

A Pilot Study of Nonconscious Mimicry among Japanese University Students: Is a Socially Undesirable Behavior Mimicked?

Yohsuke Ohtsubo*

Nara University

Abstract

The purpose of this study was to examine whether a culturally-undesirable behavior (playing with a pen) would be less likely to be mimicked by participants than a neutral behavior (clasping one's hands). Sixty participants took part in the experiment, in which the type of behavior (undesirable vs. neutral) was a within-participant factor. During two experimental sessions, each participant interacted with a confederate who engaged in one of the target behaviors. The result showed that nonconscious mimicry occurred only with the pen-play behavior. Also, only males showed mimicry of the pen-play behavior. Some possible reasons for the unexpected results are discussed.

Recently, social psychologists have been interested in the social functions of nonconscious mimicry – people's automatic tendency to imitate others' postures, mannerisms, facial expressions, and other behaviors. Recent experiments demonstrated that participants who engaged in a brief interaction with an experimental confederate tended to mimic the confederate's rubbing of his/her face, shaking of his/her foot (Chartrand & Bargh, 1999; Cheng & Chartrand, 2003; van Baaren, Maddux, Chartrand, de Bouter, & van Knippenberg, 2003), and playing with a pen (van Baaren et al., 2003). Such tendency to mimic others' mannerisms appears meaningless at first glance. However, recent research has shown that nonconscious mimicry has an important social function (Lakin, Jefferis, Cheng, & Chartrand, 2003). In Chartrand and Bargh's (1999) experiment (Experiment 2), for example, each participant engaged in an experimental task with a confederate. During the experimental session, in one condition the confederate mimicked the participant's mannerisms (mimicking condition), while in the other condition the confederate behaved in a non-imitative manner (non-mimicking condition). Those who were in the mimicking condition rated the confederate more likable than those who were in the non-mimicking condition. Moreover, those who were in the mimicking condition found that the interaction with the confederate went more

smoothly. Some studies also found that being mimicked makes people more helpful toward others (van Baaren, Holland, Kawakami, & van Knippenberg, 2004; van Baaren, Holland, Steenaert, & van Knippenberg, 2003). Reviewing these studies, Lakin et al. point out that nonconscious mimicry helps us to maintain harmonious social relationships with others.

Given the social function of nonconscious mimicry, one might wonder if there are certain types of behaviors that one might be better to refrain from imitating. A recent study concerning deceptive behaviors showed that people tend to tell lies more frequently to a person who has lied to them (Tyler, Feldman, & Reichert, 2006). Therefore, mimicking a deceptive behavior triggers a sort of conflict spiral. Also, there are certain types of behaviors that are considered unacceptable or undesirable. One might be disinclined to imitate a person who is engaging in a socially-undesirable behavior, especially when other people are observing it. In this case, a mimicker of a socially-undesirable behavior is unlikely to develop cordial relationships with observers. Therefore, it is anticipated that nonconscious mimicry will serve its social function better in the presence of some inhibitory mechanism than without it. Ekman (1972) showed that Japanese undergraduates who were exposed to stressful stimuli inhibited themselves from making negative facial expressions in the presence of an authority figure. Similar mechanisms might apply to nonconscious mimicry; that is, people might refrain from mimicking culturally-undesirable behaviors.

The purpose of this study was to test if a culturally-undesirable behavior is less likely to be mimicked than a neutral behavior. Participants of the study engaged in an alleged inspiration experiment, in which each participant was paired with a same-sex confederate and asked to produce many adjectives applying to given nouns. During the inspiration experiment, the confederate either played with a pen (a culturally-undesirable behavior) or clasped his or her hands on top of a desk (neutral behavior). In Japan, playing with a pen is not taboo, but keeping still is considered more desirable in such a context. Therefore, playing with a pen is considered a moderately-undesirable behavior. One of the female research assistants who served as a confederate professed that she was afraid that participants would think her a tomboy when she played with a pen. The study employed a within-participant design in which all participants were exposed to both types of behaviors. The inspiration experiment consisted of two sessions, and half of the participants were exposed to a confederate playing with a pen in the first session (pen-hand condition), while the other half of the participants were exposed to a confederate clasping his or her hands in the first session (hand-pen condition). It was anticipated that the confederate will be mimicked more frequently by participants when he or she is clasping his or her hands than when he or she is playing with a pen.

Methods

Participants and Design

Participants were 60 undergraduates (30 males and 30 females) at Nara University, Japan. They were paid 500 yen for their participation. Thirty participants (15 males and 15 females) were assigned to the pen-hand condition and the remaining thirty participants (15 males and 15 females) were assigned to the hand-pen condition. There was a between-participant condition: Half of the participants were supraliminally primed with the word "cooperation," while the other half of the participants were supraliminally primed with the word "competition." This between-participant condition did not have any effect on the results of this study and will not be mentioned further.

