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## Using Naturalistic Recordings to Study Children’s Social Perceptions and Evaluations

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### Abstract

Children often encounter events that bear on their moral and other evaluations, such as physical aggression and material disorder. Children’s perceptions and evaluations are decisive for how they respond to and learn from these everyday events. Using a new method for investigating the development of social perceptions and evaluations, researchers interviewed 3- to 6-year-olds about naturalistic video recordings of *harm*, *disorder*, and *joint play* events. Children distinguished between the situations in the perceived intent of the protagonists, evaluations, justifications, and what they thought the protagonist should do after. Age differences suggested that perceiving and evaluating simple everyday situations was challenging for younger children. This research highlighted the importance of studying children’s everyday social perceptions and evaluations, and validated a new paradigm for doing so.

### Keywords

moral development; everyday experiences; social cognition

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In their daily lives, young children encounter events that bear on social evaluations (Dahl, 2016b; Dahl & Campos, 2013; Nucci & Weber, 1995; Turiel, 2008). Evaluations of right and wrong – how people should act – are rooted in perceptions of acts and their consequences (Pasupathi & Wainryb, 2010). Children observe that hitting harms others, spilling food creates disorder, and joint play engenders positive relationships. It has been proposed that perceptions of everyday events guide the construction of social understandings and evaluations, for instance leading children to evaluate harmful actions as morally wrong by three years of age (Dahl & Freda, 2017; Killen & Smetana, 2015; Turiel, 1983, 2015). The present research developed a different methodological paradigm for investigating preschoolers’ perceptions and evaluations of everyday social events.

It is methodologically challenging to study children’s perceptions and evaluations of everyday events. Many everyday acts, such as spontaneous hitting others or spilling food, are

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difficult to elicit experimentally (Dahl, 2016b, 2017; Turiel, 2008). Moreover, common acts of harm or disorder in preschools occur in an otherwise hectic environment, making it challenging to assess children's perceptions and evaluations when the events occur. Overcoming these challenges, and examining children's perceptions and evaluations of everyday events, is important insofar as all developmental theories make assumptions about children's use of their daily experiences (Dahl, 2017). The present research developed a method for such examinations by interviewing 3- to 6-year-olds about naturalistic video recordings of preschool interactions.

This initial study applied this paradigm to perceptions and evaluations of three types of event: *harm events* in which a child uses force against another, *disorder events* in which a child creates material disorder, and *joint play* events in which a child plays with others (Dahl & Kim, 2014; Turiel, 2008, 2015). Harm, disorder, and play events are common in everyday life, and their comparison has implications for theories of social and moral development.

According to one proposal, *harm events* inform the development of children's moral concerns with welfare (Dahl & Freda, 2017; Killen & Smetana, 2015; Turiel, 2015). It is proposed that perceptions of acts of force and their harmful consequences by young children contribute to the development of moral judgments about hitting, biting, or kicking others. Interviews about hypothetical events have indicated that, by age three, most children make distinctions between moral violations affecting others' welfare and non-moral violations, such as violations of social conventions (see Smetana, Jambon, & Ball, 2014). Still, little past research have investigated how preschoolers perceive and evaluate commonly experienced acts of force. In the present study, video recordings were used in order to assess whether young children do indeed perceive acts of force in these ways, and if such perceptions are associated with evaluations of the acts as wrong.

*Disorder events* present unique, and rarely studied, challenges for children's social evaluations and perceptions (Dahl, 2016b; Dahl & Kim, 2014; Dahl, Sherlock, Campos, & Theunissen, 2014). Disorder events have direct physical consequences (mess, damage), but do not inherently impinge on rights or welfare. Evaluating these events requires children to *infer* connections between mess-making and other evaluative concerns, for instance with others' welfare. Although disorder events are very frequent in the lives of young children, there is almost no research on how children view such events (Dahl, 2016b). Two studies found that preschoolers judge hypothetical acts that cause disorder as distinct from other violations. Unlike their evaluations of harmful acts, preschoolers' evaluations of disorder events are based on pragmatic concerns with material consequences (e.g., "It'll get messy") and inconvenience (e.g., "They'll have to clean it up," Dahl & Kim, 2014; Dahl & Tran, 2016). Preschoolers also judge disorder events as distinct from violations of social conventions (e.g. wearing a bathing suit to school). For instance, they do not perceive conventional violations to have direct, material consequences (Dahl & Kim, 2014). The present study examined whether preschoolers could also apply evaluative concepts to the types of naturally occurring disorder events they routinely encounter.

