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THE FINAL TOUCH

How Touch affects People's Helping Behavior

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The Final Touch: How Touch affects People's Helping Behavior

Introduction

In daily interactions people often make use of non-verbal communication like gestures, body posture but also interpersonal touch (Coulson, 2004; Goldin-Meadow, 1999; Hertenstein, Keltner, App, Bulleit, & Jaskolka, 2006). Moreover, as young as six months children use the sense of touch to make sense of their world (Meltzoff & Borton, 1979) and even after a few hours mothers can identify their babies by stroking the back of their hand (Kaitz, Lapidota, Bonner, & Eidelman, 1992). Touch provides us with essential information about our environment (Hertenstein, Holmes, McCullough, & Keltner, 2009), but surprisingly few studies have examined it. The few that have, showed that touch often is perceived as a positive event. For example, women felt more positive and evaluated a library clerk more favourably if their hand was briefly touched when returning a book (Fisher, Rytting, & Heslin, 1976). Also, touch influences people's behavior as participants who played a game in which touch on the shoulder was used to communicate numbers prior to a public goods game, contributed more credits than participants in the baseline condition (Kurzban, 2001). Furthermore, early season touch between players of the same team in NBA competition predicted improved performance for both individual players as their team later in season through fostering cooperation between the teammates involved (Kraus, Huang, & Keltner, in press). While much of the existent research has focused on positive outcomes of interpersonal touch, Major and Heslin (1982) argued that interpersonal touch is not always perceived as a positive event. They revealed that observers, who were shown a picture of a person touching someone else on the shoulder, perceived the person invoking the touch as more dominant and the receiver as more submissive. Here we build upon this research by arguing that touch may also have negative implications. That is, if touch would be perceived as dominant by the person being touched, this would likely influence the cooperative interaction in a negative way. In Experiment 1, we build on Major and Heslin's research and examine the *receiver's perceptions* of interpersonal touch on the shoulder (rather than a person observing someone being touched). Based on their findings and the expected congruence between a participant's and an observer's

interpersonal judgements of nonverbal cues (Burgoon & Le Poire, 1999), we expect the receiver to feel more submissive and perceive the other person as more dominant.

In Experiment 2, we examine the effect of touch on the participant's helping behavior with the person touching him/her. As we expect interpersonal touch to communicate dominance and submission (Experiment 1) and Braver and Barnett (1974) showed that if another person is negatively evaluated (e.g. in terms of dominance) cooperation often fails, we expect that participants will be less helpful when touched by another person.

In Experiment 3, we examine whether the quality of the relationship between the receiver and the person invoking the touch, affects perceptions and feelings in the receiver. The quality of touch is suggested to be dependent on the relationship between the persons involved (Major, Schmidlin, & Williams, 1990). That is, previous research showed that people's personal territory depends on the level of acquaintance of the persons involved: affective reactions became more positive when interpersonal distance between friends decreased, while for strangers the positivity of affective reactions first increased and then decreased with decreasing interpersonal distance (Ashton, Shaw, & Worsham, 1980). As interpersonal touch holds lowers interpersonal distance, we expect that interpersonal touch will increase positive feelings and perceptions in the receiver.

Experiment 1: The influence of interpersonal touch on feelings and perceptions

Experiment 1 examined the influence of interpersonal touch on participants' feelings towards and perceptions of the person invoking the touch. Participants read a story of a real-life situation at work and scored their feelings and perceptions in this situation in the subsequent questionnaire.

Method

Participants and design. A total of 40 persons (60% men and 40% women), with a mean age of 23.45 years (age ranging from 18 to 57 years old), were recruited at a local public building. Participants were told that they would participate in a study on perceptions and feelings in a real-life situation at work and voluntarily participated in the experimental session, which lasted about 10 minutes. As this experiment used a

between-subject design with one independent variable, participants were randomly assigned to either the touch condition ($n = 20$) or the control condition ($n = 20$).

Procedure. At the start of the experiment, participants were given a story in which they participated in a meeting at work and were asked to act as if the story was a real-life situation. At the end of the meeting, an unknown colleague approaches, wishes them the best for the future and either gives them a nod on the shoulder before leaving (touch condition) or leaves the room without further interaction (control condition). After completing the story, participants were given a questionnaire that measured their feelings and perceptions in the previous situation on a 5-point scale ranging from 1 (*totally disagree*) to 5 (*totally agree*).

