

Mimicry for money: Behavioral consequences of imitation[☆]

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Abstract

Two experiments investigated the idea that mimicry leads to pro-social behavior. It was hypothesized that mimicking the verbal behavior of customers would increase the size of tips. In Experiment 1, a waitress either mimicked half her customers by literally repeating their order or did not mimic her customers. It was found that she received significantly larger tips when she mimicked her customers than when she did not. In Experiment 2, in addition to a mimicry- and non-mimicry condition, a baseline condition was included in which the average tip was assessed prior to the experiment. The results indicated that, compared to the baseline, mimicry leads to larger tips. These results demonstrate that mimicry can be advantageous for the imitator because it can make people more generous.

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People have an automatic tendency to imitate others. As the saying goes: “monkey see, monkey do.” One may wonder why monkeys and people imitate others. What is the function of mimicry? In the animal domain (e.g., gnus and mackerels), it is argued that mimicry helps to enhance safety (Dijksterhuis, Bargh, & Miedema, 2000). Among humans, it has been suggested that behavioral mimicry may enhance liking and strengthen the bonds between people (Chartrand & Bargh, 1999). Thus, some general benefits are assumed to ensue from mimicry. Although several studies have found a relationship between mimicry and rapport and liking (e.g. Bavelas, Black, Chovil, Lemery, & Mullet, 1988; LaFrance, 1982; Maurer & Tindall, 1983), to our knowledge no studies have experimentally investigated any concrete behavioral consequences of mimicry. In the present article, we argue that mimicry enhances pro-social behavior. Specifically, we aim to demonstrate that people being mimicked will respond more generously towards the person who mimics them. To experimentally test this proposal, we chose a real life restaurant setting. Does a waitress who literally

repeats what her customers order receive a larger tip than a waitress who does not mimic her customers?

Research has shown that people automatically mimic others. This effect has been observed for a wide variety of behaviors (for a review, see Chartrand, Maddux, & Lankin, in press). One type of behavior that is especially susceptible to mimicry is speech. For instance, people mimic words (Bock, 1986, 1989), accents (Giles & Powesland, 1975), rate of speech (Webb, 1969, 1972), tone of voice (Neumann & Strack, 2000), and syntax (Levelt & Kelter, 1982). Cappella and Panalp (1981) found that in dyadic conversations, people have a tendency to assimilate the way they speak, for example in rhythm, and pauses. Research has shown that, besides speech, people also mimic laughter (Young & Frye, 1966), facial expressions (Hsee, Hatfield, Carlson, & Chemtob, 1990), behaviors (Chartrand & Bargh, 1999), emotions (Hatfield, Cacioppo, & Rapson, 1994), and mood (Neumann & Strack, 2000).

Recently, Chartrand and Bargh (1999) demonstrated that behavioral mimicry occurs spontaneously even among strangers. In their first study, participants interacted with a confederate in two sessions. In one session, the confederate rubbed her face and in another session she shook her foot. Videotapes of the sessions show that participants mimicked the behavior of the confederate.

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When the confederate shook her foot, they shook their feet, and when the confederate rubbed her face, they also rubbed their face. In the debriefing, participants indicated that they were unaware of their mimicry. Thus, they unconsciously mimicked the behavior of the confederate. Chartrand and Bargh describe the occurrence of this unconscious mimicry as the “chameleon effect.” Like a chameleon our appearance changes to match the environment.

Mimicry probably serves several socially adaptive functions. It enhances rapport and liking among people (Bavelas, Black, Lemery, & Mullet, 1987), and helps to create bonds between individuals. To experimentally test the idea that mimicry increases liking, Chartrand and Bargh (1999) instructed a confederate to unobtrusively mimic the behaviors and postures of half the participants. For the other half of the participants, the confederate acted in exactly the same way, without the mimicry. Those participants who had been mimicked reported greater liking for the confederate and indicated that the interaction went more smoothly than participants who had not been mimicked.

Moreover, a recent study by van Baaren, Holland, Karremans, and Van Knippenberg (2003) demonstrated that mimicry also leads to a greater sense of interpersonal closeness. In their study, the experimenter, who was ostensibly conducting a marketing study, unobtrusively mimicked the posture and behavioral mannerisms of participants or not. At the end of this study, participants filled out an interpersonal closeness scale (Aron, Aron, & Smollan, 1992). The results indicated that participants whose behavior had been mimicked felt closer to other people in general, than participants whose behavior had not been mimicked.

In combination, these studies suggest that mimicry increases both liking and interpersonal closeness. Besides feelings and cognition, mimicry may also have beneficial consequences at a behavioral level. Because mimicry is often described in terms of its adaptive value (e.g., Chartrand et al., in press; Dijksterhuis & Bargh, 2001), if mimicry enhances interpersonal closeness and liking, it seems plausible that mimicking people may also make them more benevolent towards the person who imitates them. The primary goal of the present studies is to investigate the behavioral consequences of mimicry. Does mimicry produce larger tips for waitresses?

