

# Incidental Similarity Facilitates Behavioral Mimicry

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**Abstract.** Research has shown that mimicry increases the social influence of the mimicker and leads to greater liking of the mimicker. It has been proposed that mimicry is exhibited to create affiliation and rapport during social interaction. In two experiments (total  $N = 95$ ) we manipulated the role of incidental similarity between two individuals on mimicry behavior. Undergraduates who believed they had (vs. did not have) the same first name (Study 1) or same subject of study (Study 2) as a target presented on videotape were more likely to mimic the target's nonverbal behavior. Results support the notion that mimicry helps to create affiliation and rapport because the desire to build such a relationship is higher in the similarity condition.

**Keywords:** similarity, mimicry, relationship

## Introduction

Psychological literature has demonstrated that similarity between two strangers is associated with more positive relationships during their first encounter. Finch and Cialdini (1989) found that participants who were led to believe that they were born on the same day as Rasputin rated him less harshly. The perception that someone has about another person who is similar to him/her is not only associated with a positive perception, but also with positive behavior toward that person. Various studies have shown that compliance to an unknown solicitor is also affected by incidental similarities. Thus, Burger, Messian, Patel, del Prado, and Anderson (2004) found that undergraduates who believed they shared birthday, first name, or fingerprint similarities with a confederate were more likely to comply with a request from the confederate. Moreover, face-to-face interactions are not necessary to create higher compliance to a request. Research showed that the effect of similarity between two strangers can be manipulated in a computer-mediated communication context. Guéguen, Pichot, and Le Dreff (2005) carried out an experiment where students received an e-mail containing a 40-question survey on their food habits, which required 15–20 min to answer. This questionnaire came from a hypothetical student of the university in which the subjects were enrolled. In half of the cases, the surname of the solicitor, which appeared in his/her electronic address, was the same as the surname of the target. Results show that compliance to the request was significantly higher in the same-surname condition than in the different-surname condition and that the response delay was significantly shorter in the same-surname condition than in control condition. These positive effects of incidental similarity on social relationships between two individ-

uals are in accordance with Heider (1958) who proposed that incidental similarities create a sense of association between people that leads, in turn, to the enhancement of positive perception or compliance behavior.

Another behavioral factor associated with the positive perception of an unknown individual is mimicry. Mimicry, also called the "chameleon effect" (Chartrand & Bargh, 1999), refers to unconscious mimicry of postures, facial expressions, mannerisms, and other verbal and nonverbal behaviors. Research showed that in social interaction, people mimic a host of verbal or nonverbal behaviors of their counterparts. Giles and Powesland (1975) showed that people mimic the accents of their counterparts in social interaction. The same effect is found when observing motor mimicry in social interaction (Bavelas, Black, Lemery, & Mullet, 1986, 1987; Lafrance, 1982) in which usual nonverbal behaviors are mimicked without the mimicker being conscious of the subject. Several studies have also revealed the contagious effect of laughter (Bush, Barr, McHugo, & Lanzetta, 1989; Provine, 1992) and yawning (Estow, Jamieson, & Yates, 2007; Platek, Critton, Myers, & Gallup, 2003).

Experimental studies have also confirmed this observational effect of nonverbal mimicry between strangers. Chartrand and Bargh (1999) found that participants were more likely to touch their own face when they interacted with a face-touching confederate, who was a stranger, than when they interacted with a foot-shaking confederate. The reverse effect was found when the confederate shook his/her foot: Then the participants were more likely to shake their own feet than to touch their own faces. People mimic their counterparts in social interaction, but research showed that mimicry is also associated with higher positive evaluation of the mimicker. Chartrand and Bargh (1999, Study 2) engaged participants in a task with a confederate

who was instructed to either mimic the mannerisms of the participants or to exhibit neutral, nondescript mannerisms. Compared to those who were not mimicked, participants who were mimicked by the confederate reported a subsequent higher mean of liking of the confederate and described their interaction with the confederate to be more smooth and harmonious. In more intimate relationships, mimicry is also associated with the positive perception of the mimicker. Maurer and Tindall (1983) discovered that when a counselor mimicked the arm and leg position of a client, this mimicry enhanced the client's perception of the counselor's level of empathy, more so than when the counselor did not mimic the client. However, face-to-face interaction is not necessary to obtain the effect of mimicry on liking and interacting. An embodied artificial agent in immersive virtual reality, which mimics one's own behavior, is sufficient to influence the rating of the agent. In a recent experiment by Bailenson and Yee (2005), a virtual agent verbally presented a persuasive argument (a message advocating a campus security policy) to a participant who interacted with the agent. In half of the cases, the virtual agent mimicked the participant's head movements with a 4-second delay, whereas for another group of participants, the agent mimicked the prerecorded movement of another participant. After the interaction, the participant indicated his/her agreement with the message delivered by the agent and gave his/her impression about the agent. It was found that the mimicking virtual agent was more persuasive and received more positive trait ratings than nonmimickers.

