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Is your mood more contagious if you are likeable? The role of liking in the social induction of affect

Abstract: *In the present study, we explored the role of liking in the social induction of affect. Dispositional likeability was manipulated by written reports describing a sender as a likeable or dislikeable character. Afterwards participants watched short videos presenting the sender displaying happy or sad emotional expressions. We expected that exposure to the likeable sender would lead to reactions concordant with his emotional expression (assimilation), whereas exposure to the dislikeable sender would result in discordant reactions (contrast). The results indicated that dispositional likeability influenced the social induction of affect when the sender expressed positive emotions. Moreover, liking mediated the effects of the happy sender's dispositional likeability on participants' affective state. Exposure to the sad sender, however, led to assimilation regardless of the sender's dispositional likeability.*

Key words: *affect contagion, liking, similarity, socially induced affect*

Our feelings have long been known to be socially induced, at least in part (Hatfield, Cacioppo, & Rapson, 1994; McIntosh, Druckman, & Zajonc, 1994). This social induction of affect has been often labelled as emotional, mood or affect contagion and defined as an automatic and unconscious transfer of feelings from one person (a sender) to another (a receiver; Hatfield et al., 1994; Neumann & Strack, 2000; Paukert, Pettit, & Amacker, 2008). According to the theory that dates back more than a century (Lipps, 1907; see also: Hatfield et al., 1994), affect contagion involves two mechanisms. At first, the receiver imitates the emotional expression of the sender – a phenomenon known as emotional mimicry (Hatfield et al., 1994; Hess & Fischer, 2013). Then, muscle movements resulting from the imitation are translated into corresponding feelings, which is referred to as peripheral (e.g. facial, vocal, or postural) feedback (Philippot, Chapelle, & Blairy, 2002). Studies to date have confirmed that individuals report affective states that match not only their own facial or vocal expressions but also facial and vocal displays to which they have been exposed (Lundqvist & Dimberg, 1995; Neumann & Strack, 2000). Some researchers, however, have questioned the cause-and-effect relationship between emotional mimicry and affect contagion (Blairy, Herrera, & Hess, 1999; Gump & Kulik, 1996; Hess & Blairy, 2001).

Moreover, evidence is accumulating that the receiver's reactions to the sender's emotional expressions are not always concordant. Yet, despite a growing body of research addressing the social induction of affect, relatively little is known regarding the circumstances in which concordant and discordant reactions occur. It has been demonstrated, for instance, that if the interacting partners do not share group membership, compete with each other, are dissimilar, or have divergent views, the sender's expressions may produce discordant responses in the receiver. By contrast, shared group membership, friendship, cooperation, convergent views, or similarity between the sender and the receiver increase the probability of concordant reactions (Bourgeois & Hess, 1999; Epstude & Mussweiler, 2009; Kimura, Daibo, & Yogo, 2008; Lanzetta & Englis, 1989; McHugo, Lanzetta, Sullivan, Masters, & Englis, 1985; Van der Schalk, Fischer, Doosje, Wigboldus, Hawk, Rotteveel, & Hess, 2011). This suggests that the social induction of affect is not a simple reaction to mere perception of someone else's emotional expression; it rather involves the interpretation of emotional signals in a specific social context (Hess & Fischer, 2013). Therefore, to understand the mechanisms underlying the social induction of affect it is essential to take into account the relationship between the interacting partners (Fischer & Manstead, 2008; Fischer &

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Van Kleef, 2010). More specifically, assuming that factors such as similarity or shared attitudes are positively related to liking (Byrne, 1971; Tenney, Turkheimer, & Oltmanns, 2009), the induction of concordant affective states should be more probable when the receiver *likes* the sender, whereas interacting with a *disliked* person should produce the opposite outcome.

Liking and the social induction of affect

The proposition that people should be prone to catching the feelings of those they like and resistant to the feelings of those they dislike is not new. In fact, liking has been extensively researched as one of the most powerful moderators of emotional mimicry (Likowski, Mühlberger, Seibt, Pauli, & Weyers, 2008; Stel, Van Baaren, Blascovich, Van Dijk, McCall, Pollmann, Van Leeuwen, Mastop, & Vonk, 2010). For instance, Likowski and colleagues (2008) demonstrated that individuals showed a stronger tendency to imitate facial emotional expressions of likeable than dislikeable characters. However, the fact that liking increases emotional mimicry does not necessarily mean that it also impacts the social induction of affect because – as we have already mentioned – emotional mimicry and affect contagion are not always shown to be casually related (Blairy et al., 1999; Gump & Kulik, 1997; Hess & Blairy, 2001). Moreover, the studies indicating that friends or in-group members converge affectively to a greater extent than strangers or out-group members offer only indirect evidence that liking plays a role in this process.

Those few studies in which the moderating role of liking in the social induction of affect was explored directly have led to inconclusive findings. Van der Schalk et al. (2011) did not confirm the moderating effects of liking on affect contagion (although they supported the relationship between liking and emotional mimicry). Other studies, on the other hand, demonstrated that participants who liked the sender caught his positive affect, whereas those who did not like him were resistant to his positive emotional expression (Wróbel, Królewski, & Czarna, 2015) or even felt opposite to him (Królewski & Wróbel, 2014).

