton, 2016b). A rather conservative approach was taken to conduct the calculations. Hence, a medium effect size of $f = .25$ was used in conjunction with $\alpha = .05$, numerator $df = 2$, number of groups = 12, and a power of .95 as input variables. Accordingly, the required minimum sample size is $N_{req} = 251$. The aim was, however, to stick to a more conservative number of at least $n = 50$ participants per group ($N_{aim} = 600$) to account for individuals who fail attention-checks, for example, a common strategy used in online surveys (see Peer et al., 2017).

Participants and Recruitment

Using pre-recorded videos (see below) as a mimicry stimulus enabled an online survey for the recruitment of participants. Accordingly, the recruitment of participants was less complicated compared to the preceding in-person studies, especially because a complex cover story was not required. Participants were recruited via the online survey panel *Prolific Academic* (in the following simply referred to as *Prolific*). *Prolific* was preferred to other survey panels such as *Amazon Mechanical Turk*, because participants, on average, are less experienced with conducting experiments and, thus, they are less aware of experimental procedures (Peer et al., 2017). Accordingly, participants gathered from *Prolific*, tend to be a better representation of the average

population (Peer et al., 2017). Similar to the dyadic studies, participants were not supposed to know that the study concerned mimicry. Consequently, they were told that the study examined how communication is perceived by individuals but not that mimicry was under investigation. In total, N = 670 participants were recruited (gender: male = 349, prefer not to say = 7; age: M = 30.33 years, SD = 10.35 years)⁵.

Procedure

Once participants provided initial consent, they were told they would be shown an extract of a business meeting of a tech company. Additionally, they were told that the extract showed two directors of a company discussing business matters (see below). Afterwards, the awareness condition was manipulated (see below). Subsequently, the self-categorisation level was primed so that participants perceived the dyad displayed on the video (see below) as either out-group members or in-group members. In line with answering two separate research questions, participants then watched one of three videos. The video showed either (a) the mimicker mimicking the naturally-moving mimickee, (b) the mimicker and mimickee behaving naturally and independent from each other, or (c) the mimicker sitting with both feet on the floor and both hands on his lap whilst the mimickee behaved naturally. After watching the video, participants were asked to rate the mimicker (i.e., 'the person with the white shirt on the left in the video') on several dependent variables (see below). Further, they were asked to provide demographic information and to conduct the manipulation check. Finally, they were fully debriefed, verified their consent and were given an equivalent of 5.23 US dollars per hour.

Videos

The videos displayed two individuals in an office setting having a conversation. As participants were told to expect an extract of a business meeting of two directors, both individuals on the videos were dressed in smart casual attire discussing simple business matters. In particular, they were discussing two projects and issues related to these projects. Across the conditions, the videos only differed in the behaviour of

⁵ Age was measured using distinct categories. The mean and standard deviation were subsequently calculated.

the mimicker but not in the behaviour of the mimickee, nor in the content of the conversation. The length of each video was 3.5 minutes⁶.

Priming

For the priming, research suggesting that merely imagining a situation can result in the same outcomes as experiencing such situations was utilised (see Bargh et al., 1996; Garcia et al., 2002; see also Galinsky et al., 2005; White and Argo, 2011). In particular, participants were asked to imagine being employed by the same company the two directors are working for. In the in-group condition specifically, participants were asked to imagine themselves to be a colleague of the directors. In the out-group condition, in contrast, they were asked to take on the role of the Chief Executive Officer (CEO) of the company (for the argument of optimal distinctiveness, see Brewer, 1991).

Awareness

The awareness of participants was manipulated using a similar method to Kulesza et al. (2016). It is important to realise, at this stage, that awareness does not refer to explicitly telling participants that they will be witnessing mimicry (see Kulesza et al., 2016). Instead, awareness refers to the awareness of particular non-verbal behaviour that can be used to foster relationships. Accordingly, in the awareness condition, participants were told that the individual on the left (i.e., the mimicker) has recently attended a course on how to utilise non-verbal tools to increase perceptions of competence. Thus, participants were given information hinting at the nonverbal behaviour of the mimicker. To assimilate a real-life scenario, it was important that this manipulation was not too obvious so that participants pay attention to the overall conversation and not only to the mimicker. In the no awareness condition, in contrast, participants were told to pay attention to the conversation.

Measures

The measures were similar to the ones used in dyadic mimicry. They were measured on a 7-point Likert scale from “Strongly disagree” (1) to “Strongly agree” (7), if not stated otherwise.

⁶ Links to the videos:

Mimicry	https://www.youtube.com/watch?v=60SEctXchq4&feature=youtu.be;
No Mimicry (Neutral)	https://www.youtube.com/watch?v=9E16IV2Y_IM&feature=youtu.be;
No Mimicry (Static)	https://www.youtube.com/watch?v=5uJhqUbWvk&feature=youtu.be.

Likability. Likability was measured using the 5-item scale by Ahearne et al. (1999). “The person appears to be nice” or “The person is easy to like” are example items (Cronbach’s $\alpha = .90$).

Competence. A 4-item measure developed by Fiske and Cuddy (2006) was used to measure competence (Cronbach’s $\alpha = .87$). Example items are “The person appears to be competent” or “The person appears to be capable”.

Trustworthiness. Ahearne et al. (1999) also developed a 4-item measure for perceived trustworthiness which was used for this work (Cronbach’s $\alpha = .76$). “The person tried to mislead the other person” (reverse-coded) or “The person is someone I feel I can trust” are example items.

Interactional justice. To measure interactional justice, the 4-item measure developed by Colquitt (2001) was used (Cronbach’s $\alpha = .80$). “The person treated the other in a polite manner” or “The person treated the other with respect” are example items.

Cooperation. The degree to which participants perceived the interaction between the individuals as cooperative was measured using a slider scale (e.g., Effron and Raj, 2019) from “No degree” (0) to “Full degree” (100).

Manipulation check. At the end of the survey, participants were asked to rate the degree of mimicry which they perceived during the interaction. To do this, a slider scale ranging from “No mimicry” (0) to “Full Mimicry” (100) was used. Further, to ensure participants were aware of their role in watching the videos, they were asked to indicate which role they had with the options a = “Colleague”, b = “Board member”, c = “CEO”, d = “Competitor”, or e = “None of the above”. This manipulation check was aligned with other social identity-related manipulation checks of prior research (see Jetten et al., 1996; see also Grant and Hogg, 2012). Data from participants who did not correctly answer this question needed to be excluded from the analysis. In line with good practice in mimicry research (see Stel and Vonk, 2010), participants were asked whether they noticed anything suspicious. If participants noticed the mimicry manipulation (in the no awareness condition only), they needed to be excluded from the analysis, as elaborated already in the preceding experiments.

Finally, in between the questions, an attention-check was included, a common practice when conducting online surveys (Peer et al., 2017). Specifically, participants were

asked to select the “Strongly agree” response to one particular item. Participants who did not select this option also needed to be excluded from the analysis as this indicated a lack of attention during the survey.

Results

To conduct the analysis, data from participants who did not verify their final consent ($n = 1$), who did not pass the attention-check ($n = 37$) and/ or the group indication ($n = 71$) needed to be excluded. Further, participants who noticed mimicry in the no awareness condition needed to be excluded ($n = 13$). Finally, the data were scanned for outliers ($n = 22$; $\approx 3.3\%$) using absolute deviation around the median with a conservative rejection value of 3 units (Leys et al., 2013). In total, data from $N = 526$ participants were analysed. Recall that the a priori sample size calculation showed that at least $N_{\text{req}} = 251$ participants were required. Accordingly, the sample analysed was statistically sufficient for the aims of the study.

Manipulation-check. To check whether participants perceived more mimicry in the mimicry condition compared to both the neutral condition as well as the static condition, an ANOVA was conducted with the mimicry variable as the dependent variable and the manipulation-check as the dependent variable. As expected, a main effect of the dependent variable was found ($F(2, 523) = 97.01$; $p < .001$). In particular, participants perceived greater mimicry in the mimicry condition ($M = 60.13$; $SD = 22.31$; $95\% CI = [56.78, 63.48]$) than in the neutral condition ($M = 45.25$; $SD = 23.85$; $95\% CI = [41.74, 48.76]$) or in the static condition ($M = 25.35$; $SD = 23.69$; $95\% CI = [21.79, 28.91]$). Post-hoc comparisons demonstrated that the difference between mimicry condition and both the no mimicry (neutral) condition ($t(351) = 6.05$; $p < .001$; $d = 0.64$) as well as no mimicry (static) condition ($t(344) = 14.05$; $p < .001$; $d = 1.51$) were statistically significant. Accordingly, mimicry was successfully manipulated.

Table 5 Correlation Matrix Study 3

	1	2	3	4
Likability				
Competence	.462***			
Trust	.442***	.397***		
Interactional Justice	.379***	.405***	.511***	
Cooperation	.427***	.352***	.540***	.543***

Note. Asterisks indicate the level of significance (**p ≤ .001).

The correlation matrix can be found in Table 5. As with the preceding studies, I will briefly report the results of a MANOVA, before univariate tests will be examined in more detail. Across the dependent variables, the results show a main effect of the behavioural conditions ($F(10, 1020) = 8.36; p < .001; \eta^2 = .08$) but no effect of group membership ($F < 1; p = .531; \eta^2 < .01$) and awareness ($F(5, 510) = 1.47; p = .199; \eta^2 = .01$). Interactions were also not observed. For the remainder of the analysis, a 3 (mimicry: mimicry, no mimicry (neutral), no mimicry (static)) × 2 (group membership: in-group, out-group) × 2 (awareness: no awareness, awareness) between-participants ANOVA was conducted for each of the dependent variables. The means, standard deviations and confidence intervals are displayed in Table 6 for each dependent variable.

Table 6 Mean ratings of participants across conditions for each dependent variable

Behaviour	Group	Awareness	Likability			Trustworthiness		
			<i>M</i>	<i>SD</i>	95% CI	<i>M</i>	<i>SD</i>	95% CI
Mimicry	In	No	4.79	1.09	[4.48, 5.11]	4.97	0.85	[4.67, 5.27]
		Yes	4.77	1.01	[4.47, 5.07]	4.72	1.17	[4.43, 5.01]
	Out	No	5.15	0.96	[4.85, 5.45]	5.03	0.99	[4.74, 5.31]
		Yes	4.96	0.82	[4.67, 5.25]	4.94	0.84	[4.66, 5.21]
No Mimicry (neutral)	In	No	4.69	0.94	[4.38, 5.01]	5.08	1.00	[4.78, 5.39]
		Yes	4.69	1.03	[4.39, 4.98]	4.72	0.97	[4.44, 4.99]
	Out	No	4.53	0.94	[4.25, 4.82]	4.65	0.88	[4.38, 4.93]
		Yes	4.69	1.09	[4.40, 4.97]	4.54	1.13	[4.27, 4.81]
No Mimicry (static)	In	No	4.18	0.91	[3.89, 4.47]	4.44	0.89	[4.17, 4.71]
		Yes	3.96	1.09	[3.66, 4.26]	4.85	0.95	[4.56, 5.14]
	Out	No	4.08	1.23	[3.77, 4.39]	5.01	0.96	[4.71, 5.31]
		Yes	4.02	0.88	[3.72, 4.33]	4.69	0.81	[4.39, 4.98]
			Competence			Interpersonal Justice		
			<i>M</i>	<i>SD</i>	95% CI	<i>M</i>	<i>SD</i>	95% CI
Mimicry	In	No	5.26	1.02	[4.93, 5.58]	5.71	0.95	[5.44, 5.98]
		Yes	5.34	1.14	[5.02, 5.65]	5.59	0.86	[5.34, 5.86]
	Out	No	5.30	1.10	[4.99, 5.61]	5.79	0.76	[5.54, 6.05]
		Yes	5.58	0.89	[5.28, 5.88]	5.61	0.83	[5.36, 5.86]
No Mimicry (neutral)	In	No	5.23	0.94	[4.90, 5.56]	5.64	1.07	[5.36, 5.91]
		Yes	5.42	0.97	[5.11, 5.72]	5.56	0.87	[5.31, 5.82]
	Out	No	4.88	1.04	[4.58, 5.18]	5.32	0.89	[5.07, 5.57]
		Yes	5.03	1.21	[4.74, 5.32]	5.53	0.94	[5.29, 5.78]
No Mimicry (static)	In	No	5.10	0.89	[4.81, 5.40]	5.41	0.82	[5.16, 5.65]
		Yes	5.22	1.04	[4.90, 5.53]	5.81	0.80	[5.55, 6.08]
	Out	No	5.18	1.04	[4.85, 5.49]	5.59	0.71	[5.32, 5.86]
		Yes	5.09	1.18	[4.77, 5.41]	5.42	0.91	[5.15, 5.68]
			Cooperation					
			<i>M</i>	<i>SD</i>	95% CI			
Mimicry	In	No	79.13	15.88	[73.83, 84.42]			
		Yes	73.58	17.91	[68.47, 78.69]			
	Out	No	76.93	15.79	[71.88, 81.98]			
		Yes	74.17	16.54	[69.24, 79.11]			
No Mimicry (neutral)	In	No	78.79	15.99	[73.43, 84.16]			
		Yes	72.71	15.91	[67.72, 77.71]			
	Out	No	72.32	16.23	[67.43, 77.21]			
		Yes	71.96	15.17	[67.17, 76.75]			
No Mimicry (static)	In	No	65.85	18.02	[61.02, 70.69]			
		Yes	73.05	16.89	[67.94, 78.16]			
	Out	No	69.80	19.04	[64.50, 75.09]			
		Yes	71.31	20.77	[66.14, 76.48]			

Note. *M* = mean; *SD* = standard deviation; *CI* = confidence interval.

Likability. As illustrated in Figure 14, the analysis revealed a main effect of mimicry on likability ($F(2, 514) = 32.79; p < .001; \eta^2 = .11$) but no effect of group membership ($F < 1; p = .521; \eta^2 < .01$) or awareness ($F < 1; p = .509; \eta^2 < .01$). In particular, participants expressed greater liking for the mimicker when he mimicked ($M = 4.92; SD = .97; 95\% CI = [4.77, 5.07]$) than when he behaved normally ($M = 4.65; SD = 1.00; 95\% CI = [4.50, 4.79]$) or when he displayed static behaviour ($M = 4.06; SD = 1.02; 95\% CI = [3.91, 4.21]$). Post-hoc comparisons showed that the difference of likability between mimicry and neutral behaviour ($t(351) = 2.60; p = .010; d = 0.27$), between mimicry and static behaviour ($t(344) = 7.96; p < .001; d = 0.86$), and between neutral behaviour and static behaviour ($t(351) = 5.40; p < .001; d = 0.57$) are statistically significant. The main effect remained unchanged ($F(2, 511) = 32.88; p < .001; \eta^2 = .11$) when gender ($F(1, 511) = 4.68; p = .031; \eta^2 < .01$), ethnicity ($F < 1; p = .477; \eta^2 < .01$), and age ($F < 1; p = .699; \eta^2 < .01$) were controlled for. No interactions were found⁷.

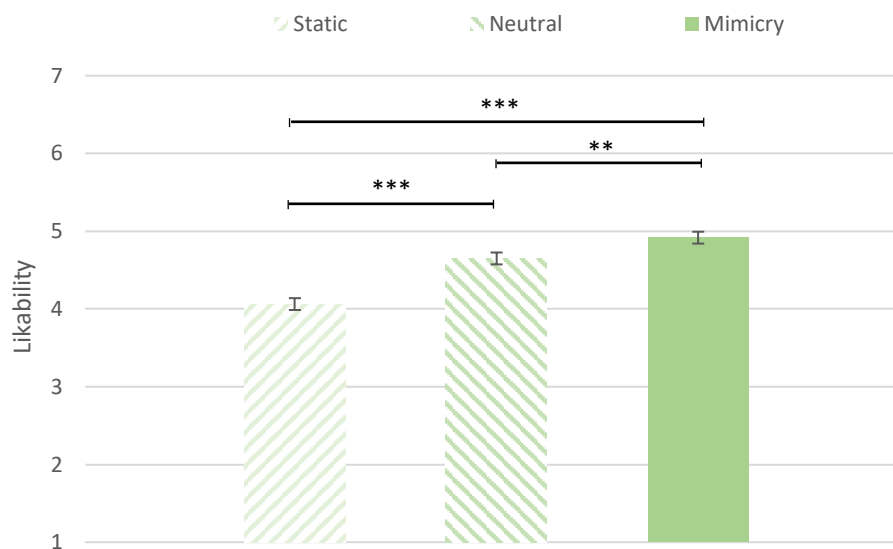


Figure 14 Mean likability ratings as a function of mimicry condition. Asterisks indicate a significant statistical difference between conditions rounded to two decimal places ($***p < .001; **p \leq .01$). Error bars represent ± 1 SE.

H_{6a} stated that mimicry, compared to no mimicry, by an out-group member towards another out-group member should decrease the likability of the mimicker, while H_{6b}, in contrast, hypothesised that mimicry, compared to no mimicry, by an in-group member

⁷ The hypothesised mimicry \times group interaction was non-significant ($F(2, 514) = 1.55; p = .213; \eta^2 < .01$). Though a marginal mimicry \times group interaction was observed ($F(1, 345) = 2.81; p = .095; \eta^2 = .01$) when the mimicry condition is only compared to the no mimicry (neutral) condition, it is too marginal to justify further discussion.

towards another in-group member should increase the likability of the mimicker. The results did not support an interaction. However, they demonstrated a main effect of the mimicry condition. Hence, H_{6b} is supported while H_{6a} is not supported by the data. Importantly, however, mimicry compared to neutral behaviour increases the likability of the mimicker (as well as mimicry compared to static behaviour). The hypothesised effect of awareness was absent. A more detailed elaboration will be conducted in the discussion section.

Competence. Based on the analysis, a marginal main effect of the mimicry condition was observed ($F(2, 514) = 2.71; p = .067; \eta^2 = .01$) alongside a marginal mimicry \times group membership interaction ($F(2, 514) = 2.74; p = .066; \eta^2 = .01$)⁸. Figure 15 illustrates the mimicry \times group membership interaction. The groups were then explored separately⁹. Whilst no significant difference between the mimicry conditions was observed for in-group members; for out-group members the analysis revealed a significant difference between the mimicry and no mimicry (neutral) conditions ($t(184) = -3.11; p = .002; d = 0.45$) and between the mimicry and no mimicry (static) conditions ($t(170) = -1.94; p = .054; d = 0.29$). In particular, participants perceived a mimicking out-group member as more competent ($M = 5.44; SD = 1.00; 95\% CI = [5.23, 5.66]$) compared to a neutrally behaving out-group member ($M = 4.96; SD = 1.13; 95\% CI = [4.75, 5.17]$) or a static out-group member ($M = 5.13; SD = 1.11; 95\% CI = [4.91, 5.36]$). Importantly, a difference between no mimicry (neutral) and no mimicry (static) was not observed ($t(176) = 1.03; p = .306; d = 0.15$). When comparing competence ratings for in-group members with those for out-group members across the mimicry conditions, they demonstrate an effect of group membership only in the no mimicry (neutral) condition ($t(178) = 2.39; p = .018; d = 0.35$). More specifically, participants perceived the neutrally behaving mimicker as less competent when he was perceived as an out-group member compared to an in-group member ($M = 5.33; SD = 0.95; 95\% CI = [5.09, 5.55]$). This effect diminished in the mimicry condition ($t(171) = -0.92; p = .358; d = 0.14$) and in the no mimicry (static) condition ($t(171) = 0.16; p = .872; d = 0.03$). Both the marginal main effect of mimicry ($F(2, 511) = 2.77; p = .064; \eta^2 = .01$) as well

⁸ When the mimicry condition is only compared to the no mimicry (neutral) condition, the interaction becomes significant ($F(1, 342) = 5.36; p = .021; \eta^2 = .02$) while the main effect remained ($F(1, 342) = 4.28; p = .039; d = 0.22$).

⁹ Though the p-value is not significant according to the orthodoxy, probing such marginal effects has become common practice not only in psychology (for a review, see Pritschet et al., 2016) but also in research on non-verbal behaviour (e.g., van Baaren et al., 2003).

as the marginal mimicry \times group membership interaction ($F(2, 511) = 2.75; p = .065; \eta^2 = .01$) remained once gender ($F < 1; p = .963; \eta^2 < .01$), ethnicity ($F < 1; p = .384; \eta^2 < .01$), and age ($F < 1; p = .477; \eta^2 < .01$) were controlled for. Main effects of awareness $F(1, 514) = 1.73; p = .189; \eta^2 < .01$ and group membership ($F < 1; p = .362; \eta^2 < .01$) were, however, not observed.

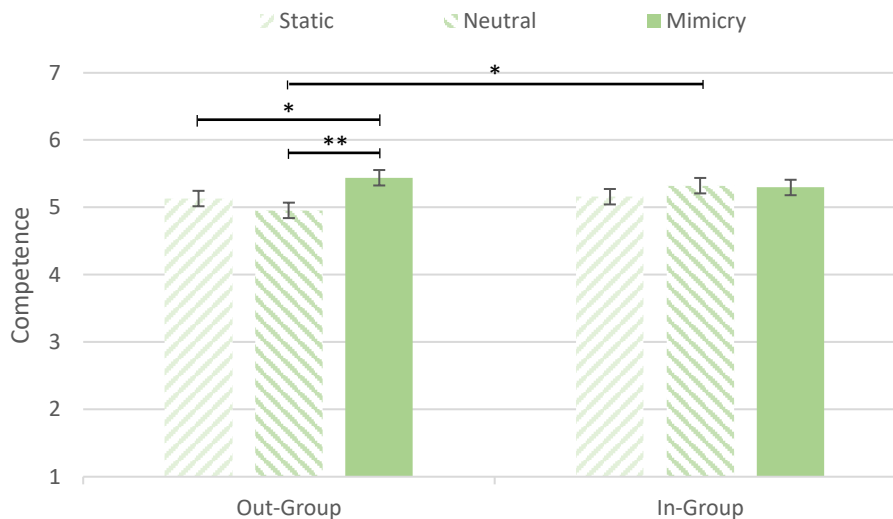


Figure 15 Mean competence ratings as a function of mimicry and group condition. Asterisks indicate a significant statistical difference between conditions rounded to two decimal places (** $p < .01$; * $p \leq .05$). Error bars represent ± 1 SE.

The hypotheses for competence were equivalent to the hypotheses developed for likability. In line with expectations, the results confirm a mimicry \times group membership interaction. However, the interaction was different than hypothesised. Observed mimicry appears to only have an effect when the observed dyad comprised out-group members rather than in-group members. It is important to recognise that mimicry elicits such positive effects for out-group members even when it is compared to neutral behaviour. The fact that a negative out-group bias existed in the neutral condition but disappeared in the mimicry condition is worth highlighting for the discussion. Due to such unexpected results, H_{7a} and H_{7b} are not supported. An effect of awareness was, however, absent.

Trustworthiness. The results did not reveal any main effect of mimicry ($F(2, 514) = 1.72; p = .180; \eta^2 < .01$), group membership ($F < 1; p = .876; \eta^2 < .01$), or awareness ($F(1, 514) = 2.07; p = .151; \eta^2 < .01$). Instead, a mimicry \times group membership interaction was observed ($F(2, 514) = 3.62; p = .027; \eta^2 = .01$) as well as a mimicry \times group membership \times awareness interaction ($F(2, 514) = 3.42; p = .034; \eta^2 = .01$). The

data were analysed separately for each awareness condition. When participants were in the no awareness condition, the analysis revealed a mimicry \times group membership interaction ($F(2, 252) = 6.19; p = .002; \eta^2 = .05$). However, such an interaction was not observed in the awareness condition ($F(2, 262) = 1.10; p = .334; \eta^2 < .01$).

Separate comparisons in the no awareness condition (see Figure 16) show a marginal difference of trustworthiness between mimicry and neutral behaviour but only in the out-group condition ($t(89) = 1.89; p = .062; d = 0.41$)¹⁰ and not in the in-group condition ($t(77) = -0.547; p = .586; d = 0.12$). When participants were not aware of mimicry and perceived the dyad as out-group members, they perceived a mimicking individual as more trustworthy ($M = 5.02; SD = 0.99; 95\% CI = [4.75, 5.31]$) compared to a neutrally behaving individual ($M = 4.65; SD = 0.88; 95\% CI = [4.39, 4.92]$). Further, comparing mimicry and static behaviour reveals a significant effect in the in-group condition ($t(86) = 2.84; p = .006; d = 0.61$) but not in the out-group condition ($t(82) = 0.10; p = .917; d = 0.31$). When participants were unaware of mimicry and perceived the dyad as in-group members, they perceived a mimicking individual as more trustworthy ($M = 4.97; SD = 0.85; 95\% CI = [4.68, 5.26]$) compared to a static individual ($M = 4.44; SD = 0.89; 95\% CI = [4.17, 4.70]$).

A final comparison within the no awareness condition between natural and static behaviour reveals a significant effect in the in-group condition ($t(85) = 3.13; p = .002; d = 0.68$) and a marginal effect in the out-group condition ($t(85) = -1.77; p = .080; d = 0.38$)¹¹. In the in-group condition, participants perceived the mimicker as more trustworthy when he behaved neutrally ($M = 5.08; SD = 1.00; 95\% CI = [4.79, 5.38]$) compared to when he behaved statically (see above). In the out-group condition, however, participants trusted individuals more in the static condition ($M = 5.01; SD = 0.96; 95\% CI = [4.72, 5.29]$) than in the neutral condition (see above). Comparing in-group ratings with out-group ratings of trust separately for each mimicry condition and for participants who were not aware of mimicry showed a significant difference between group ratings for both the no mimicry (neutral) condition ($t(84) = -2.08; p = .040; d = 0.46$) and the no mimicry (static) condition ($t(86) = 2.86; p = .005; d = 0.62$).

¹⁰ When the overall mimicry \times group interaction is considered (regardless of awareness) this effect is significant ($t(184) = -2.72; p = .007; d = 0.40$).

¹¹ When the overall mimicry \times group interaction is considered (regardless of awareness) this effect remains marginal ($t(176) = -1.74; p = .084; d = 0.26$). Accordingly, the difference between no mimicry (static) and no mimicry (neutral) are too marginal to be discussed further.

Whilst trust was lower for neutrally behaving out-group members compared to neutrally behaving in-group members (see above for values), it was lower for static in-group members compared to static out-group members (see above for values) However, these group biases disappeared in the mimicry condition ($t(82) = 0.29$; $p = .768$; $d = 0.06$).

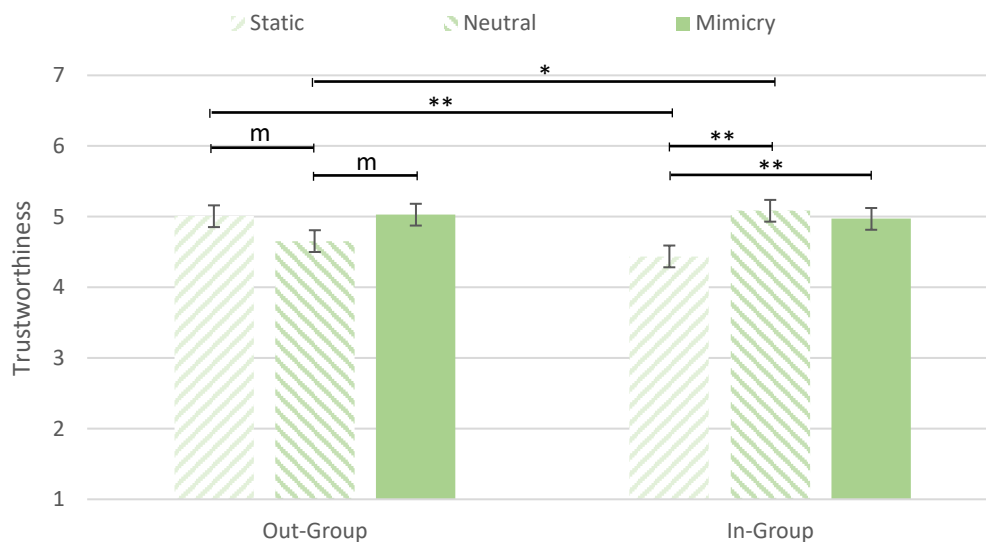


Figure 16 Mean trustworthiness ratings as a function of mimicry and group condition in the no awareness condition. Asterisks indicate a significant statistical difference between conditions rounded to two decimal places (** $p < .01$; * $p \leq .05$; m = marginal significance). Error bars represent ± 1 SE.

