Poster

Come Together! Light, Temperature, and Social Behavior

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Aspects of the physical environment fundamentally influence social perception and behavior by evoking bodily and perceptual experiences that signal social distance or proximity and can trigger compensatory behavior (Bargh & Shalev, 2012; IJzerman & Semin, 2009; Kolb, Gockel, & Werth, 2012; Williams & Bargh, 2008). However, most research focuses on a single ambient condition and thus neglects the interaction among them. The current study investigated the combined effects of light and temperature on social motivation, perception, and behavior. Based on previous findings indicating that darkness (Baron, Rea, & Daniels, 1992; Gergen, Gergen, & Barton, 1973; Miwa & Hanyu, 2006) and cold temperatures (IJzerman & Semin, 2009; Kolb, Gockel, & Werth, 2012) promote strivings for social proximity, we expected that people sitting in a cold, dim room would be particularly motivated to get into contact with other individuals, perceive them as more attractive, and show affiliative behavior.

One-hundred forty eight participants worked for 1.5 h in one of four ambient conditions differing in illuminance (150 vs. 1500 lux) and room temperature (20 vs. 26° C). During 30 minutes adaptation time, participants answered various personality questionnaires (e.g., trait affiliation, trait loneliness, BIG5). Afterwards, participants assessed their current social motivation: perceived loneliness and openness for contact (adapted from Nitsch, 1976), hope for affiliation and fear of rejection (Multi-Motive Grid, Schmalt, Sokolowski, & Langens, 2000). Participants then saw four fictive Facebook profiles and rated the owner's warmth and competence. Finally, participants were asked to imagine going abroad and having a fellow student who would help them during the first days. Participants then had the possibility to write a Facebook message to the fellow student. The length of the message measured participants' self disclosure (Miwa & Hanyu, 2006).

We controlled for trait affiliation, trait loneliness, age, and gender in all analyses. As expected, illuminance and temperature influenced participants' social motivation. Participants in the dim room reported less fear for rejection than participants in the brightly lit room, $F(1, 139) = 4.27$, $p = .046$, $\eta_p^2 = .03$. Additionally, participants in the cold room felt more lonely and were more open to contact than participants in the warm room, Fs$(1, 139) > 5.11$, $p < .025$, $\eta_p^2 > .04$. Feeling lonely without fear of rejection, participants in the dim and cold room rated the fictive Facebook users more positively (competent and warm) than participants in the other conditions, $F(4, 131) = 2.61$, $p = .038$, $\eta_p^2 = .07$. This suggests that participants in the dim and cold room are most interested in getting into contact with others individuals. In contrast, not feeling lonely and fearing rejection, participants in the bright and warm room wrote significantly shorter messages to their fellow students than those in the other conditions, $F(1, 139) = 4.54$, $p = .035$, $\eta_p^2 = .03$.

This study demonstrates that both light and temperature influence strivings for social proximity. Specifically, a cold, dim room triggers motivation to get into contact and promotes a positive evaluation of other individuals, whereas the combination of bright light and warmth reduced participants' self-disclosure. Overall, the current study is in line with the notion of embodiment and grounded cognition (Barsalou, 2008) and points out the importance of investigating the combined effects of ambient conditions.