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RESEARCH

Prior Exposure to others Shapes Interpretations of Emotional Facial Expressions

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Abstract

How we interpret emotional facial expressions is context-dependent. We argue that such context extends to prior exposure to the emotional reactions of multiple others. We tested whether exposure to different patterns of emotional reactions of others leads to different interpretations of subsequent facial expressions. Participants were exposed to sequential self-reported ratings of either more or less intense emotional reactions of others to sad images (vs. disgusting or happy images, in Studies 1 and 2, respectively). Exposure to consistent emotional patterns in the social environment led people to interpret unrelated emotional information in a similar way. Specifically, individuals consistently exposed to more (vs. less) intense self-reported sadness of others interpreted morphed facial expressions of sadness (but not happiness) as more intense. Thus, what we see in others' faces may depend on the emotional information we have been previously exposed to in our social environment.

Keywords Emotions · Emotion perception · Facial expressions · Social cognition · Norms

How we interpret emotional facial expressions is crucial for social functioning (De Prisco et al., 2023). What we see depends on what the faces convey. For example, configurations of facial-muscle movements may shape the perceived intensity of expressed emotions (Ekman, 1982). However, what we see also depends on the context (e.g., Aviezer et al., 2017). Such context involves not only concurrent information (e.g., posture and background accompanying the expression or characteristics of the expresser; Aviezer et al., 2008; Barrett et al., 2011), but also prior cues (e.g., preceding facial expressions; Jellema et al., 2011). Interpretations of emotional facial expressions can be informed by both perceptual and conceptual information (e.g., Konkle et al., 2010). Research on effects of conceptual information has primarily focused on target-related information (e.g., characteristics, Schwartz & Yovel, 2016, 2019). However, conceptual information might also involve the broader emotional context (e.g., Aviezer et al., 2008; Konkle et al., 2010). In particular, if people expect others in their environment to feel worse, they may interpret unpleasant facial expressions as indicating more intense unpleasant emotions. In this investigation, we tested whether learning about the likely emotional reactions of others biases subsequent interpretations of facial expressions accordingly.

What do People around me Tend to Feel?

Emotion norms refer to collective expectations about common or appropriate emotional experiences or expressions in a social environment (Vishkin & Tamir, 2023). Similar to social norms, emotion norms can influence people's cognitions, emotions, and behaviors (e.g., Cialdini & Goldstein, 2004) and can be learned through exposure to emotions of multiple others (e.g., Smith & Mackie, 2016). In support of this claim, research has shown that individuals who were repeatedly exposed to more (vs. less) intense emotional reactions of multiple others came to expect individuals

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to experience more intense emotions, experienced more intense emotions themselves, and judged those who deviated from the normative expectation more negatively (Maor et al., 2025).

If people are exposed to certain patterns of emotional reactions of others, they may consider such patterns normative, and these perceived norms could shape how people perceive incoming emotionally-relevant information, such as facial expressions. For example, when people learn that sadness is generally experienced more (vs. less) intensely in their environment, they may infer that sadness is typically felt at high (vs. low) intensity. This inferred norm may then shape how people perceive sadness in others, making them more likely to interpret a sad person's expression as more intense – regardless of what that person is reacting to – because this interpretation aligns with what they expect others to feel. Consistent with this account, Americans, who arguably are exposed to more intense emotions in their social environment than Japanese, perceive the same expressions of happiness or sadness as more intense than Japanese do (Matsumoto & Ekman, 1989). Such cultural differences may arise because members of different cultures have been repeatedly exposed to certain patterns of emotional experiences in their social environment (e.g., Jack et al., 2012).

We propose, therefore, that exposure to emotions in multiple others can lead people to conceptually infer that others tend to feel a certain way. This conceptual inference should lead to congruent interpretations of emotionally-relevant information, including facial expressions. To our knowledge, no research to date has empirically tested this hypothesis.

The Present Research

We hypothesize that exposure to emotions of others can bias the subsequent interpretation of emotional facial expressions, even when they appear in a different modality, and are no longer associated with specific emotion-inducing stimuli. For instance, people exposed to more (vs. less) intense self-reported reactions of others to sad stimuli may subsequently interpret a facial expression of sadness as more intense. We conducted two studies to test these hypotheses. To expose people to emotions of others in a manner that would lead people to expect certain emotional patterns in the social environment, we adopted an experimental paradigm designed to cultivate emotion norms (Maor et al., 2025). In this paradigm, participants were serially exposed to either more or less intense self-reported emotional reactions of multiple others to emotion-inducing images. Such exposure created expectations and shaped subsequent stimuli-independent social judgments. Furthermore, such effects could not be attributed to anchoring, as they have been replicated even when participants used very different response scales (Maor et al., 2025). Therefore, we adapted this paradigm to test our hypotheses. In two studies, knowledge about what people in the social environment tend to feel was manipulated by exposing participants to a sequential series of more (vs. less) intense self-reported sadness of multiple others. As a comparison, participants were also exposed to ratings of another emotion (Study 1: disgust; Study 2; happiness), where the intensity was not manipulated. We predicted that participants who were exposed to more (vs. less) intense self-reported sadness by others would subsequently interpret unrelated facial expressions of sadness as more intense.