Separate comparisons in the awareness condition (see Figure 17), in contrast, only revealed a significant difference between mimicry and neutral behaviour and only if individuals were perceived as out-group members ($t(93) = 1.94$; $p = .056$; $d = 0.39$) compared to in-group members ($t(86) = 0.2$; $p = .985$; $d < 0.01$). Even when participants were aware of mimicry, a mimicking out-group member was perceived as more trustworthy ($M = 4.93$; $SD = 0.84$; $95\% CI = [4.65, 5.22]$) compared to a neutrally behaving out-group member ($M = 4.54$; $SD = 1.13$; $95\% CI = [4.26, 4.82]$). Effects when comparing trust ratings for in-group members with trust ratings for out-group members across the mimicry conditions in the awareness group were not found. However, regardless of awareness, such a group bias was found within the neutral condition ($t(178) = 1.94$; $p = .054$; $d = 0.29$). Participants trusted a naturally behaving in-group member ($M = 4.89$; $SD = 0.99$; $95\% CI = [4.68, 5.09]$) more than a naturally behaving out-group member ($M = 4.59$; $SD = 1.01$; $95\% CI = [4.40, 4.79]$). This group bias disappeared in the mimicry condition ($t(171) = -.94$; $p = .347$; $d = 0.14$) and the

no mimicry (static) condition ($t(171) = -1.52; p = .129; d = 0.23$). Both the mimicry \times group membership interaction ($F(2, 511) = 3.56; p = .029; \eta^2 = .01$) and the three-way interaction remained ($F(2, 511) = 3.25; p = .040; \eta^2 = .01$) when the analysis controlled for gender ($F < 1; p = .887; \eta^2 < .01$), ethnicity ($F < 1; p = .687; \eta^2 < .01$), and age ($F(1, 511) = 1.42; p = .234; \eta^2 < .01$).

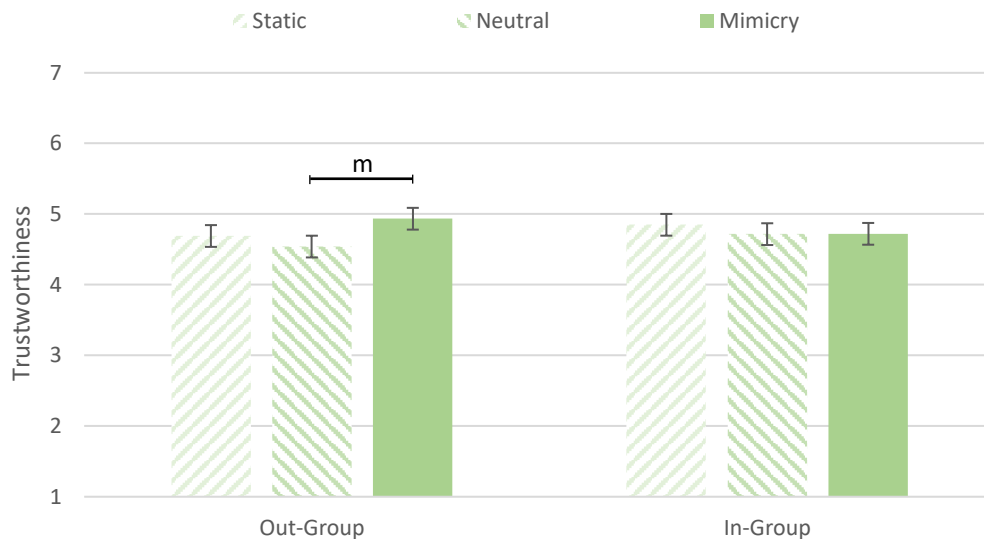


Figure 17 Mean trustworthiness ratings as a function of mimicry and group condition in the awareness condition. *M* indicates a marginal significance value of .056. Error bars represent ± 1 SE.

Similar to likability and competence, the mimicker’s trustworthiness was predicted to be affected by mimicry, group membership, and awareness. In support of these expectations, the results revealed a three-way interaction. As expected, a mimicry \times group interaction was only observed in the no awareness condition but not in the awareness condition (except for a marginal effect of mimicry, compared to no mimicry (neutral) for out-group members in the awareness condition). As with competence, the interaction was, however, different from what was expected. If the dyad observed was perceived to consist of out-group members, mimicry compared to no mimicry (neutral) had a marginally positive effect. For an in-group dyad, in contrast, static behaviour by one individual appeared to decrease the trustworthiness of this individual compared to both neutral behaviour and mimicry. Similarly to competence, a negative out-group bias in the neutral condition was observed (alongside a bias in favour of the out-group when static behaviour is displayed) which, however, disappeared in the mimicry condition. Overall, H_{8a} and H_{8b} are not supported though H_{11} is supported.

Interactional Justice. A main effect of mimicry ($F(2, 514) = 1.72; p = .180; \eta^2 < .01$), group membership ($F(1, 514) = 1.03; p = .311; \eta^2 < .01$), or awareness ($F < 1; p = .881; \eta^2 < .01$) on perceived interactional justice was not observed¹². However, the analysis revealed a marginal mimicry \times group membership \times awareness interaction ($F(2, 514) = 2.76; p = .064; \eta^2 = .01$) which remained ($F(2, 511) = 2.70; p = .068; \eta^2 = .01$) once the analysis controlled for gender ($F < 1; p = .534; \eta^2 < .01$), ethnicity ($F(1, 511) = 1.40; p = .237; \eta^2 < .01$), and age ($F(1, 511) = 1.67; p = .197; \eta^2 < .01$). Conducting a 3×2 ANOVA with mimicry and group membership as independent variables with only those participants who were in the awareness condition did not reveal any effects. Similarly, only a marginal main effect of mimicry was revealed for participants in the no awareness condition ($F(2, 252) = 2.64; p = .074; \eta^2 = .02$). The no awareness condition was consequently further explored (see Figure 18). Comparisons of the mimicry and no mimicry (neutral) condition separately for each identity condition revealed an effect for participants in the out-group condition ($t(89) = 2.75; p = .007; d = 0.57$) but not in the in-group condition ($t(77) = 0.34; p = .733; d = 0.08$). More specifically, when participants observed an interaction of out-group members, they perceived the interaction as more just when mimicry was displayed ($M = 5.79; SD = 0.76; 95\% CI = [5.54, 6.05]$) compared to when neutral behaviour was displayed ($M = 5.32; SD = 0.89; 95\% CI = [5.07, 5.57]$).

¹² When comparing the mimicry condition with the no mimicry (neutral) condition only, a marginal effect of mimicry on perceived interactional justice was observed ($F(1, 345) = 3.07; p = .081; d = 0.19$).

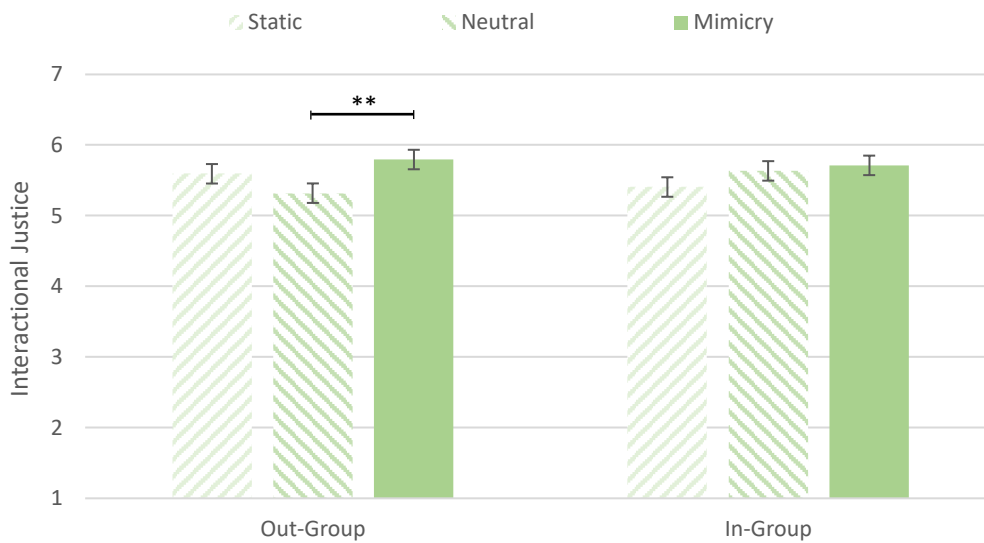


Figure 18 Mean interactional justice ratings as a function of mimicry and group condition in the no awareness condition. Asterisks indicate a significant statistical difference between conditions rounded to two decimal places (** $p < .01$). Error bars represent ± 1 SE.

Finally, the analysis revealed an effect of group membership on interactional justice perceptions but only in the no mimicry (static) condition and when participants were aware of mimicry as a concept ($t(83) = 2.13$; $p = .036$; $d = 0.46$). Specifically, participants perceived the interaction as more just when the dyad observed was perceived to be from the in-group ($M = 5.81$; $SD = 0.80$; $95\% CI = [5.55, 6.08]$) rather than from the out-group ($M = 5.42$; $SD = 0.91$; $95\% CI = [5.15, 5.68]$). The effect of mimicry on interactional justice dependent on group condition for participants who were aware of mimicry is illustrated in Figure 19.

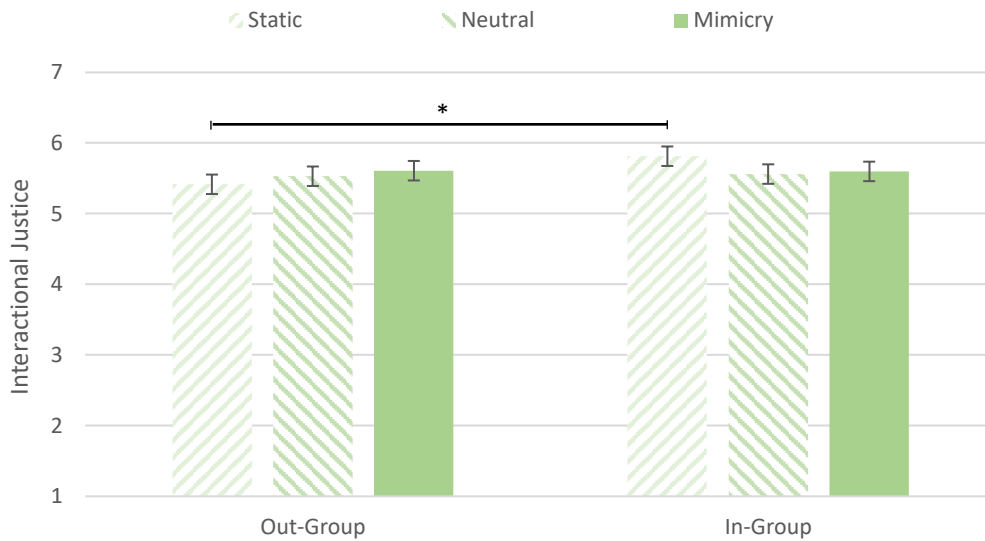


Figure 19 Mean interactional justice ratings as a function of mimicry and group condition in the awareness condition. Asterisks indicate a significant statistical difference between conditions rounded to two decimal places ($p \leq .05$). Error bars represent ± 1 SE.

H₉ hypothesised a mimicry × group membership interaction on perceptions of interactional justice whereas H₁₁ hypothesised that observed effects only occur in the no awareness condition. Indeed, the analysis revealed a mimicry × group membership × awareness interaction. However, this was different to what was expected. In particular, when participants were not aware of mimicry, mimicry, compared to neutral behaviour, increased perceptions of interactional justice but only if the observed individuals were out-group members. Accordingly, H₉ is not supported while H₁₁ is supported for interactional justice.

Cooperation. The analysis revealed a main effect of mimicry on perceived cooperation ($F(2, 514) = 5.44$; $p = .005$; $\eta^2 = .02$) but no main effect of group membership ($F < 1$; $p = .460$; $\eta^2 < .01$) or awareness ($F < 1$; $p = .500$; $\eta^2 < .01$). As illustrated in Figure 20, a mimicry × awareness interaction was observed ($F(2, 514) = 3.24$; $p = .040$; $\eta^2 = .01$) but no mimicry × group membership interaction ($F(2, 514) < 1$; $p = .427$; $\eta^2 < .01$). When statistically controlling for gender ($F < 1$; $p = .352$; $\eta^2 < .01$), ethnicity ($F < 1$; $p = .923$; $\eta^2 < .01$), and age ($F(1, 511) = 3.48$; $p = .063$; $\eta^2 < .01$), both the main effect of mimicry ($F(2, 511) = 5.24$; $p = .006$; $\eta^2 = .02$) as well as the mimicry × awareness interaction ($F(2, 511) = 3.34$; $p = .036$; $\eta^2 = .01$) remained significant. The groups were then separately analysed. When participants were aware of mimicry as a concept, mimicry did not have any effects ($F < 1$; $p = .768$; $\eta^2 < .01$). However, when participants were not aware of mimicry, it had a significant effect on perceived cooperation ($F(2,$

252) = 8.55; $p < .001$; $\eta^2 = .06$). More specifically, a significant effect was observed when comparing the mimicry condition with the no mimicry (static) condition ($t(170) = 3.95$; $p < .001$; $d = 0.59$) as well as the no mimicry (neutral) condition with the no mimicry (static) condition ($t(172) = 2.88$; $p = .005$; $d = 0.44$). Participants who were not aware of mimicry, rated an interaction in which static behaviour was displayed as least cooperative ($M = 67.65$; $SD = 18.49$; $95\% CI = [64.27, 71.39]$) compared interactions where either neutral behaviour ($M = 75.26$; $SD = 16.35$; $95\% CI = [71.96, 79.16]$) or mimicry was displayed ($M = 77.98$; $SD = 15.78$; $95\% CI = [74.39, 81.66]$). Comparing the mimicry condition with the no mimicry (neutral) condition, however, did not reveal an effect ($t(168) = 1.10$; $p = .271$; $d = 0.17$)¹³.

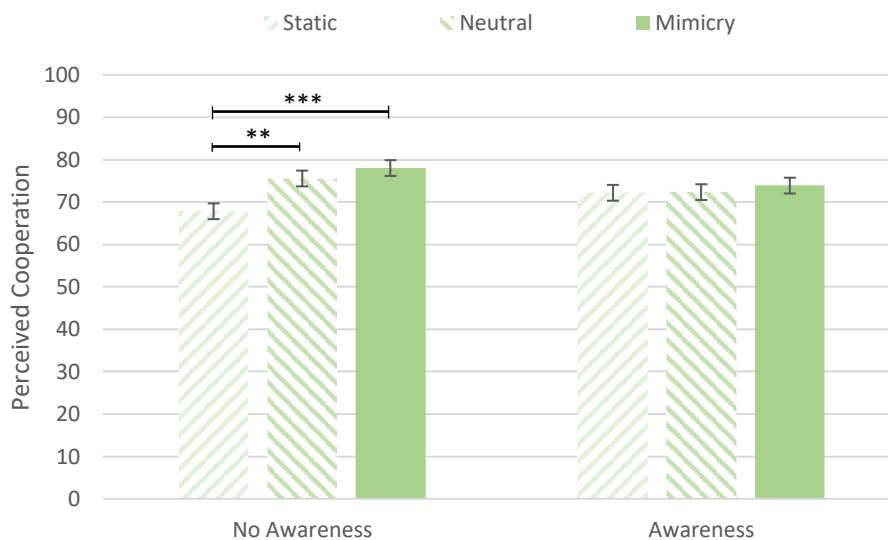


Figure 20 Mean cooperation ratings as a function of mimicry and awareness condition. Asterisks indicate a significant statistical difference between conditions rounded to two decimal places (** $p < .01$; *** $p < .001$). Error bars represent ± 1 SE.

Recall that the hypotheses for perceived cooperation (H_{10}) stated mimicry \times group membership interaction, while H_{11} hypothesised an additional moderation by awareness. The results only partly support such expectations. Mimicry, as a variable, only affected perceived cooperation when participants were not aware of mimicry. However, mimicry itself compared to neutral behaviour did not affect perceived cooperation. Instead, the no mimicry (static) condition appears to have a negative

¹³ When only the mimicry and the no mimicry (neutral) condition were analysed, the analysis revealed a main effect of awareness condition ($F(1, 345) = 4.55$; $p = .034$; $d = 0.22$) in a way that when participants were aware of mimicry they rated the interaction as less cooperative ($M = 73.11$; $SD = 16.26$; $95\% CI = [70.75, 75.46]$) than if they were not aware of mimicry ($M = 76.79$; $SD = 16.08$; $95\% CI = [74.35, 79.24]$).

effect on perceived cooperation compared to both mimicry and no mimicry (neutral). Accordingly, H_{10} is not supported whereas H_{11} is supported in the sense that the revealed effects occurred within the no awareness condition.

Discussion

Observed Mimicry

Similar to the previous discussion of dyadic mimicry (see section 'Discussion'), this section will discuss the findings of Study 3 with regard to the literature. However, broader implications based on the findings from both dyadic and observed mimicry will be discussed in the chapter 'General Discussion', which also includes two summary tables (see Table 7 and Table 8) that may be used to compare this work's findings.

In line with two separate research questions regarding the effect of mimicry compared to no mimicry (neutral) on the one hand and compared to both no mimicry (neutral) and no mimicry (static) on the other, this section is twofold. First, the results show that mimicry, compared to no mimicry (neutral), improve mimicker ratings of likability, trustworthiness, and competence as well as the perception of a fair conversation (the final three are dependent on group membership, see next section). This finding is the first demonstrating that mimicry itself, when displayed in an observed interaction, has positive effects on mimicker-related attitudes (see a call made by Chartrand and Lakin, 2013). This is particularly interesting considering that participants have not been in personal contact with the mimicker nor have they participated in the conversation (see the following section for a discussion of intergroup contact to reduce biases).

This result is aligned with the literature in several ways. Assuming that authors of dyadic mimicry used a neutral behaviour condition as a control condition rather than the static behavioural condition, these results are aligned with the literature of dyadic mimicry (for review, see Chartrand and van Baaren, 2009). Additionally, the results regarding perceived interactional justice are aligned with the, admittedly, very limited literature on observed mimicry suggesting that individuals rate an overall interaction as smoother when it involves mimicry displays (Sanchez-Burks et al., 2009).

In contrast, they contradict findings by Kavanagh et al. (2011) who found that mimicry when observed decreased, rather than increased, competence ratings of the mimicker. The reason for this result can, however, be explained. As already elaborated in the literature review for Study 3, Kavanagh et al. (2011) were primarily interested in

how mimicker ratings differ dependent on the behaviour that is mimicked (see section 'The Effects of Mimicry When It Is Observed'). When the mimickee's negative behaviour is mimicked, they found that the mimicker comes across as less competent. Despite such a valuable finding, the focus lies on the relationship between the behaviour of mimickees and mimickers. This is, however, different from the focus of the present study, that is, mimicry per se. While the former manipulated participant's attitudes towards the mimickee which, according to Kavanagh et al. (2011) reasoning, changed the participant's reaction to mimicry, the present examination focusses on mimicry in isolation and keeps the behaviour of the mimickee neutral. Hence, the focus of this research isolates the effect of mimicry whereas the effect found by Kavanagh et al. (2011) is confounded with the attitude towards the mimickee.

Second, when comparing all three mimicry conditions, it appears that the no mimicry (static) condition affects some but not all variables. In particular, a negative effect of the static condition compared to the mimicry condition was observed for likability, competence (for out-group condition only), trustworthiness (for an in-group dyad in the no awareness condition only), and perceived cooperation (for no awareness condition only). A difference between the static condition and the no mimicry (neutral) condition was found for likability and cooperation (for no awareness condition only). When combining these effects with the effects found when comparing mimicry with the neutral condition, the question as to whether mimicry is driving the effects compared to both no mimicry (neutral) and no mimicry (static) might depend, at least according to the above results, on the variable.

Ratings of the mimicker's likability significantly differ across all conditions suggesting both observed mimicry has a positive effect on likability compared to neutral behaviour whilst static behaviour has a negative effect compared to neutral behaviour. The literature of dyadic mimicry appears to agree with the positive effect of mimicry on likability, despite possible methodological constraints (see 'Mimicry And Non-Verbal Behaviour'). As this is the first mimicry-related study that utilised three behavioural conditions, literature regarding static behaviour and individual reactions in response to such robotic displays is limited. It, however, appears to be plausible that non-moving or robotic individuals are perceived as non-responsive and, therefore, as awkward or different. Research stemming from the field of robotics, for instance, has already

shown that robots that are behaviourally more responsive to humans tend to receive more favourable opinions compared to stiff robots (Lasota and Shah, 2015).

Ratings of competence and justice in the no mimicry (static) condition do not differ to the no mimicry (neutral) condition. They do, however, positively differ in the mimicry condition (for competence, in the out-group condition only; for justice, in the no awareness and out-group condition only). Taken together, this suggests that mimicry itself drives the effect on competence and interactional justice and that static behaviour does not have an effect. As these effects, however, depend on the group membership and awareness of participants, they will be discussed in the following sections.

The effect of mimicry on mimicker's trustworthiness appears to be more complex and dependent on group membership and awareness. Regardless of awareness, however, the mimicry condition appears to have a positive effect compared to the no mimicry (neutral) condition but only in the out-group condition suggesting that, like with competence, mimicry itself is responsible for the effects. In the in-group condition, in contrast, a difference between mimicry and neutral behaviour in the mimicker's trustworthiness does not exist suggesting that no mimicry (static) is driving the effects but only for participants who were unaware of mimicry as a concept. Accordingly, if the dyad is perceived to be comprised of out-group members, mimicry tends to elicit positive effects whilst static behaviour tends to engender negative effects if the dyad is comprised of in-group members and the participants are unaware of mimicry. The question that needs to be asked is, therefore, whether it is possible that for one group mimicry is driving the effects whilst static behaviour is driving the effects for the other. A possible answer to this question will be offered in the next section as group biases play an inherent role.

Finally, perceived cooperation does not appear to be impacted by mimicry per se. Instead, the results showed a significant difference between the no mimicry (static) condition and both the no mimicry (neutral) condition as well as the mimicry condition (only for the no awareness condition). Consequently, out of the variables measured in this study, perceived cooperation appears to be the only variable solely impacted by the no mimicry (static) condition and not by the other two behavioural conditions. To this extent, the results appear to be similar to the ones obtained by Study 2 (see section 'Discussion' for discussion).

The reason for this may be a non-affect based nature by which individuals judge cooperation. Contrary to affect-related constructs such as likability, judgements of cooperation may rely on attributional, and consequently, objective information (see Bies and Shapiro, 1987; see also Bies and Moag, 1986). Accordingly, affective behaviour such as mimicry, might not influence objective judgements of cooperation. As long as someone does not display awkward or cold behaviour, judgements of cooperation are not affected by affect-related behaviour. However, once individuals display robotic, non-responsive behaviour, perceptions of cooperation appear to be affected (in no awareness condition only, as will be discussed in the section 'Awareness'). One reason for this might be the lack of non-verbal response to the behaviour of the other person. While in both the mimicry and no (mimicry (neutral) condition the mimicker was moving throughout the video, non-verbal behaviour in response to the other's behaviour was displayed. Such responses were, however, absent in the no mimicry (static) condition. As behavioural responses to actions of others are fundamental for cooperative behaviour (for a review, see Sachs et al., 2004), their absence, such as in the no mimicry (static) condition, might engender the perception of less cooperative behaviour.

Effect of Group Membership

Three outcome variables were affected by a mimicry \times group membership: competence, trustworthiness, and interactional justice. Recall that the hypotheses stated a positive effect of mimicry in the in-group condition and a negative effect in the out-group condition.

First, the effect of observed mimicry on competence compared to both no mimicry (neutral) and no mimicry (static) only exists if the observed dyad is perceived to comprise out-group members. Accordingly, the mimicry \times group membership was different than expected. While observed mimicry does not appear to affect competence ratings for in-group mimickers, it appears to reconcile negative out-group biases which exist in the no mimicry (neutral) condition.

One possible explanation might come from the research of intergroup contact (e.g., Johnson et al., 1984). The theory of intergroup contact to reduce out-group biases has a long history in social psychology (see Barnum, 1997). Research has found, for instance, that positive contact between members of different social groups reduces

negative attitudes towards another (cf., Merkwand and Smith, 1999; Flynn et al., 2001; Dovidio et al., 2008; for support, however, see Rhiannon N. Turner and Crisp, 2010). It is important to mention here that it was not intergroup contact itself that had a positive effect on competence ratings but it was rather the mimicry behaviour within the intergroup contact. Accordingly, it might be possible that mimicry by an out-group member, that is, an out-group member displaying affective behaviour, creates a positive intergroup experience compared to out-group members displaying neutral or static behaviour, even though it is merely based on observations. Consequently, biases against this individual might be reduced as a result of this positive experience stemming from mimicry¹⁴. To understand another reason for this unexpected mimicry × group membership interaction, it may be worth recalling the concept of meta-contrast (see section 'When Do We Categorise People?'; see also Turner, 1985; Hogg and Turner, 1987; Oakes et al., 1991; Turner et al., 1994). As a result of the fluidity of social identities (see Wilder and Thompson, 1988; see also Gaertner et al., 1989; Turner et al., 1994; Reynolds et al., 2001; Jetten et al., 2002; Schmitt et al., 2003; Onorato and Turner, 2004; Reicher and Haslam, 2006), mimicry may be able to re-shape the observer's perception of the mimicker's social identity, potentially through a positive intergroup experience (see above). In other words, though the mimicker may have been perceived as an out-group member initially, once he started to mimic and mimicker-evaluations increased subsequently, observer's may have started to perceive him as an in-group member instead. Due to the nature of the data, such rationale cannot be tested and is thus speculative. However, it may be worth for future research to examine this possibility.

Second, group membership has been found to moderate the effect of mimicry of trustworthiness. In particular, mimicry compared to no mimicry (neutral) increases the trustworthiness of out-group members and consequently, diminishes a negative out-group bias. As this effect appears to be similar to the one observed for competence, a possible explanation for this effect has already been offered in the above paragraph. For observed in-group members, in contrast, no mimicry (static) appears to have a negative effect on trustworthiness ratings compared to both no mimicry (neutral) and mimicry (in the no awareness condition only). In other words, mimicry per se does not

¹⁴ This rationale appears to be in line with the results of Study 2: Mimicry by an out-group member may be perceived as more positively than static behaviour.

increase trustworthiness towards in-group members but static behaviour does diminish this trust.

One explanation for this effect can be provided when the biases for in-group members are remembered. Individuals express favourable opinions towards fellow in-group members whilst in-group members are striving for being a prototypical representative of their group (Tajfel and Turner, 1979; Turner et al., 1987). It might therefore be the case that affiliative behaviour such as mimicry does not make a difference in trustworthiness ratings of in-group members, or evaluations of competence for that matter, because individuals already express a positively biased opinion towards these individuals. Put differently, behaving neutrally or expressing more affiliation does not make a difference for such evaluations, because in-group members experience high trust already, simply because of their group membership (Brewer, 1981; Platow et al., 1990; Tanis and Postmes, 2005; Platow et al., 2012). However, once in-group members display behaviour that is non-prototypical for the group, trust towards such in-group members can suffer (Hogg, 2005). As static behaviour displayed by one in-group member towards another, is non-responsive and might appear suspicious, it might be perceived as non-prototypical and, consequently, diminishes trust¹⁵.