These discrepancies may derive from the fact that the role of liking in the social induction of affect is more complex than it seems. In fact, it is difficult to say who will be liked more – a smiling out-group member or a depressed in-group member – because *liking* does not solely depend on the *dispositional likeability* of the sender. People are also liked more or less when they are displaying, respectively, positive or negative feelings (Clark & Taraban, 1991; Reis et al., 1990; Reysen, 2006). This may be even more complex when we see a sender for the first time – for instance, will we like someone who looks sad and gloomy although we have heard that this person is usually nice and friendly? Will this in turn influence the contagiousness of this person's emotional expression? Van der Schalk and colleagues (2011) found, for instance, that the role of group membership depends on whether the sender's emotional expression is positive or negative (the receivers mimicked happy expressions regardless of whether they belonged to

the sender's group or not, whereas the mimicry of fear and anger was moderated by group membership). Consequently, to clarify the role of liking in the social induction of affect it is important to determine not only to what extent liking increases the tendency to catch the sender's feelings, but also to what extent liking depends on both the sender's dispositional likeability and emotional expression.

The present study

In the present study, we focused our attention on the role of liking in the social induction of affect. Specifically, we tested whether emotions displayed by a likeable sender would be more contagious than emotions displayed by a dislikeable sender and whether liking would mediate this effect. To that aim we manipulated dispositional likability of the sender presenting him as a positive vs. negative character (i.e., possessing moral vs. immoral traits; Abele & Wojciszke, 2014; Wojciszke, 2005). Based on the previous studies on concordant and discordant reactions (Epstude & Mussweiler, 2009; Likowski et al., 2008) we expected that individuals exposed to emotional displays of a likeable character would report concordant feelings (assimilation), whereas individuals exposed to emotional displays of a dislikeable character would report discordant reactions (contrast). We also hypothesised that this effect would be mediated by liking. Moreover, following the suggestion that liking depends not only on the sender's dispositional likability (operationalized here as moral vs. immoral traits) but also on the sender's positive vs. negative emotional expression, we examined the role of these two factors in determining liking, and – consequently – the social induction of affect. In addition, relating our study to previous research that examined the moderating role of shared group membership (Epstude & Mussweiler, 2009; Van der Schalk et al., 2011) and shared personality traits (Wróbel et al., 2015), we measured perceived similarity between the sender and the receiver and tested whether its role is equivalent to the role of liking. In particular, we expected that the likeable sender would be perceived as similar whereas a dislikeable sender would be perceived as dissimilar, and consequently receivers would react with concordant affect to the expressions of the former and with discordant affect to the expressions of the latter.

Our work is an extension of previous studies because it provides further information on the role of liking in the transmission of affect. First of all, we go beyond the relationship between liking and mimicry and check whether liking also affects what the receiver *feels*. Second, having assumed that liking is not a simple function of the sender's dispositional likability (i.e., moral vs. immoral traits) but may also depend on the sender's positive vs. negative emotional expression, we measure liking directly and analyse its relation to both of these factors. Third, we include the assessment of initial mood to track the direction of changes in the receivers' affect (that is, assimilation and contrast effects).

Method

Participants and procedure

Eighty students from the University of Lodz (67 women and 13 men) aged 19 to 32 ($M = 22.36$; $SD = 1.87$) were randomly assigned to four experimental conditions: (1) a likeable sender displaying happy emotional expression ($n = 20$); (2) a likeable sender displaying sad emotional expression ($n = 20$); (3) a dislikeable sender displaying happy emotional expression ($n = 20$); (4) a dislikeable sender displaying sad emotional expression ($n = 20$)¹. They participated in experimental sessions individually.

All measures and stimuli materials were presented via computer. Upon arrival to the laboratory participants were informed that the study would concern “the accuracy of intuition”. Then they completed a short questionnaire regarding their affective state, after which the following information appeared on the screen: “In a moment you will see a man who took part in our previous experiment. This experiment concerned team work – the man and other participants worked together on a task and then they anonymously evaluated each other. The man was evaluated by the rest of the team as...” Depending on the experimental condition the information was completed with a list of six adjectives presenting the man as a likeable (*kind, helpful, friendly, reliable, decent, and trustworthy*) or dislikeable (*unkind, quarrelsome, selfish, arrogant, conceited, and nasty*) character. All adjectives referred to moral traits. They had been chosen by 9 independent judges from a list of two hundred traits generated by 8 psychology students (Kendall’s $W = .88$; $p < .001$). Their impact on dispositional likeability was confirmed in the pilot study ($N = 51$): a moral character was assessed as nicer and more amiable ($M = 72.88$; $SD = 19.36$) than an immoral character ($M = 32.67$; $SD = 18.65$), $t(51) = 7.69$; $p < .001$ (the ratings were made on a scale ranging from 0 to 100).

Having read the adjectives, participants watched one of two silent videos presenting the man who was either excited and aroused or distressed and upset. Both videos were taken from the set called the Emotionally Contagious Films-Revised. They were identical in terms of length (1 min), lighting, the man’s physical appearance and differed only in terms of his emotionally expressive behaviour. Prior to the recording the men had been primed with either positive or negative emotional photographs (taken from the International Affective Picture System; Lang, Bradley, & Cuthbert, 1999); then – during the recording – he had been instructed to look into the camera and recall either the most positive or the most negative events in his life. Eight independent judges (Kendall’s $W = .87$; $p < .001$) rated his mood as 9.13 ($SD = .93$) out of ten-point scale for the positive video, and 2.33 ($SD = .99$) out of the same scale for the negative video. Additionally, the judges assessed the authenticity of the men’s emotional expression ($M = 8.88$; $SD = .83$ and $M = 8.25$; $SD = .70$, respectively; Kendall’s $W = .79$; $p < .001$). Previous studies

confirmed that the ECFs-R successfully evoke affect (Czarna, Wróbel, Dufner, & Zeigler-Hill, 2015; Wróbel et al., 2015).

