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# Cognition

journal homepage: www.elsevier.com/locate/COGNIT

# Young children proactively remedy unnoticed accidents

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#### ARTICLE INFO

Article history: Received 2 July 2011 Revised 12 September 2012 Accepted 14 September 2012 Available online 15 October 2012

Keywords: Social cognition Cooperation Prosociality Comparative psychology

## ABSTRACT

Human adults will sometimes help without being asked to help, including in situations in which the helpee is oblivious to the problem and thus provides no communicative or behavioral cues that intervention is necessary. Some theoretical models argue that these acts of 'proactive helping' are an important and possibly human-specific form of prosociality. Two experiments examined whether young children proactively help in a situation where an adult did not provide any concurrent behavioral cues that help was needed. Specifically, in Experiment 1 an experimenter either dropped an object without noticing (experimental condition) or on purpose (control). Even though children were bystanders engaged in their own task, they spontaneously intervened by helping instrumentally in the experimental condition in the absence of concurrent behavioral cues from the actor (significantly more often than in the control condition). These acts increased significantly from 21 to 31 months of age, probably reflecting children's emerging social-cognitive capacities to represent goal-directed action. Experiment 2 replicated proactive helping in 2-year-olds in a more closely matched comparison in which in both experimental and control conditions the actor did not notice the accident, and children thus had to infer whether help was needed from the actor's previous responses alone. This result shows that children are able to infer a need for intervention on concurrent situational cues, without behavioral or communicative cues by the helpee. These results indicate that proactive prosociality might be a characteristic of early human ontogeny, emerging in children as young as two years of age.

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# 1. Introduction

One of the key characteristics of human prosociality is that we literally offer help: we help even when help is unsolicited and we help even when the helpee himself provides no sign that he is in trouble. For example, we might run after a pedestrian who failed to notice that their wallet slipped out of her bag, inform colleagues about new job opportunities, or put a granola bar in our kids' backpack, anticipating that they will become hungry on their school trip. Such examples highlight that humans can recruit fairly sophisticated social-cognitive capacities to identify other people's problems and act prosocially in a flexible

\* Tel.: +1 617 495 3848; fax: +1 617 495 3903. *E-mail address:* warneken@wjh.harvard.edu manner. More specifically, humans engage in what can be called 'proactive prosociality': We act on behalf of others, not only in reaction to overt behavioral or communicative cues by the helpee who is directly soliciting help ('reactive prosociality'), but also in the absence thereof, based upon our knowledge of the situation and the other person's need ('proactive prosociality'; Jaeggi, Burkart, & van Schaik, 2010; Warneken & Tomasello, 2008a).

Some theoretical models concerning the evolution of these types of skills argue that proactive prosociality towards non-kin is a special form of prosociality that is human-unique among the great apes (Burkart, Hrdy, & van Schaik, 2009; Hrdy, 2009; Jaeggi et al., 2010). However, the ontogenetic origins of these behaviors are largely unknown. A number of studies have shown that during the second year of life, children begin to act prosocially in a variety of ways, including acts of helping, comforting,





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and sharing (for reviews see Eisenberg, Fabes, & Spinrad, 2006; Warneken & Tomasello, 2009a). However, in all previous studies showing prosocial behaviors in young children, the recipient provided overt cues about the problem, such as reaching for an object (e.g. Dunfield & Kuhlmeier, 2010; Warneken & Tomasello, 2006), failing to open something (e.g. Buttelmann, Carpenter, & Tomasello, 2009; Over & Carpenter, 2009; Warneken & Tomasello, 2006), searching for an object (e.g. Liszkowski, Carpenter, Striano, & Tomasello, 2006), making a negative facial expression of sadness or pain (Bischof-Köhler, 1991; Dunfield, Kuhlmeier, O'Connell, & Kelley, 2011; Svetlova, Nichols, & Brownell, 2010), or stating her desire verbally (Brownell, Svetlova, & Nichols, 2009). These studies also indicate that helping becomes more likely as behavioral and communicative cues are made more explicit, especially when the recipient directly asks for help (Svetlova et al., 2010). However, what remains unknown from these previous studies is whether young children actually must rely on the concurrent behavioral cues of the recipient. That is, do children need these cues to detect that the actor is displeased with the situation and needs help from the child? Alternatively, can they infer that help is needed based upon contextual cues and people's previous behaviors in similar situations? No study has assessed whether young children help proactively in the absence of any concurrent communicative or behavioral cues from the recipient signaling a need for help.