Dependent measures. The first factor was measured with four items: “I find the other person intimidating”, “I find the other person dominant”, “I feel that the other person feels more important than me” and “I think that the other person tries to dominate me”. The answers given to these four items were averaged into one score (Cronbachs alpha was .88). This score indicated participants’ perceptions of the other person’s dominance, with higher scores reflecting participants feeling more dominated by this other person. To measure the second factor, submissiveness, we used two items: “I find myself submissive to the other person” and “I find myself less important than the other person”. Participants’ answers on these two items were averaged into one score (Cronbachs alpha was .90). This score indicated participants’ feelings of submissiveness, with higher scores reflecting participants experiencing higher levels of feeling submissive. Self-assurance of the other person was measured with one item: “I find the other self-assured”. Participants’ scores on this item indicated their perceptions of self-assurance of the other person, with higher scores reflecting participants perceiving the other person as more self-assured.

Results

Pearson correlation analysis showed the two factors (dominance and submissiveness) to be distinctively related ($r = .28$, $p < .10$). Analysis of variance (ANOVA) on participants’ scores on these two factors showed a main effect of touch for both dominance, $F(1, 38) = 8.93$, $p < .01$, $\eta^2 = .19$, and submissiveness, $F(1, 38) = 5.23$, $p < .05$, $\eta^2 = .12$. As predicted, participants in the touch condition ($M = 2.96$; $SD = .87$) perceived their colleague as more dominant than participants in the control

condition ($M = 2.18$; $SD = .77$). Furthermore, participants in the touch condition ($M = 2.13$; $SD = 1.05$) also reported higher levels of submissiveness than their counterparts in the control condition ($M = 1.53$; $SD = .53$). Finally, an ANOVA showed an effect for touch for perceived self-assurance, $F(1, 38) = 4.64$, $p < .05$, $\eta^2 = .11$. Participants who were touched on the shoulder perceived their colleague as more self-assured ($M = 3.85$; $SD = .81$) than those who were not touched on the shoulder ($M = 3.30$; $SD = .80$). In sum, Experiment 1 indicated that being touched on the shoulder by another person invokes feelings of submissiveness and perceptions of dominance and self-assurance in the receiver towards the person invoking the touch.

Discussion

As Major and Heslin (1982) showed that *observers* perceived a person touching another person as more dominant and the receiver as more submissive, we expanded their findings to the perceptions and feelings of the *receiver*. When participants read a story in which they were touched on the shoulder by an unknown colleague, they reported higher levels of feeling submissive and perceived the other person as more self-assured and dominant. While our findings indicate that interpersonal touch can also be perceived as a negative event, the influence of these emotions on people's behavior remains unexplored. In Experiment 2, we will translate the story used in Experiment 1 to a real-life situation and examine how interpersonal touch will affect cooperative behavior.

Experiment 2: The influence of interpersonal touch on helping behavior

Previous research on cooperative behavior has indicated that dominant behavior will decrease the cooperative interactions between the people involved (McCabe, Rassenti, & Smith, 1996). Experiment 2 examined the influence of interpersonal touch on the receiver's helping behavior. After completing both an individual task and a task in the presence of another person, participants were asked to divide 11 credits between themselves and this other person. As Experiment 1 showed that touch communicates perceptions of dominance, in order to reduce perceptions of retaliation, this study used a dictator game to measure helping behavior. In a standard dictator game, one person (the dictator) has to divide a specific amount between himself/herself and another person

(the recipient), who has no influence on this decision (Forsythe, Horowitz, Savin, & Sefton, 1994; Hoffman, McCabe, & Smith, 1996). That is, the receiver cannot refuse or reject the allocated amount. Average allocations in these dictator games have been shown to vary with changes in the experimental design (Cason & Mui, 1998; Cherry, Frykblom, & Shogren, 2002). For example, participants donated more tickets to the other person when the experimenter was able to identify their allocations than when this possibility was removed (Hoffman, McCabe, Shachat, & Smith, 1994), which is known as the “experimenter observation effect”. In the current experiment, participants had to divide 11 credits between themselves and an (up till then) unknown fellow student. The total amount of credits that participants donated was used as a measure for helping behavior.