After watching the video participants rated their affective state again, assessed dispositional likeability of the man, and declared how much they liked him. We decided to measure dispositional likeability after the video to prevent participants from realizing that we expected it to influence their affective reactions to the sender’s expression. Following that, to lend credence to the cover story, they were asked to use their intuition and guess the man’s age, profession, marital status, and favourite free time activities. Finally, they assessed the degree of similarity between them and the man. At the end of the experiment, they were interviewed regarding their hypotheses and debriefed. None of them guessed what the real purpose of the experiment was.

Measures

Dispositional likeability. As a manipulation check for dispositional likeability, we used the same scale as the one applied in the pilot study. Participants rated the extent to which they found the video-taped man nice and amiable. They used a 100-millimeter scale ranging from *not at all* to *very much* ($\alpha = .84$, $M = 62.20$, $SD = 26.97$).

Liking. We also asked participants directly how much they liked the sender ($M = 57.51$, $SD = 20.86$). Their ratings were scored on a 100-millimeter scale ranging from *I don’t like him at all* to *I like him very much*.

Perceived similarity. Participants also rated the extent to which the sender was similar to them. The answers were scored on a 100-millimeter scale ranging from *not similar to me* to *similar to me* ($M = 49.23$, $SD = 27.41$).

Affective state. Prior to and after the video participants rated their affective state on a scale ranging from *a very negative mood* to *a very positive mood* (pre-test: $M = 67.91$, $SD = 19.95$; post-test: $M = 65.79$, $SD = 24.68$). In addition, they assessed the intensity of seven affective feelings (*happy, sad, angry, enthusiastic, active, depressed, and tired*) on a scale ranging from *not at all* to *very much*. These 8 items formed a common factor (with negative items reversed) and thus, were summed to create an index of general affective state (pre-test: $\alpha = .76$, $M = 66.29$, $SD = 14.56$; post-test: $\alpha = .89$, $M = 63.41$, $SD = 22.16$). Responses were made by clicking along a 100-millimeter slider bar.

Results

Manipulation check. First, we analyzed whether the sender’s dispositional likeability was affected by the way he was presented. The receivers perceived the happy sender as more likeable when he was presented as a moral character ($M = 67.18$, $SD = 29.81$) than when he was presented as an immoral character ($M = 57.23$, $SD = 23.12$). This

¹ We kept the group sizes equal to maximize the robustness of the analysis of variance (ANOVA) against violations of assumptions, i.e., normality and homogeneity of variance (Field, 2009).

difference, however, reached only marginal statistical significance, $t(78) = 1.68, p = .097$.

Liking. We then addressed the relation between liking and the sender's dispositional likeability and emotional expression. A 2 (sender's likeability: likeable vs. dislikeable) \times 2 (sender's expression: happy vs. sad) ANOVA with liking as a dependent variable, revealed significant main effects of the sender's expression, $F(1, 76) = 13.82, p < .001, \eta_p^2 = .15$, and dispositional likeability, $F(1, 76) = 4.77, p = .032, \eta_p^2 = .06$. The interaction effect was also significant, $F(1, 76) = 3.97, p = .049, \eta_p^2 = .05$ (see Figure 1). The happy sender was liked more when he was presented as a likeable character ($M = 74.00, SD = 18.55$) than when he was presented as a dislikeable character ($M = 56.55, SD = 22.27, t(76) = 2.95, p = .004, r = .32$), but no differences were found for the likeable ($M = 50.15, SD = 20.98$) versus dislikeable ($M = 49.35, SD = 10.81$) sad sender, $t(76) = .14, p = .892, r = .02$.

Perceived similarity. An analogous 2 \times 2 ANOVA with perceived similarity as dependent variable revealed a marginally significant main effect of the sender's expression, $F(1, 76) = 3.71, p = .058, \eta_p^2 = .05$. It reflected the difference between perceived similarity of the happy ($M = 54.95, SD = 28.68$) and sad ($M = 43.50, SD = 25.14$) sender. A main effect of the sender's dispositional likeability was also significant, $F(1, 76) = .32, p = .041, \eta_p^2 = .05$. Participants rated the likeable sender as more similar to them ($M = 55.40, SD = 27.62$) than the dislikeable sender ($M = 43.05, SD = 26.09$). No interaction effect was found (see Figure 2).