Finally, perceptions of interactional justice were positively affected by mimicry compared to the no mimicry (neutral) condition and only when the dyad observed comprised out-group members (in the no awareness condition only, see next section). One explanation might be offered by using the same logic applied for competence or trustworthiness in the previous paragraphs. This, however, might be a too simplistic approach because, as with cooperation (see above), justice may be not based on affect but instead relying on attributional information (see Bies and Shapiro, 1987; see also Bies and Moag, 1986). Accordingly, one question left for future research is how a potentially non-affect based variable such as justice can be influenced by out-group behaviour but not by in-group behaviour.

¹⁵ On the first glance this point might seem contradictory to the point raised in the discussion of Study 2, suggesting that in-group member's trustworthiness might be independent of the in-group member's behaviour. The difference between these two studies is (apart from the perspective of the mimicker), however, the strength of group category. In Study 2 the categories appeared to be sufficiently relevant resulting in a strong in-group bias so that behaviour of in-group members did not make any difference (see Reicher et al., 1995), a point also raised by Hogg (2005).

Though this section briefly provided possible explanations for the mimicry × group interaction found in the study, they cannot be taken for the single truth. They were by no means intended to offer full explanations of the phenomena observed. Instead, they simply offer one possible explanation for cognitive processes underlying the results. Further research is needed to support the rationales provided. Similarly, more research is needed to answer questions such as why some variables were affected by group membership such as trustworthiness and competence ratings while other, apparently similar variables, such as likability were not.

Awareness

The participant's awareness affected the perceived trustworthiness of the mimicker as well as perceived interactional justice and perceived cooperation. Recall that awareness does not refer to explicitly instructing participants to pay attention to the mimicker. Instead, it refers to providing hints to the participant that the individual might employ some non-verbal techniques to foster relationships.

In line with expectations, most effects of mimicry and its interaction with group membership on trustworthiness only appeared in the no awareness condition. This result is consistent with literature suggesting that knowledge is a critical component of social influence (see Cialdini, 2008). In particular, social influence can only be exerted to a greater extent when knowledge of this influence is absent to the influenced individual (Cialdini and Goldstein, 2004; see Sagarin and Wood, 2007). The fact that trustworthiness differed between mimicry and no mimicry (neutral) for out-group members in the awareness condition rather speaks for the strength of mimicry's effect. Even when participants knew that the mimicker "attended a course" to increase perceived competence perceptions through non-verbal tools, that is, through manipulation, they still trusted him more when he mimicked. On the other hand, it may have been that the awareness manipulation was only partly effective. This may be supported by the fact that likability and competence, for instance were not affected by the awareness manipulation.

In contrast to this argument, perceptions of both interactional justice and perceived coordination, as a result of the behavioural condition, were also dependent on the awareness condition (for justice, for out-group condition only, see the previous section). These results were expected and are aligned with the literature, as briefly

elaborated in the previous paragraph. However, some questions still remain unanswered and thus future research should provide clarifications. For instance, while no effects were found in the awareness condition for cooperation, an out-group bias was found in the no mimicry (static) condition for interactional justice. A question to answer is, accordingly, why such an out-group bias only exists in the awareness condition and why only for perceived interactional justice and not for cooperation.

The preceding three sections have attempted to offer explanations for the results obtained in Study 3. The next section will briefly summarise the findings of this study before limitations are discussed and more directions for future research are provided.

Summary

The preceding experiment was conducted to explore whether mimicry compared to no mimicry when it is directed at some else as opposed to directly to the self, can affect attitudes towards the mimicker as well as perceptions of the observed conversation as a whole. Based on results from Study 2 of this work, two different underlying questions were under investigation. On the one hand, the difference between mimicry and neutral behaviour was investigated to find out whether mimicry itself has an effect, compared to neutral behaviour. On the other hand, the difference between neutral behaviour and the no mimicry condition often used by researchers, here referred to as static, was explored. Finally, the moderating effect of social identities and participant's awareness on such effects was examined.

Overall, the outcomes were different from what was expected. This difference, however, comes as a positive surprise. First, it seems that mimicry, compared to neutral behaviour, affects the likability, trustworthiness, and competence of the mimicker. This result is surprising because it stands in contrast to the results found in the preceding dyadic experiments which suggested that the static condition might drive the effects found by mimicry researchers. This, however, does not appear to be the case for observed mimicry. In line with Study 1 and Study 2, the results also provide evidence for the diminishing effect of static behaviour (except for trustworthiness).

The second reason as to why the results were positively surprising was because of the mimicry \times group interaction. The effects of mimicry were expected to have a positive effect on mimicker-related attitudes when the observed dyad was perceived to be from the in-group. In contrast, if the dyad was perceived to be from the out-group

the effects of observed mimicry on such attitudes was expected to be negative. The results, however, paint a different picture from what was expected. Mimicry only appears to affect mimicker related attitudes if the dyad observed was perceived to be from the out-group (except for trustworthiness, where both in and out-group mimickers are affected by mimicry).

An important point to raise regarding the influence of group membership is the existence of an out-group bias. In the no mimicry (neutral) condition, for instance, participants perceived the mimicker as less trustworthy and competent if he was part of an out-group dyad compared to an in-group dyad. Accordingly, it appears that participants were subject to a negative out-group bias. As mimicry, compared to neutral behaviour, increases competence and trustworthiness but only for out-group members, this bias does not exist anymore in the mimicry condition. Therefore, it appears that mimicry in an observed interaction reduces negative out-group biases on mimicker-related attitudes. As I will point out in the following chapter, this finding contributes to a more comprehensive understanding of how behaviour can reduce prejudice (for literature on the reduction of prejudice, see Gaertner et al., 2000; Hewstone et al., 2002; Crisp and Turner, 2009; Dovidio et al., 2017).

Finally, the study aimed at exploring the effect of awareness on the hypothesised effects of mimicry and group membership. It was expected that such effects only occur if participants were unaware of the existence of mimicry as a general concept. The results partly support this notion. In particular, such a three-way interaction was found for perceived trustworthiness and perceived interactional justice (marginal). While mimicry only had an effect on interactional justice when the dyad observed was perceived to consist of out-group members, this effect was only apparent when participants were unaware of mimicry. Similarly, for the trustworthiness of the mimicker, almost all effects only occurred in the no awareness condition except for the positive effect of mimicry, compared to no mimicry (neutral) in the out-group condition. For perceived cooperation, as expected, mimicry as a variable only had an effect in the no awareness condition. Such effects point to the importance of the individual's social behaviour-related awareness.

Limitations and Future Directions

To study the effects of mimicry when it is observed in interactions, Study 3 employed pre-recorded videos. The content of the conversation as well as the behavioural manipulations per se, therefore, remained unchanged across the mimicry conditions. Accordingly, using pre-recorded videos allowed for an increase in the internal validity of the study compared to experiments in dyadic mimicry, for example, as the scenario was identical and standardised. However, this benefit comes with a cost. Specifically, manipulating social identities in video studies is challenging (see Golder and Macy, 2014), especially when the categories used do not correspond to static characteristics of participants such as gender or race. However, as Study 2 has already shown, using such categories might lead to strong group boundaries which might overshadow the effects of mimicry. Consequently, Study 3 refrained from utilising group boundaries which make the resulting intergroup biases too strong. Nonetheless, the challenge of adequately manipulating social identities leads to the probability that participants watched the videos with different salient identities.

In a similar vein, conducting manipulation checks which adequately check whether participants perceived the individual in the video as an in-group or as an out-group member is also challenging in online studies. The social identity manipulations in Study 1 and 2 utilised some of the participants' 'real' information, either the University where they studied or their gender, which then allowed to employ a manipulation-check grounded in the notion of self-other overlap with the mimicker based on these categories. Thus, the manipulation-check relied effectively on the participant's assessment of group membership-related similarity with the mimicker. Study 3, in contrast, used a manipulation based on imagination (e.g., leader vs subordinate) where they were asked to imagine the role they had relative to the mimicker. Precisely because they were told what their roles were (instead of being themselves, as was the case in Study 1 and 2), a manipulation-check that relies on an assessment of self-other overlap was challenging. In other words, asking participant's to imagine a scenario and then asking them how their self-other overlap is with the mimicker within this very scenario seemed to be too much of a stretch. Thus, Study 3 attempted to check that participants perceived the dyad in the video as either members of the in-group or as members of the out-group by using a measure that, though it appears to be aligned with manipulation checks of prior research (see Jetten et al., 1996; see also

Grant and Hogg, 2012), was not ideal because it did not check the manipulation rigorously. Hence, it might have been the case that the effects found by group membership are not the result of those in- and out-group biases that Study 3 aimed for; but rather of different, unintended social groups. This might be one reason as to why some effects were only found for particular variables whilst they remained hidden. For this reason, researchers are urged to continue examining the effects of mimicry in observed interactions using different social groups in in-person experiments as these facilitate the use of more adequate manipulations and manipulation checks.

An additional limitation regards omitted variables that may have influenced the results. Similar to what was mentioned in Study 2, the differences between the behavioural conditions may not solely reflect differences in behaviour but may instead be perceived by participants as differences in, for example, the mimicker's (hidden) motives to engage in the interaction or his enthusiasm for the conversation. Additionally, the differences between the videos were assumed to be related to the varying naturalness of the mimicker. As such variables were not measured, however, it remains unknown whether the differences in the videos purely relate to the non-verbal behaviour or whether they relate to differences on other dimensions that may explain the effects found.

In a similar vein, the awareness manipulation is accompanied by certain limitations. First, it is important to mention that a manipulation check was not conducted for the awareness condition. After all, getting an indication from participants as to what extent they were unaware of a certain phenomenon (i.e., mimicry) when they were indeed unaware, appears to be challenging. Nonetheless, there may be some ways for future research to develop adequate manipulation checks for such awareness manipulations. Second, manipulating participant's awareness may also come with other, unintended effects. For example, by telling participants that the mimicker attended a course on how to come across as more competent, they might have started to question his underlying motivations. Again, as this was not measured, it remains unknown whether such effects underlie the results, particularly when one takes into account the missing manipulation check. Accordingly, the effects found for the awareness manipulation may be attributable to other confounding factors, which might be worth examining in future research.

Though this work revealed interesting effects of observed mimicry, social identities, and awareness as well as their interactions on mostly mimicker-related attitudes, future research can benefit from exploring different avenues. First, the present study investigated the effect of mimicry depending on whether the observed dyad was perceived to be comprised of in-group or out-group members. Accordingly, research would benefit from research examining such effects when the interaction occurs between an in-group member and an out-group member. What happens, for example, if the mimicker is perceived to be an in-group member and interacts with an out-group member or vice versa? Such investigations will offer more clarity in the moderating effects of group memberships on mimicry and will, therefore, provide a deeper understanding of social interactions as a whole.

Second, more research is required to examine the interaction of observed mimicry and awareness in conversations. The present study found that awareness interacts with the mimicry variable but only for certain variables (justice, cooperation and trustworthiness). More research is, consequently, required to validate these findings on the one hand and to examine why particular variables are affected by awareness while others are not.

Third, and most importantly, more research on mimicry when it is observed is required. The study's greatest contribution is that mimicry compared to neutral behaviour makes the mimicker more likeable, competent, or trustworthy and that such effects diminish negative out-group biases (for competence and trustworthiness). However, less clarity exists in terms of the second research question, that is, the static condition. While the static condition appears to have negative effects for some variables such as liking or cooperation, it has no effect when it is compared to mimicry for other variables such as trustworthiness. Hence, research is required to better understand the mechanisms through which the static behaviour is perceived differently depending on the variable. A deeper understanding of static, awkward behaviour would also lead to an enhanced understanding of intergroup relations because static behaviour has been shown to be perceived differently depending on the group membership of the observed individuals. Overall, of course, more research is required on the novel topic of mimicry in observed interactions to verify the findings of this research.

There is an important point regarding the relationship between effect sizes observed and the statistical power of the experiment. The effect sizes found in the experiment were slightly smaller than the medium effect size used for the sample size calculation. Under normal circumstances, this means that the power of the sample might not be sufficiently high to detect such effect sizes and therefore, the effect sizes found must be overestimations of the true effect sizes. This argument rests on the assumption that the sample size of the experiment equals the sample size used in the calculations. Study 3, however, had a much larger sample than the calculation suggested. Consequently, the experiment might have had sufficient power to even detect these smaller than expected effect sizes. Indeed, a post-hoc sensitivity analysis using G*Power (v. 3.1.9.7, Faul et al., 2007) and the input variables $\alpha = .05$, $df = 2$, number of groups = 12, a power of .95, and the achieved sample size of $N = 526$ showed that the experiment was able to detect effect sizes of $f = .19$. Considering that this equals low to medium effect sizes (see Cohen, 1988), the experiment appeared to be able to detect the effect sizes found in the study. Accordingly, effect sizes might not be overestimations but rather represent the actual effect sizes of the phenomena concerned.

Despite limitations and possible avenues for further research, the findings of this study are important in several ways. First, mimicry, compared to no mimicry (neutral), when it is merely observed in conversations in which individuals do not participate, may affect mimicker-related attitudes as well as perceptions of justice. Consequently, the finding helps researchers to understand how behaviour can change perceptions of individuals while it also can find many applications, such as in impression management (see Bolino et al., 2016), for instance. Second, such effects are partly dependent on social group membership in a way that negative out-group biases towards an observed individual may be diminished (see competence and trustworthiness). This is not only a novel finding in mimicry research as a whole (see a call made by Chartrand and Lakin, 2013) but it also demonstrates the potential malleability of group biases merely through behavioural displays. Accordingly, the study might find applications in theories dealing with the reduction of group biases, for instance (see Brown and Hewstone, 2005). Third, the study showed overall interactions with awareness on some variables, though this manipulation has several limitations (see above). Therefore, the finding that the effects of mimicry might depend

on whether individuals have knowledge about mimicry, might change practical applications and, hopefully, research in a way that contributes to a better understanding of mechanisms through which mimicry elicits its effects.

So far, however, I have compared the results of the present study to the literature and provided limitations and future directions. However, broader implications and their importance for mimicry and identity research have not yet been provided. Accordingly, the following chapter will elaborate on what the results of Study 1, Study 2, and Study 3 mean for the broader picture of the literature and what the contributions of this work are. It will, therefore, contribute to a more comprehensive understanding of mimicry.

General Discussion

Summary of Results

Before the general implications and the contributions of the present research can be discussed, it may be useful to briefly summarise the findings. Table 7 provides an overview of the main effects found for each dependent variable across the three studies conducted. It also indicates whether the effects found for mimicry are driven by the static or by the mimicry condition.

Table 7 Summary of main effects across the three studies

Main effects	Dependent Variables	Dyadic Mimicry		
		Study 1	Study 2	Study 3
Mimicry				
	Likability	✓ ^{n.d.}	✓ ^s	✓ ^{m;s}
	Competence	✓ ^{n.d.}	×	✓ ^m
	In-Group Identification	✓ ^{n.d.}	×	-
	Trustworthiness	-	×	×
	Interactional Justice	-	×	×
	Perceived Cooperation	-	✓ ^{m;s}	✓ ^s
	Perceived Similarity	-	✓ ^s	-
Group				
	Likability	×	✓	×
	Competence	×	✓	×
	In-Group Identification	×	×	-
	Trustworthiness	-	✓	×
	Interactional Justice	-	×	×
	Perceived Cooperation	-	✓	×
	Perceived Similarity	-	✓	-
Awareness				
	Likability	-	-	×
	Competence	-	-	×
	In-Group Identification	-	-	-
	Trustworthiness	-	-	×
	Interactional Justice	-	-	×
	Perceived Cooperation	-	-	×
	Perceived Similarity	-	-	-

Note. A checkmark indicates an effect; a cross indicates no effect; a hyphen indicates 'not available'. Letters next to a checkmark indicate the dominant mimicry condition; m = mimicry; s = static; n.d. = not distinguished.

Recall that all three studies are the largest in terms of sample size in the field. While Study 1 found main effects of mimicry for all variables measured (i.e., likability, competence, and in-group identification), Study 2 found such main effects only for likability, similarity and cooperation in addition to main effects of group membership

on the majority of variables indicating strong intergroup biases. However, though the main effect of mimicry on cooperation is driven by mimicry and static condition, the effect on likability and similarity is merely driven by the static condition. Accordingly, also the mediation, though significant, is rather due to the negative effect of the static condition than due to a positive effect of mimicry. In contrast to the dyadic context, observed mimicry revealed main effects of mimicry on likability, competence (marginal) and cooperation. While the former two are rather driven by the mimicry condition (likability is also driven by the static condition), cooperation appears to be due to the negative effect of the static condition. In addition to these main effects, Table 8 provides an overview of the interactions found across the three studies.

Table 8 Summary of interactions across the three studies

Interactions	Dependent Variables	Dyadic Mimicry			Observed Mimicry		
		Study 1	Study 2	Study 3	Study 1	Study 2	Study 3
Mimicry x Group	Likability	×	√ ^s	×			×
	Competence	×	×				√ ^m
	In-Group Identification	×	×				-
	Trustworthiness	-	×				√ ^{m;s}
	Interactional Justice	-	×				×
	Perceived Cooperation	-	×				×
	Perceived Similarity	-	√ ^s				-
Mimicry x Awareness	Likability	-	-				×
	Competence	-	-				×
	In-Group Identification	-	-				-
	Trustworthiness	-	-				×
	Interactional Justice	-	-				√ ^m
	Perceived Cooperation	-	-				√ ^s
	Perceived Similarity	-	-				-
Mimicry x Group x Awareness	Likability		-				×
	Competence	-	-				×
	In-Group Identification	-	-				-
	Trustworthiness	-	-				√ ^{m;s}
	Interactional Justice	-	-				√ ^m
	Perceived Cooperation	-	-				×
	Perceived Similarity	-	-				-

Note. A checkmark indicates an effect; a cross indicates no effect; a hyphen indicates 'not available'. Letters next to a checkmark indicate the dominant mimicry condition; m = mimicry; s = static.

While Study 1 did not reveal any mimicry \times group interactions, potentially due to the lack of relevance of the social categories (i.e., University membership), Study 2 provided two of such interactions for likability and similarity measure. However, as indicated above, these are due to the negative effect of the static condition and not the result of a positive effect of mimicry.

The results, in contrast, showed several interactions in Study 3 (observed mimicry). First, the analysis revealed a mimicry \times group interaction on competence and trustworthiness. While both appear to be due to a positive influence of mimicry per se, trustworthiness also appears to be influenced by the static condition. Specifically, mimicry appears to diminish negative out-group biases that exist in the neutral condition. Second, a mimicry \times awareness interaction was observed for interactional justice as well as perceived cooperation. The former is influenced by the positive effect of mimicry while the latter is influenced by a negative effect of the static condition. In other words, when participants were not aware of mimicry, static behaviour in an observed interaction led to less perceived cooperation. Finally, mimicry \times group \times awareness interactions were observed for both interactional justice and perceived trustworthiness. The interaction on trustworthiness appears to be driven by the mimicry condition (for out-group members) and by the static condition (for in-group members) and only when participants were not aware of mimicry. In particular, while mimicry diminishes negative out-group biases of trustworthiness when the observed dyad was comprised of out-group members, static behaviour reduced the trustworthiness of the mimicker if the dyad observed was comprised of in-group members. For interactional justice, participants perceived an interaction when mimicry was displayed as more just when they were not aware of mimicry and when the dyad comprised out-group members, diminishing negative out-group biases that exist in the neutral condition.

This section provided a brief summary of the findings of the recent research. More details can be found in the respective chapters. Although the findings have already been discussed in detail as to how they relate to the literature, the following sections will provide a more generic perspective as to what the findings imply for theoretical and empirical research, for methodology and practice. Finally, general limitations and future directions will be offered in addition to those that have already been outlined, followed by a conclusion.

Theoretical and Empirical Implications

Based on the three preceding studies, this section will discuss their theoretical and empirical implications. First, despite the literature's focus on dyadic mimicry, the present research demonstrates that mimicry can be understood as a broader concept of affiliation. In fact, Study 3 shows that mimicry, compared to neutral behaviour, elicits effects on mimicker judgements if it is merely observed in a video. Though this is the first study revealing such effects, it is in line with two studies that already provided a hint that mimicry is greater than dyadic (see Sanchez-Burks et al., 2009; Kavanagh et al., 2011). The findings also provide further evidence on the notion that humans constantly infer judgements based on the behaviour of others (for an overview, see Cassidy and Gutchess, 2015). Accordingly, behaviour matters when one is surrounded by others, be it on the train or in a restaurant, even if one is not engaged in a conversation.

Second, I have shown that mimicker-judgements are strongly affected by non-responsive behaviour, especially in dyadic contexts. Specifically, awkward, non-responsive behaviour appears to be particularly damaging for judgements if one is perceived as an out-group member. Though this leads to important methodological implications (see below), it also points to an important theoretical implication. Members from a certain social group may be particularly sensitive to negative non-verbal cues from out-group members. Accordingly, biases stemming from social identities do not appear to be static and binary (i.e., positive or negative). Instead, they may rather be dynamic and can change depending on the behaviour of individuals.

Third, and in support of the dynamic biases stemming from social identities, mimicry may be able to diminish negative out-group biases, at least when it is observed rather than personally experienced. Though I have elaborated on the limitations regarding the social identity manipulation (see 'Limitations and Future Directions' in Study 3), this is arguably the most important finding of the present work and suggests that NVB may be a powerful tool to reconcile negative impressions. Though research has shown that positive intergroup contact can reduce intergroup biases (Turner, Crisp, et al., 2007; Turner, Hewstone, et al., 2007; Turner et al., 2008; Turner and Crisp, 2010), the fact that observing NVB may be able to do so without direct intergroup contact is a suggestive finding. Consequently, it seems to point to the behaviour-based malleability

of intergroup biases and adds to the literature concerned with reducing group biases (see Gaertner et al., 2000; Hewstone et al., 2002; Crisp and Turner, 2009; Dovidio et al., 2017), although more research is required to support the findings.

Similarly, group membership can moderate the effects of mimicry, at least in observed interactions. To date, researchers have mainly presupposed that social group memberships moderate effects of mimicry, without having empirical evidence (Hale and Hamilton, 2016a). Study 3 was able to provide such empirical evidence for the moderating role of social group membership on the effects of mimicry. This finding implies that social group memberships matter even when we observe people and judge them based on their behaviour. Specifically, humans evaluate behaviour differently depending on whether it is displayed by members of in-groups or out-groups. However, the way that the effect is moderated appears to be against the assumptions of mimicry researchers. Rather than the assumed negative effect of mimicry when it is displayed by an out-group member, the results demonstrate a positive effect on mimicker-related judgements (and no effect for in-group members). Accordingly, mimicry, when it is observed, does not appear to have negative effects. Therefore, mimicry in observed interactions may only have, if any, positive effects. Practical implications can be drawn from this notion (see below).

Fourth, the findings have important implications for the way we understand the relationship between mimicry and social identities, which has not been successfully explored by researchers to date. Accordingly, the present research dealt with two distinct concepts which had not been successfully combined. In other words, the lack of literature made it difficult to predict which of those concepts, mimicry or social identities, exerts stronger influence. Based on the literature from SIT and evidence that social identities moderate the occurrence of mimicry (rather than its effects), I argued that social categorisations are stronger than mimicry in their influence on judgements. Accordingly, the hypotheses stated that mimicry by out-group members backfires as a result of the stronger influence of negative out-group biases. The results, however, revealed something different. In observed interactions, mimicry by out-group members appears to diminish, rather than to strengthen, negative out-group biases manifested in mimicker-related judgements. Accordingly, the present research is the first to clarify the relationship between mimicry and social identities. In particular, the influence of mimicry may be stronger than the influence of social identities.

However, this may be subject to factors such as the social categories chosen, among others.

Fifth, mimicry in observed interactions may operate differently from mimicry in dyadic interactions. The results of the present research show that while mimicry, compared to neutral behaviour, may not elicit effects in dyadic interactions, it does in observed interactions. Though there may be other reasons for this difference such as group categories (see below), it may also be that mimicry in observed interactions operates through different mechanisms to mimicry in dyadic interactions. This view is supported by the finding that mimicry \times group interactions were found only in observed mimicry. It implies, on the one hand, that it is difficult to compare results between studies of observed and dyadic mimicry. Accordingly, a new avenue of promising research may be to further explore mimicry in observed interactions and how the mechanisms and effects are (or are not) different from dyadic mimicry.

Sixth, individual awareness appears to play a role in whether mimicry elicits effects. Particularly, mimicry only elicited (for some, not all variables) when participants were in the no awareness condition. However, this can only be said for observed mimicry as the role of awareness was not tested for dyadic mimicry. There is, however, evidence that the effects of dyadic mimicry are also moderated by awareness (Kulesza et al., 2016). Considering that the awareness condition was operationalised, in essence, through providing knowledge about NVB in general, the present findings point to important aspects of mimicry. Mimicry, when displayed by an individual, may only elicit effects if observers do not know, at that particular moment, that non-verbal behaviour subconsciously influences others. In other words, awareness of social influence does not only limit the influence of mimicry when it is directed at the self (Kulesza et al., 2016) but also when it is directed at others. Knowledge, therefore, may help to immunise against the effect of mimicry in general. This is an important limitation of mimicry per se.

Finally, the effects of mimicry in dyadic contexts may not be mediated by perceived similarity. Based on a dyadic context, such a mediating link has long been presupposed by mimicry literature as physically being similar (through mimicry), so the argument, may result in perceptions of being similar (see Byrne, 1971; see also Lakin, 2013; for a review on the mimicry literature, see Chartrand and Lakin, 2013). However,

the present studies do not support such a link. Though this finding may be due to the strength of group categories, it may also be due to not sufficiently understanding the mechanisms through which mimicry elicits effects. For example, the fact that mimicry elicited effects even when it is observed may speak in favour of the argument that perceived similarity cannot be the mechanism behind mimicry. This is because the mimicker was at no point physically similar to the observer as he mimicked someone else and yet, mimicry still elicited effects. Such a challenge to the argument underscores the need for more research to understand the concept of non-verbal mimicry. Researchers must do so, however, with rigorous research design. I hope that the methodological implications outlined in the following section are helpful to researchers.

Methodological Implications

During the present work, I have touched on methodological issues with the current mimicry literature. Drawing on the present studies, this section outlines implications for such issues as well as further implications.

One of the most important implications of this work relates to the operationalisation of the no mimicry condition. While Study 1 was consistent with the literature on mimicry in terms of what conditions were used in the experimental design (Chartrand and Bargh, 1999), Study 2 and 3 revealed the importance of using a control condition. Much of the literature on mimicry uses a static behavioural condition as a control condition. This, however, might come across as awkwardly static and non-responsive. Hence, a neutral behaviour control condition was included in the study design of Study 2 and 3 in addition to the static and former no mimicry condition. This change in design allowed for the examination of whether effects found rather stem from the static condition or whether they are due to mimicry per se.

Surprisingly, and speaking in favour of two different constructs (see above), the results differed depending on the perspective. While effects found in dyadic mimicry were merely a result of the static condition, mimicry per se elicited effects in the observer study. It is important to notice that the effects found in the dyadic study would have been allocated to mimicry rather than to the static condition if the control condition had not been included. Accordingly, it appears to be important for future researchers to specifically elaborate on how they operationalised the no mimicry condition or,

alternatively, to include a control condition. Additionally, such findings question the credibility of a myriad of mimicry studies, simply through not knowing how the researchers have operationalised the no mimicry condition.

The present research also provides important implications for social identity research. Despite the limited amount of studies that investigated mimicry in intergroup contexts, I have critiqued most of them for not adequately priming social identities. Consequently, the research design was rigorously developed to ensure adequate priming of identity levels and their manipulation checks. Though according to such checks, the manipulations have worked in Study 1 and 2, it was very difficult to conduct the manipulation check in Study 3, due to the nature of an online study. I can thus not certainly say that the desired social identities were salient in the respective conditions. However, the fact that the present research is the first demonstrating a mimicry \times group interaction underlines the importance of an effective priming approach as well as an effective manipulation check.