Procedure

Upon arrival, each participant was asked to stay in a waiting room. After arrival of the confederate, who showed up within a few minutes after the participant's arrival, the experimenter took the participant and the confederate to the laboratory, in which two chairs were arranged in such a way that the chairs were half-facing each other and half-facing the experimenter's desk. Each chair was equipped with a writing arm. After being seated, each participant first completed a brief questionnaire asking his or her sex and age. This questionnaire was introduced so that a pen would necessarily be placed on the writing arm. After completion of the questionnaire, the experimenter explained the nature of the inspiration experiment, giving an example noun, "hand," to the participant and the confederate. The experimenter prompted the confederate to produce a few adjectives to modify the noun. When the confederate produced some examples, such as "small" and "leaf-like," the experimenter affirmed that the confederate understood the task. After confirming that the participants understood the task, the experimenter explained that the participant and the confederate would take turns in thinking up adjectives: First the participant would compile adjectives applying to a noun for one minute, and then the confederate would compile adjectives applying to a different noun for one minute, and so on. Before starting the experiment, the experimenter asked the participant and the confederate if they would mind being video recorded. No participants refused to be recorded. The video was manipulated by an experiment assistant who stood behind the participant during the experimental sessions so that the assistant's behaviors were not visible to the participant.

Presenting a target noun, the experimenter always first asked the participant to produce as many adjectives as possible within the span of one minute. After one minute had elapsed, the experimenter presented a different noun and asked the confederate to produce as many adjectives as possible. Twenty seconds after the confederate began his or her turn, the

experimenter lifted up a stopwatch to signal the confederate to engage in a target behavior (i.e., playing with a pen or clasping his or her hands). After one minute had elapsed, the experimenter presented a new noun and asked the participant to produce as many adjectives for it as possible. During the participant's turn, the experimenter signaled the confederate to stop the target behavior. After presenting six nouns in this manner, the experimenter announced that they would have a short break. The confederate engaged in the target behavior three times during the first session, for 90 seconds, 60 seconds, and 40 seconds, respectively. After a short break, the experimenter started the second session. The procedure for the second session was the same as that for the first session except that a different set of nouns was used and the target behavior was altered.

After completion of the experiment, the experimenter explained fully the purpose of the experiment and asked the participant if he or she had any suspicions about the experiment. None of the participants reported suspicions relevant to the purpose of the experiment. The participant was then asked to sign a form allowing the experimenter to use the video recording. Then the participant was paid and thanked for his or her participation in the study.

Results

The video recordings were coded by four independent judges who were blind to the conditions of participants. Each video recording was coded by two of the judges. The judges counted the number of times the participant clasped his or her hands and played with a pen. The interrater reliabilities are as follows: for the hand-clasping behavior, .64 (first session) and .74 (second session), and for the pen-play behavior, .74 (first session) and .97 (second session). Although some interrater reliabilities are only moderately high, the two judges always agreed on whether or not a particular participant had engaged in each of the target behaviors at least once in a given session. The data from the two judges were averaged and used as dependent variables.

It turned out that a large portion of the participants did not engage in either type of behavior. During the session in which the confederate clasped his or her hands and did not play with a pen, 19 participants clasped their hands at least once, and six participants played with a pen at least once. During the session in which the confederate played with a pen and did not clasp his or her hands, 10 participants played with a pen at least once, and 22 participants clasped their hands at least once. Therefore, distributions of the dependent variables were highly positively-skewed. Accordingly, each data point was given a constant, 1.00, and then submitted to the log₁₀ transformation. Two separate 2 (condition: hand-pen vs. pen-hand) x 2 (confederate's behavior: clasping-hands vs. pen-play) ANOVAs with the latter

factor as repeated measures were conducted for each type of behavior (see Figure 1 for untransformed means). For the hand-clasping behavior, a main effect of the confederate's behavior was not significant, $F(1, 58) = 2.12, ns$. Other effects were also not significant. In fact, participants clasped their hands slightly more often during the session in which the confederate did not clasp his or her hands (untransformed mean = .94, $SD = 1.55$) than during the session in which the confederate clasped his or her hands (untransformed mean = .58, $SD = 1.19$). Nonconscious mimicry was thus not observed with the hand-clasping behavior. For the pen-play behavior, a main effect of confederate's behavior was marginally significant, $F(1, 58) = 3.24, p = .08, \eta^2 = .053$, and the interaction effect between the condition and the confederate's behavior was marginally significant, $F(1, 58) = 3.36, p = .07, \eta^2 = .055$. A main effect of condition was not significant. Participants played with a pen more frequently during the session in which the confederate played with a pen (untransformed mean = .18, $SD = .44$) than during the session in which the confederate did not play with a pen (untransformed mean = .13, $SD = .48$). This pattern suggests that nonconscious mimicry occurred, although the effect was weak. The marginally-significant interaction effect was due to the fact that this pattern was observed only in the hand-pen condition.