Whereas these studies showed that mimicry leads to greater liking of the mimicker, research has also established that liking causes mimicry. In a recent study, Yabar, Johnston, Miles, and Peace (2006) found that female participants mimicked more favorably the nonverbal behavior of members of their in-group than members of their out-group. In their experiment, female participants viewed videotapes of two female targets. One was presented as a member of an in-group or as a member of an out-group. The participants were not Christian and the confederate in the video was presented as a Christian (out-group member) or a non-Christian (ingroup member). The confederate on the video described a picture to the participant and during this period she touched/rubbed her face. The degree of mimicry of the participant was measured during this period relative to a baseline period. Compared to this baseline period, participants were detected to touch/rub their face more frequently when viewing the target of their in-groups, whereas the frequency of this behavior decreased when the target was a member of the participant's out-group. The authors thought that a link between mimicry and the desire of affiliation could explain these results. With the member of the in-group, the desire to affiliate would be high, thus, mimicry would increase to inform the counterpart that the participant had the desire to maintain the relation. With the member of the out-group, the decrease in mimicry would be used to inform the confederate that the participant did not want to interact with her or with members of her group.

in the future. Given the results of this study, it seems that liking somebody more is associated with a greater level of mimicry. These results, which were obtained in a laboratory setting, were recently replicated in a field experiment carried out by Guéguen (2007). In several sessions of speed-dating, Guéguen found that the nonverbal behavior of highly attractive women was more frequently mimicked by men with whom they interacted than the nonverbal behavior of moderately attractive women. The level of liking of the women was shown to be highly and positively correlated with the level of nonverbal mimicry, confirming that liking seems to cause mimicry.

Thus, when examining the literature on the effect of similarity and mimicry, we found that incidental similarity is associated with liking an individual more, and that liking a target is associated with greater mimicry of the verbal and nonverbal behavior of the target. Given the data, we can hypothesize that similarity could cause mimicry. To test such a hypothesis, two experiments were conducted in which participants were led to believe that they were similar, or not similar, to an individual presented on a videotape who performed some nonverbal behaviors. Unobtrusively, the participant's level of mimicry behavior was recorded and comparisons were made between participants who were led to believe that they shared some characteristics with the target and participants who were led to believe that they did not share such characteristics.

## Experiment 1

### Method

#### Participants

The participants were 51 females who were undergraduate business students and all aged between 18 and 20. They were selected from 87 volunteers based on the fact that their first name was moderately common in the population. Specifically, they were selected according to the frequency of their first name in the population for people of their age (Besnard & Desplanques, 1987). The data from 36 participants who had very usual first names (1st quartile) or unusual first names (4th quartile) were excluded. Furthermore, the data of one participant in the similarity condition were eliminated because of suspicion, leaving a final sample size of 50.

#### Procedure

Participants were seated at a computer and randomly assigned to one of two experimental conditions. In both conditions, participants were instructed to view a 2-min videotape displayed on a computer in which a young female re-

sponded to a short survey on her food habits. During these 2 min, the young female touched and rubbed her face five times. Participants were informed that they were participating in a study on impression formation and were then instructed to observe the target carefully in order to form an impression of her on the video. Furthermore, before viewing the video, they were instructed to read the curriculum vitae of the target. The information was the same in the two experimental conditions but in the similarity condition the first name of the target was the same as the first name of the participant, whereas in the nonsimilarity control condition the first name was a common first name but different from the participant's first name. After reading information about the target, the participant viewed the video on a laptop computer. During this phase, a webcam filmed the participants. At the end of the experiment, the experimenter asked the participant to indicate what she thought the purpose of the research was and to indicate if there was anything unusual about the experiment or the material. The participant was then fully debriefed. Two coders, unaware of experimental conditions and predictions, were instructed to view each video clip of the participants and to count the number of times the participant touched/rubbed her face. A high level of intercoder reliability was found,  $r(48) = .99$ ,  $p < .001$ ; the mean of the two coders' counts was, thus, used as the dependent variable.

## Results

A test for independent means was conducted with the two similarity conditions (similarity vs. nonsimilarity) as the independent variable and the number of face touchings/rubbings as the dependent variable. In the similarity condition, participants exhibited significantly more face touching/rubbing ( $M = 4.04$ ,  $SD = 1.63$ ) than in the nonsimilarity control condition ( $M = 2.19$ ,  $SD = 0.87$ ),  $t(48) = 5.01$ ,  $p < .001$ ,  $d = 1.45$ . Thus, these first results confirm our hypothesis that incidental similarity enhances mimicry behavior. To replicate these first results, a second experiment was performed using new information to create the belief that the participant shared a similar characteristic with a target. Moreover, in this experiment the liking of the target was measured to test the relation between liking and mimicry behavior.