Additionally, the context of social identities may be important. If possible, the social identities primed should represent important identities in the context studied. For instance, if the study is about gender, it may help to have gender-related social identities. In a similar vein, the strength and relevance of social identities appear to be important for the outcome of a study. Study 1, for example, did not find any mimicry \times group interaction while Study 2 did. One reason for this may be the relevance of the social identities chosen. University membership (Study 1) may not have been sufficiently relevant compared to 'gender' (Study 2). To simulate real-life situations in an experiment, the relevance and strength of social identities should assimilate the social identities found in real-life situations. If researchers are interested in how football fans react differently depending on their social identities, the identities experimentally manipulated should also relate to football teams rather than gender, for example.

Using identities different from those found in the assimilated real-life context may change the results of the study. Simply comparing in-groups to out-groups does not seem to be sufficient. Instead, different out-groups (and, perhaps, in-groups) may elicit different effects so that a dichotomous view of in-groups versus out-groups may be too simplistic (see also Waldzus et al., 2005; Verkuyten and Zaremba, 2005; Cortes et al., 2005). Specifically, social identities have different strengths and are more or

less relevant depending on the context under investigation (see also Scheepers and Ellemers, 2019). Therefore, research must acknowledge and reflect on the specificities of the selected out-groups and how these may differ, compared to other out-groups. For example, an important avenue to explore may be which identities create stronger biases than others.

Another important methodological implication relates to how mimicry in observed interactions can be studied. I employed a video study to explore the effects of mimicry on mimicker related judgements when it is observed. However, due to the limited research conducted in this field, it was difficult to know beforehand whether mimicry displayed on videos will be sufficiently stimulating to elicit effects. Accordingly, the findings of Study 3 imply that the effects of mimicry in observed interactions can be studied via video studies. Nonetheless, this has some important limitations which will be elaborated on in section 'Limitations and Future Directions'.

Practical Implications

Though more research is needed to substantiate the results, the present research may point towards some practical implications. First, displaying mimicry, at least according to the results I obtained, may not backfire in intergroup contexts, independently of whether it is mimicry displayed in a dyadic context or when it is observed. Accordingly, displaying mimicry as an outsider at work (whether that be, for example, to a different team member, a manager to a subordinate or vice versa, or a client to an employee or vice versa) may not result in negative consequences for likability or competence ratings. In practice, therefore, employees wishing to strengthen their relationships with out-group members may be better off to mimic, especially in situations when they are observed by others such as in meetings. Mimicry, in such situations, may elicit greater likability for and trust in the mimicker and reduces intergroup biases.

Examining a specific example may help demonstrate the practical implications of this research and its limitations. Employing mimicry during a team meeting, for example, where multiple team members are observing each other may result in enhanced evaluations of the mimicking team member. However, whilst participants in Study 3 have observed an interaction of two previously unacquainted individuals, team meetings may involve more than two individuals and thus the interactions may have a

specific dynamic to them. Accordingly, it is speculative to predict the influence of mimicry in such situations and more research is needed here.

Therefore specific practical recommendations are challenging. This is not an indication of the usefulness of this research but rather a reflection on the complexity within organisations. In large organisations, in particular, there may be a range of different identities (e.g., departmental identity, team identity, the divisional identity) that make it difficult to predict which one is salient at a given moment. This, in turn, results in a mix of different in-group versus out-group scenarios that are too complex to predict. If one does not know whether the individual one engages with at a particular point in time sees one as an in-group or an out-group member, one also does not know what effect one's behaviour in that situation may have. For example, to suggest that individuals should not behave in a non-responsive manner because it may be harmful would be speculative because this only seems to be the case for intergroup contexts, whose existence cannot easily be determined in a particular situation. Therefore, more research is required to resolve the mix of different identities in the workplace to know in what identities tend to be salient of what kind of situations before specific practical recommendations can be made.

Similarly, practical applications of mimicry may vary depending on whether individuals have met each other before. To the best of my knowledge, there have not been any studies that examined whether mimicry can change attitudes towards individuals that one has already met (i.e., that one has already formed an opinion about). Though the answer to the question of whether mimicry can change existing attitudes about the mimicker seems to be an interesting area for future research, it is speculative to suggest that observed mimicry will enhance attitudes within organisational contexts, precisely because individuals have already met and have formed opinions about each other. Again, more research on whether mimicry can change existing attitudes is required before such practical recommendations can be justified.

Limitations and Future Directions

After outlining high-level implications, this section will offer high-level limitations as well as suggestions for future research in addition to the ones already provided in preceding chapters. First, mimicry has been treated as a rather binary variable during the experiments. Mimicry was either fully present or completely absent. Accordingly,

the effects would represent a strong behavioural contrast. In reality, however, individuals often mimic automatically to some extent (for a review, see Chartrand and van Baaren, 2009) and therefore the contrast between mimicry and their normal behaviour may be less strong. The effects found in the present research may thus be an overestimation of the true effect. On the other hand, it can also be argued for the same reason that mimicry existed to some extent in the control condition (i.e., neutral behaviour) as individuals naturally mimic facial expressions, for instance (McIntosh et al., 2006; Chartrand and Lakin, 2013; Murata et al., 2016). This implies that the effects captured do represent the 'real' effects. Nonetheless, mimicry as a variable was theoretically treated as binary. Future research may therefore examine whether differences in outcome variables occur depending on whether a person behaves just neutrally (see Salazar Kämpf et al., 2018) or neutrally but with a specific instruction not to mimic.

Another limitation of the research comes to mind when one considers technological advancements, especially in the time of pandemics where many individuals work remotely. The present study either used dyadic mimicry or a video study in which an observer watched a conversation. Due to technological advancements and pandemics, however, more and more time is spent in virtual meetings (see also Laitinen and Valo, 2018; Jones and Abdelfattah, 2020). Here, one usually does not observe how others interact using their non-verbal behaviour. Instead, observers can only witness the facial expressions of one individual at a time. Accordingly, it is unclear as to whether dyadic and observed mimicry can elicit effects in virtual meetings, limiting the generalisability of the present research. On the other hand, promising evidence exists demonstrating that mimicry by virtual agents does elicit positive effects (see Bailenson and Yee, 2005; Bailenson et al., 2008). Still, more research is required to investigate mimicry in virtual meetings.

The use of scales throughout the experiments to measure dependent variables highlights another limitation of this research. More specifically, research suggests a divergence between self-report measures such as scales and measures of actual behaviour (Kormos and Gifford, 2014; Van Hiel et al., 2016). Though participants may have indicated a greater liking for the mimicker, for example, their behaviour may have not reflected this greater likability. In other words, a limitation of not only this research but also of the majority of socio-psychological research (see Sassenberg and Ditrich,

2019) is a lack of knowing the behavioural effects of experimental interventions. Though this limitation is well-known to many psychologists (see Baumeister et al., 2007), it is worth pointing out at this stage the need to further research the behavioural effects of mimicry in social interactions.

It may be worth re-iterating several limitations regarding the manipulations used in the studies. First, it was discussed that static behaviour may be seen as less responsive, awkward, or robotic, compared to mimicry or neutral behaviour. Though this initially seems plausible, it is important to remember that such inferences were speculative because they have not been tested. Similarly, the manipulations used may have had unintended effects. While the awareness manipulation in Study 3 aimed to make participant's aware (versus unaware) of mimicry, it may have accidentally caused them to be somewhat suspicious about the mimicker's motives for engaging in the conversation. Relatedly, the mimicry manipulations may have manipulated the mimicker's enthusiasm alongside the intended behavioural manipulation. As such differences in motives or enthusiasm were not measured, they may confound the effects attributed to the awareness or mimicry condition, respectively.

Though common in psychological research (Hanel and Vione, 2016), another limitation of Study 1 and Study 2 is that they relied on student samples. Therefore, the results may be biased because students are not an adequate representation of the average population. Across all studies, quite a high number of participants were excluded from the analysis. Although there were statistical (see Leys et al., 2013) and methodological reasons for this, predominantly an attempt to include participants for whom the group manipulations have worked, such exclusions may have biased the data in a way that the reader needs to be aware of.

Though not a limitation per se but rather an additional point that seems to be worth highlighting for the reader relates to the different perspectives and their underlying assumptions with which mimicry researchers approach their topic. On the one hand, there are researchers who deliberately try to manipulate mimicry (i.e., mimicry is seen as the independent variable) to examine the outcomes of such behaviour on different outcome variables (e.g., Müller et al., 2012; Verbene et al., 2013; Catmur and Heyes, 2013; Neufeld and Chakrabarti, 2016). Those scholars may see mimicry as a conscious tool to improve the outcome variable, such as the mimicker's likability. On

the other hand, there are researchers who are interested in the conditions under which natural mimicry is more (or less) likely to occur (e.g., Genschow et al., 2013; Kurzius and Borkenau, 2015; Seibt et al., 2015). Scholars in this area view mimicry as a subconscious and automatic mechanism to process incoming information (see van Baaren et al., 2009). These two perspectives, which are elaborated on in the section 'Mimicry', and their underlying assumptions may result in possible tensions. One of these tensions relates to the factor of awareness (van Baaren et al., 2009). While researchers of the former tend to support the notion that humans are often aware of their behaviour and thus can consciously change it, scholars of the latter causality seem to believe that humans are not aware of such behaviours and, therefore, cannot engage in conscious changes. However, it is important to understand that the support of one view does not diminish the other, that is, the perspectives are not mutually exclusive.

Additional research is required to explore different social identity-related dynamics of observed mimicry. In Study 3, participants observed either an in-group dyad or an out-group dyad. Though the findings are valuable, as discussed already, they provide further avenues for future research. For example, do mimicker-related judgments differ depending on whether the observed dyad comprises one in-group member and one out-group member? It may be possible that the dynamics inherent in social identities change mimicker-related judgements if, from the observer perspective, an in-group mimicker communicates with an out-group individual (or vice versa). Such different scenarios may help to extend our understanding of both mimicry and social identities.

Research may also benefit from a more intensive investigation of the mimicry concept *per se*. I have outlined a possibility that the effects of observed mimicry may be distinct from those in dyads. However, as this is merely based on the present results, it is too early to offer such a claim. Hence, more research investigating observed mimicry and dyadic mimicry, possibly in the same study design, may offer valuable insights as to whether they elicit distinct effects. Additionally, more research is required in terms of the mechanism through which mimicry elicits effects. According to the present study, it is not perceived similarity which is mediating the effects of mimicry (as there were no effects of mimicry). Hence, additional studies testing the mediation and exploring the mechanism through which observed mimicry elicits effects may be advance our understanding of the field.

Further research into social identities may also help to better understand identities per se but it may also help to better understand fields such as mimicry which aim to utilise understanding from identity research. Specifically, the present research has highlighted the importance of the relevance and strength of different social identities. It appears that different identities vary in terms of their strength and relevance and, consequently, affect the results differently. However, there does not appear to be a scientific consensus as to what social identities (such as gender or race), if any, are stronger than others. This is certainly context-dependent. However, more research into how exactly different identities differ in their strength in one particular context will help to extend our knowledge of social identity dynamics.

Finally, the relationship between mimicry and emotions, though not within the realm of this research, appears to be a promising direction for future endeavours. Throughout this work, I have mentioned on multiple occasions that there appears to be a link between mimicry and emotions. Though scholars generally agree on the existence of such a relationship, this agreement is largely based on studies that have focussed on the conditions under which mimicry of emotions occurs rather than on the change of emotions as a result of mimicry (see Weyers et al., 2009; van der Schalk et al., 2011; Hess and Fischer 2013; Sachisthal et al., 2016; for reviews, see Hess and Fischer, 2014; Fischer and Hess, 2017). Additionally, the few researchers that investigated such mimicry-induced changes of affect examined how mimicry of emotions alters the mimicker's rather than the mimickee's emotions (Chartrand and van Baaren, 2009; Stel and Vonk, 2009; Olszanowski et al., 2020). Therefore, by applying the distinction between different causalities of mimicry research made at the beginning of this work (see chapter 'Mimicry And Non-Verbal Behaviour'), a lack of research into mimicry-induced changes of the mimickee's affect becomes apparent. Considering the scholarship that highlights the importance of emotions in guiding our judgements and our decision making (see Niedenthal et al., 2005; Labroo and Ramanathan, 2007; Pfister and Böhm, 2008), future research that focusses on how mimicry may alter the mimickee's emotions, which, in turn, may lead to a change in mimicker-related judgements appears to be important to build a more comprehensive understanding of mimicry.

Conclusions

The multi-dimensional divisions in the world result in polarisations that manifested themselves in group-divided societies (for a related review, see Fiorina and Abrams, 2008; Baldassarri and Gelman, 2008; Kleiner, 2018; Fraser, 2019). In light of such group divides, research on how to build or maintain functioning social relationships is particularly important. One of the fundamental ways of building relationships is through non-verbal behaviour. Mimicry, more specifically, has been shown to increase liking or pro-social behaviour (see Chartrand and Bargh, 1999; van Baaren, Holland, et al., 2004). However, group divides, or social identities, have been shown to be powerful moderators of social interactions (for a review, see Ellemers, Spears, et al., 1999; see also Clement and Krueger, 2002; Fischer et al., 2010; Hehman et al., 2010). Given the presence of such divides, this research is the first which investigated the impact of social identities on the social outcomes of mimicry in both interpersonal and observed interactions, thereby answering the call of a myriad of researchers (see Maddux et al., 2008; Miles et al., 2011; Hasler et al., 2014; Hale and Hamilton, 2016b; Tunçgenç and Cohen, 2016; Blocker and McIntosh, 2017).

Three separate studies, the largest in the field of mimicry to date, were conducted. In terms of interpersonal mimicry, the present findings challenge research outlining the positive effects of mimicry on outcomes such as likability. Instead, the studies suggest that it may rather be an ambiguously defined control condition (no mimicry static) eliciting negative effects, disguised as positive effects of mimicry. Due to this condition, a moderation of group membership was observed on likability and similarity, potentially suggesting that out-group members are 'punished' for static behaviour while in-group members appear to be immune. Finally, a mediation of mimicry via perceived similarity was not observed (due to the static condition), challenging the assumption that similarity mediates the effects of mimicry, at least in contexts where intergroup biases exist.

The third study is the first to demonstrate how the effects of mimicry are dependent on social group memberships in observed interactions. The study shows that mimicry per se elicits effects even when it is merely observed in an interaction. The results show that, contrary to the hypotheses, mimicry, compared to neutral behaviour, may help to diminish negative out-group biases for judgements of competence, trustworthiness

and justice. Further, it is the first study to suggest that such effects may, partly, be dependent on whether participants are aware of mimicry.

The present research not only contributes to the literature by showing that mimicry has effects on mimicker-related judgements even when it is observed. It also shows that mimicry may be able to bridge biases stemming from social identity. Additionally, it contributes methodologically and empirically to the literature on dyadic mimicry by highlighting the importance of a neutral-behaviour condition and questioning the mechanism through which mimicry operates. It extends the literature by showing that not only liking but also judgements of competence, justice, or trustworthiness can be affected by mimicry and moderated by social identities.

References

- Aberson, C.L., Healy, M.R. and Romero, V.L. 2000. Ingroup bias and self-esteem: A Meta-Analysis. *Personality and Social Psychology Review*. **4**(2), pp.157–173.
- Abrams, D. and Hogg, M.A. 2001. Collective identity: Group membership and self-conception *In*: M. A. Hogg and R. S. Tindale, eds. *Blackwell Handbook of Social Psychology: Group Processes*. Oxford, UK: Blackwell Publishing, pp.425–460.
- Abrams, D. and Hogg, M.A. 1988. Comments on the motivational status of self-esteem in social identity and intergroup discrimination. *European Journal of Social Psychology*. **18**(4), pp.317–334.
- Abrams, D. and Hogg, M.A. 2004. Metatheory: Lessons from social identity research. *Personality and Social Psychology Review*. **8**(2), pp.98–106.
- Abrams, D. and Hogg, M.A. 1990. Social Identification, Self-Categorization and Social Influence. *European Review of Social Psychology*. **1**(1), pp.195–228.
- Abrams, D. and Hogg, M.A. 2010. Social identity and self-categorization *In*: J. F. Dovidio, M. Hewstone, P. Glick and V. M. Esses, eds. *The SAGE Handbook of Prejudice, Stereotyping and Discrimination*. London: Sage Publications, pp.179–193.
- Abrams, D., Wetherell, M.S., Cochrane, S., Hogg, M.A. and Turner, J.C. 1990. Knowing What To Think By Knowing Who You Are: Self-Categorization and the Nature of Norm Formation, Conformity, and Group Polarization. *British Journal of Social Psychology*. **29**(2), pp.97–119.
- Ahearne, M., Gruen, T.W. and Jarvis, C.B. 1999. If looks could sell: Moderation and mediation of the attractiveness effect on salesperson performance. *International Journal of Research in Marketing*. **16**(4), pp.269–284.
- Albert, S. and Whetten, D.A. 1985. Organizational identity *In*: T. R. Sarbin and K. E. Scheibe, eds. *Research in Organizational Behavior*. New York: Praeger, pp.263–295.
- Allen, V.L., Wilder, D.A. and Atkinson, M.L. 1983. Multiple group membership and social identity *In*: T. R. Sarbin and K. E. Scheibe, eds. *Studies in social identity*. New York: Praeger, pp.92–115.

-
- Altman, I. 1975. *The Environment and Social Behavior*. Monterey, CA: Brooks-Cole.
- Alvesson, M., Ashcraft, K. and Thomas, R. 2008. Identity matters: Reflections on the construction of identity scholarship in organizational studies. *Organization*. **15**(1), pp.5–24.
- Ambady, N. and Rosenthal, R. 1993. Half a Minute: Predicting Teacher Evaluations From Thin Slices of Nonverbal Behavior and Physical Attractiveness. *Journal of Personality and Social Psychology*, **64**(3), pp. 431-441.
- Aron, A., Aron, E. and Smollan, D. 1992. Inclusion of Other In the Self Scale and the structure of interpersonal closeness. *Journal of Personality and Social Psychology*. **63**(4), pp.596–612.
- Ashforth, B.E. 2007. Identity: The Elastic Concept *In*: C. A. Bartel, S. Blader and A. Wrzesniewski, eds. *Identity and the Modern Organization*. Mahwah, New Jersey: Erlbaum, pp.85–96.
- Ashforth, B.E., Harrison, S.H. and Corley, K.G. 2008. Identification in organizations: An examination of four fundamental questions. *Journal of Management*. **34**(3), pp.325–374.
- Ashforth, B.E. and Johnson, S.A. 2001. Which Hat to Wear? The Relative Salience of Multiple Identities in Organizational Contexts *In*: M. A. Hogg and D. J. Terry, eds. *Social Identity Processes in Organizational Contexts*. Philadelphia, PA: Taylor & Francis, pp.31–48.
- Ashforth, B.E. and Mael, F. 1996. Organizational identity and strategy as a context for the individual. *Advances in Strategic Management*. **13**, pp.17–62.
- Ashforth, B.E. and Mael, F. 1989. Social Identity Theory and the Organization. *Academy of Management Review*. **14**(1), pp.20–39.
- Ashforth, B.E. and Schinoff, B.S. 2016. Identity Under Construction: How Individuals Come to Define Themselves in Organizations. *Annual Review of Organizational Psychology and Organizational Behavior*. **3**(1), pp.111–137.
- Ashton-James, C.E. and Chartrand, T.L. 2009. Social cues for creativity: The impact of behavioral mimicry on convergent and divergent thinking. *Journal of Experimental Social Psychology*. **45**(4), pp.1036–1040.

-
- Ashton–James, C., van Baaren, R.B., Chartrand, T.L., Decety, J. and Karremans, J. 2007. Mimicry and Me: The Impact of Mimicry on Self–Construal. *Social Cognition*. **25**(4), pp.518–535.
- van Baaren, R., Janssen, L., Chartrand, T.L. and Dijksterhuis, A. 2009. Where is the love? The social aspects of mimicry. *Philosophical Transactions of the Royal Society B: Biological Sciences*. **364**(1528), pp.2381–2389.
- van Baaren, R.B., Dijkmans, M., Horgan, T.G. and Chartrand, T.L. 2004. The Forest, the Trees, and the Chameleon: Context Dependence on Mimicry. *Journal of Personality and Social Psychology*. **86**(3), pp.453–459.
- van Baaren, R.B., Holland, R.W., Kawakami, K. and van Knippenberg, A. 2004. Mimicry and Prosocial Behavior. *Psychological Science*. **15**(1), pp.71–74.
- van Baaren, R.B., Holland, R.W., Steenaert, B. and van Knippenberg, A. 2003. Mimicry for money: Behavioral consequences of imitation. *Journal of Experimental Social Psychology*. **39**(4), pp.393–398.
- Bail, C.A., Argyle, L.A., Brown, T.W., Bumpus, J.P., Chen, H., Fallin Hunzaker, M.B., Lee, J., Mann, M., Merhout, F. and Volfovsky, A. 2018. Exposure to opposing views on social media can increase political polarization. *Proceedings of the National Academy of Sciences*. **115**(37), pp.9216–9221.
- Bailenson, J.N. and Yee, N. 2005. Digital Chameleons Virtual Environments. *Psychological science*. **16**(10), pp.814–819.
- Bailenson, J.N., Yee, N., Patel, K. and Beall, A.C. 2008. Detecting digital chameleons. *Computers in Human Behavior*. **24**(1), pp.66–87.
- Baldassarri, D. and Gelman, A. 2008. Partisans without Constraints: Political Polarization and Trends in American Public Opinion. *American Journal of Sociology*. **114**(2), pp.408–446.
- Bandura, A. 1962. Social learning through imitation *In*: M. R. Jones, ed. *Nebraska symposium on motivation*. Lincoln, NE: University of Nebraska Press, pp.211–274.
- Barberia, I., Tubau, E., Matute, H. and Rodríguez-Ferreiro, J. 2018. A short educational intervention diminishes causal illusions and specific paranormal

-
- beliefs in undergraduates. *PLoS ONE*. **13**(1), pp.1–14.
- Bargh, J.A., Chaiken, S., Govender, R. and Pratto, F. 1992. The Generality of the Automatic Attitude Activation Effect. *Journal of Personality and Social Psychology*. **62**(6), pp.893–912.
- Bargh, J.A., Chaiken, S., Raymond, P. and Hymes, C. 1996. The Automatic Evaluation Effect: Unconditionally Automatic Attitude Activation with a Pronunciation Task. *Journal of Experimental Social Psychology*. **32**(1), pp.104–128.
- Bargh, J.A., Schwader, K.L., Hailey, S.E., Dyer, R.L. and Boothby, E.J. 2012. Automaticity in social-cognitive processes. *Trends in Cognitive Sciences*. **16**(12), pp.593–605.
- Barnum, C.C. 1997. A reformulated social identity theory *In*: B. Markovsky, M. J. Lovaglia and L. Troyer, eds. *Advances in Group Processes*. Greenwich, CT: JAI Press, pp.29–57.
- Barrett, D.J. 2006. Strong communication skills a must for today's leaders. *Handbook of Business Strategy*. **7**(1), pp.385–90.
- Baumeister, R.F. and Leary, M.R. 1995. The Need to Belong: Desire for Interpersonal Attachments as a Fundamental Human Motivation. *Psychological Bulletin*. **117**(3), pp.497–529.
- Baumeister, R.F. and Masicampo, E.J. 2010. Conscious Thought is for Facilitating Social and Cultural Interactions: How Mental Simulations serve the Animal-Culture Interface. *Psychological Review*. **117**(3), pp.945–971.
- Baumeister, R.F. and Tice, D.M. 1990. Anxiety and Social Exclusion. *Journal of Social and Clinical Psychology*. **9**(2), pp.165–195.
- Baumeister, R.F., Twenge, J.M. and Nuss, C.K. 2002. Effects of Social Exclusion on Cognitive Processes: Anticipated Aloneness reduces Intelligent Thought. *Journal of Personality and Social Psychology*. **83**(4), pp.817–827.
- Baumeister, R.F., Vohs, K.D. and Funder, D.C. 2007. Psychology as the Science of Self-Reports and Finger Movements: Whatever Happened to Actual Behavior? *Perspectives on Psychological Science*. **2**(4), pp.396–403.

-
- Bavelas, J.B., Black, A., Chovil, N., Lemery, C.R. and Mullett, J. 1988. Form and Function in Motor Mimicry- Topographic Evidence that the primary Function is Communication. *Human Communication research*. **14**(3), pp.276–299.
- Bernieri, F.J., Davis, J.M., Rosenthal, R. and Knee, C.R. 1994. Interactional Synchrony and Rapport: Measuring Synchrony in Displays Devoid of Sound and Facial Affect. *Personality and Social Psychology Bulletin*. **20**(3), pp.303–311.
- Bernieri, F.J. and Rosenthal, R. 1991. Interpersonal coordination: Behaviour matching and interactional synchrony *In*: R. S. Feldman and B. Rime, eds. *Fundamentals of nonverbal behaviour*. New York: Cambridge University Press.
- Bettencourt, B.A., Miller, N. and Hume, D.L. 1999. Effects of Numerical Representation within Cooperative Settings: Examining the Role of Salience in In-group Favouritism. *British Journal of Social Psychology*. **38**(3), pp.265–287.
- Biehl, M., Matsumoto, D., Ekman, P., Hearn, V., Heider, K., Kudoh, T. and Ton, V. 1997. Matsumoto and Ekman's Caucasian Facial Expressions of Emotion (JACFEE): Reliability Data and Cross-National Differences. *Journal of Nonverbal Behavior*. **21**(1), pp.3–21.
- Bies, R.J. and Moag, J.F. 1986. Interactional Justice: Communication Criteria of Fairness *In*: R. J. Lewicki, B. H. Sheppard and M. H. Bazerman, eds. *Research on Negotiations in Organizations*. Greenwich, CT: JAI Press, pp.43–55.
- Bies, R.J. and Shapiro, D.L. 1987. Interactional Fairness Judgements: The Influence of Causal Accounts. *Social Justice Research*. **1**(2), pp.199–218.
- Billig, M. and Tajfel, H. 1973. Social categorization and similarity in intergroup behavior. *European Journal of Social Psychology*. **3**(1), pp.27–52.
- Billig, M.G. 1976. *Social psychology and intergroup relations*. London: Academic Press.
- Birdwhistell, R.L. 1952. *Introduction to Kinesics*. Louisville, KY: University of Louisville Press.
- Birdwhistell, R.L. 1970. *Kinesics in Context*. Philadelphia: University of Pennsylvania Press.

-
- Blocker, H.S. and McIntosh, D.N. 2016. Automaticity of the interpersonal attitude effect on facial mimicry: It takes effort to smile at neutral others but not those we like. *Motivation and Emotion*. **40**(6), pp.914–922.
- Blocker, H.S. and McIntosh, D.N. 2017. Not All Outgroups Are Equal: Group Type May Influence Group Effect on Matching Behavior. *Journal of Nonverbal Behavior*. **41**(4), pp.395–413.
- Bocian, K., Baryla, W., Kulesza, W.M., Schnall, S. and Wojciszke, B. 2018. The mere liking effect: Attitudinal influences on attributions of moral character. *Journal of Experimental Social Psychology*, **79**, pp. 9-20.
- Boer, D., Fischer, R., Strack, M., Bond, M.H., Lo, E. and Lam, J. 2011. How shared preferences in music create bonds between people: Values as the missing link. *Personality and Social Psychology Bulletin*. **37**(9), pp.1159–1171.
- Bolino, M., Long, D. and Turnley, W. 2016. Impression Management in Organizations: Critical Questions, Answers, and Areas for Future Research. *Annual Review of Organizational Psychology and Organizational Behavior*. **3**(1), pp.377–406.
- Bonaccio, S., O'Reilly, J., O'Sullivan, S.L. and Chiochio, F. 2016. *Nonverbal Behavior and Communication in the Workplace: A Review and an Agenda for Research*.
- Bond Jr, C.F. and DePaulo, B.M. 2006. Accuracy of Deception Judgements. *Personality and Social Psychology Review*, **10**(3), pp. 214-234.
- Bourgeois, P. and Hess, U. 2008. The impact of social context on mimicry. *Biological Psychology*. **77**(3), pp.343–352.
- Bourhis, R.Y., Turner, J.C. and Gagnon, A. 1997. Interdependence, social identity and discrimination: Some empirical considerations *In*: R. Spears, P. J. Oakes, N. Ellemers and S. A. Haslam, eds. *The social psychology of stereotyping and group life*. Oxford: Blackwell Publishing, pp.273–295.
- Branscombe, N.R., Ellemers, N., Spears, R. and Doosje, B. 1999. The Context and Content of Social Identity *In*: N. Ellemers, R. Spears and B. Doosje, eds. *Social Identity*. Oxford: Blackwell Publishing, pp.35–58.