Transparency and Openness

Both studies were preregistered (Study 1: https://aspredicted.org/blind.php?x=876_H5R = 876_H5R; Study 2: https://aspredicted.org/blind.php?x=D93_SSC).[1] Data and code are available at: https://osf.io/ytd7u/?view_only = cba19c035d4d493d87677ad06be10fa9. We report how we determined sample sizes, data exclusions, and all relevant measures.

Study 1

In Study 1, participants were exposed to emotion ratings from multiple others; these ratings reflected different people's reactions to sad or disgusting images. Participants were consistently exposed to either more or less intense emotion ratings of sadness. To test for the specificity of the effect, all participants were exposed to average emotion ratings of disgust. Next, participants rated sad and disgusted facial expressions, which were morphed with neutral images, to allow for variability in intensity judgments. We hypothesized that participants who have been exposed to more (vs. less) intense ratings of sadness in multiple others would interpret subsequent sad (but not disgusted) facial expressions as more intense.

[1] The experimental paradigm was originally developed to manipulate and test the effects of emotion norms, and so it also measured emotional experiences and predicted emotional reactions of others (see Maor et al., 2025). In our pre-registration, therefore, we also listed predictions regarding these measures, to confirm its validation (i.e., we hypothesized that participants would predict the learned patterns and assimilate to them). Both of these hypotheses were confirmed. Because they are not central to the present hypotheses, we present the respective analyses in the Supplemental Materials.

Method

Participants

The final sample included 98 participants (77.6% female, M_{age} = 23.84, SD_{age} = 2.76), recruited from the university's participant pool and compensated with course credits. We conducted a power analysis based on rough estimates as there were no prior studies in this regard. The analysis indicated we needed 90 participants to detect a small effect size (f = 0.15) of a within-between interaction in a repeated-measures ANOVA (α = 0.05, β = 0.80). We oversampled by 10% and sought to recruit 100 participants. Two participants were excluded for failing both attention checks.

Materials

Stimuli In the Emotion Norm Learning Task, we used 45 disgusting images and 45 sad images. Thirty-two images were selected from the International Affective Picture System (IAPS; Lang et al., 2008), while others were sourced from open-access materials.[2] In a pilot study, participants (N = 102) rated their sadness and disgust (0 = *not at all*, 100 = *very much)* in response to sad and disgusting images. We selected disgusting images that induced relatively high disgust (M = 52.36, SD = 23.41) and low sadness (M = 13.79, SD = 13.50), $t(101) = 21.676$, $p < .001$, and sad images that induced relatively high sadness (M = 55.33, SD = 22.77) and low disgust (M = 7.94, SD = 10.30), $t(101) = 21.319$, $p < .001$. There was no mean difference in intensity levels of disgust in disgusting images and sadness in sad images, $t(101) = -1.869$, $p = .065$.

Emotion Norm Learning Task This task included a training phase and a learning phase (see Maor et al., 2025). In the training phase, participants rated how sad they felt in response to five sad images and how disgusted they felt in response to five disgusting images (0 = *not at all*, 100 = *very much*). These images were presented in a random order. Since individuals naturally vary in their own emotional responses, what constitutes a high-intensity reaction for one person may not be perceived as such by another. To ensure that participants were exposed to high versus low emotional reactions—relative to their personal baseline—we estimated each participant's average emotional response in the training phase and then presented reactions that were more or less extreme relative to that individual mean (i.e., by adjusting for it; see below). In the learning phase, in half the trials, participants rated the intensity of their reactions to an image (i.e., "*How did the picture make you feel?"*) on a 0 = *not at all* to 100 = *very much* scale, and then saw their rating on a separate screen. In the other half of trials, participants were asked to predict another gendered-matched participant's reaction to an image (i.e., "*How did the picture make [name] feel?"*) and then saw the alleged rating of that participant on a separate screen. These ratings were used to demonstrate that people learn and assimilate to what others tend to feel, such that their estimates of others' emotions and their own emotional experiences become more aligned with the perceived norm. Half the trials included sad images and half included disgusting images.