Social induction of affect. Next, to assess the changes in participants' affective state, we ran a 2 (time: pre-test, post-test) \times 2 (sender's expression: happy vs. sad) \times 2 (sender's dispositional likeability: likeable vs. dislikeable) mixed-model ANOVA, with time as a within-subjects factor, sender's expression and dispositional likeability as between-subjects factors, and general affective state as a dependent variable. The analysis revealed an interaction of time and the sender's expression, $F(1, 76) = 56.19, p < .001, \eta_p^2 = .43$. Participants' affective state improved after exposure to the happy sender ($M = 64.84, SD = 14.28$ vs. $M = 76.33, SD = 19.85, t[76] = 4.24, p < .001, r = .44$) and worsened after exposure to the sad sender ($M = 67.73, SD = 14.88$ vs. $M = 50.48, SD = 16.08, t[76] = -6.36, p < .001, r = .59$). The interaction between all three factors, however, reached only marginal significance, $F(1, 76) = 2.90, p = .094, \eta_p^2 = .04$. We further analyzed the effects of manipulation for each condition separately (see Figure 3). Planned contrast comparisons showed that, as expected, exposure to the likeable sender's emotional expression led to assimilation: participants' affective state improved when the likeable sender was happy ($M = 66.61, SD = 13.33$ vs. $M = 84.19, SD = 13.76, t[76] = 4.58, p < .001, r = .47$) and worsened when he was sad ($M = 67.09, SD = 17.22$ vs. $M = 49.42, SD = 17.97, t[76] = -4.61, p < .001, r = .47$). The pattern of means was different when the sender was dislikeable. Although participants' affective state worsened when the dislikeable sender was sad ($M = 68.38, SD = 12.54$ vs. $M = 51.54, SD = 14.31, t[76] = -4.39, p < .001, r = .45$), it remained unchanged when he was happy ($M = 63.06, SD = 15.30$ vs. $M = 68.48, SD = 22.12, t[76] = 1.41, p = .161, r = .16$).

Figure 1. Liking as a result of exposure to the likeable and dislikeable sender's happy or sad emotional expressions

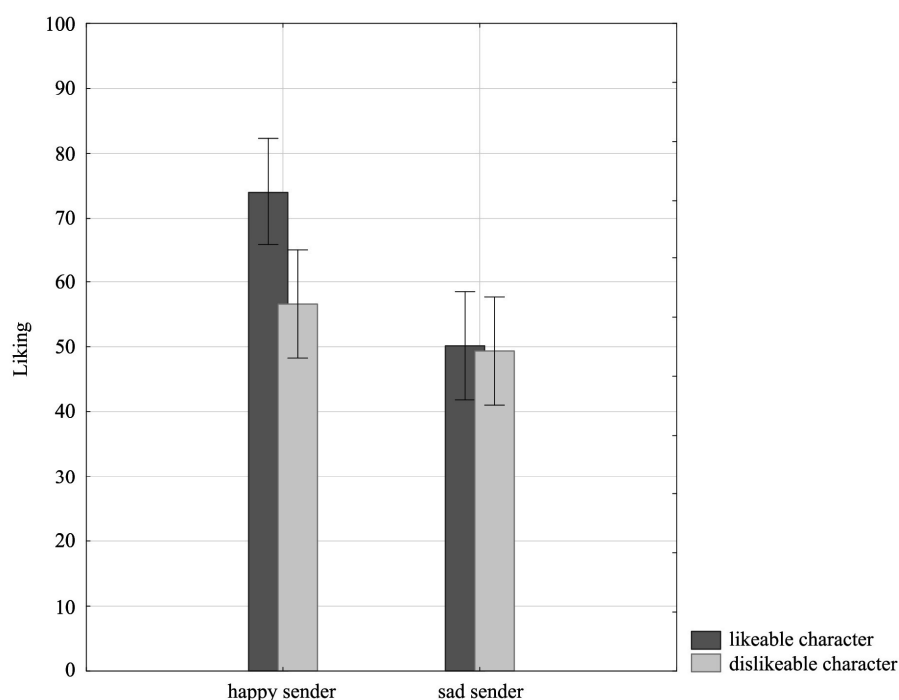
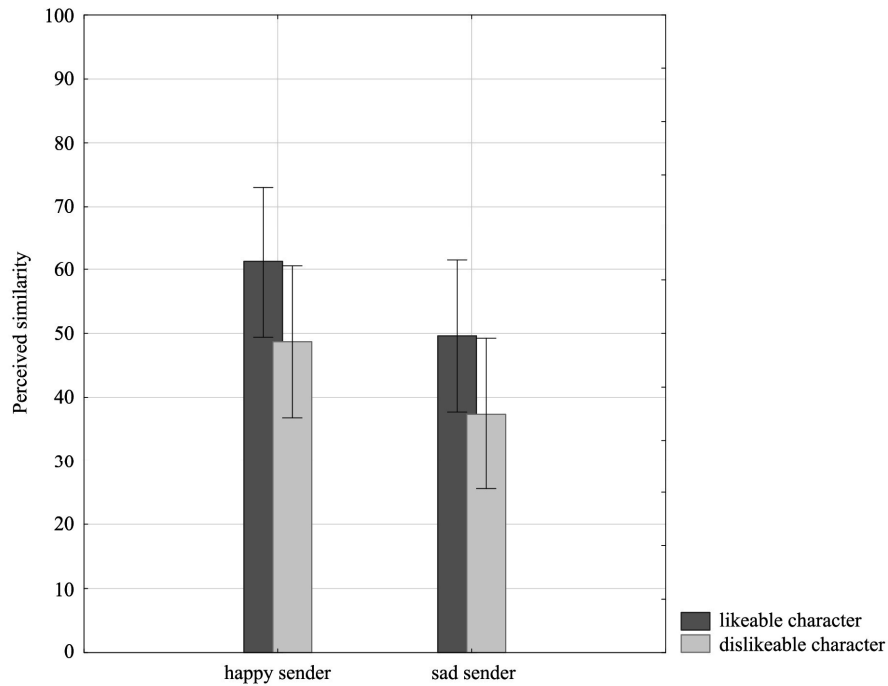


Figure 2. Perceived similarity as a result of exposure to the likeable and dislikeable sender’s happy or sad emotional expressions