Besides providing good food and service, several behaviors have been shown to increase the size of the tips that are given. Crusco and Wetzel (1984), for instance, had servers casually touch customers in a restaurant at the end of a meal when returning change to the table. The customers who had been touched left a larger tip, compared to customers who had not been touched. Other means of increasing tips include: greeting the customer and introducing oneself (Garrity & Degelman, 1990), writing “thank you” (Rind & Bordia, 1995), a helpful

message (Rind & Strohmets, 1999), or drawing a happy face (Rind & Bordia, 1996) on the checks. Squatting next to the table (Lynn & Mynier, 1993) and smiling at customers (Reis et al., 1990) also lead to a larger tip.

In Experiment 1, the effect of mimicry on the size of the tip was assessed. Verbal mimicry was chosen for two reasons. First, speech has been shown to be especially vulnerable to mimicry (Bock, 1986, 1989; Cappella & Panalp, 1981; Giles & Powesland, 1975; Levelt & Kelter, 1982; Neumann & Strack, 2000; Webb, 1969, 1972). Second, verbal mimicry is easily implemented in a restaurant setting and appears to be a normal part of the interaction. We examined whether verbal mimicry resulted in larger tips.

Experiment 1

Method

Overview. A waitress in a restaurant verbally mimicked half of her customers and did not verbally mimic the other half. She did this by literally repeating the customer’s order in the mimicry condition and not repeating the order in the non-mimicry condition. Afterwards the size of the tip was assessed.

Participants and design. Sixty groups of customers, without their awareness, participated in this experiment, 30 groups in each condition. Each group was randomly assigned to either the mimicry or the non-mimicry condition of one group. One group in the non-mimicry condition was left out of the analysis, because the waitress accidentally mimicked part of their order, leaving a total of 59 groups. The average group consisted of 2.35 people and there was no difference in group-size between the two conditions. The experiment had a single factor (behavior: mimicry vs. non-mimicry) between-subjects design.

Procedure. Upon arrival in the restaurant, the waitress asked each group of customers where they would like to sit and guided them to their table. After picking up a menu and the cutlery from the side station, she returned to the table to take the customers’ orders.

In the mimicry condition, all orders were literally repeated, from the drinks to the check. In the non-mimicry condition, the orders were not repeated, but the waitress made clear that she understood the order, for example by saying “okay!” or “coming up!” With the exception of the verbal mimicry, the waitress was instructed to ensure that all other behaviors were the same across conditions.

Results

Tips. A χ^2 test on the number of times that a tip was given indicates that groups in the mimicry condition

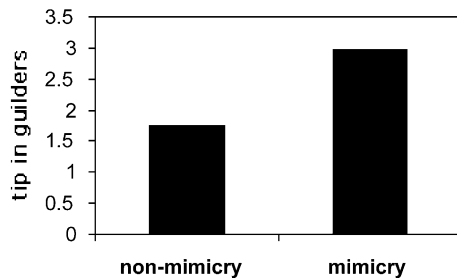


Fig. 1. Amount of tips received by the waitress in the mimicry- and non-mimicry condition: Experiment 1.

gave marginally more often a tip (81%) than groups in the non-mimicry condition (61%), $\chi^2 = 2.85$, $p < .09$.

To test the prediction that mimicry leads to a higher tip, the size of the tips were subjected to a t test for independent samples. As depicted in Fig. 1, the results indicate that the average tip was higher in the mimicry condition ($M = 2.97$ Dutch guilders)¹ than in the non-mimicry condition ($M = 1.76$ Dutch guilders), $t(1, 58) = 2.02$, $p < .05$. Additional analyses were performed in which the size of the tip was controlled for the number of people in a group, and in which the size of the tip was controlled for size of the check. In both cases the same pattern of results was obtained.

Discussion

The first experiment confirmed the hypothesis that mimicry increases tipping. When a waitress mimicked her customers by literally repeating their order, she received a larger tip than when she did not mimic her customers. Mimicry increased the size of her tips by more than 68%. These results suggest that mimicking may be beneficial by making people more generous towards those who mimic them.

Although Experiment 1 confirmed our expectations, there were several limitations in this study that we addressed in Experiment 2. First, the waitress was not blind to the hypothesis. In Experiment 1 her behavior may have, inadvertently, not only differed in its degree of mimicry, but in other relevant respects as well. In the second study, a waitress who was naïve with respect to the hypothesis was included to rule out this possibility.

