sonal warmth refers to a set of behaviours and attitudes that actively give positive responses to others (Bayes, 1972), such as liking and caring, being helpful and trustworthy, and making an effort to understand others. Conversely, interpersonal coldness refers to expressions of ill intent in interactions, including unfriendliness, untrustworthiness, and insincerity (Fiske, Cuddy, & Glick, 2007).

The physical sensation of warmth or coldness substantially influences interpersonal judgement (Asch, 1946; Kelley, 1950; Widmeyer & Loy, 1988). Asch (1946) found that the description of a target person as 'warm' or 'cold' greatly affected the formation of a subject's impression of that person, such that a 'warm' person was more likely to be seen as possessing good traits such as happiness, good nature, and caring, whereas a 'cold' person was more likely to be seen as unhappy, irritable, and selfish.

Embodied cognition theory has helped to shed light on people's use of terms describing physical temperature ('warm' and 'cold') to indicate interpersonal outcomes (Williams, Huang, & Bargh, 2009). This theory suggests that cognitive representations and operations are fundamentally grounded in basic sensory experiences and that information from sensory experiences is stored and used later in high-level cognition to construct abstract concepts and processes (Barsalou, 2008; Niedenthal, Barsalou, Winkielman, Krauth-Gruber, & Ric, 2005). In terms of interpersonal processes, Lakoff and Johnson (1999) suggested that close physical contacts between infants and caregivers generate infants' sensation of warmth and provide them with sustenance as well as care and love. This co-experience of physical warmth and affection leads to a link between the two, such that positive interpersonal outcome is cognitively represented in terms of physical

cognitions and behaviours than did a neutral temperature (sitting on an unheated pad) (Fay & Maner, 2014).

These studies suggest that the relationship between physical temperature and interpersonal outcomes is inconsistent. To our knowledge, however, little effort has been made to reconcile this inconsistency. With the current study, we aim to fill this research gap. We argue that the well-documented link between physical warmth and interpersonal warmth tells only half of the story and hypothesized that physical *coldness* could promote interpersonal warmth under certain circumstances. To explain our hypothesis, we introduce the crucial role of social context in the relationship between physical temperature and interpersonal outcomes.

Contexts are the circumstances or events that form the environment within which something exists or takes place, and have been demonstrated to have great impacts on individuals' behaviours. Specifically, social context can be defined as an environment or background containing social cues. The influence of social context on cognition and behaviour is a long-standing truism (Taylor, 1998). Social contexts can provide critical information that individuals may use to interpret others and regulate themselves, and evidence supports the moderating role of social contexts in affecting a variety of phenomena, including self-evaluation (Henderson-King, Henderson-King, & Hoffmann, 2001), in-group stereotypes (Rijswijk, Haslam, & Ellemers, 2006), and decision-making (Dreber, Ellingsen, Johannesson, & Rand, 2012).

In the current study, we proposed that social context would affect the relationship between experiences of temperature and interpersonal outcomes. As discussed above, interpersonal warmth/coldness is grounded in embodied sensations of physical warmth/ coldness (Lakoff & Johnson, 1999; Williams *et al.*, 2009). Scholars have suggested that the embodied representation of concepts is context dependent (Barsalou, 2003; Kiefer, 2005; Yeh & Barsalou, 2006), but surprisingly little is known about the role of social contexts in embodied relationships between sensory experiences and higher-level, social-related psychological processes.

We argue that physical temperature alone is far from sufficient to determine interpersonal outcomes. For example, physical warmth is co-experienced with close contact and social proximity (Freddi, Tessier, Lacrampe, & Dru, 2013; IJzerman & Semin, 2010), but recent studies of the moderating role of attachment styles have suggested that close contact and social proximity do not necessarily lead to interpersonal warmth. The positive link between physical and interpersonal warmth was found to be significant only for those with secure attachment styles (Fay & Maner, 2012; IJzerman *et al.*, 2013). Researchers have suggested that securely attached individuals learn to associate feelings of warmth with affection, but that those who are insecurely attached lack this association because it has not been enforced by their caregivers. Based on these findings regarding the development of fundamental embodied relations early in life, we argue that the association between the concrete sensory experience of physical warmth and interpersonal outcomes is more complex than generally believed. Specifically, informational cues in specific social contexts may be detected and serve as an important reference influencing how individuals associate physical stimuli with interpersonal processes.