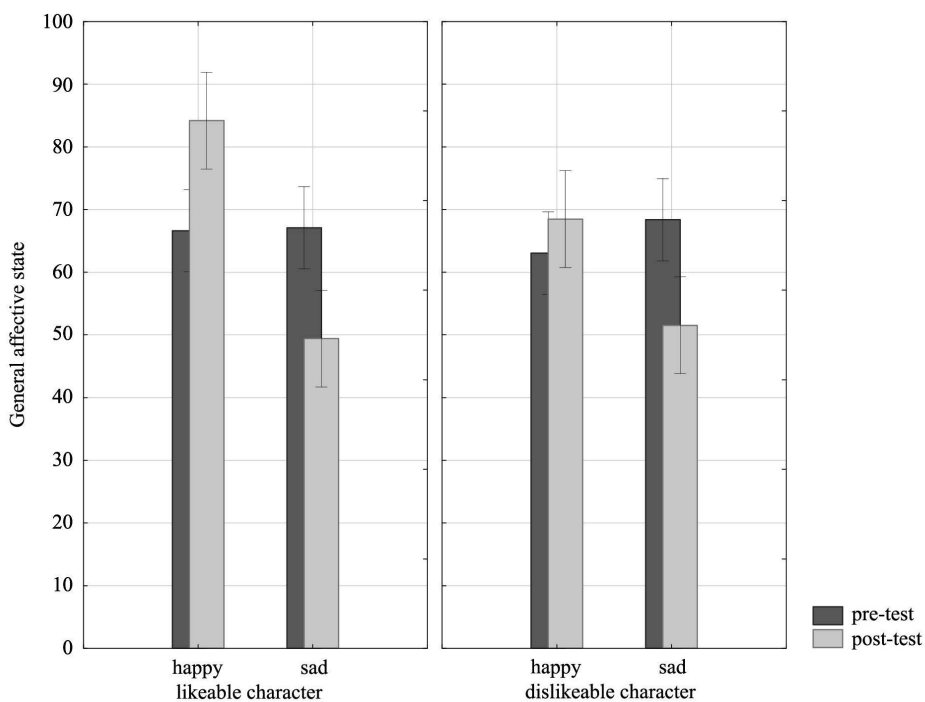


Mediators of the relationship between dispositional likeability and affect induction. Finally, we checked whether liking and perceived similarity mediated the relationship between the sender’s dispositional likeability and participants’ affective state and whether these indirect effects were moderated by the sender’s expression. To that

aim, we conducted two moderated mediation analyses with the use of the PROCESS procedure for SPSS (model 8; Hayes, 2013). The number of bootstrap samples for bias corrected confidence intervals was 10,000.

The first analysis with the sender’s dispositional likeability as an independent variable (X), general affective

Figure 3. Affective state as a result of exposure to the likeable and dislikeable sender’s happy or sad emotional expressions



state after the video (Y) as an outcome variable, liking as a mediator (M), and the sender's expression as a moderator of the effect of X on M and the effect of X on Y, provided evidence for moderated mediation (see Figure 4). The index of moderated mediation was significant ($b = 2.80$, $SE = 1.82$, 95% CI: [.16, 7.38]). The indirect effect of dispositional likeability on affective state after the video was statistically significant for participants exposed to the happy sender ($b = 2.93$, $SE = 1.58$, 95% CI: [.57, 6.74]) and non-significant for participants exposed to the sad sender ($b = .13$, $SE = .94$, 95% CI: [-1.70, 2.10]). Thus, liking mediated the effect of dispositional likeability on affect induction only in the happy conditions.

A similar moderated mediation analysis with perceived similarity as a potential mediator revealed significant indirect effects for neither the happy ($b = 1.51$, $SE = 1.24$, 95% CI: [-.30, 4.70]) nor the sad sender ($b = 1.48$, $SE = 1.07$, 95% CI: [-.07, 4.34]). The index of moderated mediation was also non-significant ($b = .04$, $SE = 1.50$, 95% CI: [-2.83, 3.41]).

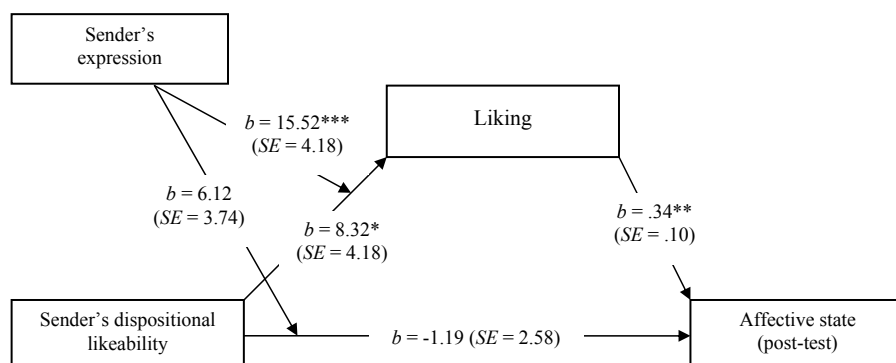
Discussion

In the current research we examined the role of dispositional likeability and liking in the social induction of affect. Overall, we found that the sender's moral vs. immoral characteristics influenced affect induction although the pattern of results did not confirm all of our predictions. As hypothesized, exposure to the likeable sender evoked concordant reactions: the receivers exposed to the happy sender reported improvement in their affective state, whereas those exposed to the sad sender reported changes in the opposite direction. This pattern of results replicates a classic affect contagion effect, according to which emotional expressions of the sender evoke corresponding feelings in the receivers (Hatfield et al., 1994; Neuman & Strack, 2000). A closer analysis, however, shows that this conclusion might not be valid when the sender is dislikeable. Despite the lack of evidence for contrast effects, we observed that when the dislikeable