Second, it is possible in Experiment 1 that the effect of verbal mimicry may have been due to the customer believing that the waitress understood the order rather than the mimicry. In the second study, the waitresses wrote down every order, visible to the client, so it was clear that the waitress understood the order. Furthermore, while the order was repeated literally in the

mimicry condition, in the non-mimicry condition a verbal reaction was given to ensure that there was no difference with regard to customer's belief that their order was understood.

Third, it was unclear in Experiment 1 whether tip size increased when the customer was mimicked, or whether tipping decreased when the customer was not mimicked. To address this problem, we registered the size of the tips of the naïve waitress two weeks prior to the actual experiment to serve as a baseline for the mimicry- and non-mimicry conditions.

Experiment 2

Method

Overview. Experiment 2 was similar to Experiment 1 with three important exceptions. First, a waitress was included who was unaware of the hypotheses. Second, the waitresses wrote down each order in addition to their verbal responses. While in the mimicry condition the waitresses literally repeated the orders, in the non-mimicry condition, the orders were not repeated, but the waitress made clear that she understood the order, for example by saying "okay!" or "coming up!" With the exception of the verbal mimicry, the waitress was instructed to ensure that all other behaviors were the same across conditions. In both conditions it was therefore clear to the customer that their order was understood. Third, for the naïve waitress, a baseline condition was established before the experiment by registering the average tip size she received in general ($N = 21$ groups).² Both waitresses ran 30 groups in each condition, making a total of 141 groups. The average group consisted of 2.19 people.

Results

Tips. The number of times a tip was given was subjected to a χ^2 test. The results indicated that the waitresses received a tip more often in the mimicry condition (78%) than in the non-mimicry condition (52%), $\chi^2 = 9.38$, $p < .01$. This difference was significant for both the naïve ($\chi^2 = 4.58$, $p < .05$) and the not naïve waitress ($\chi^2 = 4.70$, $p < .05$).

The size of the tips was subjected to a between subjects ANOVA comprising the factor Waitress (naïve vs. not naïve), and the factor Mimicry (mimicry vs. non-mimicry vs. baseline). The baseline level of the Mimicry factor was only obtained for the naïve waitress, so the overall design contains one empty cell. Nevertheless, all contrasts of interest can be tested within this design.

¹ Service in The Netherlands is always included in the price. Relatively small tips are given and they express the customer's satisfaction. A Dutch guilder is approximately US \$0.40.

² One group gave a tip that deviated more than 2.5 SD from the mean and was subsequently left out of the analyses.

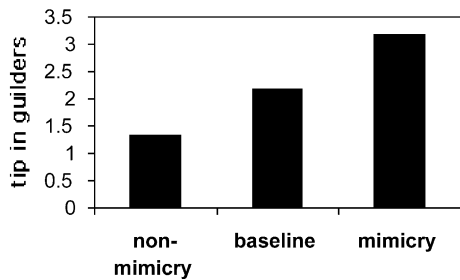


Fig. 2. Amount of tips received by the naïve waitress in the non-mimicry-, baseline- and mimicry condition: Experiment 2.

A significant main effect for Mimicry was found, $F(1, 135) = 13.45$, $p < .01$. The results showed that in the mimicry condition the average tip was higher ($M = 2.73$ Dutch guilders) than in the non-mimicry condition ($M = 1.36$ Dutch guilders). There was no difference in the effect of Mimicry between the two waitresses; the Waitress \times Mimicry interaction was not significant, $F(1, 135) = 1.58$, $p > .21$. If we nevertheless look at the simple effects of mimicry versus non mimicry for each of the waitresses separately, we observed a significant effect for the naïve waitress ($M = 3.18$ in the mimicry condition versus $M = 1.32$ in the non mimicry condition), $F(1, 135) = 12.12$, $p < .01$, and a marginally significant effect for the non naïve waitress ($M = 2.30$ in the mimicry condition versus $M = 1.39$ in the non mimicry condition), $F(1, 135) = 2.91$, $p < .10$.

Within this same design, for the naïve waitress we tested contrasts with the baseline condition. While the results indicated that she received marginally significant higher tips in the mimicry condition ($M = 3.18$) compared to baseline ($M = 2.17$), $F(1, 135) = 2.85$, $p = .09$, there was no significant difference between the non mimicry condition ($M = 1.32$) and the baseline condition ($M = 2.17$), $F(1, 135) = 2.03$, $p > .15$, as can be observed in Fig. 2. As in Experiment 1, the same pattern of results was found both when the size of the tip was controlled for number of people in a group, and when the size of the tip was controlled for size of the check.