We hypothesized that physical warmth would promote interpersonal warmth and that physical coldness would hinder interpersonal warmth in *positive* social contexts. In *negative* social contexts, we hypothesized the converse: Physical warmth would hinder

interpersonal warmth and physical coldness would promote interpersonal warmth. A body of theoretical and empirical evidence supports these hypotheses.

Positive social contexts, such as cooperation or helping contexts, include prosocial cues. Under such circumstances, because the experience of physical warmth is associated with feelings of close contact with others (Freddi *et al.*, 2013; IJzerman & Semin, 2010), it might result in more positive interpersonal outcomes, that is more interpersonal warmth. In contrast, because the experience of physical coldness is associated with distance from others, it might discourage a person from approaching others with prosocial behaviours and thereby resulting in less interpersonal warmth.

Negative social contexts, such as inconsiderate or even hostile contexts, include interpersonal conflict. Research supports the classification of anger, a typical emotion under negative social contexts, as approach-related affect (Bodenhausen, Sheppard, & Kramer, 1994; Carver & Harmon-Jones, 2009; Harmon-Jones, 2003), suggesting that anger means that a person will approach others with hostile motivation. A recent study (Xiao & Van Bavel, 2012) linked spatial proximity to threat by showing that participants perceived 'enemies' as closer when the 'enemies' posed a potential threat. These findings all support the relationship of negative perceptions, emotions, and behaviours triggered by negative social contexts with social and physical closeness. As the experience of physical warmth is associated with proximity to others, it might heighten feelings of conflict in negative social contexts, leading to more interpersonal disharmony and negative interpersonal outcomes. In contrast, the experience of physical coldness is associated with distance, causing people to 'cool down' and avoid such hostile interactions, thereby blocking further interpersonal conflict and promoting interpersonal harmony and positive interpersonal outcomes.

Also, some researchers (Lakoff & Johnson, 1999) have proposed that the conceptualization of social relationships according to physical experiences of temperature is related to the connection between bodies. People first co-experience situations in which physical experiences are tied to more abstract representations of affection, which are later co-expressed in metaphors (e.g., 'a cold fish' or 'a warm embrace') when explicit reflection or communication about these social relations is required. However, people also use metaphors such as 'cold reason' and 'hot emotion'. Consistent with our argument, the 'cold fish/warm embrace' system may be activated in a *positive* social context, whereas the 'cold reason/hot emotion' system may be activated in a *negative* social context.

Our argument parallels the classic appraisal approach to emotion (Schacher, 1964; Schacher & Singer, 1962), which holds that stimuli generate only dispersive neural/physiological arousal and that cognition in specific contexts, or appraisals, influences the interpretation of those stimuli and the corresponding emotions that they evoke (Lazarus, 1982). Similarly, we suggested that the meaning of physical sensations can be ambiguous and that physical warmth/coldness induced by such contacts generates only dispersive physiological arousal, which is interpreted based on specific social contexts. Thus, whether and how physical warmth/coldness leads to specific interpersonal behaviours (warmth or coldness) is influenced by social context.

The results of some empirical studies support these propositions. In his classic experiments, Asch (1946) showed that the semantic meanings of 'warm' were highly dependent on other descriptive adjectives, which served as a frame in which the trait of 'warm' was embedded. He found that when 'warm' was used in combination with words expressing lower social position ('obedient', 'weak', 'shallow', 'unambitious', and 'vain') to describe a target person, participants would interpret 'warm' as a trait 'compromise' of the

target person, instead of a good personality trait. According to Asch's findings, the quality of warmth can thus contribute to the formation of a good or bad impression, depending on the target person's possession of other positive or negative characteristics. In a study of retaliation in baseball games, the probability that a pitcher would hit an opposing batter increased significantly with temperature only when the pitcher's teammate had been hit by a pitch earlier in the game; when no teammate had been hit earlier in the game, this probability was only very weakly related to temperature (Larrick, Timmerman, Carton, & Abrevaya, 2011). We argue that the hitting of a teammate caused the pitcher to perceive the atmosphere of the match as hostile and that higher temperature led to more violent behaviour (i.e., less interpersonal warmth) in this negative social context.

Similarly, context moderated the effect of temperature at the semantic level. Rule, Taylor, and Dobbs (1987) found that when asked to complete aggression-relevant story stems, participants in hot-temperature condition used more negative elements than did participants in the normal-temperature condition. But when completing aggression-irrelevant (neutral context) story stems, there was no significant difference between participants in the two temperature conditions. A recent study also showed that when primed with physical warmth, participants who thought that they had been rejected previously displayed more aggressive cognitions and behaviours than those who had not been rejected (Fay & Maner, 2014).

