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Many variables have an impact on our willingness to act helpfully and prosocially towards others. Extant research has shown that being mimicked increases helping behaviour towards the mimicker and others. Viewing someone as part of one's in-group also appears to increase helping behaviour towards that person. However, the effects of mimicry and belonging to the in-group have not been measured together in regards to how they impact helping behaviour. An experiment to measure mimicry and the in-group effect is proposed with the intention of elucidating whether there is an interaction between the two factors. The mimicry condition will be examined by having the experimenter mimic the participant, a method that has been reliable in previous studies. The in-group perception will be examined by having the experimenter say they attended the same institution and enjoyed a course the participant enjoyed. Conversely, the experimenter will say they attended a rival institution and disliked a course the participant enjoyed to create an out-group perception. Helping behaviour will be measured by having the experimenter ask the participant to opt into an optional questionnaire after the experiment. If the participants did choose to complete the questionnaire, this would indicate helping behaviour. The findings of this experiment will help to refine theories of helping behaviour that have been previously proposed in the literature.

Helping behaviour can be affected by many variables, such as changes in the environment, perception and feelings of the helping individual, and the characteristics of others. Studies have found that, if an individual is mimicked, he or she is more likely to be helpful toward the mimicker and is more likely to be helpful towards subsequent individuals who come along (van Baaren, Holland, Kawakami, & Knippenberg, 2004). As well, researchers have examined the phenomenon where an individual who perceives someone as an in-group member is more likely to be helped than if they were an out-group member. In this research proposal, mimicry and the in-group effect will be examined in regards to their combined influence on helping behaviour.

The Effect of Mimicry on Helping Behaviour

Mimicry is an intentional or unintentional act of matching or copying another individual's behaviour in the mimicker's environment (Chartrand & Bargh, 1999). Mimicry can be categorized into two broad groups: physical mimicry, which includes gestures, posture, or movement mannerisms; and verbal mimicry, which includes complete speech, phrases or tones (Chartrand & Bargh, 1999). In an experiment by van Baaren, Holland, Steenaert, and Knippenberg (2003), the effect of verbal mimicry was examined by using a mimicking waitress and measuring the amount of tip received. The experimenters conducted their study by having a mimicry condition and a no-mimicry condition as the control condition. In the mimicry condition, the waitress would repeat the customer's order back to them, and in the no-mimicry condition she would not repeat the order. The amount of tip was recorded for each condition, and it was found that when the customers were mimicked, significantly greater tips were given. The authors concluded that achieving a greater tip was indicative of prosocial behaviour, and their findings suggested that mimicry increases this behaviour. The authors explained this in terms of helping, arguing that an increased tip meant they were giving the waitress greater resources, leading to increased survival rate.

Behavioural mimicry, defined as overtly mimicking physical behaviour, was studied by van Baaren et al. (2004). In their experiment,

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participants verbally described a series of advertisements. While they performed this task, the experimenter mimicked their posture, body orientation, and positioning of their limbs. After the task was over, the experimenter went to retrieve additional material from a separate room and when he returned, he accidentally dropped a number of pens. The participant was scored based on whether they picked up the pens for the experimenter within one minute of the pens being dropped. Afterward, a mood rating scale was administered to the participant, regardless of whether the pens were picked up or not. The experimenters found that a significantly greater number of participants picked up the pens if they had been mimicked than if they had not. The experimenters also found that there was no correlation between being mimicked and the mood of the participant. This is an important finding, because there has been evidence indicating that good mood increases helping behaviour (Isen & Levin, 1972). Therefore, this study shows that mimicry does not increase mood, so it cannot be the reason that helping behaviour is increased.

Gueguen, Jacob and Martin (2009) reviewed the current literature on mimicry and the effect that it has on an individual's behaviour, and found that prosocial behaviour increased after being mimicked. They proposed two theoretical explanations as to why this occurs. The first was an evolutionary approach that argued mimicry is a form of communication that acts to create and strengthen relationships with others, which leads to feelings of rapport and association between the mimicker and the mimicked. These feelings of rapport and association would increase helping behaviour of the mimicked individual toward the mimicker.