-
- Branscombe, N.R., Schmitt, M.T. and Harvey, R.D. 1999. Perceiving Pervasive Discrimination among African Americans: Implications for Group Identification and Well-Being. *Journal of Personality and Social Psychology*. **77**(1), pp.135–149.
- Brass, M., Bekkering, H. and Prinz, W. 2001. Movement Observation affects Movement Execution in a Simple Response Task. *Acta Psychologica*. **106**(1–2), pp.3–22.
- Brehm, J.W. 1966. *A theory of psychological reactance*. New York, NY: Academic Press.
- Brewer, M.B. 1981. Ethnocentrism and Its Role in Intergroup Trust *In*: M. B. Brewer and B. E. Collins, eds. *Scientific Inquiry and the Social Sciences*. San Francisco, CA: Jossey-Bass, pp.345–360.
- Brewer, M.B. 1995. Managing diversity: The role of social identities *In*: S. E. Jackson and M. N. Ruderman, eds. *Diversity in work teams: Research paradigms for a changing workplace*. Washington, DC: American Psychological Association, pp.47–68.
- Brewer, M.B. 1999. The Psychology of Prejudice: Ingroup Love or Outgroup Hate? *Journal of Social Issues*. **55**(3), pp.429–444.
- Brewer, M.B. 1991. The social self: On being the same and different at the same time. *Personality and Social Psychology Bulletin*. **17**(5), pp.475–482.
- Brewer, M.B. and Gardner, W. 1996. Who is this 'we'? Levels of Collective Identity and Self Representations. *Journal of Personality and Social Psychology*. **71**(1), pp.83–93.
- Brewer, M.B. and Kramer, R.M. 1986. Choice behavior in social dilemmas: Effects of social identity, group size, and decision framing. *Journal of Personality and Social Psychology*. **50**(3), pp.543–549.
- Briley, D.A., Morris, M.W. and Simonson, I. 2005. Cultural chameleons: Biculturals, Conformity Motives, and Decision Making. *Journal of Consumer Psychology*. **15**(4), pp.351–363.
- Brown, O., Paz-Aparicio, C. and revilla, A.J. 2019. Leader's communication style,

-
- LMX and organizational commitment: a study of employee perceptions in Peru. *Leadership & Organization Development Journal*. **40**(2), pp.230–258.
- Brown, R. and Hewstone, M. 2005. An Integrative Theory of Intergroup Contact *In*: M. P. Zanna, ed. *Advances in Experimental Social Psychology*. San Diego, CA: Elsevier Academic Press, pp.255–343.
- Budgeon, S. 2011. *Third Wave Feminism and the Politics of Gender in Late Modernity*. London, UK: Palgrave Macmillan.
- Burgoon, J.K., Guerrero, L.K. and Floyd, K. 2010. *Nonverbal Communication*. New York: Routledge.
- Burgoon, J.K. and Hale, J.L. 1988. Nonverbal Expectancy Violations: Model Elaboration and Application to Immediacy Behaviors. *Communication Monographs*. **55**(1), pp.58–79.
- Burgoon, J.K. and Hale, J.L. 1984. The Fundamental Topoi of Relational Communication. *Communication Monographs*. **51**(3), pp.193–214.
- Burgoon, J.K. and Hale, J.L. 1987. Validation and Measurement of the Fundamental Themes of Relational Communication. *Communication Monographs*. **54**(1), pp.19–41.
- Burke, C.S., Sims, D.E., Lazzara, E.H. and Salas, E. 2007. Trust in Leadership: A multi-level review and integration. *The Leadership Quarterly*, **18**, pp. 606-632.
- Button, K.S., Ioannidis, J.P., Mokrysz, C., Nosek, B.A., Flint, J., Robinson, E.S. and Munafo, M.R. 2013. Power Failure: Why small Sample Size undermines the Reliability of Neuroscience. *Nature Reviews Neuroscience*. **14**(5), pp.365–376.
- Byrne, D. 1961. Interpersonal Attraction and Attitude Similarity. *Journal of Abnormal and Social Psychology*. **62**(3), pp.713–715.
- Byrne, D. 1971. *The Attraction Paradigm*. New York: Academic Press.
- Byrne, R.W. 2009. Animal Imitation. *Current Biology*. **19**(3), pp.R111–R114.
- Byrne, R.W. 2005. Social Cognition: Imitation, Imitation, Imitation. *Current Biology*. **15**(13), pp.R498–R500.
- Cadinu, M.R. and Rothbart, M. 1996. Self-Anchoring and Differentiation Processes in

-
- the Minimal Group Setting. *Journal of Personality and Social Psychology*. **70**(4), pp.661–677.
- Calvo, M.G., Fernández-Martín, A. and Nummenmaa, L. 2014. Facial expression recognition in peripheral versus central vision: Role of the eyes and the mouth. *Psychological Research*. **78**(2), pp.180–195.
- Capella, J.N. and Planalp, S. 1981. Talk and Silence Sequences in Informal Conversations III: Interspeaker Influence. *Human Communication Research*. **7**(2), pp.117–132.
- Caporael, L.R., Dawes, R.M., Orbell, J. and van de Kragt, A. 1989. Selfishness examined: Cooperation in the absence of egoistic incentives. *Behavioral and Brain Sciences*. **12**(4), pp.683–739.
- Carli, L.L., LaFleur, S. and Loeber, C.C. 1995. Nonverbal Behavior, Gender, and Influence. *Journal of Personality and Social Psychology*, **68**(6), pp. 1030-1041.
- Carragher, D.J., Thomas, N.A. and Nicholls, M.E.R. 2018. Is trustworthiness lateralized in the face? Evidence from a trust game. *Laterality: Asymmetries of Body, Brain and Cognition*. **23**(1), pp.20–38.
- Carver, C.S., Ganellen, R.J., Froming, W.J. and Chambers, W. 1983. Modeling: An analysis in terms of category accessibility. *Journal of Experimental Social Psychology*. **19**(5), pp.403–421.
- Cassidy, B.S. and Gutchess, A.H. 2015. Influences of appearance-behaviour congruity on memory and social judgements. *Memory*. **23**(7), pp.1039–1055.
- Catmur, C. and Heyes, C. 2013. Is It What You Do, or When You Do It? The Roles of Contingency and Similarity in Pro-Social Effects of Imitation. *Cognitive Science*. **37**(8), pp.1541–1552.
- Chang, C.-H. and Johnson, R.E. 2010. Not All Leader-Member Exchanges are Created Equal: Importance of Leader relational Identity. *The Leadership Quarterly*. **21**(5), pp.796–808.
- Chartrand, T.L. and van Baaren, R. 2009. Human Mimicry. *Advances in Experimental Social Psychology*. **41**, pp.219–274.

-
- Chartrand, T.L. and Bargh, J.A. 1999. The Chameleon Effect: The Perception-Behavior Link and Social Interaction. *Journal of Personality and Social Psychology*. **76**(6), pp.893–910.
- Chartrand, T.L. and Lakin, J.L. 2013. The Antecedents and Consequences of Human Behavioral Mimicry. *Annual Review of Psychology*. **64**(1), pp.285–308.
- Chartrand, T.L., Maddux, W. and Lakin, J. 2005. Beyond the perception-behaviour link: The ubiquitous utility and motivational moderators of nonconscious mimicry *In: R. Hassin, J. Uleman and J. A. Bargh, eds. The New Unconscious*. New York: Oxford University Press, pp.334–361.
- Chattopadhyay, P. and George, E. 2001. Examining the Effects of Work Externalization through the Lens of Social Identity Theory. *Journal of Applied Psychology*. **86**(4), pp.761–788.
- Chemers, M.M. 1997. *An Integrative Theory of Leadership*. Mahwah, NJ: Lawrence Erlbaum Associates.
- Chen, X.P., Eberly, M.B., Chiang, T.J., Farh, J.L. and Cheng, B.S. 2014. Affective Trust in Chinese Leaders: Linking Paternalistic Leadership to Employee Performance. *Journal of Management*. **40**(3), pp.796–819.
- Chong, T.T.-J., Cunnington, R., Williams, M.A. and Mattingley, J.B. 2009. The Role of Selective Attention in Matching observed and executed Actions. *Neuropsychologia*. **47**(3), pp.786–795.
- Cialdini, R.B. 2001. *Influence: Science and Practice*. Boston, Massachusetts: Allyn and Bacon.
- Cialdini, R.B. 2008. *Influence: Science and Practice* 5th ed. Boston, MA: Allyn and Bacon.
- Cialdini, R.B. and Goldstein, N.J. 2004. Social Influence: Compliance and Conformity. *Annual Review of Psychology*. **55**, pp.591–621.
- Clampitt, P.G. and Downs, C.W. 1993. Employee Perceptions of the Relationship Between Communication and Productivity: A Field Study. *Journal of Business Communication*. **30**(1), pp.5–28.

-
- Clement, R.W. and Krueger, J. 2002. Social Categorization Moderates Social Projection. *Journal of Experimental Social Psychology*. **38**(3), pp.219–231.
- Clerke, A.S. and Heerey, E.A. 2021. The Influence of Similarity and Mimicry on Decisions to Trust. *Collabra: Psychology*. **7**(1), pp. 23441.
- Clutterbuck, D. and Hirst, S. 2002. Leadership communication: A status report. *Journal of Communication*. **6**(4), pp.351–354.
- Cohen, J. 1988. *Statistical Power Analysis for the Behavioral Sciences* 2nd ed. Hillsdale, N.J.: Lawrence Erlbaum Associates.
- Coker, D.A. and Burgoon, J.K. 1987. The Nature of Conversational Involvement and Nonverbal Encoding Patterns. *Human Communication Research*. **13**(4), pp.463–494.
- Collisson, B. and Howell, J.L. 2014. The liking-similarity effect: Perceptions of similarity as a function of liking. *Journal of Social Psychology*. **154**(5), pp.384–400.
- Colquitt, J.A. 2001. On the dimensionality of organizational justice: A construct validation of a measure. *Journal of Applied Psychology*. **86**(3), pp.386–400.
- Colquitt, J.A., Scott, B.A. and LePine, J.A. 2007. Trust, trustworthiness, and trust propensity: A meta-analytic test of their unique relationships with risk taking and job performance. *Journal of Applied Psychology*. **92**(4), pp.909–927.
- Condon, J. 1991. So Near the United States: Notes on Communication between Mexicans and North Americans *In*: L. A. Samovar and R. E. Porter, eds. *Intercultural Communication: A Reader*. Belmont, CA: Wadsworth Publishing, pp.106–112.
- Cooper, D. and Thatcher, S.M. 2010. Identification in Organizations: The Role of Self-Concept Orientations and Identification Motives. *Academy of Management Review*. **35**(4), pp.516–538.
- Corcoran, K., Crusius, J. and Mussweiler, T. 2011. Social Comparison : Motives , Standards , and Mechanisms *In*: D. Chadee, ed. *Theories in Social Psychology*. Oxford, UK: Wiley- Blackwell, pp.119–139.

-
- Cortes, B.P., Demoulin, S., Rodriguez, R.T., Rodriguez, A.P. and Leyens, J.-P. 2005. Infrahumanization or Familiarity? Attribution of Uniquely Human Emotions to the Self, the Ingroup, and the Outgroup. *Personality and Social Psychology Bulletin*. **31**(2), pp.243–253.
- De Coster, L., Verschuere, B., Goubert, L., Tsakiris, M. and Brass, M. 2013. I suffer more from your pain when you act like me: Being imitated enhances affective responses to seeing someone else in pain. *Cognitive, Affective and Behavioral Neuroscience*. **13**(3), pp.519–532.
- Cracco, E., Genschow, O., Radkova, I. and Brass, M. 2018. Automatic imitation of pro- and antisocial gestures: Is implicit behaviour censored? *Cognition*. **170**, pp.179–189.
- de Cremer, D. and van Vugt, M. 1999. Social Identification Effects in Social Dilemmas: A Transformation of Motives. *European Journal of Social Psychology*. **29**(7), pp.871–893.
- Crisp, R.J. and Turner, R.N. 2009. Can imagined interactions produce positive perceptions? Reducing Prejudice through Simulated Social Contact. *American Psychologist*. **64**(4), pp.231–240.
- Crocker, J., Major, B. and Steele, C. 1998. Social Stigma *In*: D. T. Gilbert, S. T. Fiske and G. Lindzey, eds. *The Handbook of Social Psychology*. New York: McGraw-Hill, pp.504–553.
- Croft, C., Currie, G. and Lockett, A. 2015. The Impact of Emotionally Important Social Identities on the Construction of a Managerial Leader Identity: A Challenge for Nurses in the English National Health Service. *Organization Studies*. **36**(1), pp.113–131.
- Cropanzano, R., Prehar, C.A. and Chen, P.Y. 2002. Using Social Exchange Theory to Distinguish Procedural From Interactional Justice. *Group & Organization Management*, **27**(3), pp. 324-351.
- Cross, S.E. and Madson, L. 1997. Models of the self: Self-construals and gender. *Psychological Bulletin*. **122**(1), pp.5–37.
- Cuddy, A.J.C., Glick, P. and Beninger, A. 2011. The dynamics of warmth and

-
- competence judgments, and their outcomes in organizations. *Research in Organizational Behavior*. **31**, pp.73–98.
- Dabbs Jr., J.M. 1969. Similarity of gestures and interpersonal influence. *Proceedings of the Annual Convention of the American Psychological Association*. **4**(1), pp.337–338.
- Dalton, A.N., Chartrand, T.L. and Finkel, E.J. 2010. The Schema-Driven Chameleon: How Mimicry Affects Executive and Self-Regulatory Resources. *Journal of Personality and Social Psychology*. **98**(4), pp.605–617.
- Dasgupta, N. and Rivera, L.M. 2008. When Social Context Matters: The Influence of Long-Term Contact and Short-Term Exposure to Admired Outgroup members on Implicit Attitudes And behavioral Intentions. *Social Cognition*. **26**(1), pp.112–123.
- David, B. and Turner, J.C. 2001. Self-Categorization Principles underlying Majority and Minority Influence *In*: J. P. Forgas and K. D. Williams, eds. *Social Influence: Direct and Indirect Processes*. Philadelphia, Pennsylvania: Psychology Press, pp.293–314.
- David, B. and Turner, J.C. 1999. Studies in Self-Categorization and Minority Conversion: The In-Group Minority in Intragroup and Intergroup Contexts. *British Journal of Social Psychology*. **38**(2), pp.115–134.
- Davies, M., Stankov, L. and Roberts, R.D. 1988. Emotional Intelligence: In Search of an Elusive Construct. *Journal of Personality and Social Psychology*. **75**(4), pp.989–1015.
- Davis, M.E. (ed.). 1982. *Interaction Rhythms: Periodicity in Communicative Behavior*. New York: Human Sciences Press.
- Day, D.V. and Crain, E.C. 1992. The role of affect and ability in initial exchange quality perceptions. *Group & Organization Management*. **17**(4), pp.380–397.
- Deaux, K. 1993. Reconstructing Social Identity. *Psychological Bulletin*. **19**(1), pp.4–12.
- Deluga, R.J. 1994. Supervisor trust building, leader-member exchange and organizational citizenship behaviour. *Journal of Occupational and Organizational*

-
- Psychology*. **67**(4), pp.315–326.
- DeRue, D.S. and Ashford, S.J. 2010. Who Will Lead and Who Will Follow? A Social Process of Leadership Identity Construction in Organizations. *Academy of Management Review*. **35**(4), pp.627–647.
- Van Dick, R., Wagner, U. and Lemmer, G. 2004. Research Note: The Winds of Change— Multiple Identifications in the Case of Organizational Mergers. *European Journal of Work and Organizational Psychology*. **13**(2), pp.121–138.
- Dijksterhuis, A. 2005. Why we are Social Animals: The High Road to Imitation as Social Glue *In*: S. S. L. Hurley and N. Chater, eds. *Perspectives of Imitation: From Cognitive Neuroscience to Social Science*. Cambridge, Massachusetts: MIT Press, pp.207–220.
- DiMaggio, P.J., Evans, J. and Bryson, B. 1996. Have American's Social Attitudes Become More Polarized? *American Journal of Sociology*. **102**(3), pp.690–755.
- Dimberg, U. and Thunberg, M. 1998. Rapid facial reactions to different emotionally relevant stimuli. *Scandinavian Journal of Psychology*. **39**, pp.39–45.
- Dimberg, U., Thunberg, M. and Elmehed, K. 2000. Unconscious facial reactions to emotional facial expressions. *Psychological Science*. **11**(1), pp.86–89.
- Dockery, T.M. and Steiner, D.D. 1990. The role of the initial interaction in leader-member exchange. *Group & Organization Management*. **15**(4), pp.395–413.
- Doney, P.M. and Cannon, J.P. 1997. An Examination of the Nature of trust in Buyer-Seller Relationships. *Journal of Marketing*. **61**(2), pp.35–51.
- Donsbach, W. 2009. Cognitive Dissonance Theory-Roller Coaster Career: How Communication Research adapted the Theory of Cognitive Dissonance *In*: T. Hartmann, ed. *Media Choice: A Theoretical and Empirical Overview*. New York, NY: Routledge, pp.128–149.
- Doosje, B., Ellemers, N. and Spears, R. 1995. Perceived Intragroup Variability as a Function of Group Status and Identification. *Journal of Experimental Social Psychology*. **31**, pp.410–436.
- Dovidio, J.F., Gaertner, S.L. and Saguy, T. 2007. Another view of “we”: Majority and

-
- minority group perspectives on a common ingroup identity. *European Review of Social Psychology*. **18**(1), pp.296–330.
- Dovidio, J.F., Gaertner, S.L., Saguy, T. and Halabi, S. 2008. From when to why: Understanding how contact reduces bias *In: U. Wagner, L. R. Tropp, G. Finchilescu, C. Tredoux and ., eds. Social issues and interventions. Improving intergroup relations: Building on the legacy of Thomas F. Pettigrew.* Oxford, UK: Blackwell Publishing Ltd, pp.75–90.
- Dovidio, J.F., Love, A., Schellhaas, F.M.H. and Hewstone, M. 2017. Reducing intergroup bias through intergroup contact: Twenty years of progress and future directions. *Group Processes & Intergroup Relations*. **20**, pp.606–620.
- Dulebohn, J.H., Bommer, W.H., Liden, R.C., Brouer, R.L. and Ferris, G.R. 2012. A meta-analysis of antecedents and consequences of leader-member exchange: Integrating the past with an eye toward the future. *Journal of Management*. **38**(6), pp.1715–1759.
- Dutton, J.E. and Dukerich, J.M. 1991. Keeping an Eye on the Mirror: Image and Identity in Organizational Adaptation. *Academy of Management Journal*. **34**(3), pp.517–554.
- Effron, D.A. and Raj, M. 2019. Misinformation and Morality: Encountering Fake-News Headlines Makes Them Seem Less Unethical to Publish and Share. *Psychological Science*. **31**(1), pp.75–87.
- Eldridge, S., Ashby, D., Bennett, C., Wakelin, M. and Feder, G. 2008. Internal and external validity of cluster randomised trials: Systematic review of recent trials. *BMJ*. **336**(7649), pp.876–880.
- Ellemers, N. 1993. The Influence of Socio-Structural Variables on Identity Management Strategies. *European Review of Social Psychology*. **4**(1), pp.27–57.
- Ellemers, N., Kortekaas, P. and Ouwerkerk, J.W. (eds.). 1999. *Social Identity*. Oxford, UK: Blackwell Publishing.
- Ellemers, N., Spears, R. and Doosje, B. (eds.). 1999. *Social Identity: Context, Commitment, Content*. Oxford, UK: Blackwell Publishing.

-
- Engle, E.M. and Lord, R.G. 1997. Implicit theories, self-schemas, and leader-member exchange. *Academy of Management Journal*. **40**(4), pp.988–1010.
- Fairhurst, G.T. 1993. The leader-member exchange patterns of women leaders in industry: A discourse analysis. *Communication Monographs*. **60**(4), pp.321–351.
- de Faria, P., Lima, F. and Santos, R. 2010. Cooperation in innovation activities: The importance of partners. *Research Policy*. **39**(8), pp.1082–1092.
- Farrell, M.A. and Oczkowski, E. 2012. Organisational identification and leader member exchange influences on customer orientation and organisational citizenship behaviours. *Journal of Strategic Marketing*. **20**(4), pp.365–377.
- Faul, F., Erdfelder, E., Lang, A.-G. and Buchner, A. 2007. G*Power 3: A flexible statistical power analysis program for the social, behavioral, and biomedical sciences. *Behavior Research Methods*. **39**(2), pp.175–191.
- Fazio, R.H., Sanbonmatsu, D.M., Powell, M.C. and Kardes, F.R. 1986. On the Automatic Activation of Attitudes. *Journal of Personality and Social Psychology*. **50**(2), pp.229–238.
- Ferguson, C.K. and Kelley, H.H. 1964. Significant factors in overevaluation of own-group's product. *The Journal of Abnormal and Social Psychology*. **69**(2), pp.223–228.
- Finkel, E.J., Campell, W.K., Brunell, A.B., Dalton, A.N., Scarbeck, S. and Chartrand, T.L. 2006. High Maintenance Interaction: Inefficient Social Coordination Impairs Self-Regulation. *Journal of Personality and Social Psychology*. **91**(3), pp.456–475.
- Fiol, C.M. and O'Conner, E.J. 2005. Identification in face-to-face, hybrid, and pure virtual teams: untangling the contradictions. *Organization Science*. **16**(1), pp.19–32.
- Fiorina, M.P. and Abrams, S.J. 2008. Political Polarization in the American Public. *Annual Review of Political Science*. **11**, pp.563–588.
- Fischer-Lokou, J., Martin, A., Guéguen, N. and Lamy, L. 2011. Mimicry and Propagation of Prosocial Behavior in a Natural Setting. *Psychological Reports*. **108**(2), pp.599–605.

-
- Fischer, P., Haslam, S.A. and Smith, L. 2010. "If You Wrong Us, Shall We Not Revenge?" Social Identity Salience Moderates Support for Retaliation in Response to Collective Threat. *Group Dynamics: Theory, Research, and Practice*. **14**(2), pp.143–150.
- Fischer, A. and Hess, U. 2017. Mimicking Emotions. *Current Opinion in Psychology*. **17**, pp.151-155.
- Fiske, S.T. 2004. *Social Beings: A Core Motives Approach to Social Psychology*. New York: Wiley.
- Fiske, S.T. and Cuddy, A.J.C. 2006. Stereotype Content across Cultures as a Function of Group Status *In*: S. Guimond, ed. *Social Comparison and Social Psychology: Understanding Cognition, Intergroup Relations, and Culture*. Cambridge, UK: Cambridge University Press, pp.249–263.
- Fiske, S.T. and Taylor, S.E. 1991. *Social Cognition*. New York: McGraw-Hill.
- Flynn, F.J., Chatman, J.A. and Spataro, S.E. 2001. Getting to Know You: The Influence of Personality on Impressions and Performance of Demographically Different People in Organizations. *Administrative Science Quarterly*. **46**(3), pp.414–442.
- Forkin, K.T., Dunn, L.K., Kaperak, C.J., Potter, J.F., Bechtel, A.J., Kleiman, A.M. et al. 2019. Influence of Sex and Body Language on Patient Perceptions of Anesthesiologists. *Anesthesiology*, **130**, pp. 314-321.
- Fraser, N. 2019. *The Old is Dying and the New cannot be Born: From Progressive Neoliberalism to Trump and Beyond*. London: Verso Books.
- Furnham, A. and Procter, E. 1989. Belief in a Just World: Review and Critique of the Individual Difference Literature. *British Journal of Social Psychology*. **28**(4), pp.365–384.
- Gaertner, S.L., Dovidio, J.F., Nier, J.A., Banker, B.S., Ward, C.M., Houlette, M. and Loux, S. 2000. The Common Ingroup Identity Model for reducing intergroup bias: Progress and challenges *In*: D. Capozza and R. Brown, eds. *Social identity processes: Trends in theory and research*. London, UK: Sage Publications Ltd., pp.133–148.

-
- Gaertner, S.L., Mann, J., Murrell, A. and Dovidio, J.F. 1989. Reducing Intergroup Bias: The Benefits of Recategorization. *Journal of Personality and Social Psychology*. **57**(2), pp.23–249.
- Galinsky, A.D., Ku, G. and Wang, C.S. 2005. Perspective-Taking and Self-Other-Overlap: Fostering Social Bonds and Facilitating Social Coordination. *Group Processes and Intergroup Relations*. **8**(2), pp.109–124.
- Galinsky, A.D. and Moskowitz, G.B. 2000. Perspective-taking: decreasing stereotype expression, stereotype accessibility, and ingroup favoritism. *Journal of Personality and Social Psychology*. **78**(4), pp.708–724.
- Gallese, V. 2001. The ‘Shared Manifold’ Hypothesis: From Mirror Neurons to Empathy. *Journal of Consciousness Studies*. **8**(5–7), pp.33–50.
- Garcia, S.M., Weaver, K., Moskowitz, G.B. and Darley, J.M. 2002. Crowded minds: The implicit bystander effect. *Journal of Personality and Social Psychology*. **83**(4), pp.843–853.
- Gardner, W.L., Gabriel, S. and Lee, A.Y. 1999. I” value freedom, but “we” value relationships: Self-construal priming mirrors cultural differences in judgment. *Psychological Science*. **10**(4), pp.321–326.
- Genschow, O., Florack, A. and Wänke, M. 2013. The power of movement: Evidence for context-independent movement imitation. *Journal of Experimental Psychology: General*. **142**(3), pp.763–773.
- Genschow, O. and Schindler, S. 2016. The influence of group membership on cross-context imitation. *Psychonomic Bulletin Review*. **23**(4), pp.1257–1265.
- George, E. and Chattopadhyay, P. 2005. One Foot in Each Camp: The Dual Identification of Contract Workers. *Administrative Science Quarterly*. **50**(1), pp.68–99.
- Georgiou, I., Becchio, C., Glover, S. and Castiello, U. 2007. Different action patterns for cooperative and competitive behaviour. *Cognition*. **102**(3), pp.415–433.
- Gerstner, C.R. and Day, D. V. 1997. Meta-analytic review of leader-member exchange theory: Correlates and construct issues. *Journal of Applied Psychology*. **82**(6), pp.827–844.

-
- Geys, B. 2014. Better not look to nice? Employees' preferences towards (un) likeable managers. *The Leadership Quarterly*, **25**, pp. 875-884.
- Gigerenzer, G. and Gaissmaier, W. 2011. Heuristic Decision Making. *Annual Review of Psychology*, **62**(1), pp. 451-482.
- Gilead, M. and Liberman, N. 2014. We Take Care of Our Own: Caregiving Salience Increases Out-Group Bias in Response to Out-Group Threat. *Psychological Science*. **25**(7), pp.1380–1387.
- Gleibs, I.H., Wilson, N., Reddy, G. and Catmur, C. 2016. Group dynamics in automatic imitation. *PLoS ONE*. **11**(9), pp.1–15.
- Go, J.R.R. 2017. Of Choices, Changes, And Challenges: The Philippines in 2016. *Philippine Political Quarterly*. **38**(1), pp.48–73.
- Golder, S.A. and Macy, M.W. 2014. Digital Footprints: Opportunities and Challenges for Online Social Research. *Annual Review of Sociology*. **40**, pp.129–152.
- Goldstein, N.J., Cialdini, R.B. and Griskevicius, V. 2008. A Room with a Viewpoint: Using Social Norms to Motivate Environmental Conservation in Hotels. *Journal of Consumer Research*. **35**(October), pp.478–482.
- Gonzales, R., Gerber, M.M. and Carvacho, H. 2016. Social Identities and Conflict in Chile: The Role of Historical and Political Processes *In: S. McKeown, R. Haji and N. Ferguson, eds. Understanding Peace and Conflict Through Social Identity Theory - Contemporary Global Perspectives*. Springer International Publishing Switzerland, pp.277–294.
- Gordon, R.M. 1992. The Simulation Theory: Objections and Misconceptions. *Mind and Language*, **7**, pp. 11-34.
- Graen, G.B. and Uhl-Bien, M. 1995. Relationship-Based Approach to Leadership: Development of Leader-Member Exchange (LMX) Theory of Leadership over 25 Years: Applying a Multi-Level Multi-Domain Perspective. *The Leadership Quarterly*. **6**(2), pp.219–247.
- Grant, F. and Hogg, M.A. 2012. Self-uncertainty, social identity prominence and group identification. *Journal of Experimental Social Psychology*. **48**(2), pp.538–542.