Method

Participants and design. Seventy-four volunteers (36.2% men and 63.8% women), with a mean age of 19.16 years (age ranging from 17 to 28 years old) ostensibly participated and were told that they would participate as part of a study on the presence of others on performance. Participants were either undergraduate psychology students, who were recruited from introductory psychology classes as partial fulfilment of their class requirement, or random persons, who were recruited through flyers and participated in exchange for a chocolate bar. As this experiment used a between-subject design with one independent variable, participants were randomly assigned to either the touch condition ($n = 37$) or the control condition ($n = 37$).

Procedure. Upon arrival, participants were told that the experiment consisted of two different parts: a first part in which they had to complete an individual task (a maze) and a second part in which they had to solve another maze in the presence of another student (who was in fact a confederate). In order to increase the credibility of the participation of a fellow student at the same moment, we ensured that the experimenter often left the room during the experiment (supposedly to give instructions to the other student).

At the start of the experiment, participants were brought to a first room where they received the informed consent and an individual task (a maze). After signing the informed consent and completing the individual task, participants were asked to follow

the experimenter to a different room. Here, they were seated next to a fellow student and had to complete a second maze. As both participants and the confederate were given the same task, in order to minimize the effect of differences in perceived social status, we ensured that the confederate solved the maze a few seconds slower than each participant. For the last part of the experiment, participants were asked to choose one out of two different cards. As participants were told that each of these cards represented a different final task, we made it seem as if the following part of the experiment (and participants' role in this part) had yet to be determined (while in fact all participants received the same subsequent task). This way we ensured that participants could not hold the fellow student responsible for being in the recipient role later on in the experiment and thereby minimized possible effects on allocations. After participants had chosen a card, they were asked to move to a different room again. As participants were about to leave the room, they either received three consecutive nods on the shoulder (of which the last one lasted for approximately three seconds in order to ensure that the participant would be aware of the touch) by the confederate (*touch condition*) or they left the room without further interaction (*control condition*).

Next, participants were explained that they had to divide 11 credits between themselves and the other student and learned that the other person could not reject their decision. As the experimenter's knowledge of the amount of credits donated influences participants' decisions, it was important to keep this variable constant. Therefore, participants were asked to put the tickets that they wanted to donate to the other person in a sealed envelope (so they believed that the experimenter would not know how many tickets they donated). This way it was clear to participants that the experimenter was oblivious for the amount of credits donated to the other person. We opted for an uneven amount of credits so that participants could not choose for an equal distribution between themselves and the other. That is, previous research on dictator games showed that without an apparent context, allocators consistently choose to divide their endowment equally with the other person (Kahneman, Knetsch, & Thaler, 1986). Participants were also told that each credit gave them a chance of winning a movie ticket (so tickets were valuable). As a final task, participants were asked to score one item, "Has there been any kind of physical contact between yourself and the other participant?", on a 5-point scale ranging from 1 (*not at all*) to 5 (*very strong*). This item was used as a

manipulation check to examine whether participants were aware of being touched or not.

Results

An ANOVA on the amount of credits that participants donated showed a main effect for touch, $F(1, 72) = 7.86, p < .01, \eta^2 = .09$. As predicted, participants who received a nod on the shoulder by another person donated less tickets to this other person ($M = 3.70; SD = 1.76$) than those who did not receive a nod on the shoulder ($M = 4.70; SD = 1.27$). Furthermore, an ANOVA on participants' answers on the question whether interpersonal physical contact was present or absent, showed a significant main effect for touch, $F(1, 72) = 52.69, p < .001, \eta^2 = .42$. Participants who were touched on the shoulder by another person ($M = 2.65; SD = 1.23$) stated more often that physical contact was present than participants who were not touched on the shoulder ($M = 1.11; SD = .39$). In sum, these results provide evidence that interpersonal touch indeed has an inhibiting effect on helping behavior. When participants were touched on the shoulder by a fellow student, they decreased helping behavior towards this person.