The second theoretical explanation was that the mimicked individual became more familiar with the mimicker, and that it was this familiarity that lead to increased helping behaviour. The authors also suggested that familiarity may lead to a desire for association and rapport-building. While the article by Gueguen et al. (2009) is a valuable piece of literature for the review of mimicry and helping behaviour, all of the research examined by Gueguen et al. (2009) involved dyadic relationships, meaning that the relationship was between the mimicker and mimicked individual, but no other individuals. Gueguen et al. (2009) did not examine any increase in helping behaviour not directed towards the mimicker.

Two additional experiments by van Baaren et al. (2004) focused on a mimicked individual and examined how the mimicry affected helping behaviour directed towards someone other than the mimicker. In the first of the two experiments, the experimenter had the participant verbally rate advertisements while the experimenter mimicked their posture and body orientation in one condition, but did not mimic participants in the other condition. Afterward, the mimicking experimenter left the room and a second experimenter entered, pretending to accidentally drop pens by the participant. The number of participants that picked up the pens for the experimenter was measured and denoted as helping behaviour. Based on the aforementioned conclusions drawn by Gueguen et al. (2009), one would expect that there would be no significant effect between the mimicked and not mimicked conditions because the participant had built rapport and familiarity with the experimenter who had left the room. However, the results showed that significantly more people pick up the pens if they had been mimicked than if they had not been mimicked. This result cannot be explained by the theories that Gueguen et al. (2009) proposed since the interaction was not dyadic, but involved a third individual.

The third experiment by van Baaren et al. (2004) built on these findings by adding an additional task to the experiment. The beginning of the experiment was similar to the previous ones, with a confederate mimicking the participants in one condition and not mimicking them in the other condition. Then, a second part of the task was introduced by either the mimicking confederate or a second, non-mimicking confederate. The second part of the task was to fill out a survey on a charity named CliniClowns, and a collection box placed in front of the participant, asking for donations for CliniClowns. The first part of the task had been a paid experiment, so the experimenters knew the participants had money to donate. The results did not indicate an interaction effect between instructor and mimicry condition, but

there was a main effect of mimicry, supporting the findings that the participant would be helpful regardless of whether it was the mimicker or a third individual who asked for donations.

Ashton-James, van Baaren, Decety, and Karremans (2007) hypothesized a link between mimicry, self-construal, and helping behaviour. Aston-James et al. (2007) defined self-construal as how connected one feels to others and how one perceives oneself in relation to others. Their first experiment involved mimicking a participant's posture and body orientation, while the participant described his or her day. Afterward, the participants completed a survey that measured their interdependence. Interdependence is a feeling of mutuality where two individuals feel dependent on each other (Aston-James et al., 2007). The results showed that participants who had been mimicked construed themselves as being higher in interdependence. Their second experiment involved mimicking a participant's posture and body orientation while the participant described their perception of 10 advertisements and then completed a questionnaire that measured how close they felt to other people. The results showed that individuals who had been mimicked reported stronger feelings of closeness toward undefined people.

In a third study by Aston-James et al. (2007), one experimenter administered a questionnaire about traveling preferences and told them that a second experimenter would be coming in afterward to run a second task. The experimenter mimicked the participant's posture and body orientation during the task and, at the end, told them that a second experimenter would come in to start the next task. The participant was asked to wait in a room with five chairs. One of the chairs had documents and coat placed on it, indicating that someone was sitting there. The level of closeness was measured by how close the participant sat to the occupied chair. The results showed that mimicked participants sat closer to the occupied chair. The results of these three experiments all support the theoretical explanation that interdependence increases after being mimicked.