Acts of proactive prosociality are also informative about the underlying motivation for children's prosocial behavior. Specifically, one issue of previous studies has been that even in these situations in which the actor does not directly communicate with the subject, children might interpret behaviors such as reaching for an object or the facial expression of a person who is oriented towards them as a communicative request to help. Thus, it is possible that young children intervene not primarily because of an insight into the person's need and a genuine prosocial motivation to alleviate the other's problem, but because they follow the person's request. Acts of proactive prosociality are thus a diagnostic case to determine whether young children have the motivation to help others in a truly spontaneous fashion.

The current studies tested whether young children will help another person proactively, without any concurrent solicitation or behavioral cues from the actor. These studies examined helping behaviors in children ranging from 21 months old - an age at which children first show helping behaviors towards unfamiliar individuals when they are detached from the parent (Warneken & Tomasello, 2008b) - to 30 months old - the age where previous studies have suggested that instrumental helping becomes robust (Svetlova et al., 2010). Children faced a situation in which an accident occurred, but the actor did not notice it, and thus did not make explicit that she had a problem with which she needed help. In particular, in both studies the experimenter was engaged in a task away from the child when an object dropped to the floor. Experiment 1 contrasted an experimental condition, where the actor was turned away and continued with her task without noticing the event, with a control condition in which the actor had

discarded the object on purpose. In Experiment 2, the actor did not notice the dropped object in either the experimental or control conditions; rather, only the actor's previous responses to dropped objects differed across conditions. Both studies focused on whether children engaged in 'instrumental helping' by picking up and returning the dropped object. In addition, it was recorded whether children tried to inform the actor about the object on the floor verbally or nonverbally. Children's instrumental helping or informing was never rewarded or acknowledged by the experimenter.

### 2. Experiment 1

### 2.1. Method

#### 2.1.1. Participants

We tested a total of N = 72 children (34 girls and 38 boys), divided into three age-groups of n = 24 subjects at 22 months (M = 22.2, range 21–23), 25 months (M = 24.9, range 24–26), and 28 months (M = 28.1, range 26–31), respectively. Sixteen additional subjects were excluded either because of fussiness or because they did not detach from the parent (12), experimenter or equipment error (2) or because they did not meet the criterion of witnessing at least three of the six test events (2). Children were recruited from a child database and lived in the Greater Boston area, typically from middle-class households with parents who had a college education (81%). Most children (71%) were described by their parents as white-Caucasian.

#### 2.1.2. Design

In a between-subjects design, children were randomly assigned to either an experimental or a control condition (n = 12 children per age-group and condition). In the *experimental condition*, empty cans rolled off a table accidentally without the experimenter noticing. In the *control condition*, the experimenter discarded the cans on purpose (see procedure for details). Trials were administered in two blocks of three trials each (six trials per session in total). During each block, children played with one of two different distracter toys, counterbalanced across subjects.

#### 2.1.3. Setup and materials

All testing was conducted in an experimental room of approximately 6 by 3 meters and video-recorded with remote controlled cameras (see Fig. 1). The first experimenter (E1) stood in front of two tables that were placed against the walls in one corner of the room, her back turned towards the child. During test trials, children were playing with a distracter toy in the center of the room. The distracter toy was either a zig-zag ramp (50 cm high and 55 cm wide) where children could let balls roll down ramps or a jingle-box ( $30 \times 30$  cm) where children could throw a cube through an opening at the top which would then slide down a xylophone on the inside and reappear through an opening at the bottom. One distracter toy was used for three consecutive test trials and then switched for the remaining three trials (order

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