General discussion

The two studies presented here provide evidence that mimicry can be used to increase tip size. In two studies, a waitress received a larger tip when she mimicked her customers than when she did not. In Experiment 2, a naïve waitress was added who replicated the findings from Experiment 1, thereby suggesting that experimenter effects are not able to account for the obtained results. In addition, the results from Experiment 2 suggest that mimicry increases the size of the tips in comparison to baseline, although this effect was mar-

ginally significant. Taken together, these studies indicate that people who are being mimicked become more generous towards the person who mimics them, thereby providing support for the adaptive function of mimicry.

Previous studies have shown that mimicry enhances positive feelings for the mimicker. The present studies went beyond these findings by showing that mimicry also has important behavioral consequences. Moreover, the present studies demonstrated these effects in a real-life restaurant setting. Thereby, we were able to support the external validity of the consequences of mimicry.

There are several limitations to the present studies that need to be addressed. Although all possible care was taken to ensure that the treatment of the experimental groups only differed in the amount of mimicry and not in the actual amount of attention paid to the customer, it may be possible that the manipulation also differed in perceived attentiveness. When the waitress literally repeats the order of the customer, he or she may (unconsciously) perceive that as more attentive than a verbal reaction to the order. Although the latter verbal reactions were meant to serve as the waitress' way to signal that she attentively registered the order, we cannot exclude that verbal mimicry is a more effective way of giving the impression that one is attentive. However, even if that were the case, it is quite conceivable that perceived attentiveness is an integral part of the effect of mimicry. Among several other possible effects, for example liking (Chartrand & Bargh, 1999) and interpersonal closeness (van Baaren et al., 2003), perceived attentiveness of the mimicker by the mimicked may increase through mimicry. These possibilities need to be addressed in future studies in a more controlled and standardized environment.

Another limitation of the present studies is concerned with the baseline condition. Two weeks prior to the experiment the "normal" amount of tips of the naïve waitress was assessed in order to compare the experimental conditions to this baseline measure. It is possible that the circumstances at the time of the baseline measurement (e.g., weather conditions, pay-check time) were different than at the time of the experiment. In future research, an alternative condition may be a condition, where in waitresses act "normal."

Taken these possible shortcomings of the baseline condition, at the present time it is not possible to give a definite answer to the question whether mimicry actually increases tips or whether non-mimicry decreases tips. The studies clearly demonstrated however, that mimicry influences the size of a tip.

The mimicry in the present studies was calculated. An interesting question is whether non-conscious mimicry has the same effects on tipping behavior. Previous research in which people were mimicked (Chartrand &

Bargh, 1999; van Baaren et al., 2003) has found that participants are unaware of the fact that they were mimicked. Also, in the present studies, when debriefed, the waitresses indicated that there was no reason to assume that customers had noticed the mimicry. Therefore it seems likely that the mimicry was unconscious at least for the mimicked. Future research may cast more light on the comparability of conscious and unconscious mimicry.

Previous research has shown not only that we like people who mimic us better than people who do not mimic us (Chartrand & Bargh, 1999), but also that mimicry makes us feel closer to other people (van Baaren et al., 2003). Although the present studies are inconclusive with regard to potential mediation, it is conceivable that the interpersonal consequences of mimicry play a mediating role in the presently reported behavioral effects of mimicry. For example, greater liking and closeness may constitute necessary psychological conditions for enhancing generosity. It is equally possible, however, that increased tipping is a direct effect of being mimicked and feelings of interpersonal closeness and liking merely constitute parallel effects of the mimicry.

A related question that needs to be addressed is whether the observed effect of mimicry is specific to the person who does the mimicry, or whether a more pro social orientation in general is induced through mimicry. It is possible that the effect of mimicry is a more diffuse state in which the interaction with the environment in general is more pro-social. When the effect of mimicry on the mimicked person is diffuse, then it is conceivable that the induced pro-social state is easily transferred to other people and situations, instead of being specifically targeted at the mimicker. Future studies should address this possibility by looking at the effects of mimicry on other people than just the mimicker. Will other people also benefit from a more pro-social mimicked person?

By investigating the consequences of mimicry, the present studies are a first attempt in answering our initial question concerning the function of mimicry. One possible function of mimicry is that it enhances the benevolence of the mimicked person. In two studies it was found that mimicry is beneficial to the person who does the mimicry. Customers, who were mimicked by a waitress, were willing to leave her larger tips compared to customers who were not mimicked. We propose that the observed effects of mimicry are not restricted to tipping behavior in the waiter-customer interaction, but may be observed in a wide variety of social situations. What other advantages could be gained by mimicry? Tentatively, we assume that all pro-social behaviors may be fostered by mimicry. Helping others who are in need of help, sharing resources with group members, and even the purpose of bonding and mating may be facili-

tated by mimicry. This way, mimicry may be a powerful tool in building and maintaining positive relationships between individuals.

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