Discussion

While previous research indicated that interpersonal touch positively affects people's interactions, our findings showed that interpersonal touch can also restrict helping behavior. When participants were touched on the shoulder by an unknown other person, they donated less credits to this person. These findings suggest that touch was perceived as communicating status information and thereby affecting cooperative behavior towards the person invoking the touch.

As the previous two studies showed that interpersonal touch has a negative effect on people's interaction, our findings seem to contradict previous research. That is, women, for example, were more likely to give a free cigarette to another woman when they were touched on the forearm than when interpersonal touch was absent (Joule, & Guéguen, 2007). However, our findings do not explain why interpersonal touch decreased receivers' helping behavior in our experiment, while, for example, it increased both cooperation between members of the same team of the National Basketball Association as their performance (Kraus, Huang, & Keltner, in press). As even knowing the family name of a further unknown receiver increased the amount of

tickets that participants donated (Charness & Gneezy, 2008), the obscurity of the receiver to participants in our setting might be an explanation for the different outcomes of interpersonal touch. In Experiment 3, we will address this possible influence on the relationship between interpersonal touch and cooperation.

Experiment 3: The effect of removing the obscurity of the person invoking the touch on receivers' perceptions.

Experiment 1 showed that participants who read a story of a real-life situation of a meeting at work in which an unknown colleague touched them on the shoulder, reported higher levels of dominance and submissiveness. As Ashton, Shaw, and Worsham (1980) showed that affective reactions to interpersonal distance differ with the quality of the relationship between the people involved; it is possible that interpersonal touch will invoke different feelings and perceptions in the receiver when the person invoking the touch is an acquaintance. In the current experiment, participants read the same story as participants in Experiment 1, with the difference that we excluded the statement that the colleague was unknown to the participant. Similar to Experiment 1, participants scored their feelings and perceptions in the previous situation in a questionnaire.

Method

Participants and design. A total of 50 volunteers (66% men and 34% women), with a mean age of 23.33 years old (age ranging from 17 to 48 years old), were recruited at a local building in Leuven (Belgium) at various hours of the day and various days of the week. Participants were told that they would participate in a study on perceptions and feelings in a real-life situation at work and voluntarily participated in the experimental session which lasted about 10 minutes. This experiment used a between-subject design with one independent variable to examine the effect of interpersonal touch on a receiver's feelings and perceptions. Participants were randomly assigned to either the touch condition ($n = 24$) or the control condition ($n = 26$).

Procedure. At the start of the experiment, participants were asked to imagine that they were an employee of a company and participated in a meeting at work, and were asked to act as if the story was a real-life situation. The story was identical to the

story used in Experiment 1 with the difference that it did not explicitly state that participants were not familiar with the person invoking the touch. As the social relationship represented by the word *colleague* (without the word *unknown* prior to it) is perceived as (even more) intimate as the social relationship represented by the word *acquaintance* (Hale, Lundy, & Mongeau, 1989), this way we ensured that participants experienced their colleague in the story as familiar. After completing the story, participants were given a questionnaire to measure their feelings and perceptions in the previous situation on a 5-point scale ranging from 1 (*totally disagree*) to 5 (*totally agree*).

Dependent measures. Support was measured with one item: “I find the other supportive”. Participants’ scores on this item reflected the level of support they experienced, with higher levels indicating that they perceived their colleague as more supportive. Self-assurance of the other person was measured with one item: “I find the other self-assured”. Participants’ scores on this item reflected their perceptions of self-assurance of their colleague, with higher scores indicating that they perceived this person as more self-assured.

Results

An ANOVA on participants’ scores showed a significant main effect of touch for both support, $F(1, 48) = 4.08, p < .05, \eta^2 = .08$, and perceived self-assurance of the other person, $F(1, 48) = 3.02, p < .10, \eta^2 = .06$. Participants in the touch condition perceived their colleague as more supportive ($M = 3.33; SD = .76$) and more self-assured ($M = 3.46; SD = 1.05$) than participants in the control condition (Support: $M = 2.96; SD = .53$; Self-assurance of the other person: $M = 3.04; SD = .77$). In sum, Experiment 3 indicated that interpersonal touch on the shoulder by a familiar colleague invoked feelings of being supported by the person invoking the touch.