sender displayed positive emotions, the receivers' affective state remained unchanged. This suggests that dislikeability may "block" concordant reactions to emotional displays of happiness. At the same time, though, it does not "block" concordant reactions to emotional displays of sadness. Individuals exposed to the sad dislikeable sender reported concordant changes analogously to those exposed to the sad likeable sender. These observations parallel findings of our earlier experiment in which we demonstrated that the expression of the sad sender was contagious regardless of whether the receivers liked him or not, whereas the happy sender "infected" others only on condition that they liked him (Wróbel et al., 2015). Taken together, these results demonstrate that people tend to converge affectively with those who look miserable and distressed even if they are dislikeable. This observation not only seems logical from an evolutionary point of view (negative moods and emotions spread more easily than positive ones because they signal potential threat or danger; Spoor & Kelly, 2004) but it may also reflect a crucial aspect of empathy, i.e. compassion for another person regardless of whether this person is likeable or not. The sadness on the sender's face communicates that he/she is in need, which may minimize the impact of dislikeability. The happy sender, on the other hand, makes an opposite impression – he/she looks satisfied and lucky, which may irritate those who do not like him/her and as a result suppress their tendency to assimilate with the sender's emotional expression.

Research on the role of liking in the social induction of affect should thus carefully differentiate between happy and sad senders. This need becomes evident only after realizing that liking is not a simple function of the sender's dispositional characteristics that are usually subject to manipulation (such as moral vs. immoral traits, similarity, or shared group membership) but also depends on the sender's expression. In the present study we demonstrated that the influence of dispositional likeability (i.e., moral or immoral traits) on affect induction operates through liking but this effect is moderated by the sender's expression. In particular, liking mediated the effects of the sender's

Figure 4. Liking as a mediator of the relationship between sender's dispositional likeability and affective state – moderated mediation model coefficients



* $p < .05$; ** $p < .01$; *** $p < .001$

dispositional likeability on the receivers' affective state only on condition that the sender was happy. For the sad senders, however, no differences in liking and socially induced affect were observed. More importantly, exposure to the sad senders – regardless of their dispositional likeability – led to concordant reactions although they were liked significantly less than the likeable happy sender (who also evoked concordant affect). Surprisingly, the dislikeable happy sender did not differ from the likeable and dislikeable sad senders in terms of liking but at the same time his emotional expression did not induce concordant reactions in the receivers. This suggests that the role of liking in the social induction of affect is more complex than it was initially assumed. Therefore, future studies would benefit from measuring liking directly instead of simply relying on dispositional likeability of the sender.

We should also stress that we did not find contrast effects. Currently, it is difficult to explain why the dislikeable sender did not evoke discordant affect, because there is scant information regarding the circumstances in which such affect appears. First, as we have already mentioned, the majority of previous studies on discordant reactions were limited to emotional mimicry (concerning external expression) and thus, the conclusions they lead to cannot be easily transferred into the domain of socially induced affect (that is, inner feelings). Second, the results of the studies, which directly addressed the moderators of the social induction of affect, are inconclusive. While there is consensus that such factors as cooperation, shared group membership, or similarity *maximize assimilation* (Epstude & Mussweiler, 2009; Likowski, Mühlberger, Seibt, Pauli, & Weyers, 2011), the effects of competition, unshared group membership or dissimilarity remain in question: do they simply *minimize assimilation* (that is, block the induction of *corresponding* feelings) or rather *maximize contrast* (that is lead to the induction of *opposite* feelings)? To answer this question, it is crucial to assess affect twice – prior to and after exposure to the sender's expression. Otherwise, it is impossible to precisely track the direction of changes in the receivers' affect. Yet, even though in three of our previous studies we used repeated measures of affect, we observed contrast only in one of them that presented the sender in an extremely unfavourable light (Królewski & Wróbel, 2014). This may mean that the social induction of discordant affect requires particularly strong manipulation. Third, the expectation that disliking will impact the social induction of affect was based in particular on the studies exploring the role of similarity (e.g. shared attitudes, group membership, personality traits; Epstude & Mussweiler, 2009; Wróbel et al., 2015), because similarity is one of the best known predictors of liking. In the current research, however, the pattern of results observed for perceived similarity between the sender and the receiver did not mirror the one observed for liking. We demonstrated that in general the happy sender was considered more similar than the sad sender and that the likeable sender was considered more similar than dislikeable sender but no interaction between these two factors was found. In addition, perceived similarity – contrary to liking – did not mediate the effects

of dispositional likeability on the receivers' affective state. These findings point to the need for further investigation of the factors influencing the social induction of concordant and discordant affect.