Lastly, to rule out that children would evaluate any videotaped act as wrong, the present study assessed children's perceptions and evaluations of *joint play* events. In contrast to

*harm* and *disorder* events, *play* events were not expected to elicit perceptions of direct welfare or material consequences nor negative evaluations.

## Studying Preschoolers' Perceptions and Evaluations of Social Events

Much past research on studying children's perception and evaluations of social events has used either observations of everyday interactions or laboratory assessments of responses to hypothetical events. Observational studies have shown that acts that cause harm, create disorder, or violate social conventions engender distinct social experiences from infancy and throughout childhood (Dahl, 2016b; Dahl & Campos, 2013; Killen & Smetana, 1999; Nucci & Turiel, 1978; Nucci & Weber, 1995). With regard to harm, victims and observers usually judge by the consequences to the victim's welfare. In contrast, when children create disorder at home parents' reactions often involve references to material consequences and inconvenience. These findings support the proposition that children's experiences could enable them to draw conceptual distinctions between harm, disorder, and other social actions (Turiel, 2015).

Research using hypothetical events have presented children with stories or puppet interactions (e.g. Dahl & Kim, 2014; Hamlin, Wynn, Bloom, & Mahajan, 2011; Schmidt, Rakoczy, & Tomasello, 2012; Smetana et al., 2012). These studies have found that children judge, protest against, and reason about acts of force, disorder, and other social actions. Hypothetical events have also been used to study children's attributions of intentions and emotions to interactants (Arsenio & Kramer, 1992; Killen, Mulvey, Richardson, Jampol, & Woodward, 2011). Findings using hypothetical events support the proposition that children draw distinctions among moral (welfare, rights, fairness, justice), pragmatic (inconvenience, disorder), and other evaluative considerations.

A third, and less common method, has been to interview children about naturally occurring events. This method bridges observations of everyday interactions and interviews about hypothetical events, and allows researchers to address questions not easily addressed otherwise. By definition, hypothetical events differ from naturally occurring events. Hypothetical events are typically simplified events to make them more readily understood by children, for instance by removing any extraneous or ambiguous features. In contrast, the events children encounter in their everyday lives contain unrelated or ambiguous acts, emotional expressions, and statements (Dunn, 1988; Recchia, Wainryb, & Pasupathi, 2013).

In the past, a few studies have involved interviews of preschoolers about naturally occurring events (Nucci & Nucci, 1982; Nucci & Turiel, 1978; Nucci, Turiel, & Encarnacion-Gawrych, 1983; Smetana et al., 1999). Typically, a researcher approaches a child immediately after an event, for instance a child who just hit another child, and interviews the child about what just happened. These findings have indicated that preschoolers apply their moral and conventional concepts in drawing distinctions between acts of harm and violations of social conventions in everyday life.

Some studies have examined children's own accounts of social conflict (e.g. Pasupathi & Wainryb, 2010; Recchia et al., 2013; Wainryb, Brehl, & Matwin, 2005). One study with

children between 4 and 16 years of age found that younger children recounted conflicts involving physical harm more often than older children (Wainryb et al., 2005). With age, children became increasingly likely to discuss psychological features of the events (e.g. mental states, emotional reactions), victim's responses, and resolution. Overall, preschoolers' accounts were less elaborate than the accounts of older children.