Discussion

Experiment 3 showed that the feelings and perceptions invoked by interpersonal touch on the shoulder between two colleagues who know each other are positive in nature. When participants read a story in which they interacted with a familiar colleague, they perceived this colleague as more supportive and self-assured when they were touched on the shoulder than when touch was absent.

General Discussion

The majority of previous research on interpersonal touch has shown that touch often is perceived as a positive event and increases cooperative interactions between the people involved (e.g. Fisher, Rytting, & Heslin, 1976; Kraus, Huang, & Keltner, in press). However, in daily interactions it is often the case that we encounter people we are not used to touch. Hence, there are situations in which touch actually can be perceived as uncomfortable and makes us feel uneasy. In fact, especially high status persons often engage in the act of touching others on the shoulder as a way to communicate their dominant position (Hall, 1996), which may result in an increased feeling of uneasiness. Indeed, Major and Heslin (1982) indicated that interpersonal touch can also invoke perceptions of dominance and submissiveness in observers. The present article expands these findings by examining the *receiver's perceptions* of interpersonal touch on the shoulder and their effect on cooperative interactions between the people involved. In Experiment 1, participants who read a story of a real-life situation of a meeting at work, reported higher levels of submissiveness, dominance and perceived self-assurance of the other person when they were touched on the shoulder by an unknown colleague than when touch was absent. In Experiment 2, we examined the effect of interpersonal touch on the shoulder on cooperative interactions between the people involved. In contrast with previous research (e.g. Kurzban, 2001), our findings show that interpersonal touch on the shoulder actually decreased receiver's helping behavior towards the person invoking the touch. Experiment 3 examined whether the quality of the relationship between the persons involved had an impact on the receiver's feelings and perceptions invoked by interpersonal touch on the shoulder. Hence, as argued above, touch is highly personal and being touched by a person familiar to us is less threatening than if a stranger would enter our personal space by touching. In contrast with Experiment 1, interpersonal touch on the shoulder invoked feelings in the receiver that were positive in nature. That is, participants indicated that they perceived the other as more supportive when they received a nod on the shoulder by their colleague than when interpersonal touch was absent. While these findings indicate that perceptions and feelings invoked by interpersonal touch can change with the quality of the relationship between the people involved, this conclusion did not hold for perceived self-assurance of the person invoking the touch. Both participants in Experiment 1 and

participants in Experiment 3 perceived their colleague as more self-assured when they received a nod on the shoulder than when touch was absent. This suggests that regardless of the quality of the relationship, touching others is a statement of self-assurance and self-regard.

Theoretical implications

Touch. Past research on touch has shown that interpersonal touch often has a positive effect on people's interactions. Guéguen (2004), for example, showed that when a teacher touched a random student on the forearm during class, this increased the likelihood that this student volunteered to demonstrate the solution of an exercise on the blackboard. While the majority of research focussed on different positive outcomes, interpersonal touch can also be perceived as a negative event. That is, Major and Heslin (1982) showed that observers perceived the person invoking the touch as more dominant and the receiver as more submissive. The present research expands these findings to the *receiver's perceptions* of interpersonal touch on the shoulder (Experiment 1) and showed that interpersonal touch can also have a negative impact on people's cooperative interactions (Experiment 2). That is, interpersonal touch between participants who did not know each other beforehand, invoked feelings of dominance and submissiveness in the receiver and decreased helping behavior towards the person invoking the touch. Finally, in Experiment 3 we expanded the findings of Experiment 1 and showed that a different social relationship between the people involved invokes other outcomes of interpersonal touch. That is, when interpersonal touch on the shoulder occurred between two familiar colleagues this invoked feelings of support in the receiver.