In the final experiment from Aston-James et al. (2007), the experimenter asked participants to recall the events of their day, while the experimenter mimicked their posture and body orientation. They then administered a questionnaire that would measure interdependence. Afterward, the participants were asked to volunteer in a PhD student's study, which was a five-page questionnaire that the participant got to see before they decided to volunteer their time. Whether the participant opted to do the PhD student's study or not was the measure for whether the person was going to be helpful. The results showed that participants who were mimicked acted more prosocially and also had a higher level of interdependence, choosing to complete the PhD student's questionnaire. The authors tentatively concluded that mimicry increased an individual's interdependence which lead to increased helping behaviour. This is another explanation of helping behaviour, and why mimicry increases. Interdependence can explain both helping the mimicker, as well as other people. This does not debunk the theories of rapport, association, or familiarity, but it does extend them.

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The Effect of In-Group Perception on Helping Behaviour

Another variable that has been manipulated in helping behaviour studies is whether the person being helped is perceived as an in-group member to the helper. In a series of experiments by Tajfel, Billig, Bundy, and Flament (1971), it was concluded that individuals are more likely to help members of their perceived in-group, rather than individuals in the out-group – even when helping members of the out-group is not disadvantageous or difficult.

The experimenters created an in-group/out-group scenario with very small distinctions by separating participants based on the number of dot clusters recalled. These aspects are not very personal matters of creating group boundaries; however, the results show that these scenarios were enough for the individual to feel like they were a part of a group. The experimenters created in-groups and out-groups in this experiment by having participants write down the number of dots they saw in a series of dot clusters presented. Afterward, the experimenters explained that some participants would have been more accurate than others. The

experimenters marked the number of clusters recalled and spoke to participants individually, telling them they were either in the accurate or inaccurate group from the experiment. The experimenters measured helping behaviour by asking the participant to allot a small amount of money to other individuals, ranking them on a scale. The higher the ranking, the more money this other participant would receive. The participants had no interaction with their group prior to the money allotting, and this was also controlled by using code numbers for participants indicating participants as "in your group" or "in the other group". This lends strong support for in-group/out-group differences in helping behaviour, which will be referred to as the in-group effect.

There are many different ways that an individual can perceive him or herself as part of an in-group or not a part of an out-group. One common way is by race because it can be readily seen by the individual. A meta-analysis compiled by Saucier, Miller and Doucet (2005) found there was not universal discrimination in helping Blacks versus Whites, while there was a difference when others variables were factored in. Variables such as the length of time required for helping, the risk, difficulty and the effort required were all factors that may decrease helping Blacks, where it did not significantly decrease when helping Whites. This lends support to the proposed research because many different factors can decrease helping of an out-group so the idea of comparing the effect that mimicry has when an in-group effect is occurring is reliable.

A review of helping behaviour pertaining to the in-group effect was compiled and analyzed by Sturmer and Snyder (2010). They found that when helping people that one perceives as being a part of their in-group, the best predictor of this is empathy, while helping out-group members is predicted best by attraction. From this result, they concluded that empathic, altruistic helping occurs more with in-group members while mutual helping, where both groups benefit, occurs with out-groups more. This is an important distinction because it is not a universal truth that out-groups will always be helped less; in some circumstances, helping behaviour can be increased if the individual needs to rely on the out-group for resources or services. This may be related to a feeling of interdependence because the individual would feel dependent on the out-group for their help, so they would help that out-group member.

The in-group effect has been well researched, but its effects on helping behaviour are not always predictable. There are a number of factors that could increase or decrease helping of an out-group member. In this proposed study, the results would pertain to how mimicry affects the in-group effect, on helping behaviour, whether it increases or decreases helping.

The Effect of Mimicry and In-Group/Out-Group on Helping Behaviour

As the previous literature review shows, there has been a large amount of research on mimicry as it affects helping behaviour, as well as the in-group effect as it affects helping behaviour. However, extant literature has not examined these variables together.