To summarize, we propose that the meaning of physical warmth/coldness and its association with physical closeness/distance may vary by social context. In cooperative or helpful contexts, the experience of warmth is positive and the experience of coldness is negative. In inconsiderate or hostile social contexts, the experience of warmth may be negative and the experience of coldness may be positive.

The current studies were conducted to provide a more complete understanding of the relationship between the experience of physical warmth/coldness and interpersonal outcomes. We focused on the effect of physical temperature perceived by mere contact using manipulation methods similar to those used in Williams and Bargh (2008) experiments, in which physical coldness/warmth conditions were primed by asking participants to briefly hold or touch cold/warm objects. In previous research linking the concrete experience of physical warmth with interpersonal warmth, experimental scenarios and tasks, such as reading a set of positive characteristics ('intelligent', 'skilful', 'industrious', 'determined', 'practical', and 'cautious') about a target person (Williams & Bargh, 2008), deciding whether to choose a gift to 'treat a friend' (Williams & Bargh, 2008), or investing money with a 'trustee' (Kang *et al.*, 2011), unintentionally created positive social contexts. Thus, the findings of these studies tell only half of the story, as the effects of physical temperature in negative social contexts were not considered. Our study attempted to fill this research gap.

We conducted three experiments to test our hypotheses that participants experiencing physical coldness would show less interpersonal warmth in a positive social context and that the opposite would occur in a negative social context. In Experiment 1, we created a scenario suggesting a negative social context and examined whether the experience of physical coldness (vs. warmth) reduced interpersonal warmth under these conditions. In Experiment 2, we manipulated temperature (warm vs. cold) and social context (positive vs. negative) and tested their interaction effects on interpersonal warmth. In Experiment 3, we manipulated temperature (warm, cold, and room

temperature) and social context (positive vs. negative) and used a hostility-related indicator (interpersonal coldness) as the dependent variable. For all studies, the materials were in Chinese and the text presented here is translated.

EXPERIMENT 1
Method

Fifty-four university students (29 men, 25 women; *M* age = 22.17 years) from a university in north China participated in this experiment in exchange for US$1.50 compensation each. They were randomly assigned to the cold and warm temperature groups.

For the cold group, an electronic heating pad was placed in the refrigerator for 30 min; for the warm group, the pad was plugged in ('high' heat setting) for 3 min, then unplugged. A research assistant prepared the pad, put it in a thick-walled box, and handed the box to the experimenter. The experimenter gave the box to each participant and asked him/her to open it and touch and observe the pad inside. This procedure ensured that the experimenter was blinded to participants' sensations of physical warmth/coldness. After touching and observing the pad, participants were asked to complete a filler task in which they rated the pad by means of a questionnaire with 10 adjective pairs (good/bad, high/low quality, like/dislike, first class/low grade, pleasant/unpleasant, attractive/unattractive, interesting/uninteresting, beautiful/ugly, comfortable/uncomfortable to touch, cheap/expensive) on a 7-point bipolar scale. The results showed no significant difference in the evaluation of warm and cold pads for any adjective pair (all $p > .05$, $t = 0.09$–1.01).

After touching and evaluating the pad, participants were presented with the following scenario: 'You and your classmate A attended a course that required a term paper. Upon A's request, you gave your paper to A for reference. However, the professor later told you that your paper was identical to A's and asked you to rewrite it or you would receive no credit for the course.' Participants were then asked to rate their willingness to forgive A on a 10-point scale (1 = *certainly not*, 10 = *certainly*).

Results and discussion

All analyses controlled for gender, which has been shown to influence interpersonal processes (Frieze & Li, 2010), but no significant gender difference was detected in any experiment reported here. The removal of the gender covariate from analyses did not substantially alter the results. Thus, this variable is not discussed in subsequent text.

An independent-samples *t*-test showed that physical temperature significantly affected participants' willingness to forgive classmate A in the study scenario, $t(52) = 2.46$, $p = .017$, Cohen's $d = .663$. Participants in the cold temperature group were more willing to forgive A ($M = 8.37$, $SD = 2.27$) than were those in the warm group ($M = 6.78$, $SD = 2.49$).