-
- Gratch, J.G., Wang, N., Gerten, J., Fast, E. and Duffy, R. 2007. Creating Rapport with Virtual Agents *In: C. Pelachaud, J. C. Martin, E. Andre, G. Chollet, K. Karpouzis and D. Pele, eds. International Workshop on Intelligent Virtual Agents*. Berlin: Springer Verlag, pp.125–138.
- Greenberg, J. and Baron, R.A. 2003. *Behavior in Organizations*. Upper Saddle River, NJ: Pearson Education.
- Groves, R.M., Singer, E. and Corning, A.D. 2000. A leverage-saliency theory of survey participation: description and illustration. *Public Opinion Quarterly*. **64**(3), pp.299–308.
- Guéguen, N. and Martin, A. 2009. Incidental similarity facilitates behavioral mimicry. *Social Psychology*. **40**(2), pp.88–92.
- Guéguen, N., Martin, A., Meineri, S. and Simon, J. 2012. Using Mimicry to Elicit Answers to Intimate Questions in Survey Research. *Field Methods*. **25**(1), pp.47–57.
- Gump, B.B. and Kulik, J.A. 1997. Stress, Affiliation, and Emotional Contagion. *Journal of Personality and Social Psychology*. **72**(2), pp.305–319.
- Gusterson, H. 2017. From Brexit to Trump: Anthropology and the Rise of Nationalist Populism. *American Ethnologist*. **44**(2), pp.209–214.
- Hale, J. and Hamilton, A.F.D.C. 2016a. Cognitive mechanisms for responding to mimicry from others. *Neuroscience and Biobehavioral Reviews*. **63**, pp.106–123.
- Hale, J. and Hamilton, A.F.D.C. 2016b. Testing the relationship between mimicry, trust and rapport in virtual reality conversations. *Nature- Scientific Reports*. **6**(10), pp.1–11.
- Hall, E.T. 1984. *The Dance of Life*. Garden City, NY: Doubleday-Anchor.
- Hall, E.T. 1959. *The Salient Language*. New York: Fawcett Publications.
- Hanel, P.H.P., Vione, K.C. 2016. Do Student Samples Provide an Accurate Estimate of the General Public? *PLoS ONE*. **11**(12). pp. e0168354.
- Hargie, O., Saunders, C. and Dickson, D. 1987. *Social Skills in Interpersonal Communication*. Cambridge, MA: Brookline Books.

-
- Hargie, O. and Tourish, D. (eds.). 2000. *Handbook of Communication Audits for Organizations*. London: Routledge.
- Haslam, S.A. 2001. *Psychology in Organizations: The Social Identity Approach*. London: Sage Publications.
- Haslam, S.A. and Ellemers, N. 2005. Social Identity in Industrial and Organizational Psychology: Concepts, Controversies, and Contributions. *International Review of Industrial and Organisational Psychology*. **20**, pp.39–118.
- Haslam, S.A., Powell, C. and Turner, J.C. 2000. Social Identity , Self- categorization , and Work Motivation : Rethinking the Contribution of the Group to Positive and Sustainable Organisational Outcomes. *Applied Psychology*. **49(3)**(3), pp.319–339.
- Haslam, S.A. and Turner, J.C. 1992. Context-dependent variation in social stereotyping 2: The relationship between frame of reference, self-categorization and accentuation. *European Journal of Social Psychology*. **22**(3), pp.251–277.
- Haslam, S.A. and Turner, J.C. 1995. Context-dependent variation in social stereotyping 3: Extremism as a self-categorical basis for polarized judgement. *European Journal of Social Psychology*. **25**(3), pp.341–371.
- Hasler, B.S., Hirschberger, G., Shani-Sherman, T. and Friedman, D.A. 2014. Virtual Peacemakers: Mimicry Increases Empathy in Simulated Contact with Virtual Outgroup Members. *Cyberpsychology, Behavior, and Social Networking*. **17**(12), pp.766–771.
- Hayes, A.F. 2018. *Introduction to Mediation, Moderation, and Conditional Process Analysis: A Regression-Based Approach* 2nd ed. New York, NY: Guilford Press.
- Helman, E., Mania, E.W. and Gaertner, S.L. 2010. Where the division lies: Common ingroup identity moderates the cross-race facial-recognition effect. *Journal of Experimental Social Psychology*. **46**(2), pp.445–448.
- Hertwig, R. and Ortmann, A. 2008. Deception in Experiments: Revisiting the Arguments in Its Defense. *Ethics & Behaviour*. **18**(1), pp.59–92.
- Heslin, R. and Alper, T. 1983. Touch: The Bonding Gesture *In*: M. Wiemann and R. P. Harrison, eds. *Nonverbal Interaction*. Beverly Hills, CA: Sage Publications.

-
- Hess, U. and Fischer, A. 2013. Emotional Mimicry as Social Regulation. *Personality and Social Psychology Review*. **17**(2), pp.142–157.
- Hess, U. and Fischer, A. 2014. Emotional Mimicry: Why and When We Mimic Emotions. *Social and Personality Psychology Compass*. **8**(2), pp.45-57
- Hewstone, M., Cairns, E., Judd, C.M., Voci, A. and McLernon, F. 2000. Intergroup contact in Northern Ireland: mediational and moderational hypotheses *In: Presented at Ann. Meet. Soc. Exp. Soc. Psychol.* Atlanta, GA.
- Hewstone, M., Rubin, M. and Willis, H. 2002. Intergroup Bias. *Annual Review of Psychology*. **53**, pp.575–604.
- Heyes, C. 2011. Automatic Imitation. *Psychological Bulletin*. **137**(3), pp.463–483.
- Heyes, C., Bird, G., Johnson, H. and Haggard, P. 2005. Experience modulates automatic imitation. *Cognitive Brain Research*. **22**(2), pp.233–240.
- Van Hiel, A., Onraet, E., Crowson, H.M. and Roets, A. 2016. The Relationship Between Right-wing Attitudes and Cognitive Style: A Comparison of Self-report and Behavioural Measures of Rigidity and Intolerance of Ambiguity. *European Journal of Personality*. **30**(6), pp.523–531.
- Hinds, P.J. and Mortensen, M. 2005. Understanding Conflict in Geographically Distributed Teams: The Moderating Effects of Shared Identity, Shared Context, and Spontaneous Communication. *Organization Science*. **16**(3), pp.290–307.
- Hoelter, J.W. 1985. A structural theory of personal consistency. *Social Psychology Quarterly*. **48**(2), pp.118–129.
- Hogg, M.A. 1993. Group cohesiveness: A critical review and some new directions *In: W. Stroebe and M. Hewstone, eds. European Review of Social Psychology*. London: Wiley, pp.85–111.
- Hogg, M.A. 2016. Social Identity Theory *In: S. McKeown, R. Haji and N. Ferguson, eds. Understanding Peace and Conflict Through Social Identity Theory - Contemporary Global Perspectives*. Springer International Publishing Switzerland, pp.3–17.
- Hogg, M.A. 2005. Social Identity and Misuse of Power: The Dark Side of

-
- Leadership. *Brooklyn Law Review*. **70**(4), pp.1239–1257.
- Hogg, M.A. 1992. *The social psychology of group cohesiveness: From attraction to social identity*. London: Harvester Wheatsheaf.
- Hogg, M.A. 2007. Uncertainty-identity theory *In*: M. P. Zanna, ed. *Advances in Experimental Social Psychology*. San Diego, CA: Academic Press, pp.69–126.
- Hogg, M.A. 2012. Uncertainty-identity theory *In*: P. A. M. Van Lange, A. W. Kruglanski and E. T. Higgins, eds. *Handbook of Theories of Social Psychology*. Thousand Oaks, California: Sage Publications, pp.62–80.
- Hogg, M.A. and Abrams, D. 1988. *Social Identifications: A Social Psychology of Intergroup Relations and Group Processes*. New York: Routledge.
- Hogg, M.A. and Hornsey, M.J. 2006. Self-Concept Threat and Multiple Categorization within Groups *In*: R. J. Crisp and M. Hewstone, eds. *Multiple Social Categorization: Processes, Models, and Applications*. New York: Psychology Press, pp.112–135.
- Hogg, M.A. and van Knippenberg, D. 2003. Social Identity and Leadership Processes In-Group *In*: M. P. Zanna, ed. *Advances in Experimental Social Psychology*. San Diego, California: Academic Press, pp.1–52.
- Hogg, M.A. and Terry, D.J. 2000. Social identity and self-categorization processes in organizational contexts. *Academy of Management Review*. **25**(1), pp.121–140.
- Hogg, M.A., Terry, D.J. and White, K.M. 1995. A Tale of Two Theories: A Critical Comparison of Identity Theory With Social Identity Theory. *Social Psychology Quarterly*. **58**(4), pp.255–269.
- Hogg, M.A. and Turner, J.C. 1987. Intergroup behaviour, self-stereotyping and the salience of social categories. *British Journal of Social Psychology*. **26**(4), pp.325–340.
- Hornsey, M.J. 2008. Social identity theory and self-categorization theory: A historical review. *Social and Personality Psychology Compass*. **2**(1), pp.204–222.
- Houston, D.M. and Andreopoulou, A. 2003. Tests of both corollaries of social identity theory's self-esteem hypothesis in a real group setting. *British Journal of Social*

-
- Psychology*. **42**(3), pp.357–370.
- Hove, M.J. and Risen, J.L. 2009. It's All in the Timing: Interpersonal Synchrony Increases Affiliation. *Social Cognition*. **27**(6), pp.949–960.
- Huy, Q.N. 2011. How Middle Managers' Group-Focus Emotions and Social Identities Influence Strategy Implementation. *Strategic Management Journal*. **32**(13), pp.1387–1410.
- Inzlicht, M., Gutsell, J.N. and Legault, L. 2012. Mimicry reduces racial prejudice. *Journal of Experimental Social Psychology*. **48**(1), pp.361–365.
- Jackson, E.M. and Johnson, R.E. 2012. When opposites do (and do not) attract: Interplay of leader and follower self-identities and its consequences for leader-member exchange. *The Leadership Quarterly*. **23**(3), pp.488–501.
- Jacob, C., Guéguen, N., Martin, A. and Boulbry, G. 2011. Retail salespeople's mimicry of customers: Effects on consumer behavior. *Journal of Retailing and Consumer Services*. **18**(5), pp.381–388.
- Janssen, O. 2001. Fairness Perceptions as a Moderator in the Curvilinear Relationship between Job Demands, and Job Performance and Job Satisfaction. *Academy of Management Journal*. **44**(5), pp.1039–1050.
- Janssen, O. 2003. Innovative behaviour and job involvement at the price of conflict and less satisfactory relations with co-workers. *Journal of Occupational and Organizational Psychology*, **76**, pp. 347-364.
- Jetten, J., Postmes, T. and McAuliffe, B.J. 2002. 'We're all individuals': Group norms of individualism and collectivism, levels of identification and identity threat. *European Journal of Social Psychology*. **32**(2), pp.189–207.
- Jetten, J., Spears, R. and Manstead, A.S.R. 1996. Intergroup Norms and Intergroup Discrimination: Distinctive Self-Categorization and Social Identity Effects. *Journal of Personality and Social Psychology*. **71**(6), pp.1222–1233.
- Johnson, D.W., Johnson, R.T. and Maruyama, G. 1984. Goal Interdependence and Interpersonal Attraction in Heterogeneous Classrooms: A Meta-Analysis *In*: N. Miller and M. B. Brewer, eds. *Groups in Contact: The Psychology of Desegregation*. Orlando, Florida: Academic Press, pp.187–212.

-
- Johnson, M.D., Morgeson, F.P., Ilgen, D.R., Meyer, C.J. and Lloyd, J.W. 2006. Multiple Professional Identities: Examining Differences in Identification Across Work-Related Targets. *Journal of Applied Psychology*. **91**(2), pp.498–506.
- Johnston, L. 2002. Behavioral Mimicry and Stigmatization. *Social Cognition*. **20**(1), pp.18–35.
- Jones, R.E. and Abdelfattah, K.R. 2020. Virtual Interviews in the Era of COVID-19: A Primer for Applicants. *Journal of Surgical Education*. **77**(4), pp.733–734.
- Jost, J.T. and Hunyadi, O. 2002. The psychology of system justification and the palliative function of ideology *In: W. Stroebe and M. Hewstone, eds. European Review of Social Psychology*. Hove, UK: Psychology Press, pp.111–153.
- Judd, C.M., James-Hawkins, L., Yzerbyt, V. and Kashima, Y. 2005. Fundamental dimensions of social judgment: Understanding the relations between judgments of competence and warmth. *Journal of Personality and Social Psychology*. **89**(6), pp.899–913.
- Kavanagh, L.C., Suhler, C.L., Churchland, P.S. and Winkielman, P. 2011. When It ' s an Error to Mirror : The Surprising Reputational Costs of Mimicry. *Psychological Science*. **22**(10), pp.1274–1276.
- Kawakami, K. and Dion, K.L. 1995. Social identity and Affect as Determinants of Collective Action: Towards an Integration of Relative Deprivation and Social Identity Theories. *Theory and Psychology*. **5**(4), pp.551–577.
- Keane, T.M., Wedding, D. and Kelly, J.A. 1983. Assessing subjective responses to assertive behavior: Data from patient samples. *Behavior Modification*. **7**(3), pp.317–330.
- Kenworthy, J.B., Turner, R.N., Hewstone, M. and Voci, A. 2005. Intergroup Contact: When Does it Work, and Why? *In: J. F. Dovidio, P. Glick and L. A. Rudman, eds. On the Nature of Prejudice: Fifty years after Allport*. Oxford, UK: Blackwell Publishing, pp.278–292.
- Kervyn, N., Yzerbyt, V.Y., Judd, C.M. and Nunes, A. 2009. A Question of Compensation: The Social Life of the Fundamental Dimensions of Social Perception. *Journal of Personality and Social Psychology*. **96**(4), pp.828–842.

-
- Kessler, T. and Hollbach, S. 2005. Group-based emotions as determinants of ingroup identification. *Journal of Experimental Social Psychology*. **41**(6), pp.677–685.
- Kim, J., Oh, I.-S., Holtz, B.C., Han, S. and Hu, D. 2019. The Antecedents and Consequences of Impression Management Across Culture: A Meta-Analysis. *Academy of Management Annual Meeting Proceedings*, 1, pp. 11127.
- Kleiner, T.-M. 2018. Public Opinion Polarisation and Protest Behaviour. *European Journal of Political Research*. **57**(4), pp.941–962.
- Kleinke, C.R. 1986. *Meeting and Understanding People*. New York: Freeman.
- Knapp, M.L. and Hall, J. 1996. *Nonverbal Communication in Human Interaction* 4th ed. New York: Harcourt Brace Jovanovich.
- Van Knippenberg, D. 2000. Work Motivation and Performance: A Social Identity Perspective. *Applied Psychology: An International Review*. **49**(3), pp.357–371.
- Knobloch-Westerwick, S. and Meng, J. 2011. Reinforcement of the Political Self Through Selective Exposure to Political Messages. *Journal of Communication*. **61**(2), pp.349–368.
- Knobloch-Westerwick, S., Mothes, C. and Polavin, N. 2020. Confirmation Bias, Ingroup Bias, and Negativity Bias in Selective Exposure to Political Information. *Communication Research*. **47**(1), pp.104–124.
- Konovsky, M.A. and Cropanzano, R. 1991. Perceived Fairness of Employee Drug Testing as a Predictor of Employee Attitudes and Job Performance. *Journal of Applied Psychology*. **76**(5), pp.698–707.
- Kormos, C. and Gifford, R. 2014. The validity of self-report measures of proenvironmental behavior: A meta-analytic review. *Journal of Environmental Psychology*. **40**, pp.359–371.
- Kouzakova, M., van Baaren, R. and van Knippenberg, A. 2010. Lack of behavioral imitation in human interactions enhances salivary cortisol levels. *Hormones and Behavior*. **57**(4–5), pp.421–426.
- Kouzakova, M., Karremans, J.C., van Baaren, R.B. and van Knippenberg, A. 2010. A

-
- Stranger's Cold Shoulder Makes the Heart Grow Fonder: Why Not Being Mimicked by a Stranger Enhances Longstanding Relationship Evaluations. *Social Psychological and Personality Science*. **1**(1), pp.87–93.
- Kraft-Todd, G.T., Reiner, D., Kelley, J.M., Heberlein, A.S., Baer, L. and Riess, H. 2017. Empathic nonverbal behavior increases ratings of both warmth and competence in a medical context. *PLoS ONE*. **12**(5), p.e0177758.
- Kramer, R.M. 1991. Intergroup relations and organizational dilemmas: The role of categorization processes *In*: L. L. Cummings and B. M. Staw, eds. *Research in Organizational Behavior*. Greenwich, CT: JAI Press, pp.191–228.
- Kramer, R.M. and Brewer, M.B. 1984. Effects of group identity on resource utilization in a simulated commons dilemma. *Journal of Personality and Social Psychology*. **46**(5), pp.1044–1057.
- Kruglanski, A.W. and Mayseless, O. 1990. Classic and current social comparison research: Expanding the perspective. *Psychological Bulletin*. **108**(2), pp.195–208.
- Kühn, S., Müller, B.C.N., van Baaren, R.B., Wietzker, A., Dijksterhuis, A. and Brass, M. 2010. Why do I like you when you behave like me? neural mechanisms mediating positive consequences of observing someone being imitated. *Social Neuroscience*. **5**(4), pp.384–392.
- Kulesza, W., Dolinski, D. and Wicher, P. 2016. Knowing that you mimic me: the link between mimicry, awareness and liking. *Social Influence*. **11**(1), pp.68–74.
- Kulesza, W.M., Cisłak, A., Vallacher, R.R., Nowak, A., Czekiel, M. and Bedynska, S. 2015. The Face of the Chameleon: The Experience of Facial Mimicry for the Mimicker and the Mimickee. *Journal of Social Psychology*. **155**(6), pp.590–604.
- Kurzius, E. and Borkenau, P. 2015. Antecedents and consequences of mimicry: A naturalistic interaction approach. *European Journal of Personality*. **29**(2), pp.107–124.
- Labroo, A.A. and Ramanathan, S. 2007. The Influence of Experience and Sequence of Conflicting Emotions on Ad Attitudes. *Journal of Consumer Research*. **33**(4), pp. 523-528.

-
- Laitinen, K. and Valo, M. 2018. Meanings of communication technology in virtual team meetings : framing technology-related interaction. *International Journal of Human-Computer Studies*. **111**, pp.12–22.
- Lakens, D. 2013. Calculating and reporting effect sizes to facilitate cumulative science: a practical primer for t-tests and ANOVAs. *Frontiers in Psychology*. **4**, pp.1–12.
- Lakens, D. 2010. Movement synchrony and perceived entitativity. *Journal of Experimental Social Psychology*. **46**(5), pp.701–708.
- Lakens, D. and Evers, E.R. 2014. Sailing from the Seas of Chaos into the Corridor of Stability Practical Recommendations to Increase the Informational Value of Studies. *Perspectives on Psychological Science*. **9**(2), pp.278–292.
- Lakens, D. and Stel, M. 2011. If They Move in Sync, They Must Feel in Sync: Movement Synchrony Leads to Attributions of Rapport and Entitativity. *Social Cognition*. **29**(1), pp.1–14.
- Lakin, J.L. 2006. Automatic Cognitive Processes and Nonverbal Communication *In*: V. Manusov and M. L. Patterson, eds. *The SAGE Handbook of Nonverbal Communication*. Thousand Oaks, CA: Sage Publications, pp.59–77.
- Lakin, J.L. 2013. Behavioral mimicry and interpersonal synchrony *In*: J. A. Hall and M. L. Knapp, eds. *Nonverbal Communication*. Berlin: Walter de Gruyter GmbH, pp.539–575.
- Lakin, J.L. and Chartrand, T.L. 2013. Behavioral Mimicry as an Affiliative Response to Social Exclusion *In*: C. N. DeWall, ed. *The Oxford handbook of social exclusion*. New York: Oxford University Press, pp.266–274.
- Lakin, J.L. and Chartrand, T.L. 2003. Using nonconscious behavioral mimicry to create affiliation and rapport. *Psychological Science*. **14**(4), pp.334–339.
- Lakin, J.L., Chartrand, T.L. and Arkin, R.M. 2008. I am too just like you: Nonconscious Mimicry as an Autobehavioral Response to Social Exclusion. *Association for Psychological Science*. **19**(8), pp.816–822.
- Lakin, J.L., Jefferis, V.E., Cheng, C.M. and Chartrand, T.L. 2003. The chameleon effect as social glue: Evidence for the evolutionary significance of nonconscious

-
- mimicry. *Journal of Nonverbal Behavior*. **27**(3), pp.145–162.
- Lakoff, G. 2010. Why it Matters How We Frame the Environment. *Environmental Communication*. **4**(1), pp.70–81.
- Van Lange, P.A.M., De Bruin, E.M.N., Otten, W. and Joireman, J.A. 1997. Development of Prosocial, Individualistic, and Competitive Orientations: Theory and Preliminary Evidence. *Journal of Personality and Social Psychology*. **73**(4), pp.733–746.
- Lasota, P.A. and Shah, J.A. 2015. Analyzing the Effects of Human-Aware Motion Planning on Close-Proximity Human-Robot Collaboration. *Human Factors*. **57**(1), pp.21–33.
- Lawler, E.J. 1992. Affective attachments to nested groups: A choice process theory. *American Sociological Review*. **57**(3), pp.327–339.
- Leach, C.W., van Zomeren, M., Zebel, S., Vliek, M.L.W., Pennekamp, S.F., Doosje, B., Ouwerkerk, J.W. and Spears, R. 2008. Group-Level Self-Definition and Self-Investment: A Hierarchical (Multicomponent) Model of In-Group Identification. *Journal of Personality and Social Psychology*. **95**(1), pp.144–165.
- Leander, N.P., Chartrand, T.L. and Bargh, J.A. 2012. You Give Me the Chills: Embodied Reactions to Inappropriate Amounts of Behavioral Mimicry. *Psychological Science*. **23**(7), pp.772–779.
- Leander, N.P., Chartrand, T.L. and Wood, W. 2011. Mind your mannerisms: Behavioral mimicry elicits stereotype conformity. *Journal of Experimental Social Psychology*. **47**(1), pp.195–201.
- Leary, M.R. (ed.). 2001. *Interpersonal Rejection*. New York: Oxford University Press.
- Leary, M.R. 1990. Responses to Social Exclusion: Social Anxiety, Jealousy, Loneliness, Depression, and low Self Esteem. *Journal of Social and Clinical Psychology*. **9**(2), pp.221–229.
- Leary, M.R. and Baumeister, R.F. 2000. The nature and function of self-esteem: Sociometer theory *In*: M. P. Zanna, ed. *Advances in Experimental Social Psychology*. San Diego, California: Academic Press, pp.1–62.

-
- Lees, C. 2018. The 'Alternative for Germany': The Rise of Right-Wing Populism at the Heart of Europe. *Politics*. **38**(3), pp.295–310.
- van Leeuwen, M.L., Veling, H., van Baaren, R.B. and Dijksterhuis, A. 2009. The influence of facial attractiveness on imitation. *Journal of Experimental Social Psychology*. **45**(6), pp.1295–1298.
- Leighton, J., Bird, G., Orsini, C. and Heyes, C. 2010. Social attitudes modulate automatic imitation. *Journal of Experimental Social Psychology*. **46**(6), pp.905–910.
- Leonardelli, G.J., Pickett, C.L. and Brewer, M.B. 2010. Optimal Distinctiveness Theory. A Framework for Social Identity, Social Cognition, and Intergroup Relations. *Advances in Experimental Social Psychology*. **43**(C), pp.63–113.
- Lewicki, P. 1986. *Nonconscious Social Information Processing*. Orlando, Florida: Academic Press.
- Leys, C., Ley, C., Klein, O., Bernard, P. and Licata, L. 2013. Detecting outliers: Do not use standard deviation around the mean, use absolute deviation around the median. *Journal of Experimental Social Psychology*. **49**(4), pp.764–766.
- Liden, R.C., Wayne, S.J. and Stilwell, D. 1993. A longitudinal study on the early development of leader-member exchanges. *Journal of Applied Psychology*. **78**(4), pp.662–674.
- Locksley, A., Oritz, V. and Hepburn, C. 1980. Social categorization and discriminatory behavior: Extinguishing the minimal intergroup discrimination effect. *Journal of Personality and Social Psychology*. **39**(5), pp.773–783.
- Long, C.P., Bendersky, C. and Morrill, C. 2011. FAIRNESS MONITORING : LINKING MANAGERIAL CONTROLS AND FAIRNESS JUDGMENTS IN ORGANIZATIONS. *Academy of Management Journal*. **54**(4), pp.1045–1068.
- Lumsden, J., Miles, L.K. and Neil Macrae, C. 2014. Sync or sink? Interpersonal synchrony impacts self-esteem. *Frontiers in Psychology*. **5**(SEP), pp.1–11.
- Lumsden, J., Miles, L.K., Richardson, M.J., Smith, C.A. and Macrae, C.N. 2012. Who syncs? Social motives and interpersonal coordination. *Journal of Experimental Social Psychology*. **48**(3), pp.746–751.

-
- Luthanen, R. and Crocker, J. 1992. A Collective Self-Esteem Scale: Self-Evaluations of One's Social Identity. *Personality and Social Psychology Bulletin*. **18**(5), pp.302–318.
- Luthra, A. and Dahiya, R. 2015. Effective Leadership is all About Communicating Effectively: Connecting Leadership and Communication. *International Journal of Management & Business Studies*. **5**(3), pp.43–48.
- Mackie, D.M., Devos, T. and Smith, E.R. 2000. Intergroup Emotions: Explaining Offensive Action Tendencies in an Intergroup Context. *Journal of Personality and Social Psychology*. **79**(4), pp.60–616.
- Maddux, W.W., Mullen, E. and Galinsky, A.D. 2008. Chameleons bake bigger pies and take bigger pieces: Strategic behavioral mimicry facilitates negotiation outcomes. *Journal of Experimental Social Psychology*. **44**(2), pp.461–468.
- Major, B., Quinton, W.J. and McCoy, S.K. 2002. Antecedents and Consequences of Attributions to Discrimination: Theoretical and Empirical Advances *In*: M. P. Zanna, ed. *Advances in Experimental Social Psychology*. San Diego, California: Academic Press, pp.251–330.
- Manera, V., Becchio, C., Cavallo, A., Sartori, L. and Castiello, U. 2011. Cooperation or competition? Discriminating between social intentions by observing prehensile movements. *Experimental Brain Research*. **211**(3–4), pp.547–556.
- Markus, H.R. 1977. Self-schemata and processing information about the self. *Journal of Personality and Social Psychology*. **35**(2), pp.63–78.
- Markus, H.R. and Kitayama, S. 1991. Culture and the Self: Implications for Cognition, Emotion, and Motivation. *Psychological Review*. **98**(2), pp.224–253.
- Marsh, K.L., Richardson, M.J. and Schmidt, R.C. 2009. Social Connection through Joint Action and Interpersonal Coordination. *Topics in Cognitive Science*. **1**(2), pp.320–339.
- Marsh, L.E., Bird, G. and Catmur, C. 2016. The imitation game: Effects of social cues on 'imitation' are domain-general in nature. *NeuroImage*. **139**, pp.368–375.
- Martiny, S.E. and Rubin, M. 2016. Towards a clearer understanding of social identity theory's self-esteem hypothesis *In*: S. McKeown, R. Haji and N. Ferguson, eds.