Previous research has shown that mimicry not only increases helping behaviour toward the mimicker (van Baaren et al., 2003; van Baaren et al., 2004), but also toward other people (van Baaren et al., 2004) by increasing the mimicked individual's feeling of interdependence (Aston-James et al., 2007). As well, the mimicking is thought to increase rapport, association and familiarity with the mimicker, increasing the likelihood of the individual helping the mimicker. With that said, the effect of mimicry can be combined with the in-group effect. Research on the in-group effect has shown that an individual is more likely to be helpful toward someone perceived as part of their in-group (Saucier et al., 2005; Sturmer & Snyder, 2010; Tajfel et al., 1971). This may suggest that an in-group member that mimics the participant will be helped even more often. It is possible that an out-group member that mimics will not be helped as much, or that mimicry may have a strong enough effect that it would allow the mimicked to help the perceived out-group member. The research being proposed would extend this literature and seek evidence for these possibilities.

Predictions

Given the findings that mimicry increases helping behaviour and that helping occurs more often towards those perceived as in-group members, helping should occur more often toward a mimicking in-group member than an out-group member. Helping behaviour should occur more often if the individual is mimicked, regardless of in-group or out-group mimicker. Helping behaviour should also occur more often if the individual is seen as an in-group member, regardless of mimicking or not. Since the literature has not examined these two variables together before, it is unknown whether the no mimicry, in-group condition will differ from the mimicry, out-group condition.

Method

Participants

Participants will be students at Western University and will be recruited on a volunteer basis. The participants that are recruited will be Caucasian because the experimenters will be Caucasian and this will help reduce unwanted in-group/out-group effects. Both males and females will be recruited for the experiment. There will be 50 participants per condition, resulting in 200 participants in the study.

Design. Participants will be required to call ahead if they wish to participate in the study, and to give their name and gender, as well as schedule a time to come in. This is to ensure that an experimenter of the same sex will facilitate the experiment because gender will not be used as an in-group/out-group difference. When the participant arrives, they will be greeted by the experimenter and will be asked to sit down at a table. The experimenter will sit in a chair, opposite the participant, but at the same table. The experimenter will give the participant a letter of information and a consent form. The letter will say that the experiment is examining the effect of verbal skills as they relate to memory. The experimenter will also explain that they will be completing one task, and it should take approximately 15 minutes.

The experimenter will tell them that they will first complete a basic background information survey. The survey will ask their name, student number, home address, faculty and favourite course taken at university. After they have completed the survey, the experimenter will look over the background information and, in the in-group condition, say: "I took the same course that you said was your favourite, at Western University, and I really enjoyed it." Or, in the out-group condition, he or she will say: "I took the same course that you said was your favourite, at Queen's University, and I really disliked it." In both instances, the experimenter will immediately move onto instructions for the task in order to discourage further discussion on the subject.

The experimenter will give the participant three short stories, two paragraphs in length. The experimenter will ask the participant to read the first story and afterward, repeat the story in their own words back to the experimenter. This procedure will occur twice more, for the second and third stories. For the mimicry condition, when the participant is retelling the stories to the experimenter, the experimenter will non-verbally mimic the participant by mimicking body posture, facial expression, and body orientation of the participant. For the no-mimicry condition, when the participant is retelling the stories to the experimenter, the experimenter will have a neutral facial expression, be sitting upright and have their hands together and propped on the table and feet flat on the floor. For the no-mimicry with movement condition, when the participant is retelling the stories to the experimenter, the experimenter will move their hands, nod and cross their legs. This condition is to ensure that movement of the experimenter does not affect helping behaviour, since the mimicry condition may contain movement.

After the third story has been retold back to the experimenter, the experimenter will tell the participant that the experiment is over. At this time, the experimenter will ask the participant if they would like to volunteer their time for an additional, unrelated study that is being conducted. The experimenter will say that it will take about 30 minutes to complete and there will be no compensation, monetary or otherwise. A sample survey will be given to the participant to peruse, which will be six pages, front and back. If the participant opts to complete the additional study, the experimenter will wait until

the survey is completed. Once it is completed, all material will be collected, the participant will be thanked for their time and will be fully debriefed. The experimenter will explain the deception of the mimicry condition and about the university and course similarity or dissimilarity. They will have a second consent form presented to sign, to ensure that the participant understands what actually happened in the experiment.

