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I owe you an explanation:
Children's beliefs about when people are obligated to explain their actions.

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Abstract

To cohesively interact with others, we must recognize that we are sometimes obligated to explain our actions. In three experiments, we provide evidence that young children are aware of social norms governing when explanations are owed, and judge that people are obligated to explain their actions when they directly interfere with others' goals. In Experiment 1, 3-6-year-olds were more likely to say that agents had to explain their actions when they interfered with others' goals, than when agents did not interfere. In Experiment 2, children differentiated between when explanations are owed and when they are desired. Finally, in Experiment 3, children showed they understand that an explanation is owed to the person whose goal was frustrated, but not to other people. These findings show that children are aware of ways explanations enter into social interactions, and increase our knowledge of social norms that govern communication.

I owe you an explanation: Children's beliefs about when people are obligated to explain their actions.

You do not normally have to explain your actions to others. For instance, when grocery shopping, you are not obligated to tell other shoppers why you are using a cart instead of a basket, or why you chose one brand of cereal over another. However, you might owe other shoppers an explanation if you intentionally block their path with your cart. Understanding when explanations are owed is important for our daily social interactions. For instance, if you neglected to explain why you blocked your fellow shoppers, you might be perceived as inconsiderate and rude. Conversely, if you needlessly explained your purchases to the other shoppers, you might be viewed as odd.

People's judgments about when explanations are owed are informative about the social norms involved in communication. Recent work in experimental philosophy has focused on norms that govern the content of communicative utterances. For example, much work shows that people feel that assertions should express knowledge, and these norms likely exist to prevent people from misleading or misinforming others (e.g., Turri, 2015, 2016, 2017). In contrast to these norms, obligations to explain actions are discourse obligations (Traum & Allen, 1994). Discourse obligations determine *when* certain things should be said. They include apologies and responses to questions, and may often function to ensure that people avoid conflicts, and maintain relationships.

In the present paper, we examine whether people feel individuals are obligated to explain actions that directly interfere with others' goals. People feel they are autonomous and have self-

determination rights that entitle them to pursue their goals without being subject to interference. For example, adults and children feel people are entitled to make self-relevant decisions, even when their decisions are opposed by authority figures (e.g., Helwig, 1997; Killen & Smetana, 1999; Lagattuta, Nucci, & Bosacki, 2010; Nucci, 1981; Nucci & Weber, 1995; Ruck, Abramovitch, & Keating, 1998). Actions that directly interfere with others' goals encroach on their autonomy, and may warrant explanation.¹ This proposal is inspired by the philosopher Stanley Benn's (1975) claim that people are obligated to explain their actions when they interfere with others' freedom to act (also see Benn & Weinstein, 1971).

The proposal that explanations may sometimes be owed to others is broadly consistent with research showing that adults mostly provide explanations spontaneously, without being prompted or asked to do so (Malle, 1999, 2004; Wong & Weiner, 1981). Our proposal that explanations are sometimes motivated by obligations extends this idea by specifying one factor that may lead people to generate explanations without being prompted.

To examine our proposal, we tested whether young children judge that agents have to explain their actions when they directly interfere with others' goals. We anticipated that young children might succeed in recognizing that people owe explanations in such situations because from infancy they find goals very salient, and recognize when goals are interfered with (Woodward, 2009; Hamlin, 2013; Kuhlmeier, 2013). Investigating this in young children is also promising as it can increase knowledge of children's awareness of how explanations enter into their social interactions.

¹ This proposal does not imply that directly interfering with others' goals is the *only* action that creates such obligations. For example, people could also be obligated to explain their actions when they break existing agreements, commitments, or promises (see Gräfenhain, Behne, Carpenter, & Tomasello, 2009 for related work).