Close scrutiny of the pen-play data showed that only one female played with a pen, and she did so throughout the experiment (i.e., in both sessions regardless of whether the confederate played with a pen or not). The sex difference in nonconscious mimicry of the pen-play behavior was significant by Fisher's exact test. Nine of 30 males played with a pen during the session in which the confederate played with a pen, while only one of 30 females did so. The probability of observing this pattern by chance was .01. It is noteworthy that this was not

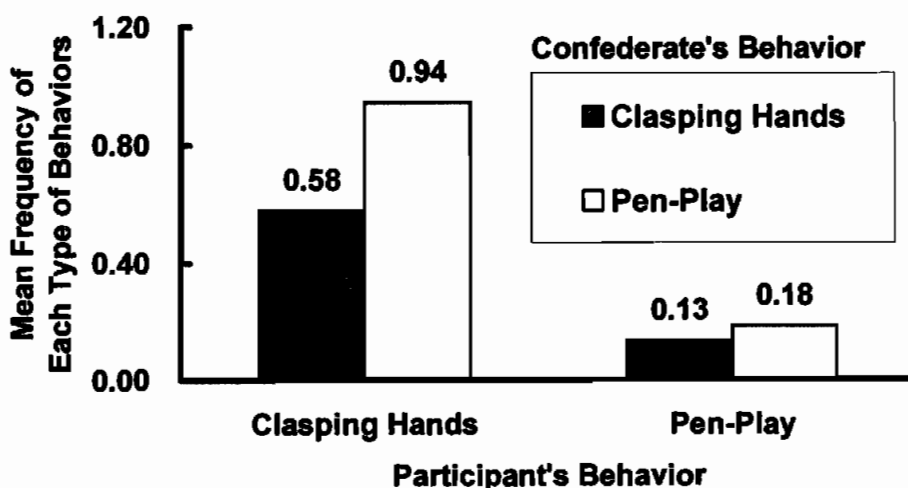


Figure 1. Mean frequency of each type of behavior as a function of the confederate behavior (clasp hands vs. pen-play).

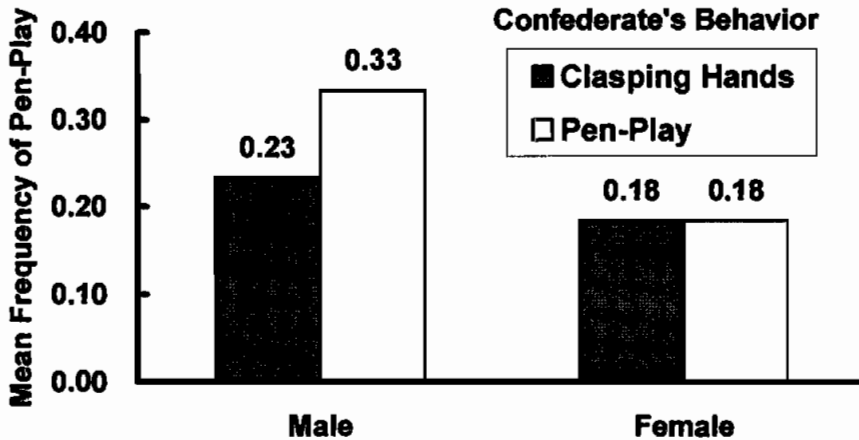


Figure 2. Mean frequency of pen-play behavior as a function of the confederate behavior (clasping-hands vs. pen-play) and participants' sex.

solely due to the fact that males were simply more prone to play with a pen than were females. Although there was such tendency (i.e., 5 of 30 males played with a pen during the session in which the confederate did not play with a pen, while only one of 30 females did so), it was not significant by Fischer's exact test. Given the sex difference in nonconscious mimicry, the 2 (condition) \times 2 (confederate's behavior) ANOVA was conducted including only the males' data. The main effect of the confederate's behavior reached the statistically significant level, $F(1, 28) = 4.65, p < .05, \eta^2 = .14$ (see Figure 2 for untransformed means).