In previous studies of the relationship between physical and interpersonal warmth, scenarios presented to participants were generally positive (lacking elements of harm or hostility): Dependent variables included treating oneself or a friend with a gift (Williams & Bargh, 2008) and the amount of money invested in a trust game (Kang *et al.*, 2011). In

contrast, the scenario adopted in the current study created a negative social context incorporating components of cheating, harm, and unjust treatment of the participant because of a target person's dishonest behaviour. In this negative social context, physical coldness led to more forgiveness of the target person than did physical warmth; thus, cold temperature was associated with warmer interpersonal outcomes.

Three limitations of Experiment 1 should be mentioned. First, it used only a negative social context, preventing examination of the interaction effect of temperature and social context on interpersonal outcomes. Second, on the 10-point scale that was used to measure forgiveness, a larger number indicated more willingness to forgive (interpersonal warmth) and a smaller number indicated interpersonal coldness. We cannot fully eliminate the explanation that participants primed with physical coldness preferred to choose a larger number, whereas those primed with physical warmth tended to choose a smaller number. Third, Experiment 1 did not include a manipulation check of physical warmth/coldness.

EXPERIMENT 2

Experiment 2 was designed to overcome limitations of Experiment 1. We manipulated social context and temperature to test the interaction effect of these two variables. We also counterbalanced the rating scale so that larger and smaller numbers indicated warmer interpersonal responses in half of the scales each to control for the potential confounding effect of participants' tendency to choose smaller/larger numbers. Additionally, we included a temperature manipulation check.

Method

Sixty university students (28 men, 32 women; M age = 22.20 years) from a university in north China participated in this experiment in exchange for US\$1.50 compensation each. They were randomly assigned to four groups according to a 2 (temperature: Cold vs. warm) × 2 (social context: Positive vs. negative) between-subjects design.

Physical temperature was manipulated in a manner similar to that described for the experiment conducted by Williams and Bargh (2008). For the cold groups, a cup was placed in the refrigerator for 30 min; for the warm groups, a cup was filled with hot water and emptied after 3 min. The experimenter was blinded to cup temperature in the same way as in experiment 1.

As in Experiment 1, each participant was presented with a cup and asked to touch and observe it, then complete the same filler task. A previous pilot study ($n = 36$) demonstrated no significant difference in the evaluation of warm and cold cups for any adjective pair used in the evaluation task (all $p > .05$, $t = 0.04$–1.13).

After touching and evaluating the cups, participants in the positive social context groups read the following scenario: 'A deliveryman gave you a package and kindly wiped dirt from the wrapping.' Participants in the negative social context groups read the following scenario: 'A deliveryman gave you a package and accidentally tore the wrapping.' Then, all participants read the following text: 'After delivering the package,

the individual asked for 5 min of your time to recommend another product to you.' Participants were asked to rate the possibility they would listen to the sales promotion (the dependent variable) on a 10-point scale. Half of the scales were formatted so that larger numbers indicated warmer interpersonal behaviour (1 = *certainly refuse*, 10 = *certainly accept*), and the other half were anchored using the opposite rating format (1 = *certainly accept*, 10 = *certainly refuse*).

Participants were then asked to rate their satisfaction with the deliveryman's service on a 10-point scale (1 = *very satisfied*, 10 = *very dissatisfied*). Participants in the positive social context groups showed greater satisfaction ($M = 2.50, SD = 1.31$) than did those in the negative social context groups, $M = 6.90$, $SD = 1.94$; $t(58) = -10.32$, $p < .001$, demonstrating that context manipulation was successful.

Finally, to check temperature manipulation, we asked participants to rate the temperature of the cup that they had just touched and evaluated (1 = *very cold*, 10 = *very warm*). The ratings of participants in the warm groups ($M = 8.23$, $SD = 1.65$) were significantly higher than those of participants in the cold groups, $M = 2.50$, $SD = 2.18$; $t(58) = 11.48$, $p < .001$, demonstrating that temperature manipulation was successful.

Results and discussion

Responses structured by the scale on which smaller numbers indicated warmer interpersonal behaviour were reverse-coded to match those that were anchored in the opposite manner. Scale direction had no significant effect, $F(1,54) = 0.04$, $p = .835$, and the removal of the scale direction covariate from the model did not substantially alter the results. Thus, this variable is not discussed further.