-
- Understanding peace and conflict through social identity theory: Theoretical, contemporary and worldwide perspectives*. New York: Springer, pp.19–32.
- Maslow, A.H. 1943. A Theory of Human Motivation. *Psychological Review*. **50**, pp.370–396.
- Masterson, S.S. and Lensges, M. 2014. Leader–Member Exchange and Justice *In*: T. N. Bauer and B. Erdogan, eds. *The Oxford Handbook of Leader-Member Exchange*. Oxford, UK: Oxford University Press, pp.1–33.
- Maxwell, S.E. and Delaney, H.D. 2004. *Designing Experiments and Analyzing Data: A Model Comparison Perspective* 2nd ed. Mahwah, NJ: Erlbaum.
- Mayer, R.C. and Gavin, M.B. 2005. Trust in management and performance: Who minds the shop while the employees watch the boss? *Academy of Management Journal*. **48**(5), pp.874–888.
- McAllister, D.J. 1995. Affect- and Cognition-based Trust as Foundations for interpersonal Cooperation in Organizations. *Academy of Management Journal*. **38**(1), pp.24–59.
- McDaniel, E. and Andersen, P.A. 1998. International Patterns of Interpersonal Communication. *Journal of Nonverbal Behavior*. **22**(1), pp.58–72.
- McGarty, C., Turner, J.C., Hogg, M.A., David, B. and Wetherell, M.S. 1992. Group Polarization as Conformity to the Prototypical Group Member. *British Journal of Social Psychology*. **31**(1), pp.1–20.
- McIntosh, D.N. 2006. Spontaneous facial mimicry, liking, and emotional contagion. *Polish Psychological Bulletin*. **37**(1), pp.31–42.
- McIntosh, D.N., Reichmann-Decker, A., Winkielman, P. and Wilbarger, J.L. 2006. When the social mirror breaks: deficits in automatic, but not voluntary, mimicry of emotional facial expressions in autism. *Developmental Science*. **9**(3), pp.295–302.
- Mehrabian, A. 1972. *Nonverbal Communication*. Chicago: Aldine.
- Mehrabian, A. 1967. Orientation Behaviours and Nonverbal Attitude Communication. *Journal of Communication*. **17**(4), pp.324–332.

-
- Meleady, R. and Crisp, R.J. 2017. Take it to the top: Imagined interactions with leaders elevates organizational identification. *The Leadership Quarterly*. **28**(5), pp. 621-638.
- Meltzoff, A.N. and Moore, M.K. 1977. Imitation of facial and manual gestures by human neonates. *Science*. **198**(4312), pp.75–78.
- Merkwan, J.B. and Smith, T.B. 1999. Tolerance and racial identity among foreign sojourners: Testing the contact hypotheses. *Psychological Reports*. **85**(1), p.170.
- Miles, L.K., Lumsden, J., Richardson, M.J. and Neil Macrae, C. 2011. Do birds of a feather move together? Group membership and behavioral synchrony. *Experimental Brain Research*. **211**(3–4), pp.495–503.
- Miles, L.K., Nind, L.K., Henderson, Z. and Macrae, C.N. 2010. Moving memories: Behavioral synchrony and memory for self and others. *Journal of Experimental Social Psychology*. **46**(2), pp.457–460.
- Miles, L.K., Nind, L.K. and Macrae, C.N. 2009. The rhythm of rapport: Interpersonal synchrony and social perception. *Journal of Experimental Social Psychology*. **45**(3), pp.585–589.
- Miscenko, D. and Day, D. V. 2015. Identity and identification at work. *Organizational Psychology Review*. **6**(3), pp.215–247.
- Mitchell, J.P., Banaji, M.R. and Macrae, C.N. 2005. The Link between Social Cognition and Self-Referential Thought in the Medial Prefrontal Cortex. *Journal of Cognitive Neuroscience*. **17**(8), pp.1306–1315.
- Mogan, R., Fischer, R. and Bulbulia, J.A. 2017. To be in synchrony or not? A meta-analysis of synchrony's effects on behavior, perception, cognition and affect. *Journal of Experimental Social Psychology*. **72**(October), pp.13–20.
- Mondillon, L., Niedenthal, P.M., Gil, S. and Droit-Volet, S. 2007. Imitation of in-group versus out-group members' facial expressions of anger: A test with a time perception task. *Social Neuroscience*. **2**(3–4), pp.223–237.
- Mooney Marini, M. and Singer, B. 1988. Causality in the Social Sciences. *Sociological Methodology*. **18**, pp. 347-409.

-
- Morry, M.M., Kito, M. and Ortiz, L. 2011. The attraction-similarity model and dating couples: Projection, perceived similarity, and psychological benefits. *Personal Relationships*. **18**(1), pp.125–143.
- Muldoon, O.T., Lowe, R.D. and Schmid, K. 2016. Identity and Psychological Health *In: S. McKeown, R. Haji and N. Ferguson, eds. Understanding Peace and Conflict Through Social Identity Theory - Contemporary Global Perspectives*. Springer International Publishing Switzerland, pp.135–144.
- Müller, B.C.N., Maaskant, A.J., Van Baaren, R.B. and Dijksterhuis, A. 2012. Prosocial Consequences of Imitation. *Psychological Reports*. **110**(3), pp.891–898.
- Mummendey, A. and Schreiber, H.-J. 1984. Social Comparison, Similarity and Ingroup Favouritism: A Replication. *European Journal of Social Psychology*. **14**(2), pp.231–233.
- Murata, A., Saito, H., Schug, J., Ogawa, K. and Kameda, T. 2016. Spontaneous Facial Mimicry Is Enhanced by the Goal of Inferring Emotional States: Evidence for Moderation of “Automatic” Mimicry by Higher Cognitive Processes. *PLoS ONE*. **11**(4), pp.1–15.
- Nahrgang, J.D. and Seo, J.J. 2014. How and Why High Leader–Member Exchange (LMX) Relationships Develop: Examining the Antecedents of LMX *In: T. N. Bauer and B. Erdogan, eds. The Oxford Handbook of Leader–Member Exchange*. Oxford, UK: Oxford University Press, pp.1–62.
- Neighbors, C., LaBrie, J.W., Hummer, J.F., Lewis, M.A., Lee, C.M., Desai, S., Kilmer, J.R. and Larimer, M.E. 2010. Group Identification as a Moderator of the Relationship between Perceived Social Norms and Alcohol Consumption. *Psychology of Addictive Behaviors*. **24**(3), pp.522–528.
- Neufeld, J. and Chakrabarti, B. 2016. Empathy modulates the rewarding effect of mimicry. *Nature- Scientific Reports*. **6**(1), pp.1–8.
- Nicholson, C.Y., Compeau, L.D. and Sethi, R. 2001. The Role of interpersonal Liking in Building Trust in Long-Term Channel Relationships. *Journal of the Academy of Marketing Science*. **29**(1), pp.3–15.

-
- Niedenthal, P.M., Barsalou, L.W., Winkielman, P., Krauth-Gruber, S. and Ric, F. 2005. Embodiment in Attitudes, Social Perception, and Emotion. *Personality and Social Psychology Review*. **9**(3), pp. 184-211.
- Nolan, J.M., Schultz, W., Cialdini, R.B., Goldstein, N.J. and Griskevicius, V. 2008. Normative Social Influence Is Underdetected. *Personality and Social Psychology Bulletin*. **34**(7), pp.913–923.
- Oakes, P.J. 1987. The salience of social categories *In*: J. C. Turner, M. A. Hogg, P. J. Oakes, S. D. Reicher and M. S. Wetherell, eds. *Rediscovering the social group: A self-categorization theory*. Oxford and New York: Basil Blackwell.
- Oakes, P.J., Haslam, S.A. and Turner, J.C. 1994. *Stereotyping and social reality*. Oxford, UK: Blackwell Publishing.
- Oakes, P.J., Turner, J.C. and Haslam, S.A. 1991. Perceiving people as group members: The role of fit in the salience of social categorizations. *British Journal of Social Psychology*. **30**(2), pp.125–144.
- Olszanowski, M., Wrobel, M. and Hess, U. 2020. Mimicking and sharing emotions: a re-examination of the link between facial mimicry and emotional contagion. *Cognition and Emotion*. **34**(2), pp.367-376.
- Onorato, R. and Turner, J. 2004. Fluidity in the self concept: the shift from personal to social identity. *European Journal of Social Psychology*. **34**(3), pp.257–278.
- Otten, S. 2002. “Me” and “Us” or “Us” and “Them”? The Self as Heuristic for Defining Novel Ingroups. *European Review of Social Psychology*. **13**(1), pp.1–33.
- Otten, S. and Wentura, D. 1999. About the Impact of Automaticity in the Minimal Group Paradigm: Evidence from affective Priming Tasks. *European Journal of Social Psychology*. **29**(8), pp.1049–1071.
- Over, H. and Carpenter, M. 2009. Priming third-party ostracism increases affiliative imitation in children. *Developmental Science*. **12**(3), pp.1–8.
- Over, H., Carpenter, M., Spears, R. and Gattis, M. 2013. Children selectively trust individuals who have imitated them. *Social Development*. **22**(2), pp.215–224.
- Paladino, M.P., Mazzurega, M., Pavani, F. and Schubert, T.W. 2010. Synchronous

-
- multisensory stimulation blurs self-other boundaries. *Psychological Science*. **21**(9), pp.1202–1207.
- Pearson, J.C., Turner, L.H. and Todd-Mancillas, W.R. 1994. *Gender and Communication* 3rd ed. Dubuque, IA: Brown and Benchmark.
- Peer, E., Brandimarte, L., Samat, S. and Acquisti, A. 2017. Beyond the Turk: Alternative platforms for crowdsourcing behavioral research. *Journal of Experimental Social Psychology*. **70**, pp.153–163.
- Peters, R., Broekens, J. and Neerincx, M.A. 2017. 'Robots Educate in Style: The Effect of Context and Non-verbal behaviour on Children's Perceptions of Warmth and Competence'. *IEEE International Symposium on Robot and Human Interactive Communication (RO-MAN)*, Lisbon, Portugal, 28 August - 1 September.
- Pettigrew, T.F. 1958. Personality and sociocultural factors in intergroup attitudes: A crossnational comparison. *Journal of Conflict Resolution*. **2**(1), pp.29–42.
- Pettigrew, T.F. and Tropp, L.R. 2008. How does intergroup contact reduce prejudice? Meta-analytic tests of three mediators. *European Journal of Social Psychology*. **38**, pp.922–934.
- Pfister, H.-R. and Böhm, G. 2008. The multiplicity of emotions: A framework of emotional functions in decision making. *Judgement and Decision Making*. **3**(1), pp. 5-17.
- Phillips, A.S. and Bedeian, A.G. 1994. Leader-follower exchange quality: The role of personal and interpersonal attributes. *Academy of Management Journal*. **37**(4), pp.990–1001.
- Phinney, J.S. 1990. Ethnic Identity in Adolescents and Adults: Review of Research. *Psychological Bulletin*. **108**(3), pp.499–514.
- Pickett, C.L. and Brewer, M.B. 2005. The Role of Exclusion in Maintaining in-Group Inclusion *In*: D. Abrams, M. A. Hogg and J. M. Marques, eds. *The Social Psychology of Inclusion and Exclusion*. New York: Psychology Press, pp.89–112.
- Platow, M.J., Foddy, M., Yamagishi, T., Lim, L. and Chow, A. 2012. Two

-
- experimental tests of trust in in-group strangers: The moderating role of common knowledge of group membership. *European Journal of Social Psychology*. **42**(1), pp.30–35.
- Platow, M.J., McClintock, C.G. and Liebrand, W.B.G. 1990. Predicting intergroup fairness and intergroup bias in the minimal group paradigm. *European Journal of Social Psychology*. **20**(3), pp.221–239.
- Pollet, T.V. and Saxton, T.K. 2019. How Diverse Are the Samples Used in the Journals ‘Evolution & Human Behavior’ and ‘Evolutionary Psychology’. *Evolutionary Psychological Science*. **5**, pp.357–368.
- Podsakoff, N.P., Podsakoff, P.M., MacKenzie, S.B. and Klinger, R.L. 2013. Are We Really Measuring What We Say We’re Measuring? Using Video Techniques to Supplement Traditional Construct Validation Procedures. *Journal of Applied Psychology*. **98**(1), pp.99-113.
- Postmes, T., Spears, R. and Lea, M. 1998. Breaching or building social boundaries? SIDE-effect of computermediated communication. *Communication Research*. **25**(6), pp.689–713.
- Powell, R.A., Symbaluk, D.G. and Honey, P.L. 2009. *Introduction to Learning and Behavior* 3rd ed. Belmont, CA: Wadsworth Publishing.
- Preacher, K.J. and Hayes, A.F. 2004. SPSS and SAS procedures for estimating indirect effects in simple mediation models. *Behavior Research Methods, Instruments, & Computers*. **36**(4), pp.717–731.
- Prentice, D.A. and Miller, D.T. (eds.). 1999. *Cultural Divides: Understanding and Overcoming Group Conflict*. New York: Russell Sage Foundations.
- Pritschet, L., Powell, D. and Horne, Y. 2016. Marginally Significant Effects as Evidence for Hypotheses: Changing Attitudes Over Four Decades. *Psychological Science*. **27**(7), pp. 1036-1042.
- Rabbie, J.M. and Wilkens, G. 1971. Intergroup competition and its effect on intragroup and intergroup relations. *European Journal of Social Psychology*. **1**(2), pp.215–234.
- Rae, J.R., Newheiser, A.-K. and Olson, K.R. 2015. Exposure to Racial Out-Groups

-
- and Implicit Race Bias in the United States. *Social Psychological and Personality Science*. **6**(5), pp.535–543.
- Rafferty, A.E. and Griffin, M.A. 2004. Dimensions of transformational leadership: Conceptual and empirical extensions. *The Leadership Quarterly*. **15**, pp.329–354.
- Ramarajan, L. 2014. Past, Present and Future Research on Multiple Identities: Toward an Intrapersonal Network Approach. *Academy of Management Annals*. **8**(1), pp.589–659.
- Randel, A.E. 2002. Identity salience: A moderator of the relationship between group gender composition and work group conflict. *Journal of Organizational Behavior*. **23**(6), pp.749–766.
- Rauchbauer, B., Pfabigan, D.M. and Lamm, C. 2018. Event-related potentials of automatic imitation are modulated by ethnicity during stimulus processing, but not during motor execution. *Nature- Scientific Reports*. **8**(1), pp.1–15.
- Ray, G.B., Berlin Ray, E. and Zahn, C.J. 1991. Speech Behavior and Social Evaluation: An Examination of Medical Messages. *Communication Quarterly*. **39**(2), pp.119–129.
- Reddish, P., Tong, E.M.W., Jong, J., Lanman, J.A. and Whitehouse, H. 2016. Collective synchrony increases prosociality towards non-performers and outgroup members. *British Journal of Social Psychology*. **55**(4), pp.722–738.
- Redeker, M., Stel, M. and Mastop, J. 2011. Does mimicking others change your self-view? *Journal of Social Psychology*. **151**(4), pp.387–390.
- Reicher, S.D. and Haslam, S.A. 2006. Rethinking the Psychology of Tyranny: The BBC Prison Study. *British Journal of Social Psychology*. **45**(1), pp.1–40.
- Reicher, S.D., Spears, R. and Postmes, T. 1995. A social identity model of deindividuation phenomena *In*: W. Stroebe and M. Hewstone, eds. *European Review of Social Psychology*. Chichester, UK: John Wiley & Sons, Ltd, pp.161–198.
- Reid, S.A. and Hogg, M.A. 2005. Uncertainty reduction, self-enhancement, and ingroup identification. *Personality and Social Psychology Bulletin*. **31**(6), pp.1–

14.

Reynolds, K.J. and Turner, J.C. 2006. Individuality and the prejudiced personality. *European Review of Social Psychology*. **17**(1), pp.233–270.

Reynolds, K.J., Turner, J.C., Haslam, S.A. and Ryan, M.K. 2001. The Role of Personality and Group Factors in Explaining Prejudice. *Journal of Experimental Social Psychology*. **37**(5), pp.427–434.

Richter, A.W., West, M.A., Van Dick, R. and Dawson, J.F. 2006. Boundary Spanners' Identification, Intergroup Contact, and Effective Intergroup Relations. *Academy of Management Journal*. **49**(6), pp.1252–1269.

Ridgeway, C.L. 1987. Nonverbal Behavior, Dominance, and the Basis of Status in Task Groups. *American Sociological Review*, **52**(5), pp. 683-694.

Riggio, R. 2006. Nonverbal Skills and Abilities *In: V. Manusov and M. L. Patterson, eds. The SAGE Handbook of Nonverbal Communication*. Thousand Oaks, California: Sage Publications, pp.79–96.

Riketta, M. 2005. Organizational Identification: A meta-analysis. *Journal of Vocational Behavior*. **66**(2), pp.358–384.

Riley, A. and Burke, P.J. 1995. Identities and self-verification in the small group. *Social Psychology Quarterly*. **58**(2), pp.61–73.

Romancini, R. and Castilho, F. 2019. Strange Fruit: The Rise of Brazil's 'New Right-Wing' and the Non-Partisan School Movement. *Journal of Alternative and Community Media*. **4**(1), pp.7–22.

Rousu, M.C., Colson, G., Corrigan, J.R., Grebitus, C. and Loureiro, M.L. 2015. Deception in Experiments: Towards Guidelines on use in Applied Economics Research. *Applied Economic Perspectives and Policy*. **37**(3), pp.524–536.

Rubin, Z. and Hewstone, M. 1998. Social identity theory's self-esteem hypothesis: A review and some suggestions for clarification. *Personality and Social Psychology Review*. **2**(1), pp.40–62.

Sachisthal, M.S.M., Sauter, D.A. and Fischer, A.H. 2016. Mimicry of ingroup and outgroup emotional expressions. *Comprehensive Results in Social Psychology*.

1(1-3), pp. 86-105.

Sachs, J.L., Mueller, U.G. and Wilcox, T.P. 2004. The Evolution of Cooperation. *The Quarterly Review of Biology*. **79**(2), pp.135–160.

Sagarin, B.J. and Wood, S.E. 2007. Resistance to influence *In*: A. R. Pratkanis, ed. *The Science of Social Influence: Advances and Future Progress*. New York, NY: Psychology Press, pp.321–340.

Salazar Kämpf, M., Liebermann, H., Kerschreiter, R., Krause, S., Nestler, S. and Schmukle, S.C. 2018. Disentangling the Sources of Mimicry: Social Relations Analyses of the Link Between Mimicry and Liking. *Psychological Science*. **29**(1), pp.131–138.

Sanchez-Burks, J., Bartel, C.A. and Blount, S. 2009. Performance in Intercultural Interactions at Work: Cross-Cultural Differences in Response to Behavioral Mirroring. *Journal of Applied Psychology*. **94**(1), pp.216–223.

Sassenberg, K. and Ditrich, L. 2019. Research in Social Psychology Changed Between 2011 and 2016: Larger Sample Sizes, More Self-Report Measures, and More Online Studies. *Advances in Methods and Practices in Psychological Science*. **2**(2), pp.107–114.

van der Schalk, J., Fischer, A., Doosje, B., Wigboldus, D., Hawk, S., Rotteveel, M. and Hess, U. 2011. Convergent and divergent responses to emotional displays of ingroup and outgroup. *Emotion*. **11**(2), pp. 286-298.

Schaubroeck, J., Lam, S.S.K. and Peng, A.C. 2011. Cognition-based and affect-based trust as mediators of leader behavior influences on team performance. *Journal of Applied Psychology*. **96**(4), pp.863–871.

Schaubroeck, J.M., Peng, A.C. and Hannah, S.T. 2013. Developing trust with peers and leaders: Impacts on organizational identification and performance during entry. *Academy of Management Journal*. **56**(4), pp.1148–1168.

Scheepers, D. and Ellemers, N. 2019. Social Identity Theory *In*: K. Sassenberg and M. L. W. Vliek, eds. *Social Psychology in Action: Evidence-Based Interventions from Theory to Practice*. Springer, Cham, pp.129–143.

Scheepers, D., Ellemers, N. and Sintemaartensdijk, N. 2009. Suffering from the

-
- Possibility of Status Loss: Physiological Responses to Social Identity Threat in High Status Groups. *European Journal of Social Psychology*. **39**, pp.1075–1092.
- Schlenker, B.R. 1982. Translating actions into attitudes: An identity-analytic approach to the explanation of social conduct. *Advances in Experimental Social Psychology*. **15**, pp.193–247.
- Schmitt, M.T., Branscombe, N.R. and Kappen, D.M. 2003. Attitudes toward group-based inequality: Social dominance or social identity? *British Journal of Social Psychology*. **42**(2), pp.161–186.
- Schwartz, S.H. 2012. An Overview of the Schwartz Theory of Basic Values. *Online Readings in Psychology and Culture*. **2**(1), pp.1–20.
- Schwartz, S.H. 1992. Universals in the content and structure of values: Theory and empirical tests in 20 countries M. P. Zanna, ed. *Advances in Experimental Social Psychology*. **25**, pp.1–65.
- Sedikides, C. and Strube, M.J. 1997. Self-evaluation: To thine own self be good, to thine own self be sure, to thine own self be true, and to thine own self be better In: M. P. Zanna, ed. *Advances in Experimental Social Psychology*. New York: Academic Press, pp.209–296.
- Seibt, B., Mühlberger, A., Likowski, K.U. and Weyers, P. 2015. Facial mimicry in its social setting. *Frontiers in Psychology*. **6**(August).
- Shaughnessy, J.J., Zechmeister, E.B. and Zechmeister, J.S. 2012. *Research Methods in Psychology* 9th ed. New York: McGraw-Hill.
- Shaw, D.J., Vrij, A., Leal, S., Mann, S., Hillman, J., Granhag, P.A. and Fisher, R.P. 2015. Mimicry and Investigative Interviewing: Using Deliberate Mimicry to Elicit Information and Cues to Deceit. *Journal of Investigative Psychology and Offender Profiling*. **12**(3), pp.217–230.
- Shih, M., Bonam, C., Sanchez, D. and Peck, C. 2007. The social construction of race: Biracial identity and vulnerability to stereotypes. *Cultural Diversity and Ethnic Minority Psychology*. **13**(2), pp.125–133.
- Shih, M., Pittinsky, T.L. and Ambady, N. 1999. Stereotype Susceptibility: Identity Salience and Shifts in Quantitative Performance. *Psychological Science*. **10**(1),

pp.80–83.

- Shih, M. and Sanchez, D.T. 2005. Perspectives and Research on the Positive and Negative Implications of having Multiple Racial Identities. *Psychological Bulletin*. **131**(4), pp.569–597.
- Sidanius, J. and Pratto, F. 1999. *Social Dominance: An Intergroup Theory of Social Hierarchy and Oppression*. Cambridge, UK: Cambridge University Press.
- Simon, B. 2004. *Identity in a modern society: A social psychological perspective*. Oxford: Blackwell Publishing.
- Simon, B. and Hamilton, D.H. 1994. Self-stereotyping and social context: The effects of relative in-group size and in-group status. *Journal of Personality and Social Psychology*. **66**(4), pp.699–711.
- Simon, B., Mommert, A. and Renger, D. 2015. Reaching across group boundaries: Respect from outgroup members facilitates recategorization as a common group. *British Journal of Social Psychology*. **54**(4), pp.616–628.
- Simpson, B. and Willer, R. 2015. Beyond Altruism: Sociological Foundations of Cooperation and Prosocial Behavior. *Annual Review of Sociology*. **41**, pp.43–63.
- Singer, E. and Couper, M.P. 2008. Do Incentives Exert Undue Influence on Survey Participation? Experimental Evidence. *Journal of Empirical Research on Human Research Ethics*. **3**(3), pp.49–56.
- Singer, E., van Hoewyk, J., Gebler, N., Raghunathan, T. and McGonagle, K. 1999. The effect of incentives on response rates in interviewer-mediated surveys. *Journal of Official Statistics*. **15**(2), pp.217–230.
- Singh, R., Ho, L.J., Tan, H.L. and Bell, P.A. 2007. Attitudes, personal evaluations, cognitive evaluation and interpersonal attraction: On the direct, indirect and reverse-causal effects. *British Journal of Social Psychology*. **46**(1), pp.19–42.
- Slack, M.K. and Draugalis, J.R. 2001. Establishing the internal and external validity of experimental studies. *American Journal of Health-System Pharmacy*. **58**(22), pp.2173–2181.

-
- Sluss, D.M. and Ashforth, B.E. 2008. How Relational and Organizational Identification Converge: Processes and Conditions. *Organization Science*. **19**(6), pp.807–823.
- Sluss, D.M. and Ashforth, B.E. 2007. Relational Identification and Identification : Defining Ourselves through Work Relationships. *The Academy of Management Review*. **32**(1), pp.9–32.
- Sluss, D.M., Ployhart, R.E., Cobb, M.G. and Ashforth, B.E. 2012. Generalizing Newcomers' Relational and Organizational identifications: Processes and Prototypicality. *The Academy of Management Journal*. **55**(4), pp.949–975.
- Smeesters, D., Yzerbyt, V.Y., Corneille, O. and Warlop, L. 2009. When do primes prime? The moderating role of the self-concept in individuals' susceptibility to priming effects on social behavior. *Journal of Experimental Social Psychology*. **45**(1), pp.211–216.
- Smidts, A., Pruyn, A.T.H. and Van Riel, C.B.M. 2001. The Impact of Employee Communication and Perceived External Prestige on Organizational Identification. *The Academy of Management Journal*. **44**(5), pp.1051–1062.
- Smith, K.G., Carroll, S.J. and Ashford, S.J. 1995. Intra- and Interorganizational Cooperation: Toward a research Agenda. *Academy of Management Journal*. **38**(1), pp.7–23.
- Sobel, M.E. 1982. Asymptotic Confidence Intervals for Indirect Effects in Structural Equation Models *In*: S. Leinhardt, ed. *Sociological Methodology*. San Francisco, CA: Jossey-Bass, pp.290–312.
- Sommer, R. 1969. *Personal Space: The Behavioral Basis of Design*. Englewood Cliffs, NJ: Prentice-Hall.
- Spears, R., Doosje, B. and Ellemers, N. 1997. Self- Stereotyping in the Face of Threats to Group Status Distinctiveness: The Role of Group Identification. *Personality and Social Psychology Bulletin*. **23**(5), pp.538–553.
- Stel, Mariëlle and van Knippenberg, A. 2008. The Role of Facial Mimicry in the Recognition of Affect. *Psychological Science*. **19**(10), pp.984–985.
- Stel, M., van Baaren, R.B., Blascovich, J., van Dijk, F., McCall, C., Pollmann, M.M.,

-
- van Leeuwen, M.L., Mastop, J. and Vonk, R. 2010. Effects of a priori liking on the elicitation of mimicry. *Experimental Psychology*. **57**(6), pp.412–418.
- Stel, M., van Baaren, R.B. and Vonk, R. 2008. Effects of mimicking: acting prosocially by being emotionally moved. *European Journal of Social Psychology*. **38**(6), pp.965–976.
- Stel, M., Blascovich, J., McCall, C., Mastop, J., van Baaren, R.B. and Vonk, R. 2010. Mimicking disliked others: effects of a priori liking on the mimicry-liking link. *European Journal of Social Psychology*. **40**(5), pp.867–880.
- Stel, M., van Dijk, E. and Olivier, E. 2009. You want to know the truth? Then don't mimic! *Psychological Science*. **20**(6), pp.693–699.
- Stel, M. and Harinck, F. 2011. Being mimicked makes you a prosocial voter. *Experimental Psychology*. **58**(1), pp.79–84.
- Stel, M., Mastop, J. and Strick, M. 2011. The impact of mimicking on attitudes toward products presented in TV commercials. *Social Influence*. **6**(3), pp.142–152.
- Stel, M., Rispens, S., Leliveld, M. and Lokhorst, A.M. 2011. The consequences of mimicry for prosocials and proselves: Effects of social value orientation on the mimicry-liking link. *European Journal of Social Psychology*. **41**(3), pp.269–274.
- Stel, M. and Vonk, R. 2009. Empathizing via mimicry depends on whether emotional expressions are seen as real. *European Psychologist*. **14**(4), pp.342–350.
- Stel, M. and Vonk, R. 2010. Mimicry in social interaction: Benefits for mimickers, mimicked, and their interaction. *British journal of Psychology*. **101**, pp.311–323.
- Stephan, W.G. and Finlay, K. 1999. The role of empathy in improving intergroup relations. *Journal of Social Issues*. **55**(4), pp.729–744.
- Sue-Chan, C., Au, A.K.C. and Hackett, R.D. 2012. Trust as a mediator of the relationship between leader/member behavior and leader-member-exchange quality. *Journal of World Business*. **47**(3), pp.459–468.
- Suls, J., Martin, R. and Wheeler, L. 2002. Social Comparison : Why , With Whom , and With What Effect ? *Current Directions in Psychological Science*. **11**, pp.159–163.