Independent variables. There are two independent variables in this experiment: mimicry and non-mimicry. In the mimicry condition, the experimenter will mimic the participant with non-verbal mimicry by copying the participant's body posture, facial expression and body orientation of their limbs. In the no-mimicry condition, the experimenter will not mimic the participants and will sit straight up, have a neutral expression on their face and their arms resting on the table with hands clasped together and feet flat against the floor. In the no-mimicry with movement condition, the experimenter will not mimic the participant, but will move their hands, nod and cross their legs.

The second variable is the in-group effect, where the experimenter will either identify themselves as an in-group member or out-group member to the participant. This will happen at the start of the experiment when the experimenter examines the background information questionnaire. For the in-group condition, the experimenter will claim to have gone to the same university as the participant. For the out-group condition, the experimenter will claim to have gone to a different university as the participant. This should form the in-group/out-group perception for the participant.

Dependent variable. The task will be measured as the number of people that volunteered for the second, optional task in each group, divided by the number of people in that group. By using a proportion, it will control for uneven participant numbers.

Anticipated Results

The highest proportion of people to be helpful should be in the condition where the experimenter is viewed as part of the participant's in-group (Saucier et al., 2005; Sturmer & Snyder, 2010; Tajfel et al., 1971) and the participant has been mimicked (van Baaren et al., 2004; van Baaren et al., 2003). Since both the in-group effect and mimicry lead to increased helping behaviour, both of these effects being present should increase the chance of helping behaviour to a very high likelihood.

The lowest proportion of people exhibiting helping behaviour should be in the conditions where the experimenter is seen as an out-group member (Saucier et al., 2005; Sturmer & Snyder, 2010; Tajfel et al., 1971) and the participant has not been mimicked, with or without movement from the experimenter (van Baaren et al., 2004; van Baaren et al., 2003). Whereas the previous explanation relied on an additive theory, where both factors increased helping behaviour with the in-group effect and mimicry, this explanation relies on the lack of these effects. This is not an effect that should decrease helping behaviour, however. Lacking mimicry and in-group perception means the participant has a normal likelihood of helping and there is not an effect being applied that should increase helping. This is the control condition.

The proportions that fall in between the highest and lowest should be the conditions where one effect is present that increases helping behaviour. For the condition where there is no mimicry, with or without experimenter movement, with the in-group effect, the proportion is larger than the control condition because of the in-group effect. Since there is no mimicry, however, it is not as high a proportion as when mimicry is involved. Both of these conditions are replications of previous experiments, because only one effect is being examined, but it is important that the proportions be examined in relation to the proportions of the other conditions. The experimenter-movement condition would have the same expected results as the no mimicry condition. This condition would be used to ensure that movement of the experimenter does not have an impact on helping behaviour.

Limitations

A problem with this research, and any in-group/out-group research, is that it is difficult to control for perceived extraneous association by the participant. This study would control for

race by having all conditions have an in-group race member of the same gender, but it is possible that the association of university and courses in-group/out-group is not strong enough of a manipulation. However, this experimental design is similar to the design of Flippen, Hornstein, Siegal and Weitzman (1996), where the in-group was formed by placing letters seeking aid for a community, one that the participant was a part of or not. The results were significant, so it is expected that this procedure should be reliable.

Future Studies

Future investigations could extend this study by measuring helping behaviour in a different way, or by having the participants fill out questionnaires to determine why they felt compelled to help. Further research should also focus on the effect of increasing a helping disposition towards someone other than the mimicker. This phenomenon has been researched in Aston-James et al. (2007), but not in relation to the in-group effect. Would the mimicking by an in-group member enhance the participant's helping disposition toward a second experimenter who did not mimic that individual? If so, would the second experimenter need to be a part of the in-group, or would out-group members also be helped? Extending the study in this way would suggest that mimicking has a general effect on one's helping disposition, independent of whether the people being helped belong to the individual's in-group or out-group.

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