Analysis of variance (ANOVA) showed that the main effect of physical temperature was insignificant, $F(1,56) = 0.22$, $p = .642$, partial $\eta^2 = .004$, but that of social context was significant, $F(1,56) = 112.00$, $p < .001$, partial $\eta^2 = .667$. Most importantly, the interaction effect of physical temperature and social context was significant, $F(1,56) = 10.68$, $p = .002$, partial $\eta^2 = .160$. In the negative social context (in which the deliveryman provided poor service), participants in the physical warmth group were less willing to listen to the sales promotion ($M = 2.53$, $SD = 2.17$) than were those in the physical coldness group, $M = 4.13$, $SD = 1.25$; $t(28) = -2.48$, $p = .019$. Conversely, in the positive social context (in which the deliveryman provided good service), participants in the physical coldness group were less willing to listen to the sales promotion ($M = 7.27$, $SD = 1.98$) than were those in the physical warmth group, $M = 8.47$, $SD = 0.92$; $t(28) = 2.13$, $p = .042$.

The finding that social context had a significant main effect on interpersonal outcomes is in line with the argument from social exchange theory (Blau, 1964) that individuals are willing to return favours to maintain balanced relationships and equalize exchange (Gouldner, 1960). In Experiment 2, the quality of service offered by the deliveryman greatly influenced participants' willingness to do a favour for him.

More importantly, we found no significant main effect of physical warmth/coldness, suggesting that physical temperature alone cannot determine interpersonal warmth. We found a significant interaction effect between physical temperature and social context, showing that the relationship between physical and interpersonal warmth differed according to social context. The findings of Experiment 2 are consistent with our hypotheses that physical warmth increases interpersonal warmth in a positive social context (in which the original interpersonal interaction contains elements of help and

consideration), whereas physical coldness increases interpersonal warmth in a negative social context (in which the original interpersonal interaction contains a careless mistake).

Several limitations of Experiment 1 and 2 should be addressed. First, neither experiment included a room-temperature control group, which would have served as a baseline reference for interpersonal outcomes for comparison of the effects of physical warmth/coldness and testing of the directionality of these effects. Second, participants in Experiments 1 and 2 were asked to touch hot/cold objects before the social context scenarios were introduced, which did not allow direct testing of the hypothesis that social context would influence individuals' interpretation of stimuli. To address this limitation, social contexts should be introduced prior to exposure to stimuli. Third, the dependent variables in Experiments 1 (willingness to forgive) and 2 (willingness to help) were positive interpersonal outcomes. A hostility-related dependent variable is needed to fully test the interaction of temperature and context on interpersonal outcomes.

EXPERIMENT 3

Experiment 3 was designed to overcome the limitations mentioned above. Because no significant effect of scale direction was found in Experiment 2, we measured the dependent variable using a unidirectional rating scale in experiment 3.

Method

One hundred and fifty university students (54 men, 96 women; *M* age = 25.01 years) from a university in north China participated in this experiment in exchange for US$2.00 compensation each. They were randomly assigned to six groups according to a 3 (temperature: Cold vs. warm vs. room) × 2 (social context: Positive vs. negative) between-subjects design.

Temperature was manipulated as in Experiment 2, with addition of room-temperature (~68°F or 20°C) cups (the normal-temperature condition). The experimenter was blinded to cup temperature in the same way as in Experiments 1 and 2.

Participants in the positive social context groups first read the following scenario: 'You went to claim a parcel for your friend, and there was a nice orderly queue of people waiting for their parcels. The express-post company's staff members were friendly and helpful, and they worked very efficiently'. Participants in the negative social context groups read the following scenario: 'You went to claim a parcel for your friend, and there was a disorderly queue of people waiting for their parcels. The express-post company's staff members were unfriendly and careless, and they worked very inefficiently'. To check the manipulation of social context, all participants were then asked to rate the valence of the scenario (1 = *very negative*, 7 = *very positive*). Participants in the positive social context groups (*M* = 6.41, *SD* = 0.77) rated the situation significantly more positive than did those in the negative social context groups, *M* = 2.59, *SD* = 0.86; *t*(148) = 28.73, *p* < .001, demonstrating that context manipulation was successful.

After reading and rating the scenarios, participants were asked to open the box that the experimenter handed to them and to examine the cup within it carefully by observing and touching it. To make this task a natural part of the scenario, we told participants to imagine that the cup was the object contained within the parcel they had claimed. This process lasted for 5 min at the least. They were then asked to evaluate the cup using the same questionnaire as in Experiment 2. Analysis demonstrated no significant difference in evaluations of cups at different levels of temperature for any adjective pair (all $p > .05$, $t = 0.06-1.19$).