Much recent research on children's explanations has examined how generating explanations benefits children's causal reasoning (Legare & Lombrozo, 2014; Rittle-Johnson, Saylor, & Swygart, 2008; Walker, Lombrozo, Legare, & Gopnik, 2014; for a review see Legare, 2014). For example, explaining how a toy works helps 3-year-olds remember new causal information about how it works (Legare & Lombrozo, 2014). Related research has examined children's ability to evaluate the quality of causal explanations. These studies show that preschoolers prefer explanations which are simple and highly probable (Bonawitz & Lombrozo, 2012) and place little trust in explanations that are circular and contain no causal information (Baum, Danovitch, & Keil, 2007; Mercier, Bernard, & Clément, 2014; also see Corriveau & Kurkul, 2014). Moreover, children intelligently evaluate reasons (Castelain, Bernard, Van der Henst, & Mercier, 2016; Koenig, 2012). For example, they prefer reasons provided by powerful people, and do not like reasons based on guesses (Castelain et al., 2016; Koenig, 2012). Together, these studies are informative about the relation between explanations and children's causal reasoning, and how children evaluate speakers' testimony. However, they say less about their expectations for the ways in which explanations *should* enter social interactions. For instance, such studies are informative about children's evaluative abilities, but are fairly uninformative about their beliefs about *when* and *why* people should explain their actions to others.

Only a few studies have examined children's use of explanations in these kinds of social interactions. These studies have predominantly used naturalistic observation methods to examine when toddlers and preschoolers provide explanations and justifications (e.g., Dunn & Munn, 1987; Goetz, 2010; Orsolini, 1993; Veneziano & Sinclair, 1995; for exceptions see Köymen, Mammen, & Tomasello, 2016; Köymen, Rosenbaum, Tomasello, 2014). They mainly conclude

that young children provide explanations when they are in disputes with others (e.g., arguing over whose turn it is to play a game; Dunn & Munn, 1987; Goetz, 2010; Orsolini, 1993), or when making joint-decisions (e.g., deciding where to place a toy; Köymen et al., 2016; Köymen et al., 2014). However, these studies do not reveal whether children recognize that people (including themselves) are sometimes *obligated* to explain their behavior.

Present Studies

We report three experiments. In all experiments, children saw brief vignettes and then judged whether a character in each vignette had to explain their actions. We chose this approach, rather than examining when children explain their actions, as it could be difficult to induce children to interfere with others' goals. We also favored an approach in which children evaluated third parties, as children's decisions to generate explanations could depend on many factors besides their notions of when explanations are owed.

Our experiments include children in two age groups, 3-4 and 5-6 years. We chose these ages ranges because children's social cognition undergoes much development between ages three and six. On the one hand, we anticipated that young children might succeed in recognizing that people owe explanations in such situations because children are skilled at *evaluating* reasons (Koenig, 2012), and goal interference is very salient to young children (Woodward, 2009; Hamlin, 2013; Kuhlmeier, 2013). At the same time, this understanding might show delayed development as younger children sometimes fail to apply their understanding of "theory of mind" (which includes reasoning about goals) when making other kinds of judgments (e.g., Bradmetz & Schneider, 1999; Pesowski, Denison, & Friedman, 2016; Richert & Lillard, 2002). For example, young preschoolers often neglect to apply their understanding of intent when

judging whether actions are wrong or should be punished (e.g., Cushman, Sheketoff, Wharton, & Carey, 2013; Zelazo, Helwig, & Lau, 1996).

Experiment 1

Methods

Participants. We tested 88 children: 44 3-4-year-olds ($M = 4;2$, range = 3;1-4;10, 20 girls) and 44 5-6-year-olds ($M = 5;11$, range = 5;0-6;11, 23 girls). Two additional children were tested, but excluded for not answering the test question. In all experiments, children were individually tested at preschools, daycares, and schools.

Materials and Procedure. Children were told a story narrated by the experimenter, accompanied by pictures shown on a laptop computer; stories were also conveyed in this way in the subsequent experiments. Children were randomly assigned to hear one of two versions of the story, which varied in whether an agent's action did or did not interfere with another character's goal (see Figure 1 for sample slides and scripts from all experiments). In the "interference" version, a boy wanted to sit in the larger of two chairs, but a girl took this chair so that she could reach a box of toys on a high shelf. In the "non-interference" version, the boy wanted to sit in the smaller chair, and the girl again took the larger chair to reach the box. After hearing the story, children were asked a yes/no test question about whether the girl was obligated to explain her actions to the boy.² The story also included two comprehension questions. If children did not answer these questions, or answered them incorrectly, then all relevant information was repeated, and the questions were asked again. If children did not answer the comprehension questions

² In this experiment, and those subsequent, children occasionally said "I don't know" or remained silent when asked the test question. Children who responded "I don't know" (4 of 200 children across all experiments) were prompted with "What do you think?"; if they said "I don't know" again, or remained silent, their answer of "I don't know" was kept. Children who were silent (5 of the 200 children across all experiments) for the initial test question were prompted three times, first with "What do you think?", second with "Just guess", and third with a repetition of the test question.

correctly after three tries, the experimenter continued testing (see Table 1 for rates of success).