The present research developed a paradigm for studying children's responses to everyday events by interviewing them about naturalistic events shown in the video recordings. Since the interviews were removed from ongoing interactions, this method allows for detailed examination of children's attributions of intent and consequences, as well as their notions of what should happen after the event (Dahl et al., 2014). Moreover, the method did not rely on children to provide their own narratives of events, which can be challenging for young children (Wainryb et al., 2005).

The interviews in this study assessed four key aspects of children's perceptions and evaluations of harm, disorder, and play events: (1) whether children readily perceived the target features of the events, (2) how children construed the motives and consequences of the target actions, (3) how children evaluated these actions, and (4) what they thought interactants should do subsequently. In examining these issues, the study aimed to validate a new method, examine theoretically important issues in children's perceptions and evaluations of social events, and generate questions for future research.

The study focused on the period from three to six years of age, which is characterized by major moral and social transitions. During this time, children's mental state attributions (Killen et al., 2011), coordination of multiple considerations when evaluating social situations (Damon, 1975; Köymen et al., 2014; Rizzo & Killen, 2016), and understanding of mixed emotional states (Arsenio & Kramer, 1992; Lagattuta, Nucci, & Bosacki, 2010) undergo substantial changes. Given the challenges in perceiving and evaluating everyday events, which are likely more complex than hypothetical events, we expected that 5- and 6-year-olds would more readily identify actions in the situations, attribute intentions, provide justifications for their evaluations, and propose subsequent actions (e.g. apologies or teacher interventions) than would 3- to 4-year-olds.

## Method

### Participants

Ninety-two children (60% female, 30% male) participated in the study. The younger age group consisted of 50 3- to 4-year-olds ( $M_{age} = 4.0$  years, range: 3.0 – 4.9 years) and the older age group consisted of 42 5- to 6-year-olds ( $M_{age} = 5.5$  years, range: 5.0 – 6.8 years). The recruitment goal was to have at least 40 children in each age group. This sample size is comparable to sample sizes on past studies on preschoolers' judgments about moral and social events (Dahl & Kim, 2014; Smetana, Ball, Jambon, & Yoo, 2018), and simulations indicated a power greater than .90 for detecting expected main effects and interactions given the present design. Children were recruited from a participant database at a public research university in the Western U.S. and from several nearby preschools. The research procedures

were approved by the Institutional Review Board at the University of California, Santa Cruz (HS2310: “Preschoolers’ interactions and thoughts about norm violations”).

## Materials

To obtain video clips to be showed to participants, research assistants reviewed approximately 50 hours of naturalistic video recordings from four different preschools. Researchers identified 180 events falling into three categories: *Harm* events involved a child purposively hitting another child. The selected events included a provocation preceding the act of force (e.g., child taking a toy from another child). *Disorder* events included a child creating disorder by pushing or dropping something so that it spilled or broke (e.g., pushing a tray with toys off the table, spilling the toys onto the floor). *Play* events contained a child playing with other children without any visible harm, disorder, or other apparent violation (e.g., building a tower together). Research assistants evaluated each clip for visibility (whether the clip provided an unobstructed view of the target acts), ambiguity (whether the act was readily identifiable as harm, disorder, or play), and suitability for editing (e.g. whether a clip could be created without showing any adult intervention). Based on these evaluations, three events were selected for each event type. The clips were edited to show at least five seconds before and after the target actions, not include any visual or auditory interventions from adults, and crop out distracting events. In each video, the faces and voices of the interactants were visible during most or all of the clip.

## Procedures

The order of harm, disorder, and play clips was counterbalanced. Eight of the children did not watch all nine video clips because the children said they did not want to watch more videos. After each video clip, the researcher first asked the child: “What happened in that video?” (*act description*). If children did not describe the target event in response to the question, the researcher asked whether the child saw the target event. If the child said “no,” the researcher played the clip again, and ask the child again whether the child saw the target event. If the child still did not indicate that he or she had seen the target, the experimenter moved on to the next video. Next, the researcher asked: “Why do you think s/he did that?” (*attributed motive*), “How do you think [victim] felt?” (*victim consequences*, harm videos only), “Was it okay to for ... to...?” (*act evaluation*), “Why/why not?” (*justification*), “What do you think [protagonist] should do after?” (*subsequent action - protagonist*), “What do you think the teacher should do?” (*teacher intervention*, harm and disorder only).