At least four limitations of the present study should be mentioned. First, the sample size was quite small and women were overrepresented. This may have influenced the results because females have been reported to be more sensitive to the feelings of others than males (Hoffman, 1977), especially if they were exposed to the persons in moderately negative affective states (Luo, Zheng, Chen, Li, Wang, Deng, & Zheng, 2014). Future research would thus benefit from including more male receivers as well as male and female senders instead of one video-taped man. Yet, there is also some evidence that men and women declare differences in susceptibility to affect contagion but in fact they may not differ in their experimentally tested proneness to the social induction of affect (Eisenberg & Lennon, 1983; Sonny-Borgström, Jönsson, & Svensson, 2008; Wild, Erb, & Bartels, 2001). Second, we used only self-report measures of affect which, although in general provide a reliable and valid insight into a person's affective experience, also have several limitations (e.g., sensitivity to social desirability bias; Barrett, Robin, Pietromonaco, & Eyssell, 1998; Robinson & Clore, 2002). Third, we measured dispositional likability after the video instead of assessing it right after the moral versus immoral characteristics manipulation. Although this approach prevented participants from realizing that we expected dispositional likeability to influence the social induction of affect, it also had some disadvantages. In particular, participants' ratings of the sender's dispositional likeability were influenced by the video – they saw the happy sender in a more favorable light than the sad sender (their ratings of the likeable versus dislikeable senders differed more in the pilot study than in the current study). Fourth, we relied exclusively on the experimental method, which limits the ecological validity of the findings. It is possible that more realistic life settings would allow for more systematic test of assimilation and contrast effects.

References

- Abele, A.E., & Wojciszke, B. (2014). Communal and agentic content in social cognition: A Double Perspective Model. *Advances in Experimental Social Psychology*, 50, 196–255. doi:10.1016/B978-0-12-800284-1.00004-7
- Baron, R.A. & Byrne, D. (1981). *Social psychology. Understanding human interaction* (3rd ed.). Boston: Allyn & Bacon.
- Barrett, L.F., Robin, L., Pietromonaco, P.R., & Eyssell, K.M. (1998). Are women the “more emotional” sex? Evidence from emotional experiences in social context. *Cognition and Emotion*, 12, 555–578. doi:10.1080/026999398379565
- Blairy, S., Herrera, P., & Hess, U. (1999). Mimicry and the judgment of emotional facial expressions. *Journal of Nonverbal Behavior*, 23, 5–41. doi:10.1023/A:1021370825283
- Bourgeois, P., & Hess, U. (1999). Emotional reactions to political leaders facial displays: a replication. *Psychophysiology*, 36, S36.
- Byrne, D. (1971). *The Attraction Paradigm*. New York: Academic Press.
- Clark, M.S., & Taraban, C.B. (1991). Reactions to and willingness to express emotion in two types of relationships. *Journal of Experimental Social Psychology*, 27, 324–336. doi:10.1016/0022-1031(91)90029-6