The comprehension questions allowed us to highlight important information in our stories. Some of these questions were more linguistically demanding (i.e., why questions) than our test questions (i.e., yes/no questions), so we analyzed children's responses regardless of whether they passed the comprehension questions. The same comprehension questions and prompting procedure was used in Experiment 2.

EXPERIMENT 1

Look here are two chairs. And up here is a box of toys. Look here is a boy. The boy wants to sit on the [blue/green] chair. Which chair does the boy want to sit on? So he goes to sit down. Just before he sits down a girl comes. The girl wants the box of toys but she can't reach. So she goes and gets the blue chair to stand on. Why did she get the chair? Does the girl have to tell the boy that?

EXPERIMENT 2

Here are two buckets. And look here is a girl. The girl wants to play with the [purple/orange] bucket. Which bucket does the girl want to play with? So she goes to play with it. Just before she does, a boy comes. The boy takes the purple bucket and puts it on his head. He puts the purple bucket on his head because he wanted to pretend he is a robot. Why did he do that? [Does the boy have to tell the girl that? / Does the girl want to know that?]

EXPERIMENT 3

Look, here are some kids and they are in a library. And look, this boy is going to read the blue book. He is going to read it. This boy is going to read the orange book. He is going to read it. Let's see what happens. This girl takes the orange book from the boy. She takes it because it's her favorite story. [Does the girl have to tell this boy she took it because it's her favourite story? / Does the girl have to tell this boy she took it because it's her favourite story?]

Figure 1. Sample stimuli and story scripts for all three experiments.

Table 1. Proportion of comprehension questions passed in Experiments 1 and 2

	Condition	3-4-year-olds	5-6-year-olds
Experiment 1	Interference	0.98	1.00
	Non-interference	0.93	1.00
Experiment 2	Interference, owes question	0.92	
	Interference, desire question	0.79	
	Non-interference, owes question	0.88	
	Non-interference, desire question	0.86	

Results and Discussion

We examined whether children were more likely to say the agent owed an explanation when she interfered with the other character's goal compared with when she did not; data from all experiments are available at <https://osf.io/hr683/>. A generalized linear model for binary logistic data with the between-subject factors *story-version* (interference, non-interference) and *age* (3-4-year-olds, 5-6-year-olds) revealed a main effect of story-version, $Wald\ X^2(1) = 14.15, p < .001$, with children more likely to say the agent was obligated to explain her action when she interfered with the other character's goal (82% of responses) compared with when she did not interfere (41% of responses). There was a marginally significant effect of age, $Wald\ X^2(1) = 3.01, p = .083$, and the interaction between condition and age was not significant, $p = .599$.

These findings suggest that young children consider whether an agent interferes with others' goals when deciding whether the agent has to explain their actions. To ensure these findings are robust, in the next experiment, we sought to replicate our findings using different storylines in which the reasons for interfering with another's goal were less transparent. The next experiment also addressed a potential concern with our findings: Instead of considering whether the agent owed an explanation, children might have asked themselves whether the other character *desired* an explanation. We felt this is a plausible concern because for young children, desires are salient motivators of behavior (Bartsch & Wellman, 1989). To address this concern,

the next experiment compares judgments of whether the agent owed an explanation to judgments of whether the other character wanted an explanation of the agent's action. Because there were no significant effects of age in the present experiment, the next experiment only included children in our younger age range (i.e., 3-4-year-olds).

Experiment 2

Methods

Participants. We tested 72 3-4-year-olds ($M = 4;1$, range = 3;2-4;11, 35 girls).

Materials and Procedure. Children were randomly assigned to one of four conditions in a 2X2 between-subjects design manipulating *story-type* (interference, non-interference) and *question-type* (explanation-owed, explanation-desired). In each condition, children heard two stories where an agent either did or did not interfere with another character's goal. In the first story, a boy wanted to sit in a certain chair, and a girl either took this chair (interference) or another chair that was beside it (non-interference); in contrast with Experiment 1, these chairs were the same size, making the agent's motivation less transparent. In the second story, a girl wanted to play with a certain bucket, and a boy either took this bucket (interference) or another bucket that was beside it (non-interference). Immediately after each story, children were asked a test question which either concerned whether the second agent was obligated to explain their actions (explanation-owed) or whether the other character wanted to know why the agent acted as they did (explanation-desired).