Cooperation and helping behavior. In previous research, the level of cooperation and helping behavior has been shown to depend on a wide range of variables, like group size (Latané & Darley, 1968) but also the sex and the attractiveness of the persons involved (Kahn, Hottes, & Davis, 1971). Moreover, previous research on physical factors that influence cooperative interactions, have shown that interpersonal touch has a positive effect on cooperation and helping behavior in wide range of settings (e.g. Kurzban, 2001; Fisher, Rytting, & Heslin, 1976; Guéguen, 2004). In the present experiments, we expand the existing body of literature on (the effect of interpersonal touch on) cooperative interactions and show that interpersonal touch can

also decrease helping behavior between the persons involved. That is, people decreased cooperation when they were touched on the shoulder by an (up till then) unknown other than when touch was absent.

Limitations

While our findings provide substantial insights in the outcomes of interpersonal touch on the shoulder, there are some limitations which future research might address.

A first limitation of the present work is the use of a dictator game to measure cooperative interactions. Although this choice minimized the effect of possible retaliation, it also might have created a competitive social context for the people involved. As Tsjovold and Field (1983) showed that the social context of a decision plays a major role in people's interactions, it is possible that our findings cannot be expanded to a different social context. Previous research, however, showed that participants in a dictator game consequently chose the option of an equal split over the option of higher personal gains (Kahneman, Knetsch, & Thaler, 1986). As these findings indicate that possible bias of a competitive social context is rather limited, we expect to find no different outcomes in a different social context.

A second limitation of the previous experiments involves the social status of both the receiver as the person invoking the touch. In our setting, participants interacted with counterparts of an (almost) equal social status (a colleague or a fellow student). As perceived social status plays a major role in people's interactions (Hall, 1996), future research should examine the effect of status differences (both for the receiver as for the person invoking the touch) on the relationship between interpersonal touch and perceptions and behavior.

A third limitation of our setting is the quality of the relationship between the persons involved. As Experiment 1 and Experiment 3 showed that even a small change in a social relationship affects the way that interpersonal touch is experienced by the receiver, it remains possible that the social relationship between the persons involved will also influence the receiver's helping behavior. For example, Experiment 2 indicated that interpersonal touch between participants who did not know each other beforehand decreases cooperative interactions between the persons involved. Based upon our findings in Experiment 3, it seems plausible to assume that interpersonal touch

between, for example, acquaintances will have a lower negative effect (or even a positive effect) on cooperative interactions between the persons involved. Therefore, future research should further explore the role of the quality of the relationship between the people involved and examine the effect of interpersonal touch between persons with different social relationships (like friends, colleagues, members of a couple and spouses).

A fourth limitation involves the relationship between the receiver's feelings and perceptions and helping behavior towards the person invoking the touch. While the findings of Experiment 1 and Experiment 2 provide clear evidence that interpersonal touch on the shoulder (between two persons who did not know each other beforehand) invoked feelings of submissiveness and dominance in the receiver and decreased cooperative interactions between the persons involved, our findings do not provide insight in the process underlying the findings of Experiment 2. Therefore, future research should examine a possible mediation effect of these feelings and perceptions on the relationship between interpersonal touch and helping behavior.

A final limitation of the present work is that, in order to manipulate interpersonal touch, participants in the touch condition always received a nod on the shoulder by the confederate. In real-life interactions with other persons, however, people use different kinds of touch (like a handshake, a hug or a nod on the back) that may invoke different feelings and perceptions in the receiver. For example, Lee and Guerrero (2001) showed that participants who saw a videotape holding images of interpersonal touch between two co-workers, perceived touch on the cheek as more inappropriate (but also as an indication of a higher level of interpersonal attraction) than a nod on the shoulder. As different kinds of interpersonal touch invoke different perceptions in observers, they may also invoke different feelings and perceptions in the receiver and affect helping behavior towards the person invoking the touch. For example, it seems plausible to assume that interpersonal touch on the knee, in comparison to a nod on the shoulder, will be perceived as more intimate and dominant, and will even further decrease cooperative interactions between the persons involved. Future research should address this limitation and examine the perceptions of different kinds of interpersonal touch and their influence on cooperative behavior.

Conclusion

In conclusion, the present research argued and demonstrated that touching others has a significant impact on people's perceptions, feelings and behavior. It is quite astonishing to see that the subtle act of touching someone on the shoulder has such an important influence on people's relation and interaction. In fact, our research showed that at times interpersonal touch on the shoulder can be perceived as highly negative, probably resulting in a rather literal "final touch" for the relationship.

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