## Coding

The coding scheme was developed on the basis of theoretical expectations and a preliminary review of the data. Transcripts of the interviews were coded for children’s *act description* (Did the spontaneously describe the target action?), *attributed motive* (Table 1), *victim consequences* (Did the child attribute negative emotions to the victim?), *act evaluation* (Was the target action okay?), and (5) *evaluation justification* (Table 2). Responses to the *subsequent action – protagonist* question were coded for *apologies* (e.g. “he should say sorry,” “she should apologize”) and *clean up/repairation* (e.g. “she should put the toys away,” “he should try to fix it”). Statements about what the teacher should do (*teacher intervention*) were coded for indications that the teacher should *intervene* (e.g. “give her a time-out,” “tell

him to say sorry”). Agreement was calculated by double-coding 20 percent of the data: Mean Cohen’s  $\kappa = .88$  (range: .72 – 1.00).

### Data analysis

Data were analyzed using Generalized Linear Mixed Models with logistic link function and binomial error distribution. All dependent variables were dichotomous. Models included fixed effects of situation type and child age, and random intercepts for participants. Except when noted, interactions between age group and event type were not significant,  $p > .05$ . Hypotheses were tested using likelihood ratio tests and Wald tests (Hox, 2010).

## Results

### Act Perceptions

Older children were more likely to spontaneously describe the target event (5–6-year-olds: 77% of cases) than younger children (3–4-year-olds: 64%),  $D(1) = 9.74$ ,  $p < .001$ . Overall, the propensity to spontaneously describe the target event was higher for disorder (78%) and play (77%) events than for harm events (56%),  $D(2) = 42.57$ ,  $p < .001$ . When children who did not initially describe the acts of force in the harm video, they commonly described the children in the video as simply playing together. Upon prompting, however, nearly all children (99%) indicated that they had seen the target event.

### Attributed Motives

Children’s attributions of motives were sensitive to the type of event they observed (Table 3). Attributions of *aggression* (e.g. “He wanted to hit her because she wasn’t sharing”) were more common in the harm situations (49%) than in the disorder (3%) and play (1%) situations,  $D(2) = 277.85$ ,  $p < .001$ . Older children used more attributions of *aggression* (22%) than younger children (13%),  $D(1) = 10.95$ ,  $p < .001$ . Participants were more likely to refer to *limited agency* (e.g. “it was an accident”) in the disorder situations (10% of cases) than in the harm (2%) and play (2%) situations,  $D(2) = 30.28$ ,  $p < .001$ . *Material order* statements (e.g. “The plants needed water”) were primarily used in the play situations (15%, vs. 6% in disorder situations and 0% in moral situations),  $D(2) = 49.94$ ,  $p < .001$ . References to *protagonist concerns* (e.g. “He wanted the toys on the floor”) were more common in the disorder (51%) and play (51%) situations than in the harm (22%) situations,  $D(2) = 67.55$ ,  $p < .001$ .

### Attribution of Negative Emotion to Victim (Harm Events)

In response to the harm situations, children attributed negative emotions to the victim in 79 percent of situations. Older children were more likely than younger children to attribute negative emotions to the victim,  $D(1) = 14.47$ ,  $p < .001$  (3–4-year-olds: 66% of cases, 5–6-year-olds: 91%).