Participants were randomly assigned to view either more or less intense ratings of others to sad images. To account for individual biases in emotional responses, we computed an individual bias score by taking the difference between the participant's own mean emotional response to sad images in the training phase and the mean response to the same images in the pilot sample. These individual bias scores allowed us to account for each participant's individual affective reactivity, preventing participants' personal emotional responses from influencing their perception of what constitutes a more (or less) intense reaction. This was important because an intense response for one person might not appear as intense to another, if the latter tends to have relatively more intense reactions themselves. This adjustment also helped ensure that "more intense" and "less intense" reactions were consistent across participants and experimental conditions. More intense sad ratings on each trial were calculated as M_{image} + ¾ SD_{image} + individual bias score, where the mean (M_{image}) and standard deviation (SD_{image}) were based on the distribution of responses in the pilot data. Less intense ratings were calculated as M_{image} - ¾ SD_{image} + individual bias score. Given that reactions of others to disgusting images were not manipulated and remained constant across conditions, we did not compute participants' individual disgust bias scores.

Facial Interpretation Task To measure the perceived intensity of facial expressions, we adapted an existing facial recognition task (Branco et al., 2018). Participants identified the emotion expressed by different actors and then provided a subjective rating of the intensity of the emotion (0 = *not intense at all;* 100 = *very intense*). The stimuli consisted of grayscale images of Western Caucasian faces, including three female and three male models (see Fig. 1, for an example). The key part of the task included 6 images of disgusted expressions and 6 images of sad expressions, presented in a random order.[3] Each image was presented twice. Facial

[2] In both studies, the IAPS image codes are listed in the Supplemental Materials. Access to the non-IAPS images is available upon request.

[3] For exploratory purposes, participants also saw an additional set of eight ambiguous facial expressions, created by digitally morphing two photographs of the same actor expressing sadness and disgust (50%

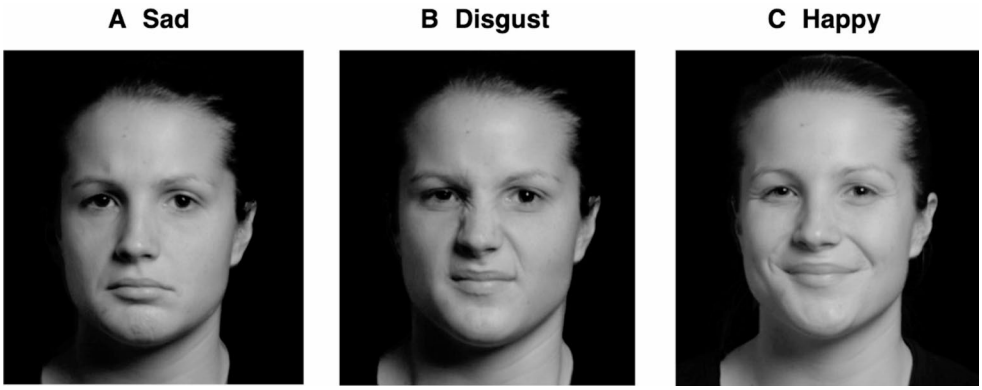

Fig. 1 Examples of Morphed Facial Expressions, Each Composed of 70% of a Discrete Emotion (Sadness, Disgust, or Happiness) Blended with a Neutral Expression from the Same Female Model

expressions were selected from the Interdisciplinary Affective Science Laboratory (IASLab) Facial Stimulus Set and digitally morphed, using FantaMorph© software (Abrosoft), with a photograph of the same actor's neutral expression, to create morphed images that were 70% sad/disgusted expressions and 30% neutral expressions.

We conducted a pilot study to ensure these images were recognized as sad and disgusted expressions. In the pilot study, participants ($N=64$; 44 females; $M_{age} = 24.55$) were exposed to multiple sad and disgusted expressions and asked to identify the expressed emotion and rate the intensity of the facial expression. We selected facial expressions that had high rates of correct emotion recognition and relatively moderate intensity ratings in order to avoid ceiling effects. Because morphing rates were fixed (as described above) for sad and disgusted expressions, this resulted in differences in the perceived emotional intensity of sad vs. disgusted facial expressions. Disgusted expressions were seen as significantly more intense ($M=59.37$, $SD=7.83$) than sad expressions ($M=44.58$, $SD=9.12$), $t(30) = -4.917$, $p<.001$.

Procedure

Participants completed the study online. After providing informed consent, participants completed the emotion norm learning task, where they were randomly exposed to either more or less intense sad ratings of others. Next, participants completed the facial interpretation task. Finally, they provided demographic information and were debriefed.

Results

We tested a multilevel model to examine whether participants in the more (vs. less) intense sadness condition interpreted sad (but not disgusting) faces as more intense.[4] We entered the experimental condition (more vs. less intense sadness), image type (sad vs. disgusting), and their interaction as predictors, and participants' intensity ratings of facial expressions as the outcome. We specified random intercepts for participants and stimuli. Contrary to our hypothesis and as shown in Fig. 2, the interaction between condition and image type was not significant, $B=-0.69$, $SE=1.17$, $p=.556$, 95% CI [−2.98, 1.61], $R^2=0.000$. However, the main effect of condition was significant, $B=-6.28$, $SE=3.14$, $p=.048$, 95% CI [−12.49, −0.07], $R^2=0.013$, indicating that participants who were exposed to more intense sadness in multiple others rated morphed facial expressions as more intense ($M=54.80$, $SD=24.46$) than did participants who were exposed to less intense sadness in multiple others ($M=48.10$, $SD=23.61$). There was also a main effect of image type, $B=-10.75$, $SE=2.96$, $p=.001$, 95% CI [−16.75, −4.76], $R^2=0.039$, indicating that disgusted expressions ($M=56.87$, $SD=23.22$) were considered more intense than sad expressions ($M=46.30$, $SD=24.18$), regardless of condition.

Discussion

Study 1 provided partial support for our prediction. Individuals exposed to more (vs. less) intense sadness in multiple others subsequently interpreted unrelated emotional facial expressions as more intense. However, the evidence did not support our hypothesis regarding emotion-specificity, in that participants also judged disgusted facial expressions as more intense. Given that sadness and disgust are both

sadness and 50% disgust). Participants indicated whether each face expressed sadness or disgust. Our manipulation did not influence the emotions detected in those images (see Supplemental Materials).

[4] The analyses we report differed from our preregistered analysis plan (i.e., repeated-measures ANOVA). This is because treating both participants and stimuli as random factors in experimental data helps obtain more accurate estimates of these variance components (see Judd et al., 2012). Indeed, when comparing the fit indices of multilevel models and repeated-measures ANOVAs, we found that multilevel models provided significantly better fit to our data, $ps < .001$. Therefore, we reported results of multilevel models in the main text and results of our pre-registered analyses in the Supplementary Materials.

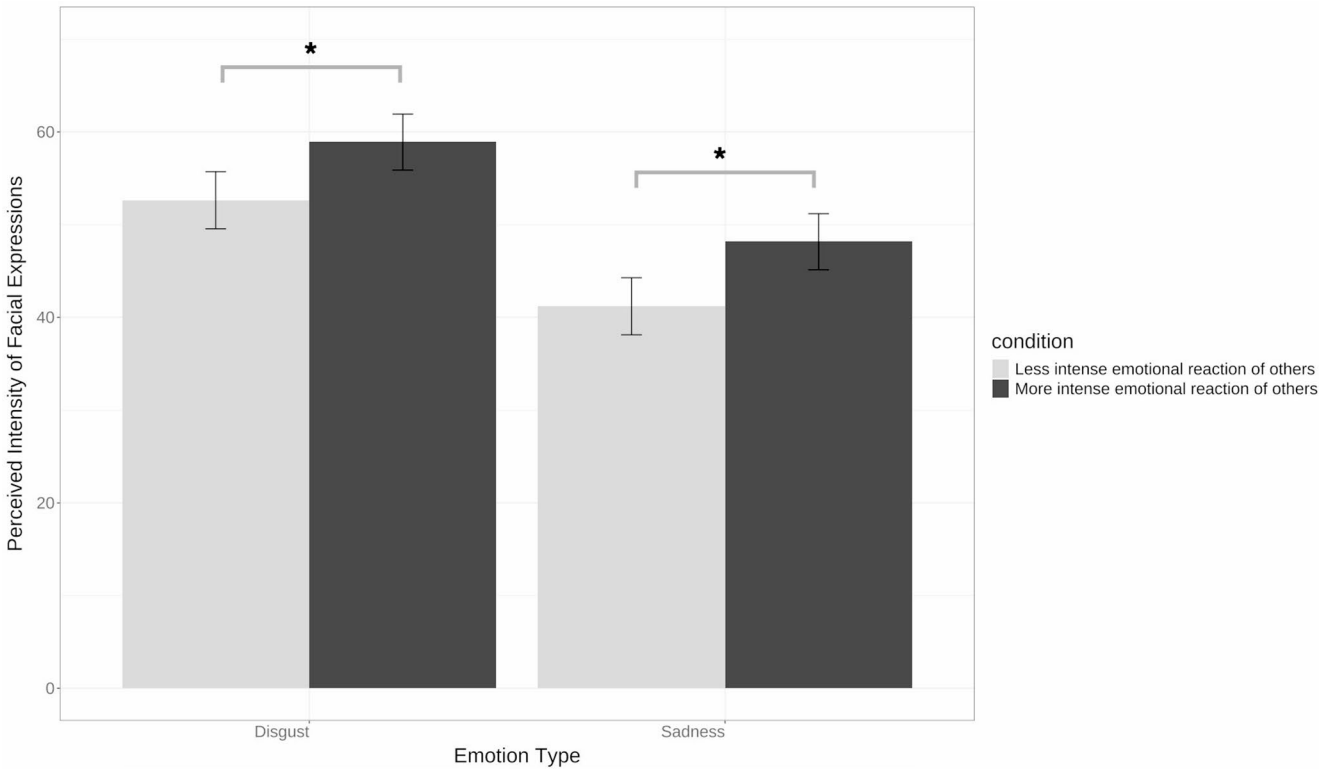

Fig. 2 Perceived Intensity of Facial Expressions as a Function of Condition and Emotion Type (Study 1). Note. *p <.05. Error bars indicate standard errors

unpleasant and similar in valence, participants may have generalized information about others' sad reactions to disgust, leading to similar effects on the interpretation of both expressions. Whereas inferences about one unpleasant emotion could be generalized to other unpleasant emotions, it is less likely that they would be generalized to pleasant emotions. This is because distinctions by valence are typically stronger than distinctions by discrete emotions (e.g., Barrett, 1998). In Study 2, therefore, we targeted two emotions that differ by valence, as this distinction is likely to make them more clearly distinguishable.

Study 2

Study 2 manipulated exposure to the intensity of sadness (vs. happiness) in multiple others. We predicted that individuals exposed to more (vs. less) intense sad ratings of others would interpret sad (but not happy) facial expressions as more intense.

Method

The methods in Study 2 were similar to those of Study 1, with the exceptions listed below.

Participants

The final sample included 55 participants (83.6% female, M_{age} = 24.71, SD_{age} = 2.61). Participants were recruited from the university's participant pool and received course credits for their participation. A power analysis indicated that a sample of 50 participants was required to detect a within-between interaction effect (η^2_p = 0.041, f ~ 0.205) with power = 0.80 and alpha = 0.05.[5] We oversampled to account for potential attrition and recruited 71 participants. To ensure participants paid sufficient attention during the experiment, following the preregistration, we implemented a stricter exclusion criterion than in Study 1, such that participants who failed any attention checks were excluded from further analysis. This resulted in the exclusion of 16

[5] Sample size estimates in Study 2 were based on a significant interaction found in Study 1—specifically, the interaction between the experimental manipulation and emotion type on participants' expected emotional reactions of others. This interaction indicated that our manipulation was successful, and was therefore critical to detect in Study 2. The effect size was derived from an ANOVA model in which we first averaged the mean expected emotional reactions across trials for each participant and condition (with sadness vs. disgust as the within-person factor, and more vs. less extreme sadness reaction as the between-person factor), and then conducted the interaction analysis.

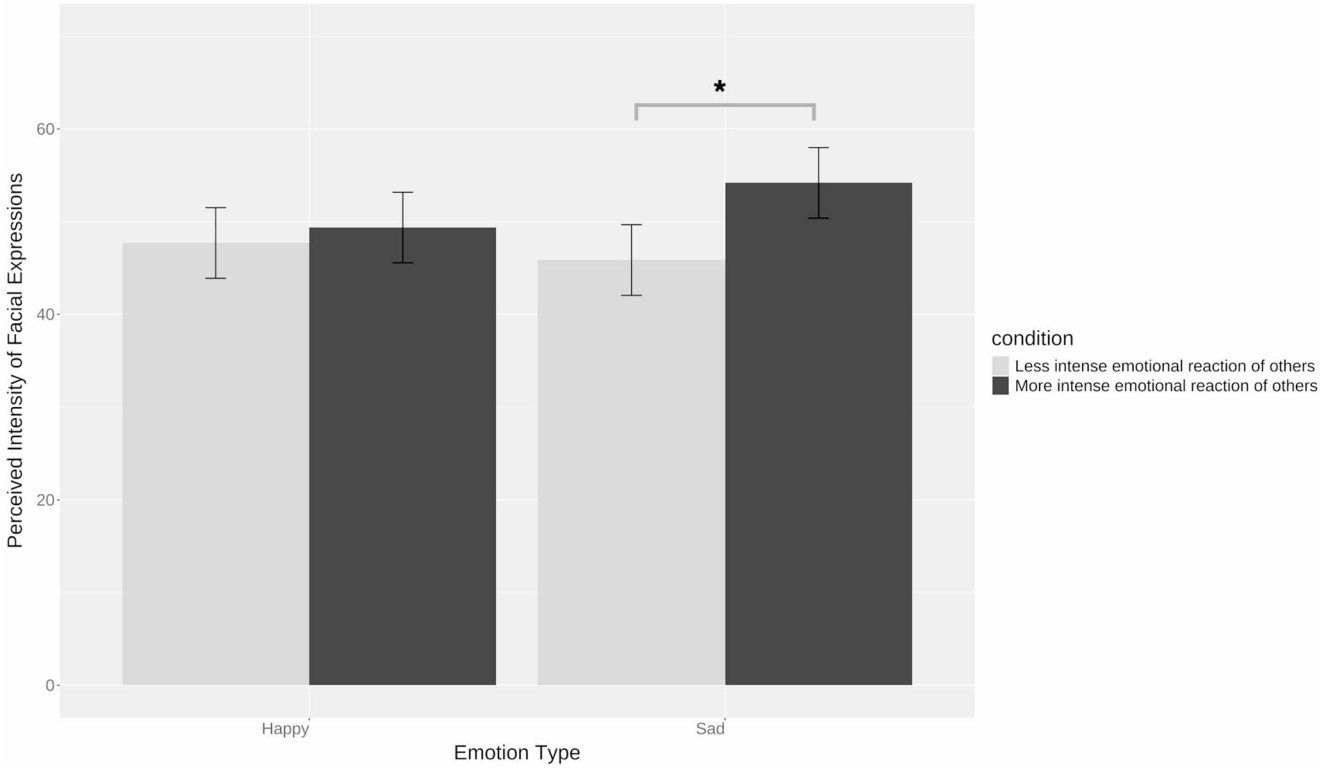

Fig. 3 Perceived Intensity of Facial Expressions as a Function of Condition and Emotion Type (Study 2). Note. *p <.05. Error bars indicate standard errors

participants. The exclusion did not change the pattern of results and the likelihood of exclusion did not differ by condition (p=.287).

Materials

Stimuli We used 45 sad images and 45 happy images, 85 of which were selected from the IAPS database. Images were chosen based on pilot ratings (mean happiness in happy images=51.00, SD=16.47; mean sadness in sad images=50.65, SD=13.03).

Facial Expressions Similar to Study 1, a total of 24 morphed facial expressions were created using grayscale images of Western Caucasian faces, including six happy and six sad expressions for each gender (male and female young adults).[6] Participants were asked to identify the emotional expression.) Original facial expressions were selected from the IASLab database and morphed images were created using FantaMorph. Our target stimuli were created by morphing 70% of the actor's target emotional expression with 30% of the same actor's neutral expression.

Results

As predicted and shown in Fig. 3, we found a significant interaction between condition and image type, B=6.66, SE=1.73, p<.001, 95% CI [3.27, 10.05], R^2=0.006. Participants exposed to more intense ratings of sadness subsequently perceived sad expressions as more intense (M=55.86, SD=24.11) than did participants exposed to less intense ratings of sadness in others (M=48.34, SD=24.47), B=8.32, SE=3.68, p=.027, 95% CI [1.11, 15.53]. Additionally, as predicted, the two conditions did not differ in the perceived intensity of happy facial expressions (more intense: M=48.96, SD=23.96; less intense: M=47.10, SD=23.18), B=1.67, SE=3.68, p=.652, 95% CI [−5.54, 8.87]. The main effects of image type (sad: M=51.90, SD=24.58; happy: M=47.98, SD=23.56), B = −1.84, SE=3.94, p=.643, 95% CI [−9.83, 6.07], R^2=0.001, and condition (more intense: M=52.41, SD=24.27; less intense: M=47.72, SD=23.83), B=1.67, SE=3.68, p=.652, 95% CI [−5.67, 8.98], R^2=0.001, were not significant.

[6] As in Study 1, in Study 2 we also included an additional set of 8 male and 8 female expressions, created by morphing 50% sad with 50% happy expressions, for exploratory purposes.

Discussion

Study 2 provided support for our hypotheses. Participants exposed to more (vs. less) intense ratings of sadness subsequently perceived sad facial expressions as more intense. These effects were specific to sadness and did not generalize to happiness.

General Discussion

With the rise and prominence of social media, our exposure to emotional reactions of multiple others is greater than ever. These reactions are often systematic, reflecting patterns or trends in the population that lead us to infer what others in our social environment tend to feel. How might this form of exposure influence our interpretations of emotional information in other modalities we encounter in different contexts? In two studies, we show that repeated exposure to the emotional reactions of others may lead people to interpret unrelated emotional expressions in a manner that is consistent with the observed overall trend.

These findings make several novel contributions. First, they show that interpretations of emotional facial expressions are embedded not only within the current or immediate context, but also within the context of individuals' prior exposure to multiple others. Second, such exposure can influence subsequent interpretations of emotional facial expressions via conceptual mechanisms. In our studies, exposure to emotional ratings of others led people to infer norms about emotions – specifically, what others tend to feel – and interpret emotional facial expressions in accordance with this conceptual inference. These effects cannot be attributed to social desirability, as there was no evidence during debriefing that participants were aware of the study's true purpose (for a detailed analysis of participants' perceptions, see Supplemental Materials). These effects also cannot be explained by anchoring, as we observed different patterns for sadness compared to disgust or happiness, even though the same scales were used across emotion types.

Third, these findings suggest that faces are encoded not only with respect to their deviation from the average of previously observed faces (e.g., Rhodes & Leopold, 2011), but also with respect to their deviation from perceived emotional patterns (i.e., the average of previously observed emotional responses, regardless of modality).

This research also demonstrates that exposure to emotions of multiple others may lead people to make abstract inferences that go beyond the immediate exposure context and perceptual information. In doing so, our findings bridge research on affective social learning (Dukes & Clement, 2019) with cultural research on emotion norms (e.g., Eid & Diener, 2001). Our findings could potentially point to one mechanism by which emotion norms develop in cultural contexts (Vishkin & Tamir, 2023) and explain how cultural contexts inform the interpretation of emotional facial expressions. These results may also carry pragmatic implications. Identifying possible sources that shape interpretations of emotional facial expressions may help improve communication and reduce interpersonal conflict.

Limitations and Future Directions

There are some limitations to our research. First, exposure to the emotions of others may change people's own emotions (Hess & Fischer, 2014). Therefore, one alternative explanation of our results is that exposure to more (vs. less) intense sadness of others made people sadder, which in turn, led participants to judge sad expressions as more intense (Forgas & East, 2008). If the manipulations served as emotion inductions, then in Study 2, we should have found opposite results for judgments of sad and happy faces, such that participants who felt worse (due to the manipulation) would interpret happy faces as less intense. Contrary to this prediction, however, interpretations of happy faces remained unaffected, indicating that our findings cannot be explained as affect-congruent judgments. Future work could test this further by tracking current feelings before and after the facial interpretation task.

Second, we found support for valence-specific (sadness vs. happiness; Study 2), but not emotion-specific (sadness vs. disgust; Study 1) effects. It may be that while people draw distinct inferences regarding emotions of different valence, they are less sensitive to distinctions between similarly-valenced emotions. Future research could explore which emotion characteristics drive similar or distinct effects of exposure to emotional reactions of others, and whether these findings extend to other emotions. Future research could also test whether effect on different emotions is driven by affective characteristics (e.g., valence, arousal) or by emotion-related beliefs or display norms.

Third, our sample was restricted to undergraduate students. Future research should test the generalizability of our effects, and whether exposure to others' emotions is more likely to bias interpretation in certain cultural contexts compared to others.

Conclusion

Our findings show that people exposed to more (vs. less) intense sadness of others subsequently interpreted unrelated facial expressions of sadness as more intense. These findings demonstrate that the emotional reactions of people to

whom we were exposed in the past can shape subsequent interpretations of emotional facial expressions. What we see in others' faces may be determined by prior exposure to patterns of emotion in our social environment.

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Competing Interests The authors declare no competing interests.

Availability of Data and Material All study materials, data, and R codes are available at the Open Science Framework: https://osf.io/ytd7u/?view_only=cba19c035d4d493d87677ad06be10fa9.

Code Availability Not applicable.

Authors' Contributions Conceptualization: DH, WC, MTMethodology: DH, WC, MTInvestigation: DH, YT, MTVisualization: DH, MTFunding acquisition: MTProject administration: YT, MTSupervision: MTWriting – original draft: DH, MTWriting – review & editing: DH, WC, MT.

Supplementary Information The online version contains supplementary material available at https://doi.org/10.1007/s42761-025-00345-6.

Ethics Approval and Consent to Participate Both studies received ethics approval from the Institutional Review Board of The Hebrew University of Jerusalem, and all participants gave their informed consent to participate.

Consent to Participate Not applicable.

Consent for Publication Not applicable.

References

Aviezer, H., Ensenberg, N., & Hassin, R. R. (2017). The inherently contextualized nature of facial emotion perception. *Current Opinion in Psychology*, *17*, 47–54. https://doi.org/10.1016/j.copsyc.2017.06.006

Aviezer, H., Hassin, R. R., Ryan, J., Grady, C., Susskind, J., Anderson, A., & Bentin, S. (2008). Angry, disgusted, or afraid? Studies on the malleability of emotion perception. *Psychological Science*, *19*(7), 724–732. https://doi.org/10.1111/j.1467-9280.2008.02148.x

Barrett, L. F. (1998). Discrete emotions or dimensions? The role of valence focus and arousal focus. *Cognition and Emotion, 12*(4), 579–599. https://doi.org/10.1080/026999398379574

Barrett, L. F., Mesquita, B., & Gendron, M. (2011). Context in emotion perception. *Current Directions in Psychological Science*, *20*(5), 286–290. https://doi.org/10.1177/0963721411422522

Branco, L. D., Cotrena, C., Ponsoni, A., Salvador-Silva, R., Vasconcellos, S. J. L., & Fonseca, R. P. (2018). Identification and perceived intensity of facial expressions of emotion in bipolar disorder and major depression. *Archives of Clinical Neuropsychology*, *33*(4), 491–501. https://doi.org/10.1093/arclin/acx080

Cialdini, R. B., & Goldstein, N. J. (2004). Social influence: Compliance and conformity. *Annual Review of Psychology*, *55*, 591–621. https://doi.org/10.1146/annurev.psych.55.090902.142015

De Prisco, M., Oliva, V., Fico, G., Radua, J., Grande, I., Roberto, N., & Murru, A. (2023). Emotion dysregulation in bipolar disorder compared to other mental illnesses: A systematic review and meta-analysis. *Psychological Medicine*, *53*(16), 7484–7503. https://doi.org/10.1017/S003329172300243X

Dukes, D., & Clément, F. (2019). *Foundations of affective social learning: Conceptualizing the social transmission of value*. Cambridge University Press. https://doi.org/10.1017/9781108661362

Eid, M., & Diener, E. (2001). Norms for experiencing emotions in different cultures: Inter- and intranational differences. *Journal of Personality and Social Psychology*, *81*(5), 869–885. https://doi.org/10.1037/0022-3514.81.5.869

Ekman, P. (1982). Methods for measuring facial action. In K. R. Scherer & P. Ekman (Eds.), *Handbook of methods in nonverbal behavior research* (pp. 45–90). Cambridge University.

Forgas, J. P., & East, R. (2008). How real is that smile? Mood effects on accepting or rejecting the veracity of emotional facial expressions. *Journal of Nonverbal Behavior*, *32*(3), 157–170. https://doi.org/10.1007/s10919-008-0050-1

Hess, U., & Fischer, A. (2014). Emotional mimicry: Why and when we mimic emotions. *Social and Personality Psychology Compass*, *8*(2), 45–57. https://doi.org/10.1111/spc3.12083

Jack, R. E., Caldara, R., & Schyns, P. G. (2012). Internal representations reveal cultural diversity in expectations of facial expressions of emotion. *Journal of Experimental Psychology: General*, *141*(1), 19–25. https://doi.org/10.1037/a0023463

Jellema, T., Pecchinenda, A., Palumbo, L., & Tan, E. G. (2011). Biases in the perception and affective valence of neutral facial expressions induced by the immediate perceptual history. *Visual Cognition, 19*(5), 616–634. https://doi.org/10.1080/13506285.2011.569775

Judd, C. M., Westfall, J., & Kenny, D. A. (2012). Treating stimuli as a random factor in social psychology: A new and comprehensive solution to a pervasive but largely ignored problem. *Journal of Personality and Social Psychology*, *103*(1), 54–69. https://doi.org/10.1037/a0028347

Konkle, T., Brady, T. F., Alvarez, G. A., & Oliva, A. (2010). Conceptual distinctiveness supports detailed visual long-term memory for real-world objects. *Journal of Experimental Psychology: General*, *139*(3), 558–578. https://doi.org/10.1037/a0019165

Lang, P. J., Bradley, M. M., & Cuthbert, B. N. (2008). International affective picture system (IAPS): Affective ratings of pictures and instruction manual. Technical Report A-8. University of Florida, Gainesville, FL.

Maor, O., Millgram, Y., Goldenberg, A., Cunningham, W., & Tamir, M. (2025). *Learning affect norms: Implications for predictions, experiences and social judgments*. Manuscript under review.

Matsumoto, D., & Ekman, P. (1989). American-Japanese cultural differences in intensity ratings of facial expressions of emotion. *Motivation and Emotion*, *13*(2), 143–157. https://doi.org/10.1007/BF00992959

Rhodes, G., & Leopold, D. A. (2011). Adaptive norm-based coding of face identity. In A. J. Calder, G. Rhodes, M. H. Johnson, & J. V. Haxby (Eds.), *The Oxford handbook of face perception* (pp. 263–286). Oxford University Press. https://doi.org/10.1093/oxfordhb/9780199559053.013.0014

Schwartz, L., & Yovel, G. (2016). The roles of perceptual and conceptual information in face recognition. *Journal of Experimental Psychology: General*, *145*(11), 1493–1511. https://doi.org/10.1037/xge0000220

Schwartz, L., & Yovel, G. (2019). Learning faces as concepts rather than percepts improves face recognition. *Journal of Experimental Psychology: Learning, Memory, and Cognition, 45*(10), 1733–1747. https://doi.org/10.1037/xlm0000673

Smith, E. R., & Mackie, D. M. (2016). Representation and incorporation of close others' responses: The RICOR model of social influence. *Personality and Social Psychology Review*, *20*(4), 311–331. https://doi.org/10.1177/1088868315598256

Vishkin, A., & Tamir, M. (2023). Emotion norms are unique. *Affective Science*, *4*, 453–457. https://doi.org/10.1007/s42761-023-00188-z