Results and Discussion

We anticipated that children would be more likely to say the agent owed an explanation when they interfered with the other character's goal. However, children might not show a similar effect of interference when judging whether the other character desired an explanation. The

agent's motivation was not transparent in both versions of the story, so it is possible that children expected the other character to want to know the reasons for the agent's actions regardless of whether the agent interfered.

To examine these possibilities, we entered children's "yes" responses into a generalized estimating equations (GEE) model (binary logistic) with the predictors *story-type* (interference, non-interference) and *question-type* (explanation-owed, explanation-wanted). There were no main effects, both $ps = .678$, but there was a significant interaction between story-type and question-type, Wald $X^2(1) = 8.28$, $p = .004$. To follow-up on this interaction, we ran pairwise comparisons to examine whether children's responses varied by story-type when they answered each question. Children were more likely to agree the agent had to explain her actions when she interfered with a goal (72% of responses) than when she did not (36% of responses), $p = .014$. Crucially, a similar effect did not arise when children were asked whether the other character wanted an explanation. Instead, there was a marginally significant effect in the opposite direction, $p = .055$.

These findings suggest that young children consider whether an agent interferes with others' goals when deciding whether the agent has to explain their actions. The results also show that children differentiate between situations where explanations are owed and where they might be desirable (i.e., where someone might be curious to know what is going on).

However, the findings so far do not examine whether children understand the *specificity* of the agent's obligation to explain their action. Children might feel that an agent who interferes with goals must explain their actions, but without knowing who it is owed to. For example, children could feel the explanation is owed anyone who witnessed the agent's actions. Hence, in

our final experiment, we examined whether young children recognize that the agent specifically owes an explanation to the person whose goal was interfered with, and not to others.

In this final experiment, we returned to testing young and older groups of children (i.e., as 3-4-year-olds and 5-6-year-olds). Unlike Experiment 2, which used a similar design to Experiment 1, this experiment used a new test question, and employed a different within-subjects design.

Experiment 3

Methods

Participants. We tested 40 children: 20 3-4-year-olds ($M = 4;0$, range = 3;2-4;9, 13 girls) and 20 5-6-year-olds ($M = 5;9$, range = 5;0-6;11, 9 girls).

Materials and Procedure. In a within-subjects design, children were told two stories in which an agent interfered with the goals of a second character, but without interfering with the goals of a third character. In the first story, two boys were going to read books in a library, and a girl took the book one of the boys wanted. In the second story, two girls were going to play with puzzles, and a boy took the puzzle one of the girls was going to play with. After each story, children were asked whether the agent owed an explanation to the “victim”, and whether the agent owed an explanation to the “observer”. We counterbalanced the order of these questions across the two stories and across participants.

We did not include a comprehension question in this Experiment as we did not want to highlight one object and character more than the other. For example, asking children to point to which book the girl wants would have led them to point to the book right beside the target boy.

Results and Discussion

In this experiment, children could indicate that an explanation was owed to the victim, to the observer, to both of these characters, or to neither. To examine whether children understand that explanations are specifically owed to the person whose goal is disrupted, we entered children's responses into a GEE model (binary logistic) with the within-subjects factor *addressee* (victim, observer) and the between-subjects factor age (3-4-year-olds, 5-6-year-olds). There was a main effect of addressee, $Wald\ X^2(1) = 28.60, p < .001$, in which children were more likely to say that an explanation was owed to the victim (84% of responses) than to the observer (34% of responses). There was a marginally significant effect of age, $Wald\ X^2(1) = 2.79, p = .095$, and the interaction between addressee and age was not significant, $Wald\ X^2(1) = 1.18, p = .278$. These results suggest young children have some understanding of the specificity of obligations to explain actions that interfere with others.