### Act Evaluations

As expected, most children in both age groups responded that the moral and disorder actions were wrong (92% overall). However, there was a significant interaction between age group



and event type,  $D(2) = 24.71, p < .001$ . Negative judgments about play events were more common among younger children (19%) than among older children (8%),  $D(1) = 6.00, p = .014$ . (Their subsequent justifications indicated that many of these younger children [48%] thought that the play event was not alright because the agent or others would be hurt, for instance by falling while running.) In contrast, there were no significant age group differences between judgments about harm events,  $D(1) = 2.01, p = .16$ , or disorder events,  $D(1) = .72, p = .40$ . In both age groups, children judged the harm actions as wrong more often than the disorder actions, and judged disorder actions as wrong more often than play actions, Wald tests:  $ps < .001$ .

A possible explanation for why children sometimes deemed disorder actions as alright is that they sometimes viewed these actions as accidental. Indeed, when children said a disorder action was an accident they were significantly less likely to say the action was wrong (65% not okay responses, vs. 88%),  $D(1) = 5.12, p = .024$ , illustrating the interconnections of social perceptions and evaluations.

### Justifications for Evaluations

Justifications for evaluations varied among situation types and between age groups (Table 4). As children rarely judged that the harm and disorder actions were okay (0–16% of cases) or that the play actions were wrong (8–19%), we did not analyze justifications for these judgments.

#### Justifications for negative evaluations (harm and disorder events).—

Justifications for why the target action was wrong differed widely between the harm and disorder events, indicating that children drew categorical distinctions between these two events. References to *authority* (e.g. “The teacher said so”) were more common among 3- to 4-year-olds (11% of cases) than among 5- to 6-year-olds (3%),  $D(1) = 8.31, p = .004$ . Statements about *material order* (e.g. “It’ll get messy”) were significantly more common in disorder situations (29%) than in harm situations (7%),  $D(1) = 51.80, p < .001$ . Statements about *obligation/permission* (e.g. “He shouldn’t hit others”) were more common for the moral situations (19%) than the disorder situations (11%),  $D(1) = 5.69, p = .017$ . References to *treatment of others* (e.g. “The other girl is sad”) depended on an interaction between situation type and age group,  $D(1) = 5.13, p = .023$ . For harm situations, older children were more likely to reference *treatment of others* (60%) than were younger children (34%),  $D(1) = 10.43, p = .001$ . In contrast, there was no significant age group difference for disorder situations (3–4 year-olds: 18%, 5–6 year-olds: 24%),  $D(1) = 0.71, p = .40$ . Both age groups used this justification type more often for harm situations than for disorder situations,  $ps < .003$ .

**Justifications for positive evaluations (play events).—**The most common explanations for why the play actions were okay were *protagonist concerns* (21%) and *material order* (20%). References to *context* (e.g. “Because it’s play time”) were significantly more common among older participants (16%) than among younger participants (7%),  $D(1) = 4.16, p = .041$ , while younger participants were more likely to provide *no response* (25%) than older participants (6%),  $D(1) = 8.65, p = .003$ .

### Proposed Subsequent Actions

**Protagonist apology.**—Children indicated that the protagonist should apologize in 36 percent of events. There was a significant interaction between age group and situation type,  $D(2) = 18.04$ ,  $p < .001$ . As expected, older children were significantly more likely than younger children to say the protagonist should apologize in the harm situations (3–4 year-olds: 61%, 5–6-year-olds: 87%),  $D(1) = 13.25$ ,  $p < .001$ . In contrast, the difference was not significant in the disorder situations (3–4 year-olds: 26%, 5–6-year-olds: 33%),  $D(1) = 0.89$ ,  $p = .35$ , or the play situations (3–4 year-olds: 9%, 5–6-year-olds: 3%),  $D(1) = 2.71$ ,  $p = .10$ . Children in both age groups indicated that the protagonist should apologize more often in the harm situations than the disorder situations, and more in the disorder situations than in the play situations,  $ps < .001$ .