- Czarna, A.Z., Wróbel, M., Dufner, M., Zeigler-Hill, V. (2015). Narcissism and emotional contagion: Do narcissists "catch" the emotions of others? *Social Psychological and Personality Science*, 6, 318–324.
- Eisenberg, N., & Lennon, R. (1983). Sex differences in empathy and related capacities. *Psychological Bulletin*, 94, 100–131. doi:10.1037/0033-2909.94.1.100
- Epstude, K., & Mussweiler, T. (2009). What you feel is how you compare: How comparisons influence the social induction of affect. *Emotion*, 1, 1–14. doi:10.1037/a0014148
- Field, A. (2009). *Discovering statistics using SPSS* (3rd edition). London: SAGE Publications Ltd.
- Fischer, A.H., & Manstead, A.S.R. (2008). Social functions of emotion. In M. Lewis, J. Haviland-Jones & L. Feldman Barrett (Eds.), *Handbook of Emotions* (3rd ed., pp. 456–468). New York: Guilford.
- Fischer, A.H., & van Kleef, G.A. (2010). Where have all the people gone? A plea for including social interaction in emotion research. *Emotion Review*, 2, 208–211. doi:10.1177/1754073910361980
- Gump, B.B., & Kulik, J.A. (1997). Stress, affiliation, and emotional contagion. *Journal of Personality and Social Psychology*, 72, 305–319. doi:10.1037/0022-3514.72.2.305
- Hatfield, E., Cacioppo, J.T., & Rapson, L.R. (1994). *Emotional Contagion*. Cambridge: Cambridge University Press.
- Hayes, A.F. (2013). *Introduction to mediation, moderation, and conditional process analysis*. New York-London: The Guilford Press.
- Hess, U., & Blairy, S. (2001). Facial mimicry and emotional contagion to dynamic emotional facial expressions and their influence on decoding accuracy. *International Journal of Psychophysiology*, 40, 129–141. doi:10.1016/S0167-8760(00)00161-6
- Hess, U., & Fischer, A. (2013). Emotional mimicry as social regulation. *Personality and Social Psychology Review*, 17, 142–157. doi:10.1177/1088868312472607.
- Hoffman, M.L. (1977). Sex differences in empathy and related behaviors. *Psychological Bulletin*, 54, 712–722. doi:10.1037/0033-2909.84.4.712
- Kimura, M., Daibo, I., & Yogo, M. (2008). The study of emotional contagion from the perspective of interpersonal relationships. *Social Behavior and Personality*, 36, 27–42.
- Królewak, K., & Wróbel, M. (2014). Poczuję to, co Ty, jeśli Cię polubię? Wpływ atrakcyjności interpersonalnej na zarażanie afektywne [Will I feel the way you do because I like you? The influence of interpersonal attraction on affect contagion]. *Psychologia Społeczna*, 9, 422–436. doi:10.7366/1896180020143104
- Lang, P.J., Bradley, M.M., & Cuthbert, B.N. (1999). *International affective picture system (IAPS): Instruction manual and affective ratings*. The Center for Research in Psychophysiology: University of Florida.
- Lanzetta, J.T., & Englis, B.G. (1989). Expectations of cooperation and competition and their effects on observers' vicarious emotional responses. *Journal of Personality and Social Psychology*, 33, 354–370. doi:10.1037/0022-3514.56.4.543
- Likowski, K.U., Mühlberger, A., Seibt, B., Pauli, P., & Weyers, P. (2008). Modulation of facial mimicry by attitudes. *Journal of Experimental Social Psychology*, 44, 1065–1072. doi:10.1016/j.jesp.2007.10.007
- Likowski, K.U., Mühlberger, A., Seibt, B., Pauli, P., & Weyers, P. (2011). Processes underlying congruent and incongruent facial reactions to emotional facial expressions in a competitive vs. cooperative setting. *Emotion*, 11, 457–467. doi:10.1037/a0023162
- Lipps, T. (1907). Das Wissen von fremden Ichen. In Lipps, T. (Ed.). *Psychologische Untersuchungen* (Band 1), (pp. 694–722). Leipzig: Engelmann.
- Luo, P., Zheng, X., Chen, X., Li, Y., Wang, J., Deng, L., & Zheng, X. (2014). Sex differences in affective response to different intensity of emotionally negative stimuli: An event-related potentials study. *Neuroscience Letters*, 578, 85–89. doi:10.1016/j.neulet.2014.06.032
- Lundqvist, L.-O. & Dimberg, U. (1995). Facial expressions are contagious. *Journal of Psychophysiology*, 9, 203–211.
- McHugo, G.J., Lanzetta, J.T., Sullivan, D.G., Masters, R.D., & Englis, B.G. (1985). Emotional reactions to a political leader's expressive displays. *Journal of Personality and Social Psychology*, 49, 1513–1529. doi:10.1037/0022-3514.49.6.1513
- McIntosh, D.N., Druckman, D., & Zajonc, R.B. (1994). Socially induced affect. In D. Druckman & R.A. Bjork (Eds.), *Learning, remembering, believing: Enhancing human performance* (pp. 251–276). Washington, DC: National Academy Press.
- Neumann, R., & Strack, F. (2000). „Mood contagion”: The automatic transfer of mood between persons. *Journal of Personality and Social Psychology*, 79, 211–223. doi:10.1037/0022-3514.79.2.211
- Paukert, A.L., Pettit, J.W., & Amacker, A. (2008). The role of interdependence and perceived similarity in depressed affect contagion. *Behavior Therapy*, 39, 277–285. doi:10.1016/j.beth.2007.08.001
- Philippot, P., Chappelle, G., & Blairy, S. (2002). Respiratory feedback and the generation of emotion. *Cognition and Emotion*, 16, 605–627. doi:10.1080/02699930143000392
- Reis, H.T., Wilson, I.M., Monestere, C., Bernstein, S., Clark, K., Seidl, E., ... Radoane, K. (1990). What is smiling is beautiful and good. *European Journal of Social Psychology*, 20, 259–267. doi:10.1002/ejsp.2420200307
- Reysen, S. (2006). A new predictor of likeability: laughter. *North American Journal of Psychology*, 8, 373–382.
- Robinson, M.D. & Clore, G.L. (2002). Belief and feeling: Evidence for an accessibility model of emotional self-report. *Psychological Bulletin*, 128, 934–960. doi:10.1037/0033-2909.128.6.934
- Sonnyby-Borgström, M., Jönsson, P., & Svensson, O. (2008). Gender differences in facial imitation and verbally reported emotional contagion from spontaneous to emotionally regulated processing levels. *Scandinavian Journal of Psychology*, 49, 111–122. doi:10.1111/j.1467-9450.2008.00626.x
- Spoor, J.R. & Kelly, J.R. (2004). The evolutionary significance of affect in groups: Communication and group bonding. *Group Processes & Intergroup Relations*, 7, 398–412. doi:10.1177/1368430204046145
- Stel, M., Van Baaren, R.B., Blascovich, J., Van Dijk, E., McCall, C., Polmann, M.M.H., ... Vonk, R. (2010). Effects of a priori liking on the elicitation of mimicry. *Experimental Psychology*, 57, 412–418. doi:10.1027/1618-3169/a000050
- Tenney, E., Turkheimer, E., & Oltmanns, T.F. (2009). Being liked is more than having a good personality: The role of matching. *Journal of Research in Personality*, 43, 579–585. doi:10.1016/j.jrp.2009.03.004
- Van der Schalk, J., Fischer, A., Doosje, B., Wigboldus, D., Hawk, S., Rotteveel, M., & Hess, U. (2011). Convergent and divergent responses to emotional displays of ingroup and outgroup. *Emotion*, 11, 286–298. doi:10.1037/a0022582
- Wild, B., Erb, M., & Bartels, M. (2001). Are emotions contagious? Evoked emotions while viewing emotionally expressive faces: Quality, quantity, time course and gender differences. *Psychiatry Research*, 102, 109–124. doi:10.1016/S0165-1781(01)00225-6
- Wojciszke, B. (2005). *Sprawczość i wspólnotowość. Podstawowe wymiary spostrzegania społecznego [Agency and communion. Basic dimensions of social cognition]*. Gdańsk: Gdańskie Wydawnictwo Psychologiczne.
- Wróbel, M., Królewak, K., Czarna, A.Z. (2015). Do I mirror your mood if we're peas in a pod? Similarity and liking in the social induction of affect. *The Journal of Social Psychology*. doi:10.1080/00224545.2015.1047437

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