After touching and evaluating the cups, all participants read the following scenario: 'You told your friend that you had claimed the parcel and there was a cup in it, but your friend told you that the parcel should contain both a cup and a spoon. So now the spoon is missing'. Participants were then asked to rate the likelihood that they would register a

physical coldness group (M = 5.24, SD = 1.54) were more likely to make a complaint than were those in the control group, $t(48)$ = 3.03, p = .004.

The results of Experiment 3 replicated those of Experiment 2. We found significant interactive and main effects of social context, but no significant main effect of temperature. More importantly, Experiment 3 revealed significant differences from the control (room temperature) group in the interpersonal outcomes of physical warmth/coldness in positive and negative social contexts. Use of the hostility-related dependent variable (likelihood of making a complaint) provided support for our hypotheses: Physical warmth reduced the likelihood that participants would make a complaint and physical coldness increased this likelihood in the positive social context, whereas physical warmth increased the likelihood of making a complaint and physical coldness reduced this likelihood in the negative social context. In accordance with previous research (Fay & Maner, 2014), we also found that temperature had no effect on affect and that differences in hostile responses were not due to affect.

GENERAL DISCUSSION

This series of three experiments revealed the 'warm' side of physical coldness in a negative social context. Specifically, we found that those experiencing physical coldness were more willing to forgive a classmate's dishonest behaviour (Experiment 1). In Experiment 2, which involved the manipulation of social context and physical temperature, we found that these two variables influenced interpersonal outcomes interactively: After a deliveryman's considerate behaviour, participants experiencing physical warmth were more likely than those experiencing physical coldness to do a favour for him; when the deliveryman made a mistake, however, participants experiencing physical coldness were more likely than those experiencing physical warmth to do a favour for him. The results of Experiment 3, in which a control temperature group and a hostility-related dependent variable were used, replicated those of Experiment 2: In a pleasant queue, participants touching cold objects were more likely to complain and those touching warm objects were less likely to complain than were those in the control group; in an annoying queue, this pattern was completely reversed. In sum, we showed that the relationship between physical warmth/coldness and interpersonal outcomes is highly dependent on social context.

The current research contributes to the existing literature in several important ways. First, it challenges the well-documented link between physical and interpersonal warmth by providing evidence that physical warmth can generate interpersonal coldness in negative social context. As discussed above, previous research (Kang *et al.*, 2011; Williams & Bargh, 2008) linking concrete experiences of physical temperature with abstract interpersonal processes has largely ignored the context in which the abstract process is grounded in sensory experience. However, context is important because no interpersonal process takes place in a vacuum. The characteristics and perceived attitude of the other party in an interpersonal relationship, as well as previous interaction between parties, form the background or environment of the interpersonal process, that is the social context. To better interact with other people, the provision of appropriate responses based on different social contexts, rather than simple coding of the properties of the present encounter, is adaptively beneficial. Therefore, the valence of social contexts helps to determine how physical warmth/coldness relates to interpersonal warmth/coldness.

One limitation of the current research is that the experiments did not involve real interpersonal interactions; instead, we asked participants to *imagine* 'a classmate', 'a deliveryman', or 'an express-post company' in the respective scenarios, and then measured their *willingness* to forgive or help the target person or to make a complaint about a parcel. Although this methodological approach has been used widely in social psychology research, actual behaviour in interpersonal interactions, such as an actual choice of gift (Williams & Bargh, 2008) or investment of money (Kang *et al.*, 2011), is a better indicator of interpersonal outcomes.

As the current research revealed the 'warm' side of physical coldness for the first time, we call for more attention to this line of research. Furthermore, by demonstrating that the impact of physical warmth/coldness on interpersonal outcomes varies according to social context, the current research provides a valuable springboard for the investigation of potential moderating factors on the relationships between other physical experiences and high-level psychological processes. Because the relationships between sensory experiences and high-level psychological processes vary under different social circumstances, this line of future research can be expected to reveal previously unnoticed links and elaborate on well-demonstrated findings regarding embodiment.

C

The current study showed that the effect of physically experienced temperature on interpersonal outcomes is dependent on social context. Physical experience leads to physiological arousal, and the social context determines how this arousal relates to a particular interpersonal outcome. In positive social contexts, physical warmth increases interpersonal warmth and physical coldness reduces interpersonal warmth; in negative social contexts, these relationships are reversed. By introducing the role of social context in the grounding of abstract interpersonal processes in concrete physical experiences, we believe that our findings shed light on the broader perspective of embodied cognition.

Acknowledgements

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