**Protagonist clean-up/repair.**—Children indicated that the protagonist should clean up or repair in 24 percent of situations overall. Clean-up/repair responses were overall more common among older children (34%) than among younger children (16%),  $D(1) = 18.09$ ,  $p < .001$ . In addition, there was a significant effect of situation type,  $D(2) = 179.32$ , as clean-up/repair responses were more overall common in response to disorder situations (40%) than in response to play (31%) and harm situations (1%).

**Proposed teacher interventions (harm and disorder events).**—Children were more likely to say that the teachers should intervene in the harm situation (75%) than in the disorder situation (57%),  $D(1) = 31.30$ ,  $p < .001$ . The age group effect was not significant,  $D(1) = 3.84$ ,  $p = .05$ .

### Similarity of Responses to Events within Each Category

To examine whether response patterns were comparable for events within each category, we first conducted a Latent Class Analysis (LCA) using all variables that significantly differed among event types (Dahl & Kim, 2014; Linzer & Lewis, 2011). Results of an LCA model with three latent classes were consistent with our event types: The three harm events were typically placed in Class 1, the three disorder events were typically placed in Class 2, and the three play events were typically placed in Class 3. To further examine the coherence of each event type, we made all possible comparisons of situation pairs for all the dependent variables used in the LCA. Of 252 pairwise comparisons of events, 88% revealed the same pattern as the group means. For instance, all harm situations elicited more references to aggressive intent (35–62%) than any of the disorder or play situations (0–3%). In short, while naturally occurring events inevitably vary, events within each type elicited similar responses from children.

### Discussion

The present research developed a methodological paradigm for investigating perceptions and evaluations of commonly occurring social events. It has been proposed that perceptions and evaluations of such events are central to children's construction of moral and other evaluative concepts (Dahl, Waltzer, & Gross, 2018; Killen & Smetana, 2015; Piaget, 1932; Turiel, 1983, 2015). Moreover, these perceptions and evaluations likely guide children's



reactions to the actions they encounter. To protest against a harmful act, children need to perceive the act as harmful and evaluate it as wrong. Past research has often relied on hypothetical events and puppet interactions to study children's social perceptions and evaluations. The present study interviewed children about video recordings of naturally occurring events involving harm, disorder, and joint play among preschoolers.

In response to video recordings of naturally occurring events, preschoolers made distinct perceptions and evaluations about harm, disorder, and play events. These distinctions were largely consistent for the events within each event type, as evidenced by Latent Class Analyses. For acts of *harm*, children commonly attributed aggressive intentions to the protagonist, for instance using force to get what the protagonist wanted (e.g. "He hit because she wasn't sharing the toys"). Attributions of aggressive intent were especially common among older children. Children also perceived morally relevant consequences to victims in the infliction of harm, with most saying the victim felt negatively after being hit or pushed. Older children were especially likely to say that the protagonist should apologize, and teachers should intervene, following harm events. The findings, therefore, indicate that young children do perceive the reasons for harm events, attribute negative motives to the actor, and understand that there are negative consequences experienced by victims. All this, we would expect, contributes to the early formation of moral judgments about welfare.

Responses to *disorder* events provided further evidence that preschoolers view them as distinct from other social events (Dahl & Kim, 2014; Dahl & Tran, 2016). In explaining why children in the videos created disorder, children referred to the protagonist's goals (e.g., "he wanted the toys on the ground"), or a lack of agency (e.g., "he didn't mean to"). They typically evaluated these acts as wrong because of concerns with material order (e.g., "It'll get messy") or consequences to others (e.g., "Someone will have to clean up"). Consistent with past research, children rarely referenced existing rules or authority prohibitions when explaining why it was wrong to create disorder. Still, pragmatic concerns with material order and convenience may not constitute a separate domain of thought on par with moral or conventional domains. Rather, many disorder events are construed as second-order moral or prudential events: Events that indirectly pertain to the welfare of other people or the agent, insofar as they create inconvenience (Dahl & Kim, 2014; Turiel, 1989). Maintaining material order can be a source of conflict among children and adults (e.g. Smetana, Daddis, & Chuang, 2003; Goodnow, 1988). Children's developing perceptions and evaluations of order and disorder are likely contributors to such conflicts, for instance guiding children to create or prevent disorder at home or in school.