General Discussion

Philosophical and adult psychological work suggests that the ability to recognize when explanations are owed is important for evaluating the fairness of actions, maintaining relationships, and preventing conflict (e.g., Bobocel & Zdaniuk, 2005; Malle, 2004; Turri, 2015, 2016, 2017). Our findings reveal that by 3 years, children recognize when explanations are owed to others. They appreciate that people are obligated to explain their actions when they interfere with others' goals (Experiment 1 and 2), and that these explanations are owed to the person whose goal was frustrated, but not to observers (Experiment 3). Our findings support the proposal, inspired by Stanley Benn (1975), that actions that directly interfere with others' goals and encroach on their autonomy, warrant explanation. They also build on prior work investigating people's awareness of norms that govern the content of communicative utterances (e.g., Turri, 2015, 2016, 2017) by demonstrating that in early childhood, people are already

aware of a discourse obligation (Traum & Allen, 1994) governing *when* explanations are required.

Developmental Relevance

Our findings have implications for understanding children's development. First, our finding that children recognize one situation in which explanations are owed, suggests that they may recognize other situations like this. For example, children might judge that people owe explanations if they break social commitments, such as not keeping a promise. Similarly, children might judge that people owe explanations when they violate conversational maxims, as when they lie and disregard the Gricean maxim of quality (see Grice, 1975). Children as young as 3-years-old recognize when these kinds of violations occur, so they may have the prerequisite knowledge to judge that explanation are owed (see Gräfenhain, Behne, Carpenter, & Tomasello, 2009 for work on social commitments, and Eskritt, Whalen, & Lee, 2010 for work on Gricean violations). If children also recognize that explanations are owed in these cases, it would suggest a broader theory according to which people owe explanations whenever they violate social obligations. On this view, interfering with others' goals and freedoms is just one such violation.

Second, our findings hint at an intriguing progression in children's understanding of how explanations enter into social interactions. As adults, we are aware of many reasons for explaining our actions to others. Besides generating explanations because they are owed, we may also explain our actions for self-interested reasons such as to avoid blame, maintain our reputations, and manage how others view us (Malle, 2004; Malle, Knobe, O'Laughlin, Pearce, & Nelson, 2000; also see Malle & Knobe, 1997 for related work on intentions). For example, if you are late for a meeting, but make no attempt to explain why, others could conclude that you are unreliable or that you are indifferent to their convenience and welfare. However, they might be

less likely to conclude this if you explain that you were late because of factors outside your control.

However, recent work suggests that young preschoolers are unlikely to understand these other motivations for explaining actions. For example, children do not appear to understand the reputational consequences of actions until they are six, or possibly five (for an excellent review see Silver & Shaw, 2018). As such, our findings suggest that children's understanding of when people are *obligated* to explain their actions likely emerges *before* their awareness of *self-interested* reasons that might prompt explanation. This suggestion is counter to traditional accounts of development which posit the reverse developmental trajectory. Most notably, Kohlberg (1973) proposed a pattern of development where young children understand moral considerations such as *obligations* to others, *after self-beneficial motives* for actions (e.g., avoiding punishment). It must be noted, though, that our findings only hint at this developmental progression, and further work is needed to carefully explore it.

Potential Concerns

One potential concern with our study is that children may not have really felt that the agents in our vignettes were *obligated* to explain their actions. For instance, children could have interpreted our test questions as instead asking whether the agent should have to explain their actions, or whether the agent was expected to explain their actions. Similarly, children's judgments could reflect the belief that it would be socially beneficial for the agent to explain their actions—this might appease the victim, and serve to excuse the interfering actions. Although our findings cannot conclusively rule out these alternatives, the differences between these related possibilities are not great. These interpretations of the question are all normative and all rely on normative reasoning about explanation.

Another potential concern is that children might have been reasoning about ownership and not goals during our task. Prior work shows that young children recognize that ownership governs the acceptability of actions, and that owners have a right to decide how their property is used (Friedman, Neary, & Burnstein, 2009; Nancekivell & Friedman, 2017; Nancekivell & Friedman, 2014; Schmidt, Rakoczy, & Tomasello, 2013). In our experiments, children could have felt that explanations were owed to the victims because their ownership rights were violated (i.e., and not because of interference with their goals). However, we believe this is unlikely. In Experiments 1 and 2, this ownership-violation account requires children to think that the victim owned the object they intended to use, but not the other object. However, previous work suggests that children do not infer ownership from an agent's intention to use an object (e.g., Neary, Friedman, & Burnstein, 2009 Experiment 2; also see Shaw, Li, & Olson, 2012). Children do sometimes infer ownership from physical proximity and contact (e.g., Blake, Ganea, & Harris, 2012; Neary & Friedman, 2008); however, the victim was equally close to both of the objects. If children inferred ownership in this way, they should judge the agent would explain themselves regardless of which object they took. We did not find this. Also, in Experiment 3 the characters were in a library, so it is unlikely that children thought that any of the characters owned the books. Notably, *even if* children did infer ownership, our finding would still be broadly consistent with Stanley Benn's account, as rights to one's property could be construed as an extension of our freedom to act autonomously (for a philosophical discussion see Humphrey, 1992).

A final and related concern is that children's responses were based on expectations that agents are more likely to owe explanations to someone they are already interacting with, than to someone they have not yet interacted with. This is a plausible concern in Experiment 3 because

the agent moved closer to the victim than to the other person who was present. However, Experiments 1 and 2 used between-subjects designs in which children saw the exact same slides regardless of whether the agent interfered with a goal or did not. Hence, it is implausible that children construed an interaction in one condition, but not the other. Moreover, the scripts did not describe any verbal or physical interaction between the agent and the victim. Finally, in Experiment 2, this alternative account struggles to explain why children's judgments about whether an explanation was desired did not significantly differ across condition.

Open Questions

We expected that people would adhere to a goal-based principle in judging when explanations are owed. However, as discussed above, Benn (1975) suggests that people need to explain their actions when they interfere with others' *freedom*. A strict interpretation of this account means that people owe explanations when they interfere with others' ability to make choices, even when they do not specifically interfere with others' goals. This account is also plausible given that children can reason about free choice and recognize factors that constrain it (e.g., Chernyak, Kang, & Kushnir, in press; Kushnir, Gopnik, Chernyak, Seiver & Wellman, 2015). Although the present findings are equally explained by both accounts, the current experiments only directly test the narrower goal-based account.

Another question raised by our findings is whether obligations to explain actions are related to obligations to apologize. At first, it might seem that explanations and apologies are required in the same situations. For example, the agent in our vignettes probably owed apologies alongside owing explanations. However, we suspect people are often obligated to explain their actions, even when they do not owe an apology. For example, when a parent grabs their child's hand to prevent the child from touching a hot stove, they might not owe the child an apology.

But the parent may need to explain why they interfered with the child's goal. Similar intuitions might also arise when paternalistic actions benefit adults. Although we have not yet tested this prediction, it at least raises the possibility that obligations to explain and apologize depend on different communicative norms.

We close by considering a further question on the nature of owed explanations. Our investigation focussed on *when* people are obligated to explain their actions. As such, we did not address factors that affect the quality of these explanations, or factors that make these explanations satisfying. From childhood, people evaluate the quality of explanations (e.g., Baum, Danovitch, & Keil, 2007; Bonawitz, & Lombrozo, 2012). For example, they prefer simple explanations containing a single cause over more complex explanations, and likewise dislike circular explanations which reiterate the question being asked (Baum, Danovitch, & Keil, 2007; Bonawitz & Lombrozo, 2012). However, additional considerations might influence how people evaluate explanations that are produced under obligation. One possibility is that the “mode” of explanation may be particularly important. For instance, explanations referring to mental states are especially informative about people's motivations for actions (Malle et al., 2000), while explanations referring to skills and facilitating circumstances are more informative about how people came to complete their actions (Malle et al., 2000). When we are obligated to explain our actions to others, we may be expected to inform others of our motivations, and therefore refer to our mental states. For example, after blocking a fellow grocery store shopper with your cart, others might judge your explanation as more satisfying if you mention your mental states (e.g., I didn't mean to block you; I didn't know you were there) than if you refer to external circumstances enabling your actions (e.g., the wheels on my cart are jammed; my hair fell in front of eyes).

Conclusion

In sum, our findings are informative about people's recognition that others are sometimes obligated to explain their actions to others. The findings show that young children aged three to six are aware of one type of discourse obligation (i.e., one kind of situation where people are obligated or required to say something; Traum & Allen, 1994). The present research also highlights that early in development people are aware of certain ways that explanations enter into social interactions, and that this recognition is crucial for their social functioning.

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