Discussion

The experiment was aimed at testing the hypothesis that nonconscious mimicry would be more frequently observed for a culturally-neutral behavior (i.e., hand-clasping behavior) than a culturally-undesirable behavior (i.e., pen-play behavior). The hand-clasping behavior was more frequently engaged in than the pen-play behavior. Of the 60 participants, 24 participants clasped their hands at least once during the experiment, while 11 participants played with a pen at least once during the experiment. This pattern seems consistent with the assumption that the pen-play behavior was less culturally desirable. There is a question as to why nonconscious mimicry did not occur with the hand-clasping behavior. According to the confederates, the hand-clasping behavior was less noticeable than the pen-play behavior. They believed that a majority of the participants were so concentrated on the task that they did not look at the confederate at all. Therefore, to test the hypothesis, more noticeable target behaviors are needed.

Although the original hypothesis was not testable because of the lack of nonconscious

mimicry of the hand-clasping behavior, an interesting pattern related to the hypothesis was observed. There was a tendency for females not to exhibit nonconscious mimicry of the pen-play behavior. It is reasonable to assume that a cultural norm inhibiting rude behaviors affects females more markedly than males. Given the fact that no sex difference in nonconscious mimicry was observed in Chartrand and Bargh's (1999) study, both males and females share a predisposition to nonconscious mimicry. Perhaps the results of this study should be interpreted as illustrating that males are less susceptible to cultural norms than females, and thus are more likely to play out nonconsciously formed behavioral intention even when the intended behavior is perceived as slightly undesirable in a given context. This interpretation is consistent with the basic idea of the study that nonconscious mimicry is accompanied by some inhibitory mechanism. However, this evidence is at best indirect and weak. More direct demonstration of the presence of some inhibitory mechanism of nonconscious mimicry is needed.

This study showed a relatively low frequency of nonconscious mimicry. This result seems to contradict van Baaren et al.'s (2003) result (Experiment 3). Van Baaren et al. compared mimicking behaviors of Japanese and Americans. Consistent with the hypothesis that mimicking behaviors are more prominent among Japanese, who have relatively interdependent self-construals, than among Americans, who have relatively independent self-construals, Japanese participants showed a greater amount of nonconscious mimicry. Given van Baaren et al.'s result, the low frequency of nonconscious mimicry in this study, in which Japanese undergraduates took part, seems puzzling. It is noteworthy that van Baaren et al.'s Japanese sample was drawn from Japanese students studying at an American university, as these students might be somewhat different from ordinary Japanese. Also, the difference in the results might be attributable to some methodological differences. For example, van Baaren et al.'s arrangement might have allowed participants to see the confederate better than our arrangement did. A study that closely simulates van Baaren et al.'s procedure may be worth conducting in Japan in order to examine fully the matter of cultural influence on nonconscious mimicry.

Acknowledgment

I am grateful to Kazuhiro Kii, Emi Noguchi, Saori Takeuchi, and Tetsuya Yamada for their assistance in conducting the experiment.

References

- Chartrand, T. L., & Bargh, J. A. (1999). The chameleon effect: The perception-behavior link and social interaction. *Journal of Personality and Social Psychology, 76*, 893-910.
- Cheng, C. M., & Chartrand, T. L. (2003). Self-monitoring without awareness: Using mimicry as a nonconscious affiliation strategy. *Journal of Personality and Social Psychology, 85*, 1170-1179.
- Ekman, P. (1972). Universals and cultural differences in facial expressions of emotion. In J. Cole (Ed.), *Nebraska Symposium on Motivation, 1971* (pp. 207-283). Lincoln, NE, University of Nebraska Press.
- Lakin, J. L., Jefferis, V. E., Cheng, C. M., & Chartrand, T. L. (2003). The chameleon effect as social glue: Evidence for the evolutionary significance of nonconscious mimicry. *Journal of Nonverbal Behavior, 27*, 145-162.
- Tyler, J. M., Feldman, R. S., & Reichert, A. (2006). The price of deceptive behavior: Disliking and lying to people who lie to us. *Journal of Experimental Social Psychology, 42*, 69-77.
- van Baaren, R. B., Holland, R. W., Kawakami, K., & van Knippenberg, A. (2004). Mimicry and prosocial behavior. *Psychological Science, 15*, 71-74.
- van Baaren, R. B., Holland, R. W., Steenaert, B., & van Knippenberg, A. (2003). Mimicry for money: Behavioral consequences of imitation. *Journal of Experimental Social Psychology, 39*, 393-398.
- van Baaren, R. B., Maddux, W. W., Chartrand, T. L., de Bouter, C., & van Knippenberg, A. (2003). It takes two to mimic: Behavioral consequences of self-construals. *Journal of Personality and Social Psychology, 84*, 1093-1102.