Children perceived and evaluated *play* events differently from *harm* and *disorder* events. In explaining joint play acts, children referred to the protagonist's goals and concerns, but also the material order created by the act (e.g. "The plants needed water"). As expected, children typically said that the play acts were okay, ruling out the possibility that children simply judged any act as wrong within this interview method.

The study also found notable age differences. Compared to 3- to 4-year-olds, 5- to 6-year-olds more frequently described the target event in the video, attributed aggression when explaining harmful actions, attributed negative emotions to victims in harm situations, and

referred to treatment of others when explaining why the harm actions were wrong. Older children were also more likely to say that protagonists should apologize or repair. It may be surprising that 5- to 6-year-olds showed more distinct perceptions and evaluations than did 3- to 4-year-olds. Three-year-olds do apply concepts of intentions, welfare, rights, and material disorder to hypothetical situations (Dahl & Kim, 2014; Killen et al., 2011; Nucci & Weber, 1995; Smetana et al., 2012; Zelazo, Helwig, & Lau, 1996). Moreover, the videos were created to make the events unambiguous. Accordingly, many situations in young children's lives are likely even more ambiguous or multifaceted than the situations children encountered in this study. Age changes in children's social perceptions and evaluations might stem from changes in ways of tracking the mental states of others, advances in children's ways of expressing their perceptions and evaluations verbally, or increased exposure to connections between actions, consequences, and remedies with age (Killen et al., 2011; Siegal & Storey, 1985). The challenges of perceiving and evaluating social situations in everyday life are not artifacts of instrumentation, but are real constraints with implications for children's social development. Developmental changes in how children handle these challenges will enable children to respond more adaptively during the conflicts they encounter in everyday life.

The present research validated the method used for studying children's perceptions and evaluations of social situations, and points to new areas of research. Findings were overall consistent with past studies interviewing preschoolers about hypothetical and actual events, but also yielded new questions worthy of further inquiry. For instance, why were children less likely to spontaneously describe harm acts than to describe disorder or play acts? And which features of everyday situations influence whether younger (or older) preschoolers attribute aggressive intent, rather than other intents, following acts of force (Dodge et al., 2003)?

The study had several limitations that could be addressed in future research. One limitation is that the study only focused on harm, disorder, and play events. Future research could also include conventional or safety-related violations, and possibly include additional events within each category (Dahl & Kim, 2014; Smetana et al., 1999). Moreover, although there was considerable consistency in each category, future research could make further distinctions, for instance between provoked and unprovoked acts of force (Astor, 1994; Dahl, 2016a). Another limitation was the reliance on verbal responses from children. In order to study precursors of the responses observed in the present study, future research could assess also non-verbal emotional or behavioral reactions (Rakoczy, Warneken, & Tomasello, 2008; Smetana & Braeges, 1990; Van de Vondervoort & Hamlin, 2017).

Despite the limitations of this initial study, the present research developed a valuable method for investigating children's perceptions and evaluations of everyday events. Children's interactions in everyday events are central to most theories of development (Dahl, 2017), yet are difficult to study in a controlled setting. Interviews about selected recordings of naturally occurring events allow researchers to conduct in-depth interviews in a controlled setting about the very kinds of events young children encounter in their everyday life. Bridging the methods of naturalistic observation and structured interviews, the paradigm can be adapted

to address a number of key questions about how children perceive, understand, and evaluate their social worlds.

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Table 1

Coding categories for attribution of motive

Code	Definition	Example
<i>Aggression</i>	Target action is described as purposeful act of force or a response to a provocation	“He hit her so he could get her blocks,” “The other girl may not have been sharing”
<i>Limited agency</i>	Protagonist did not intend action, or was immature	“She didn’t mean to,” “They were babies, “It was an accident”
<i>Material order</i> *	Reference to how actions affected material order, pertained to practical goals or functions, or had material consequences	“The plants needed water”
<i>Protagonist concerns</i> *	Reference to the goal, welfare, or emotional state of the protagonist, except those fitting under <i>aggression</i> .	“He wanted to play,” “Because it would be fun,”
<i>Other</i> *	Response not fitting into above categories	“The teacher showed them”
<i>No response</i>	Child says s/he does not know the answer to the question, or does not respond	“I don’t know”

Notes. Rightmost column shows the proportion of situations in which participants attributed the motive to the protagonist.

\* Codes used for both attributed motive and justification for evaluation.



**Table 2**

Coding categories for evaluation justifications

Code	Definition	Example
<i>Authority</i>	Reference to reaction or opinion of adult authority, e.g. teacher	"The teachers might get mad," "The teacher probably said they should water the plants"
<i>Context</i>	Reference to the physical, temporal, or institutional setting of the event	"It's play time," "Because they're in school"
<i>Material order</i> *	Reference to how actions affected material order, pertained to practical goals or functions, or had material consequences	"It'll break," "Otherwise the plants will die"
<i>Obligation/permission</i>	Statement about what you should or should not do that were not specifically social and lacked further elaboration	"That's not what you should do," "Two wrongs don't make a right"
<i>Protagonist concerns</i> *	Reference to the goal, welfare, or emotional state of the protagonist, except those fitting under <i>aggression</i> .	"He was sad"
<i>Treatment of others</i>	Reference to consequences of action to others' welfare, or specifically social evaluations about the niceness or meanness of action	"She didn't like it," "It hurt the other kid," "That's mean"
<i>Other</i> *	Response not fitting into above categories	"Just because," "He was little"
<i>No response</i> *	Child says s/he does not know the answer to the question, or does not respond	"I don't know"

*Notes.* Rightmost column shows the proportion of situations in which participants provided the justification for their evaluation.

\*Codes used for both attributed motive and justification for evaluation

Table 3

## Attribution of Motive

Explanation	Harm		Pragmatic		Play		Effects	
	3-4yrs	5-6yrs	3-4yrs	5-6yrs	3-4yrs	5-6yrs	Age	Situation
Agency	.04	.01	.11	.10	.01	.02		***
Aggression	.38	.61	.02	.04	.01	.01	***	***
Material order	.00	.01	.08	.04	.15	.15		***
Protagonist concerns	.23	.21	.45	.57	.46	.56		***
Other	.15	.06	.14	.08	.14	.14		
None	.28	.16	.28	.23	.24	.12		

Note. Cells show proportion of cases in which participants provided each type of explanation.

\*\*\*  
 $p < .001$ ,

\*\*  
 $p < .01$ ,

\*  
 $p < .05$

**Table 4**

Justifications for judgments

Justification	Harm (not ok)		Disorder (not ok)		Effects		Play (ok)		Effects	
	3-4yrs	5-6yrs	3-4yrs	5-6yrs	Age	Situation	3-4yrs	5-6yrs	Age	Age
Authority	.10	.03	.11	.02	***		.08	.16		
Context	.02	.01	.00	.02			.07	.16		
Material order	.06	.09	.23	.36		***	.20	.20		
Obligation/permission	.17	.20	.11	.12		*	.10	.10		
Protagonist concerns	.15	.08	.18	.14			.17	.25		
Treatment of others	.34	.60	.18	.24	**	***	.05	.04		
Other	.08	.04	.10	.06			.10	.09		
None	.15	.05	.18	.10			.25	.06		

Note. Cells show proportions of cases in which participants provided each response type. Justifications for judgments that the harm and disorder events were “ok,” and the play event was “not ok,” were not analyzed, as these judgments were rare (0–19% of judgments in each category, see Table 3).

\*\*\*  
 $p < .001$ ,

\*\*  
 $p < .01$ ,

\*  
 $p < .05$