## Experiment 2

### Method

#### Participants

Forty-four females who were undergraduate business administration students, all aged between 18 and 20, were participants of this experiment.

### Procedure

Participants were seated at a computer and randomly assigned to one of two experimental conditions. The procedure was the same as in the previous experiment except that the similarity/nonsimilarity conditions were manipulated by information about the studies of the confederate. In the similarity condition the target was presented as a graduate student in business administration, whereas in the nonsimilarity control condition the target was presented as a graduate student in sociology. After viewing the video, the participant answered a question intended to measure her liking of the target ("How likable was the person on the video") on a 10-point scale numbered from 1 (*dislikeable*) to 10 (*likable*). At the end of the experiment, the participant was debriefed using the same methodology as in Experiment 1. Here, no participant expressed suspicion about the incidental similarity. As in the previous experiment, two coders, who were unaware of experimental conditions and predictions, viewed each video clip of the participants separately and counted the number of times the participant touched/rubbed her face. A high level of intercoder reliability was found,  $r(42) = .97$ ,  $p < .001$ ; the mean of the two coders' counts was, thus, used as a measure of mimicry.

## Results

In the similarity condition, participants exhibited significantly more face touching/rubbing ( $M = 3.25$ ,  $SD = 1.78$ ) than in the nonsimilarity control condition ( $M = 2.02$ ,  $SD = 0.59$ ),  $t(42) = 3.08$ ,  $p < .005$ ,  $d = 0.95$ . In the similarity condition, participants also expressed a higher level of liking for the target ( $M = 7.45$ ,  $SD = 2.01$ ) than in the nonsimilarity control condition ( $M = 6.13$ ,  $SD = 1.64$ ),  $t(42) = 2.41$ ,  $p < .03$ ,  $d = 0.74$ . To test the relation between the two dependent variables, a product-moment correlation analysis was performed. A significant positive relationship was found,  $r(42) = .63$ ,  $p < .0001$ , revealing that a high score of liking was associated with a high level of mimicry behavior, whereas a low score of liking was associated with a low level of mimicry behavior. To test whether liking was a mediator variable, a mediational analysis was performed by multiple regression (Baron & Kenny, 1986). First, a regression analysis with mimicry as the predictor variable and similarity as the criterion variable revealed that there was an effect that may be mediated,  $\beta = .43$ ,  $SE\beta = .14$ ,  $t(42) = 3.10$ ,  $p = .003$ . Regression between liking and similarity was significant,  $\beta = .34$ ,  $SE\beta = .15$ ,  $t(42) = 2.34$ ,  $p = .03$ , similar to that for mimicry and liking,  $\beta = .55$ ,  $SE\beta = .12$ ,  $t(42) = 4.43$ ,  $p < .001$ . However, the regression between similarity and mimicry with liking as a second predictor was not significant,  $\beta = .08$ ,  $SE\beta = .13$ ,  $t(42) = 0.62$ ,  $ns$ . Thus, it seems that the effect of similarity/nonsimilarity on mimicry is mediated by liking.

## General Discussion

Two experiments revealed that an incidental similarity of a target is associated with a greater level of mimicry behavior from the participants who were exposed to the target. The results are in accordance with the theoretical explanation that mimicry is used to create affiliation and rapport between two individuals (Jefferis, van Baaren, & Chartrand, 2003; Lakin & Chartrand, 2003; Lakin, Jefferis, Cheng, & Chartrand, 2003). Probably, the incidental similarity used in these two experiments resulted in a perceived unit relationship and a fleeting sense of liking between the target and the participant, which led, in turn, to the enhancement of the participant's level of mimicry. Participants probably reacted as if they interacted with a friend or someone who was familiar. Yabar et al. (2006) recently found that female participants more frequently mimicked the nonverbal behavior of members of their in-group than members of their out-group. These authors considered that mimicry is used to indicate to the counterpart that the mimicker wants to interact with him/her. In the in-group condition, this desire was high, thus, a high level of mimicry was found, whereas in the out-group condition, this desire was low, thus, a low level of mimicry was used. So, in our experiment the same effect perhaps occurred with the similar target. A greater liking, and then desire to interact with the target, was created by incidental similarity and this effect, in turn, led the participant to mimic the target. The highly positive relationship between liking and mimicry found in the second experiment seems to confirm this explanation.

In both our experiments, similarity was shown to enhance the level of mimicry expressed by an individual toward a target. It will now be interesting to evaluate the effect of similarity linked to mimicry on the evaluation of the mimicker. Perhaps similarity associated with mimicry would create an interaction effect on judgment and helping behavior that would be higher than the mere enhancing effect of each variable. The effect of mimicry is interesting for social psychologists, and further studies are necessary to explain why this effect occurs and in which social situations it arises. Furthermore, research on mimicry will help to explain how people operate in social interactions so as to establish a positive perception of their counterpart.

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