-
- Swan, J.E., Bowers, M.R. and Richardson, L.D. 1999. Customer trust in the salesperson: An integrative review and meta-analysis of the empirical literature. *Journal of Business Research*. **44**(2), pp.93–107.
- Swann, W.B. 1983. Self-verification: Bringing social reality into harmony with the self
In: J. Suls and A. G. Greenwald, eds. Psychological Perspectives on the Self.
New York: Psychology Press, pp.1038–1051.
- Swann, W.B., Bosson, J.K. and Pelham, B.W. 2002. Different Partners, different Selves: Strategic Verification of Circumscribed Identities. *Personality and Social Psychology Bulletin*. **28**(9), pp.1215–1228.
- Swann, W.B., Polzer, J., Seyle, D. and Ko, S. 2004. Finding Value in Diversity: Verification of Personal and Social Self-Views in Diverse Groups. *Academy of Management Review*. **29**(1), pp.9–27.
- Swiercz, P.M., Icenogle, M.L., Bryan, N.B. and Renn, R.W. 1993. Do perceptions of Performance Appraisal Fairness predict Employee Attitudes and Performance? *Academy of Management Proceedings*. **1**, pp.304–308.
- Swim, J.K., Aikin, K.J., Hall, W.S. and Hunter, B.A. 1995. Sexism and Racism: Old-Fashioned and Modern Prejudices. *Journal of Personality and Social Psychology*. **68**(2), pp.199–214.
- van Swol, L.M. 2003. The Effects of Nonverbal Mirroring on Perceived Persuasiveness, Agreement with an Imitator, and Reciprocity in a Group Discussion. *Communication Research*. **30**(4), pp.461–480.
- Tajfel, H. 1969. Cognitive aspects of prejudice. *Journal of Social Issues*. **25**(4), pp.79–97.
- Tajfel, H. 1959. Quantitative Judgement in Social Perception. *British journal of Psychology*. **50**(1), pp.16–29.
- Tajfel, H. 1982. Social Psychology of Intergroup Relations. *Annual Review of Psychology*. **33**, pp.1–39.
- Tajfel, H., Billig, M.G., Bundy, R.P. and Flament, C.I. 1971. Social Categorization and Intergroup Behavior. *European Journal of Social Psychology*. **1**(2), pp.149–178.

-
- Tajfel, H. and Turner, J. 1979. An integrative theory of intergroup conflict *In*: W. G. Austin and S. Worchel, eds. *The Social Psychology of Intergroup Relations*. Monterey, CA: Brooks-Cole, pp.33–47.
- Tajfel, H. and Turner, J.C. 1986. The social identity theory of intergroup behavior *In*: S. Worchel and W. G. Austin, eds. *Psychology of Intergroup Relations*. Chicago, IL: Nelson-Hall, pp.7–24.
- Tamborini, R., Novotny, E., Prabhu, S., Hofer, M., Grall, C., Klebig, B., Hahn, L.S., Slaker, J., Ratan, R.A. and Bente, G. 2018. The effect of behavioral synchrony with black or white virtual agents on outgroup trust. *Computers in Human Behavior*. **83**, pp.176–183.
- Tangney, J.P., Miller, R.S., Flicker, L. and Barlow, D.H. 1996. Are shame, guilt, and embarrassment distinct emotions? *Journal of Personality and Social Psychology*. **70**(6), pp.1256–1269.
- Tanis, M. and Postmes, T. 2005. Short communication a social identity approach to trust: Interpersonal perception, group membership and trusting behaviour. *European Journal of Social Psychology*. **35**(3), pp.413–424.
- Tanner, R.J., Ferraro, R., Chartrand, T.L., Bettman, J.R. and Baaren, R. Van 2008. Of Chameleons and Consumption: The Impact of Mimicry on Choice and Preferences. *Journal of Consumer Research*. **34**(6), pp.754–766.
- Tarr, B., Launay, J. and Dunbar, R.I.M. 2014. Music and social bonding: ‘Self-other’ merging and neurohormonal mechanisms. *Frontiers in Psychology*. **5**(SEP), pp.1–10.
- Tauer, J.M. and Harackiewicz, J.M. 2004. The effects of cooperation and competition on intrinsic motivation and performance. *Journal of Personality and Social Psychology*. **86**(6), pp.849–861.
- Taylor, S.E., Wayment, H.A. and Carrillo, M. 1996. Social comparison, self-regulation, and motivation *In*: R. M. Sorrentino and E. T. Higgins, eds. *Handbook of motivation and cognition*. New York: Guilford Press, pp.3–27.
- Tiedens, L.Z. and Fragale, A.R. 2003. Power moves: Complementarity in dominant and submissive nonverbal behavior. *Journal of Personality and Social Psychology*.

Psychology. **84**(3), pp.558–568.

- Todorov, A. 2008. Evaluating faces on trustworthiness: An extension of systems for recognition of emotions signaling approach/avoidance behaviors. *Annals of the New York Academy of Sciences*. **1124**, pp.208–224.
- Tourish, D. and Hargie, O. (eds.). 2004. *Key Issues in Organizational Communication*. London: Routledge.
- Tropp, L.R. and Wright, S.C. 2001. Ingroup identification as the inclusion of ingroup in self. *Personality and Social Psychology Bulletin*. **27**(5), pp.585–600.
- Tse, H.H.M., Ashkanasy, N.M. and Dasborough, M.T. 2012. Relative leader–member exchange, negative affectivity and social identification: A moderated-mediation examination. *The Leadership Quarterly*. **23**, pp.354–366.
- Tubbs, S.L. and Moss, S. 2000. *Human Communication* 8th ed. New York: McGraw-Hill.
- Tunçgenç, B. and Cohen, E. 2016. Movement synchrony forges social bonds across group divides. *Frontiers in Psychology*. **7**(MAY), pp.1–12.
- Turner, J.C. 1985. Social categorization and the self-concept: A social cognitive theory of group behaviour *In*: E. J. Lawler, ed. *Advances in Group Processes*. Greenwich, CT: JAI Press, pp.77–122.
- Turner, J.C. 1991. *Social Influence*. Buckingham, UK: Open University Press.
- Turner, J.C. 1982. Towards a cognitive redefinition of the social group *In*: H. Tajfel, ed. *Social Identity and intergroup relations*. Cambridge: Cambridge University Press, pp.15–40.
- Turner, J.C. and Bourhis, R.Y. 1996. Social identity, interdependence and the social group: A reply to Rabbie et al *In*: W. P. Robinson, ed. *Social groups and identities: Developing the legacy of Henri Tajfel*. Oxford: Butterworth Heinemann, pp.25–63.
- Turner, J.C., Hogg, M.A., Oakes, P.J., Reicher, S.D. and Wetherell, M.S. 1987. *Rediscovering the social group: A self-categorization theory*. Oxford: Blackwell Publishing.

-
- Turner, J.C. and Oakes, P.J. 1989. Self-categorization theory and social influence *In*: P. B. Paulus, ed. *The Psychology of Group Influence*. Hillsdale, New Jersey: Erlbaum, pp.233–275.
- Turner, J.C. and Oakes, P.J. 1986. The Significance of the Social Identity Concept for Social Psychology with Reference to Individualism, Interactionism and Social Influence. *British Journal of Social Psychology*. **25**(3), pp.237–252.
- Turner, J.C., Oakes, P.J., Haslam, S.A. and Mcgarty, C. 1994. Personal and social identity: self and social context. *Personality and Social Psychology Bulletin*. **20**(5), pp.454–463.
- Turner, J.C. and Onorato, R. 1999. Social Identity, Personality, and the Self-Concept: A Self-categorisation Perspective *In*: T. R. Tyler, R. M. Kramer and O. P. John, eds. *The Psychology of the Social Self*. Mahwah, New Jersey: Lawrence Erlbaum Associates, pp.11–46.
- Turner, J.C., Reynolds, K.J., Haslam, S.A. and Veenstra, K.E. 2006. Reconceptualizing Personality: Producing Individuality by Defining the Personal Self *In*: T. Postmes and J. Jetten, eds. *Individuality and the Group: Advances in Social Identity*. London: Sage Publications, pp.11–36.
- Turner, R.N. and Crisp, R.J. 2010. Imagining intergroup contact reduces implicit prejudice. *British Journal of Social Psychology*. **49**(1), pp.129–142.
- Turner, R.N., Crisp, R.J. and Lambert, E. 2007. Imagining Intergroup Contact Can Improve Intergroup Attitudes. *Group Processes & Intergroup Relations*. **10**(4), pp.427–441.
- Turner, R.N., Hewstone, M. and Voci, A. 2007. Reducing Explicit and Implicit Outgroup Prejudice Via Direct and Extended Contact: The Mediating Role of Self-Disclosure and Intergroup Anxiety. *Journal of Personality and Social Psychology*. **93**(3), pp.369–388.
- Turner, R.N., Hewstone, M., Voci, A. and Vonofakou, C. 2008. A Test of the Extended Intergroup Contact Hypothesis: The Mediating Role of Intergroup Anxiety, Perceived Ingroup and Outgroup Norms, and Inclusion of the Outgroup in the Self. *Journal of Personality and Social Psychology*. **95**(4), pp.843–860.

-
- Twenge, J.M., Baumeister, R.F., DeWall, C.N., Ciarocco, N.J. and Bartels, J.M. 2007. Social Exclusion decreases Prosocial Behavior. *Journal of Personality and Social Psychology*. **92**(1), pp.56–66.
- Twenge, J.M., Catanese, K.R. and Baumeister, R.F. 2003. Social Exclusion and the Deconstructed State: Time Perception, Meaninglessness, Lethargy, Lack of Emotion, and Self-Awareness. *Journal of Personality and Social Psychology*. **85**(3), pp.409–423.
- Valdesolo, P. and DeSteno, D. 2011. Synchrony and the social tuning of compassion. *Emotion*. **11**(2), pp.262–266.
- Valdesolo, P., Ouyang, J. and DeSteno, D. 2010. The rhythm of joint action: Synchrony promotes cooperative ability. *Journal of Experimental Social Psychology*. **46**(4), pp.693–695.
- Vasilopoulou, S. 2016. UK Euroskepticism and the Brexit Referendum. *The Political Quarterly*. **87**(2), pp.219–227.
- van der Velde, S.W., Stapel, D.A. and Gordijn, E. 2010. Imitation of emotion: When meaning leads to aversion. *European Journal of Social Psychology*. **40**(3), pp.536–542.
- Verbene, F.M.F., Ham, J. and Midden, C.J.H. 2015. Trusting a Virtual Driver That Looks, Acts, and Thinks Like You. *Human Factors*. **57**(5), pp.895–909.
- Verbene, F.M.F., Ham, J., Ponnada, A. and Midden, C.J.H. 2013. Trusting Digital Chameleons: The Effect of Mimicry by Virtual Social Agent on User Trust *In: Persuasive Technology*, pp.234–245.
- Verkuyten, M. and Zaremba, K. 2005. Interethnic Relations in a Changing Political Context. *Social Psychology Quarterly*. **68**(4), pp.375–386.
- Vignoles, V.L., Regalia, C.C., Manzi, C., Gollledge, J. and Scabini, E. 2006. Beyond Self-Esteem: Influence of Multiple Motives on Identity Construction. *Journal of Personality and Social Psychology*. **90**(2), pp.308–333.
- Voci, A. 2006. The link between identification and in-group favouritism: Effects of threat to social identity and trust-related emotions. *British Journal of Social Psychology*. **45**(2), pp.265–284.

-
- Vrij, A., Hartwig, M. and Granhag, P.A. 2019. Reading Lies: Nonverbal Communication and Deception. *Annual Review of Psychology*, **70**, pp. 295-317.
- Waldzus, S., Mummendey, A. and Wenzel, M. 2005. When “different” means “worse”: In-group prototypicality in changing intergroup contexts. *Journal of Experimental Social Psychology*. **41**(1), pp.76–83.
- Wallbott, H.G. 1995. Congruence, Contagion, and Motor Mimicry: Mutalities in Nonverbal Exchange *In*: J. Markova, C. F. Graumann and K. Foppa, eds. *Mutalities in Dialogue*. Cambridge, UK: Cambridge University Press, pp.82–98.
- Wang, Y. and Hamilton, A.F. de C. 2012. Social top-down response modulation (STORM): a model of the control of mimicry in social interaction. *Frontiers in Human Neuroscience*. **6**(June), pp.1–10.
- Wayne, S.J. and Ferris, G.R. 1990. Influence tactics, affect, and exchange quality in supervisor subordinate interactions—a laboratory experiment and field-study. *Journal of Applied Psychology*. **38**(1), pp.232–260.
- Weber, B. and Heidenreich, S. 2018. When and with whom to cooperate? Investigating effects of cooperation stage and type on innovation capabilities and success. *Long Range Planning*. **51**(2), pp.334–350.
- Weick, K.E. 1995. *Sensemaking in Organizations*. Thousand Oaks, California: Sage Publications.
- Weick, K.E. 1993. The Collapse of Sensemaking in Organizations: The Mann Gulch Disaster. *Administrative Science Quarterly*. **38**(4), pp.628–653.
- Weyers, P., Mühlenberger, A., Kund, A., Hess, U. and Pauli, P. 2009. Modulation of facial reactions to avatar emotional faces by nonconscious competition priming. *Psychophysiology*. **46**(2), pp. 328-335.
- White, K. and Argo, J.J. 2011. When Imitation Doesn’t Flatter: The Role of Consumer Distinctiveness in Responses to Mimicry. *Journal of Consumer Research*. **38**(4), pp.667–680.
- Wieber, F., Gollwitzer, P.M. and Sheeran, P. 2014. Strategic regulation of mimicry effects by implementation intentions. *Journal of Experimental Social Psychology*. **53**, pp.31–39.

-
- Wilder, D.A. and Thompson, J.E. 1988. Assimilation and contrast effects in the judgements of groups. *Journal of Personality and Social Psychology*. **54**(1), pp.62–73.
- Williams, K.D. 2001. *Ostracism: The Power of Silence*. New York: Guilford Press.
- Williams, K.D. and Zadro, L. 2005. Ostracism: the Indiscriminate early Detection System *In*: K. D. Williams, J. P. Forgas and W. von Hippel, eds. *The Social Outcast: Ostracism, Social Exclusion, Rejection, and Bullying*. New York: Psychology Press, pp.19–34.
- Wills, T.A. 1981. Downward comparison principles in social psychology. *Psychological Bulletin*. **90**(2), pp.245–271.
- Wiltermuth, S. and Heath, C. 2009. Synchrony and Cooperation. *Psychological Science*. **20**(1), pp.1-5 %U <http://dx.doi.org/10.1111/j.1467-9280.2008>.
- Witherspoon, P.D. 1997. *Communicating Leadership: An Organizational perspective*. Boston: Allyn and Bacon.
- Wood, J.A., Boles, J.S. and Babin, B.J. 2008. The formation of buyer's trust of the seller in an initial sales encounter. *Journal of Marketing Theory and Practice*. **16**(1), pp.27–39.
- Wood, J.V. and Taylor, K.L. 1991. Serving self-relevant goals through social comparison *In*: J. Suls and T. A. Wills, eds. *Social Comparison: Contemporary theory and research*. Hillsdale, NJ: Erlbaum, pp.23–49.
- Wright, S.C., Aron, A. and Tropp, L.R. 2002. Including Others (and Groups) in the Self: Self-expansion and Intergroup Relations *In*: J. P. Forgas and K. D. Williams, eds. *The Social Self: Cognitive, Interpersonal, and Intergroup Perspectives*. New York: Psychology Press, pp.343–363.
- Wu, J.J. and Tsang, A.S.L. 2008. Factors affecting members' trust belief and behaviour intention in virtual communities. *Behaviour and Information Technology*. **27**(2), pp.115–125.
- Yabar, Y., Johnston, L., Miles, L. and Peace, V. 2006. Implicit behavioral mimicry: Investigating the impact of group membership. *Journal of Nonverbal Behavior*. **30**(3), pp.97–113.

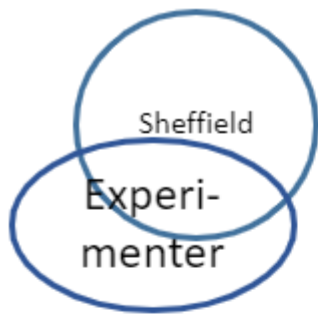
-
- Yilmaz, C. and Hunt, S.D. 2001. Salesperson Cooperation: The Influence of Relational, Task, Organizational, and Personal Factors. *Journal of the Academy of Marketing Science*. **29**(4), pp.335–357.
- van Zomeren, M., Postmes, T. and Spears, R. 2008. Towards an Integrative Social Identity Model of Collective Action. A Quantitative Research synthesis of Three Socio-Psychological Perspectives. *Psychological Bulletin*. **134**(4), pp.504–535.

Appendices

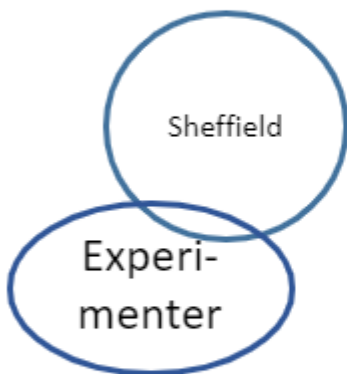
Appendix A – Interview Questions Study 1

1. Why did you choose Leeds as a place to study?
2. What is your subject of study and why have you chosen it?
3. What do you think of Leeds in general?
4. What would you improve at the university to improve student's experience?
5. What would you improve in Leeds to increase life quality?
6. How would you rate the life as a student in Leeds and why?

Appendix B – Manipulation-Check Study 1



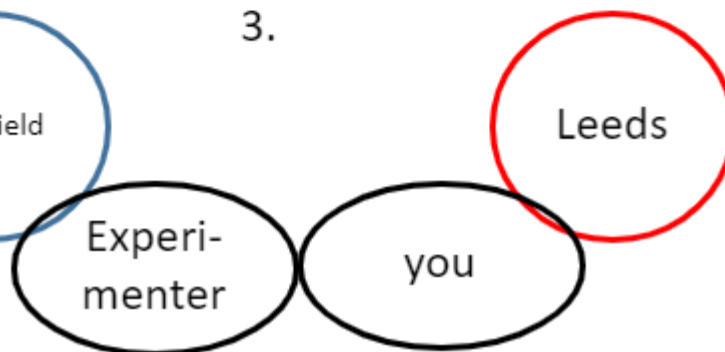
1.

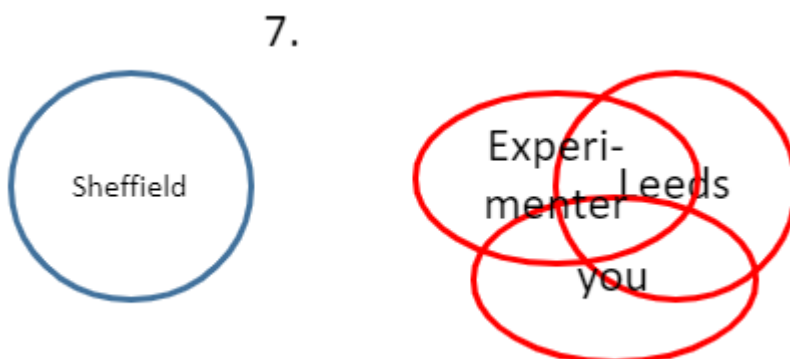
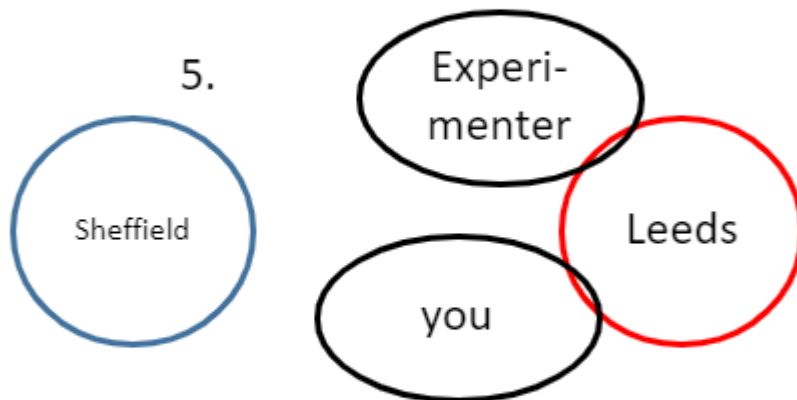
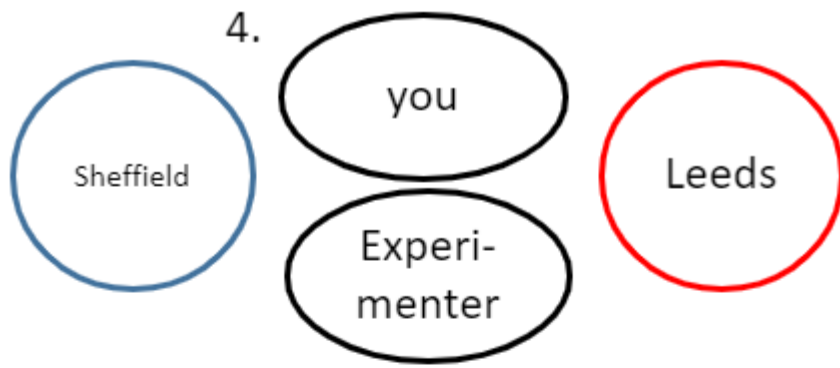


2.



3.





Appendix C – Ethnicities Study 1

Ethnicities:

Ethnicity	Frequency
White	117
Black or African American	6
American Indian	1
Asian	24
Other	10
Total	158

Appendix D – Interview Questions Study 2

1. Would you describe yourself as a feminist and why is that?
2. What does feminism mean to you?
3. Do you think gender equality is important and why do you think that?
4. If you had the power to change things, what would you do to foster gender equality?
5. Do you think that we as a society will ever reach gender equality and why do you think this way?

Appendix E – Introductory Paragraphs Study 2

Introduction:

Feminism refers to the belief of political, economic and social equality of sexes in society based on the notion that social structures strongly favour men and disadvantage women.

Supporters of Feminism:

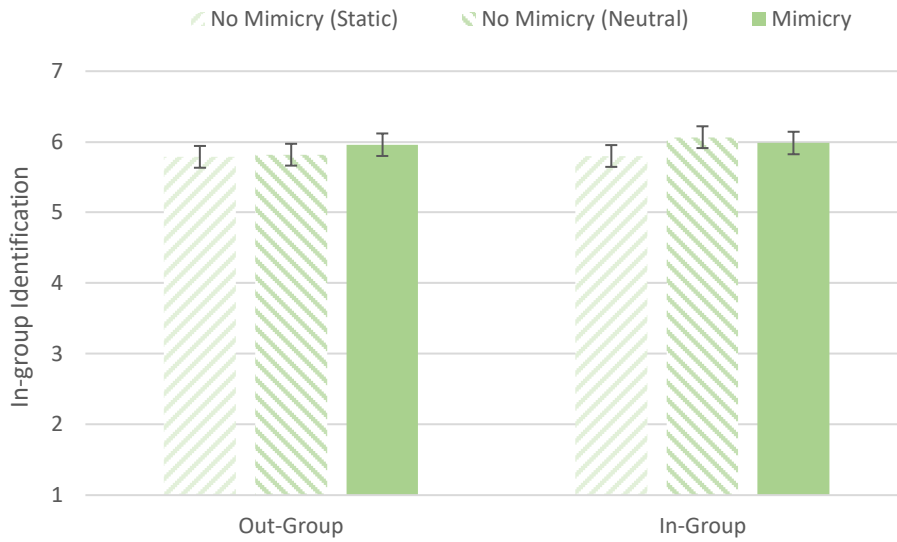
Pro-feminists, therefore, believe that women should receive equal pay for the same job and that they should be equally represented in all professions. Further, they are strong advocates for women to have the right to receive the same education and that women should have the freedom to decide what they want to do with their lives. Hence, pro-feminists strive for changes in the political system to make both genders more equal on all dimensions.

Opposers of Feminism:

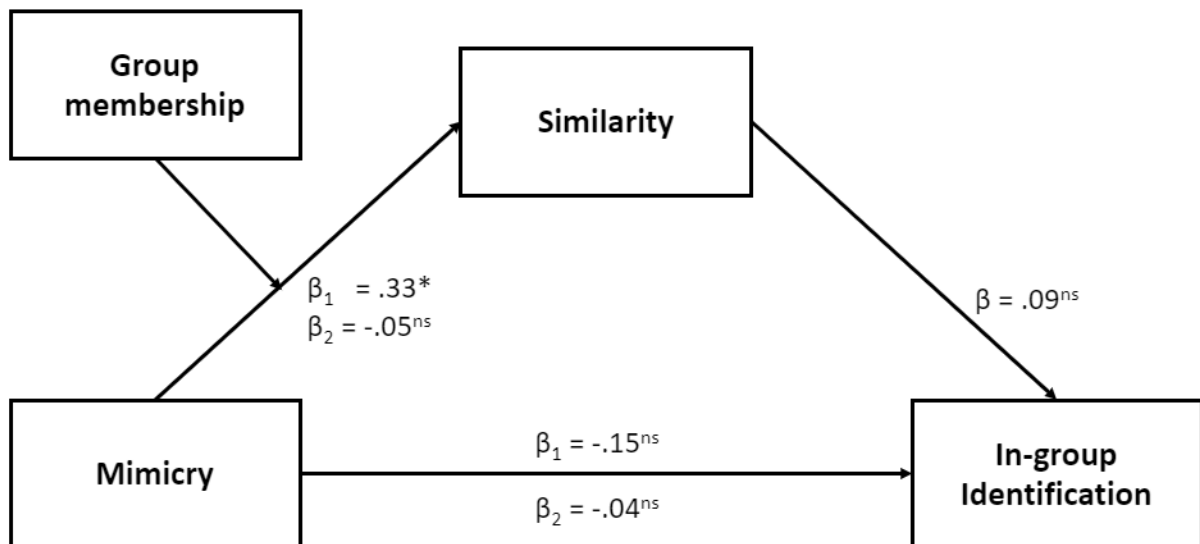
Anti-feminists, in contrast, believe that the social structures in society do not favour men. Further, they advocate the standpoint that the divide between men and women is evolutionary and that it is unchangeable. Hence, they believe that taking political action to promote women is not necessary as the society we live in stems from biological differences between genders. They, therefore, argue that the inequality of the modern age is due to inherent differences between men and women and should not be changed.

Appendix F – In-group Identification Study 2

Bar Chart:



Mediation:



Appendix G – Interactional Justice Study 2

Bar Chart:

