

Children's Expectations of Emotional Intimacy in Close Relationships

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Abstract

Humans across cultures distinguish intimate, close, or family-like relationships from those that are merely affiliative. Recent work suggests that this distinction is so fundamental that even humans as young as 8 months recognize a common cue of social intimacy: close physical contact. In the current studies, we investigate whether children, ages 6 to 9 years, recognize another hallmark of intimate relationships: emotional intimacy. In Study 1, children used the disclosure of sad emotions, as opposed to facts or happy emotions, as a cue for close social relationships. Interestingly, adults thought that disclosing emotions more generally was indicative of closer relationships. In Study 2, children expected that people in close social relationships would more often disclose sad emotions, but not happy emotions or facts. Again, adults did not distinguish between happy and sad emotions: they thought people in closer relationships would disclose both happy and sad emotions rather than facts. In Study 3, neither children or adults thought that disclosing sad emotions was a way to create social relationships. Together, these results suggest that by the age of six years, children connect close social relationships with emotional intimacy, but that they don't use it in their planning.

Keywords: social cognition; information sharing; emotional intimacy

Introduction

Humans in every culture distinguish 'thick' relationships (strong, intimate, close, or family-like relationships) from those that are 'thin' (weak, affiliative, prosocial). This distinction is made as early as 4 months, using physical intimacy, contrasted with cooperative behaviors, to make predictions about who will respond to distress (Thomas et al., 2022.; Woo et al., in prep). Sociologists have long recognized the importance of this distinction but tend to characterize the relationships based on different types of information disclosed: in weak ties people disclose useful information; in strong ties people seek support by disclosing more sensitive or personal information. In fact, when collecting data about people's social networks, sociologists measure thick ties by asking, "Who do you turn to for emotional support when you're feeling upset or stressed?" (See Small, 2017 for history).

Yet, there have been few empirical studies that test whether people reason that close social relationships include confiding in others, nor how early in development this intuition may emerge. In the present studies, we ask, do U.S. American children, ages 6 to 9 years, intuit that people

confide with one another in close social relationships? We operationalize emotional intimacy as revealing sad emotions, as compared to happy emotions and facts. We reasoned that telling someone else about one's sadness may make one more vulnerable or may imply an expectation of support, which people may intuit is more appropriate in close social relationships than telling someone else about one's happiness or sharing facts. First, we will discuss recent findings about how children think about thick and thin social relationships, then we will discuss how they think about information sharing within relationships.

Children's Intuitive Theories of Social Relationships.

A growing body of research suggests that children have rich intuitive theories of social relationships (e.g., Thomsen, 2020; Shutts & Kalish, 2021) and that many of these intuitions may have their roots in infancy (Thomas, 2024). These theories include ideas about friendship (Afshordi & Liberman, 2021) and social closeness (Thomas, Woo, et al., 2022). Children use proximity, prosocial interactions, and similarity to infer friendship.

Interestingly, while children expect resource-sharing to occur more with friends and family over strangers, they do not reliably distinguish between family and friends (Thomas, Woo, et al 2022; Spokes and Spelke, 2016). They do however, distinguish between family and friends when answering questions about physical intimacy. Thus, children do not think that sharing resources is an indicator of *close* relationships but do think that physical intimacy is one. How might children think about information sharing within relationships? And is there a similar distinction between physical intimacy and prosociality that can be found when it comes to children's intuitions about information sharing and social closeness?

Intuitions about Relationships and Information Sharing.

Children do have some early developing intuitions about what kind of information is disclosed within relationships. For example, 6-year-old children recognize that information that may make someone look bad (e.g., lying) is more likely to be a secret and think that secret sharing is more likely to occur with friends (Anagnostaki et al., 2013). Likewise, children also expect that those who disclose secrets are more likely to be friends than non-friends (Liberman and Shaw, 2018).

Children also seem to think that more generally, people in close friendships will better know the contents of one another's minds: Children as young as 6 years expect that those who display physical intimacy (by touching and dancing), compared to those who display affiliation (by dancing), will better know one another's mental states, such as preferences, but not physical attributes of the person. They also expect that those who know each other's mental states are socially closer (Woo, Yu, Thomas, 2024). While this was not directly tested in this set of experiments, the intuition that close others better know one another's minds may be the result of children intuiting that close others are more likely to disclose sensitive information, like emotional states.

However, not all information disclosure should be equally indicative of a close social relationship. Just as disclosing a secret with someone may leave someone vulnerable, an individual's emotional state, especially when negative, may lead to judgments or disaffirming views of the person disclosing, or may also leave a social partner feeling obligated to help.

If children share this intuition, it would reflect real-world dynamics. For example, young adolescents aged 10 to 13 years old are willing to forfeit a monetary reward to disclose personal facts to peers who were not close. However, these young adolescents paid more money to disclose relatively superficial information (e.g., liking reality TV) rather than more intimate information (e.g., feeling self-conscious), suggesting that disclosing the intimate information was seen as more costly (Vijayakumar et al., 2020). Disclosing intimate information seems to be an important part of close relationships. While some empirical work has found that others confide in many 'thin' ties (Small, 2017), in other studies, self-disclosure patterns accounted for 72% of the variance in intimacy ratings among romantic couples (Chelune et al., 1984), and college students said they disclose personal information when they want to have close or trusting relationships or to increase intimacy (Derlega et al., 2008).

One question, then, is how younger children may think about the relationship between social intimacy and emotional disclosure. On the one hand, children may not connect emotional disclosure with intimacy for several reasons. First, it is unclear how children think about the concept of private emotions, let alone that disclosing these emotions might be part of some but not all social relationships. While previous research suggests children recognize secrets, the secrets either were not specified or involved something that children could get in trouble for. However, disclosing emotions makes people vulnerable in a less straightforward way, making it potentially less likely that children would recognize it as a cue for close social relationships. In the current studies, we contrast disclosing emotions with disclosing information, which could be seen as potentially prosocial because it provides the other person with potentially useful information. However, previous work suggests that children do not necessarily associate

more prosocial behavior with more *intimate* as opposed to cooperative relationships. We start with children aged 6 to 9 years because children at this age are adept at understanding that others have thoughts, beliefs, and emotions that may differ from their own (Wellman, 2014). We think that this knowledge may support reasoning about emotional disclosure and social closeness.

Importantly, this age range also reflects a transitional phase in children's social lives. As they move through elementary school, children broaden their social worlds, from primarily family-based interactions to peer relationships formed in classrooms, extracurriculars, and other group settings (Burke et al., 2022). This expansion provides opportunities for children to have a broader array of relationships that vary in levels of intimacy and trust. Thus, children in this age group may be especially attuned to the significance of disclosing information, particularly when it is emotionally salient.

In the current studies, our goal was to understand whether children connect social closeness with disclosing information and whether their intuitions were different or the same as adults. We investigated this kind of reasoning in three studies. In Study 1, we asked, do children and adults infer social closeness based on the type of information that someone discloses (emotions vs. facts and happy vs. sad emotions)? In Study 2, we asked, do children expect people in close social relationships to disclose sad emotions more than facts or happy emotions more than facts? In Study 3, we asked, given the desire to create a relationship, which type of information do children think will be disclosed?

General Methods

Participants

Fifty-seven U.S. American children aged 6 to 9 years old (mean = 7.81 years, range = 6.04 to 9.88 years, S.D. = 1.05), were tested via online video call. All participants participated in all three studies during the same session. 36 parents reported their child was a boy, and 21 parents reported their child was a girl. Participants were recruited using a lab database, advertisements on social media, and Children Helping Science (lookit.mit.edu). 45% of parents said their children were White or Caucasian, 26% reported Asian, 3% reported Black or African American, 17% reported multiracial, 1% reported Middle Eastern, 1% reported South American, and 3% did not report a race for their child. 28% of caregivers reported having a Master's degree, 14% reported having a doctorate degree, 37% reported having a Bachelor's degree, 5% reported having an Associate's degree, 1% reported having completed elementary and high school, and 13% did not report education level. For comparison, we also surveyed 47 U.S. American adult participants (mean = 26.8 years old, 20 women, 27 men) through Prolific, an online platform. The adult participants saw the same stories and questions as the children.

The data collection for all three studies occurred during the same session. All analyses were pre-registered (<https://osf.io/pv9gi/>) unless otherwise specified. We conducted Bayesian binomial tests with default priors to determine whether children and adults answered differently than chance in the forced-choice questions. We conducted Bayesian logistic mixed-effects models with default priors appropriate for a binary outcome variable to test for effects of condition. In these models, the relevant condition was a fixed effect, and participant ID was a random effect.

Study 1

In study 1, children heard and adults read two stories about two different protagonists at school. In one story, a protagonist learned an animal fact and also felt sad at school. In the other story, a different protagonist learned a different animal fact and felt happy at school (the animal facts were borrowed from Shields et al., 2024). In each story, the protagonist then encountered two classmates. The protagonists disclosed their emotion but withheld the fact from one classmate and disclosed the fact but withheld their emotion from the other classmate. After the stories, as an attention check, children and adults were asked to recall which character was told the fact and which character was told the emotion. We then measured social closeness across two measures. Children and adults were asked which classmate they thought was better friends with the protagonist. Finally, we had two food-sharing items, one that required physical intimacy (Thomas, Woo, et al., 2022) and one that did not: children and adults were asked to guess who the protagonist would want to share a single ice cream cone with, and who the protagonist would share partitionable candy with (forced-choice). Based on prior work in which children do not expect preferential sharing with family over friends but do expect physical intimacy with family compared to friends, we reasoned that if children associate sharing sad emotions with social closeness, they should expect the protagonist to share the single ice cream cone more often with the person they disclosed a sad emotion with, which requires physical intimacy. On the other hand, if children think that close social relationships are primarily about being more prosocial, they should expect more sharing of the partitionable candy with the person they inferred as closer.

Results

Better Friend. When asked who was better friends with the protagonist, children chose the person who learned about the protagonist’s emotion more often in the sad condition (77%, $BF_{10} = >1000$), but not in the happy condition (49%, $BF_{01} = 6.85$). We tested whether condition (happy/sad) affected children’s answers using a Bayesian logistic mixed-effects model. The condition affected children’s responses (posterior median = 2.93, 95% credible interval [0.98, 8.60], 0% in the ROPE). Thus, children thought that sharing a sad emotion was indicative of social closeness. By contrast,

adults chose the target of emotional disclosure across both the happy and sad conditions (sad condition; 91%, $BF_{10} = >1000$; happy condition 80%, $BF_{10} = >1000$). Adults did not differ in their responses across conditions (median = 1.07, 95% CI [-0.24, 2.57], 6.4% in ROPE).

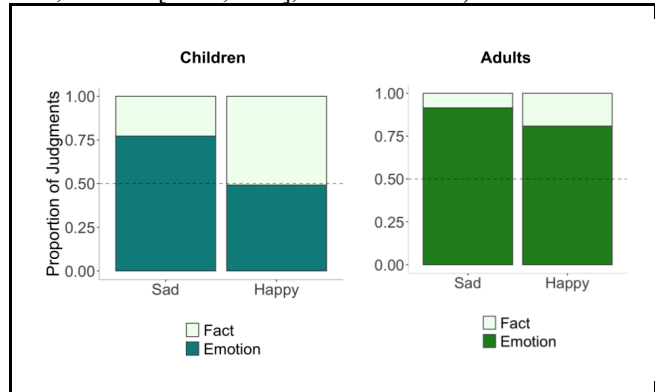


Figure 1. Better friend judgments by condition in Study 1. Children were more likely to say that the character who was told about the emotion was better friends with the central character, when the emotion to be disclosed was sad, then when it was happy. Adults chose both emotions to be closer than facts.

Food Sharing. Next, we asked if children and adults used sharing emotions to predict food-sharing behavior. We predicted that children should choose the character who received information about sad emotions more in the food-sharing trials that involved intimate interactions (sharing a single ice cream cone) compared to non-intimate food-sharing (sharing partitionable candies). For the ice cream trial, children selected the character who was told the emotion more often in the sad condition (70%, $BF_{10} = 17$). However, they chose each character equally often in the happy condition (49%, $BF_{01} = 6.85$). Consistent with their inferences about who were ‘best friends’, adults selected the classmate who was told the emotion in the sad condition (87%, $BF_{10} = >1000$) and in the happy emotion (78%, $BF_{10} = 566$) more often than the classmate who was told the fact. For the candy trial, we found evidence that children chose equally in the sad condition (59%, $BF_{01} = 2.5$) and medium evidence they chose equally in the happy condition (52%, $BF_{01} = 6.67$). The adults were also at chance with their selections (sad: 55%, $BF_{01} = 4.2$; happy: 42%, $BF_{01} = 3.3$).

We conducted Bayesian linear mixed-effects models to test an interaction between item type and condition. For children, there was no main effect of happy/sad conditions (median = .32, 95% CI [-0.46, 1.11], 27.3% in ROPE); there was no main effect of food item (median=-0.16 CI [-0.94, 0.62], 34.45% in ROPE). There was no evidence of an interaction (median = 0.68, 95% CI [-0.45, 1.82], 13.48% in ROPE). We also ran a model that treated each of the four conditions separately (happy/ice cream; sad/ice cream;

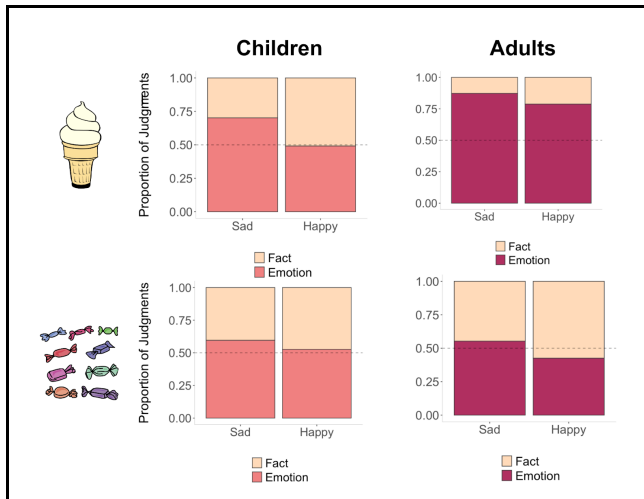


Figure 2. Proportion of children and adults choosing the target who learned about emotions and facts across each condition and trial type in Study 1. Unlike adults, children used disclosing sad emotions, but didn't use disclosing happy emotions to predict physically intimate actions (sharing a single ice cream cone). They did not think that sharing sad emotions predicted sharing partitionable food.

happy/candy; sad/candy). The candy trial in the happy condition was used as the comparison. For the children, We found that the only difference was between the happy candy trial and the sad ice cream trial (median = 0.87, 95% CI, [0.07, 1.72], 2.5% in ROPE; sad candy trial: median = 0.32, 95% CI, [-0.46, 1.12], 26.5% ROPE; happy ice cream: median = -0.16, 95% CI, [-0.93, 0.66], 34% in ROPE).

For the adults, we ran the same models. There was no main effect of happy/sad conditions (median = .54, 95% CI [-.29, 1.38], 16.97% in ROPE); there was a main effect of item (median = 1.68 CI [.76, 2.61], 0% in ROPE). There was not evidence of an interaction (median = .12, 95% CI [-1.29, 1.62], 21.34% in ROPE). We then ran the same model where each question was treated as a separate condition. The candy trial in the happy condition was used as the comparison. For the adults, we found a difference between the happy candy trial and the sad ice cream trial (median = 2.31, 95% CI, [1.34, 3.5], 0% in ROPE) and the happy ice cream (median = 1.66, 95% CI, [0.77, 2.66], 0% in ROPE), but not with the sad candy trial: median = 0.54, 95% CI, [-0.29, 1.36], 16.9% ROPE) Refer to Figure 2.

Discussion

We found that when the protagonist was feeling sad in the story, children more often said that the character who was told the emotion was the better friend and was more likely to engage in a physically intimate interaction (i.e., sharing a single ice cream cone). By contrast, when the protagonist disclosed a happy emotion, we did not find such effects. This suggests that children view disclosing sadness as potentially more vulnerable and indicative of social closeness. These findings provide evidence that children are

cognizant of the type of information disclosed and can use that to infer social closeness. Conversely, adults chose the classmate who was told the emotion over the fact, regardless of whether it was a happy or sad emotion. Thus, adults seem to have a more general intuition that disclosing emotions is indicative of closeness, regardless of whether it is sad or happy.

Study 2

In Study 1, we asked whether children and adults used the types of information that protagonists disclose to infer social closeness. In Study 2, we asked whether children and adults would predict that people would choose to disclose different kinds of information depending on the relationship. If they have an intuitive theory of social intimacy that includes emotional disclosure, they should be able to reason both ways.

Methods

Here, participants were told about the same protagonist. In the story, their mother and a friend's mother both asked how the protagonist's day was at school. We then asked participants to predict whether the protagonist would disclose the fact or their emotional state across the happy condition and sad condition.

Results

In the sad condition, children predicted the protagonist would disclose the emotion more often than the fact with their mother (75%, BF10= 456). Children did not predict that the protagonist would disclose the sad emotion more often with the friend's mother (38% predicted the emotion, BF01=1.6). In the happy condition, children were at chance in both relationship conditions (mother; 54%, BF01= 5.6; 49%, BF01= 6.8). Adults predicted the protagonist to disclose sad feelings with their mother more than the fact (78%, BF10 = 566), but happy feelings were closer to chance (66%, BF01 = 0.5). They did not expect the protagonist to disclose emotions with the friend's mom (sad: 19%, BF10 = >1000; happy: 27%, BF10 = 20.8). We also conducted a Bayesian logistic mixed-effects model to test for effects of condition. For children, we found that the happy/sad condition interacted with relationship (median = 1.64, 95% CI, [0.44, 2.89], 0% in ROPE). The mom/sad condition was different from the rest (friend's mom/happy: median = 1.68, 95% CI [0.50, 2.97] 0% in ROPE; mom/happy: median = -1.69, 95% [-2.95, -0.48], 0% in ROPE; friend's mom/sad: median = -1.68, [-2.96, -0.47], 0% in ROPE). In agreement with the results of Study 1, it seems that children expect that people disclose sad emotions more often in close relationships than in other positive relationships. They don't make the same inferences when the emotion is happy. For the adults, we found that relationship affected adults' responses (mother: median = 2.06, 95% CI [1.04, 3.21], 0% in ROPE); condition did not (median = -0.6, 95% CI [-1.75, .48], 16.3% in ROPE). We found mixed evidence for interactions between the

relationship and condition (median = 1.43, 95% CI [-0.06, 2.99], 2.87% in ROPE). With mom/sad as the reference, we found that it was different than the other three conditions: mom/happy: median = -1.12 95% CI [-2.02, -0.26, 0% in ROPE]; friend's mom/happy: median = -1.37, 95% CI [-2.29; -0.51], 0% in ROPE; friend's mom/sad: median = -1.88, 95% CI [-2.84, -1.00], 0% in ROPE).

Discussion

In this experiment, we found that children expected the protagonist to tell their mother that they felt sad at school with their mother over telling her about a fact. This was not true for a friend's mother. When the protagonist had been feeling happy, children did not seem to have clear expectations about what should be disclosed with whom. This supports the hypothesis that children recognize mother-child as a close relationship and expect emotional intimacy in this relationship. These findings suggest that children see emotional intimacy as part of close relationships. The adults had a similar pattern, but again did not as strongly distinguish between happy and sad emotions. Like children, the adults also expected the protagonist to disclose sad emotions to their mother, but were trending toward saying that the child would also share happy emotions. In contrast to children, they expected a *lack* of emotional disclosure with the friend's mother.

Study 3

In studies 1 and 2, children connected close social relationships with emotional intimacy. It stood to reason, then, that children would be able to use this information when thinking about how another person would attempt to *create* a social relationship. This would speak to an intuitive theory of relationships that grants children and adults the opportunity to intervene in the world by using a causal model of how relationships and emotional intimacy coincide. In Study 3, we investigate this possibility.

Methods

In Study 3, children and adults learned about a protagonist who wanted to become close friends with a character they met for the first time. We then asked the participants to choose whether the protagonist should disclose the fact or their emotional state to achieve this goal.

Results

We found that the children were equally likely to say that the protagonist should disclose a fact compared to an emotion across both the sad condition (49% chose emotion, BF01=6.8) and the happy condition (57% chose emotion, BF01=3.5). Adults answered similarly across conditions (47% chose sad emotion, BF01 = 5.3; 48% chose happy emotion, BF01 = 5.5). We also did not find evidence of effects of the condition in our model for the children (median = -0.45, 95% CI [-1.29, 0.39], 20% in ROPE) or for

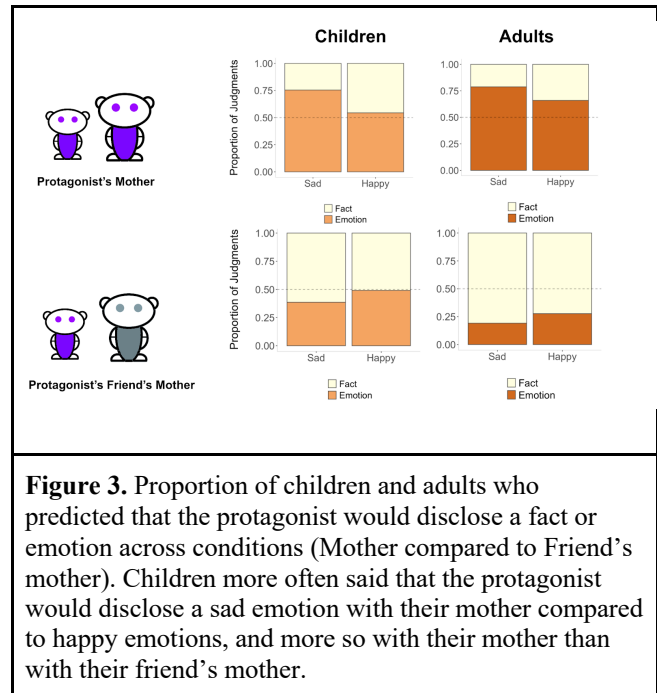


Figure 3. Proportion of children and adults who predicted that the protagonist would disclose a fact or emotion across conditions (Mother compared to Friend's mother). Children more often said that the protagonist would disclose a sad emotion with their mother compared to happy emotions, and more so with their mother than with their friend's mother.

the adults (median = -0.26, 95% CI [-1.89, 1.26], 19% in ROPE).

Discussion

This study aimed to investigate whether children thought that cultivating emotional intimacy was one way to create a relationship. We found that neither children nor adults had this intuition. This suggests that, while children and adults think revealing sad emotions occurs in established close relationships, it may not be a tool to *create* relationships.

General Discussion

In three studies, we examined 6- to 9-year-old U.S. American children's and adults' expectations about the connection between disclosing information and close relationships. In Study 1, the participants learned about a protagonist who disclosed a fact with one character and failed to disclose how they had been feeling at school, while with another character, disclosed the emotion they had been feeling, but omitted the fact. We varied whether the emotion was happy or sad and found that children inferred that the character who was told about the sad emotion, as opposed to the fact, was better friends with the protagonist. This was not true for disclosing happy emotions as opposed to facts. They also connected this kind of emotional disclosure with physical intimacy, as they expected that the protagonist would share a single ice cream cone with the character who had been told about the sad emotion, but not the character who had been told about the happy emotion. Thus, children seemed to use emotional intimacy as a cue of social closeness. By contrast, adults inferred that the characters who were told both emotions were better friends with the protagonist than the characters who were told the facts. They also extended this intuition to predictions about

physical intimacy: saying that the protagonist would share a single ice cream cone with the characters who were told emotions, regardless of whether it was happy or sad.

In Study 2, children and adults predicted emotional intimacy in relationships. Here, we operationalized social closeness by comparing the protagonist's mother to a friend's mother. Therefore, we kept the asymmetrical nature of the relationship the same but varied whether the character was socially close. When asked to choose between whether the protagonist would disclose an emotion or a fact, children guessed that the protagonist would disclose an emotion only with their mother and only when this emotion was sadness. Otherwise, children were at chance as to whether the protagonist would choose to disclose a fact or emotion. In contrast to Study 1, in Study 2, adults did distinguish between happy and sad emotions somewhat, more strongly expecting the protagonist to disclose sad emotions with their mother than happy emotions. Like children, they did not expect the protagonist to share either emotion with a friend's mom.

Finally, in Study 3, we asked whether children and adults would use this knowledge to make predictions about how someone would act if they wanted to create a relationship. Here, contrary to our hypotheses, neither children or adults made systematic predictions.

These studies provide insights into children's intuitive theories of close social relationships and how disclosure may play into these theories. Importantly across these studies, children were asked to compare different ways a person can talk about their day (either disclosing information that they learned or disclosing an emotional experience they had). Interestingly, disclosing a fact with someone could be framed as more prosocial, while disclosing an emotion would not.

These findings add to the growing literature that children distinguish between thick and thin relationships within the larger category of prosocial relationships. While the children in these studies had years of experience with different kinds of relationships, it is still striking that relatively young children recognize emotional intimacy. It seems unlikely that people have explicitly taught children that people disclose sad or negative emotions with close others, nor that you can tell who is close based on the things they disclose with one another. Thus, it is an interesting question how children come to have this knowledge. Additionally, this may be evidence that children integrate intuitive psychology with their intuitive theory of social relationships. Children younger than these participants tend to struggle to connect those two domains. Thus, one caveat to the current studies is that this intuition may be relatively later developing compared to other intuitions about social closeness, such as responses to apparent distress and physical intimacy that involves close physical contact (Thomas, Woo, et al., 2022).

Our findings do agree with previous work in this domain, in which children (roughly the same age as the children here) inferred social closeness after learning that a character

correctly predicted how their social partner would feel (e.g., being bored or curious while reading) and expected close others to better know the preferences of their social partners (e.g. preferring a ball to a bear). These previous findings could be explained as either evidence that children think that close others have had more time with one another and thus more opportunities to learn, or that close others are more motivated to learn, track, and remember their partners' mental states (Woo, Yu, Thomas, 2024). The current studies suggest that at least one explanation for these previous findings is the intuition that people verbally share mental states, especially negative emotional states, with close social partners, and may even hide those mental states from less close social partners. However, a difference between the current studies and this previous work is that children in these previous studies did not seem to systematically differentiate between sad and happy emotions, and it is unclear why they do so.

First it should be noted that we did not directly pit sad emotions against happy emotions. It is possible that while adults see all emotional disclosure as part of close relationships, they may expect that a person who was told about sadness compared to a person told about happiness would be the closer friend. For this reason, it is possible that both children and adults distinguish between disclosing sadness and happiness.

People often feel uncomfortable disclosing negative emotions and future research could further investigate why. Perhaps, while it is sometimes unpleasant to learn about other people's emotional states, in many close social relationships, we either don't mind because we value the other person's emotional well-being, and/or we expect that we ourselves will be able to 'offload' negative emotions with close others in the future. This may explain why participants did not expect others to disclose negative emotions to *create* a relationship. If both adults and children share this intuition, then children's failure to use disclosing happiness may have resulted from them having a higher estimation of how much acquaintances care about learning one another's mental states more generally. Future studies could investigate these possibilities.

One major limitation of these findings is the relatively homogeneous pool of participants tested in this study. Future studies could investigate whether these expectations vary across cultural contexts, especially in cultures where people are less likely to share emotional states with anyone. It could also be fruitful to examine how children determine when a relationship is close enough to involve emotional intimacy.

While many questions remain, the current series of studies is one step closer to gaining a better understanding of how children understand social relationships, and in this case, how they connect relationships to patterns of information disclosure.

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