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Parental Presence and Encouragement Do Not Influence Helping in Young Children

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Young children begin helping others with simple instrumental problems from soon after their first birthdays. In previous observations of this phenomenon, both naturalistic and experimental, children's parents were in the room and could potentially have influenced their behavior. In the two current studies, we gave 24-month-old children the opportunity to help an unfamiliar adult obtain an out-of-reach object when the parent (or a friendly female adult) (i) was present but passive, (ii) was present and highlighted the problem for the child, (iii) was present and actively encouraged the child to help, (iv) was present and ordered the child to help, or (v) was absent from the room. The children helped at relatively high levels and equally under all these treatment conditions. There was also no differential effect of treatment condition on children's helping in a subsequent test phase in which no parent was present, and children had to disengage from a fun activity to help. Young children's helping behavior is not potentiated or facilitated by parental behavior in the immediate situation, suggesting that it is spontaneous and intrinsically motivated.

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Prosocial behaviors such as helping, sharing, informing, and comforting emerge early in development (Eisenberg, Fabes, & Spinrad, 2006; Grusec, Davidov, & Lundell, 2002; Hay & Cook, 2007; Warneken & Tomasello, 2009a,b). One prosocial behavior that is particularly robust in toddlers is instrumental helping, that is, helping another person with an instrumental problem by, for example, picking up an object another person is reaching for. Children begin to perform this behavior in the second year of life (Rheingold, 1982; Warneken & Tomasello, 2006, 2007). Specifically, children help without a direct request from the person needing help (Svetlova, Nichols, & Brownell, 2010; Warneken & Tomasello, 2006) and without receiving praise or a concrete reward (Warneken, Hare, Melis, Hanus, & Tomasello, 2007). One experiment indicated that rewards can even have an undermining effect on children's tendency to help spontaneously in the future (Warneken & Tomasello, 2008). Furthermore, recent studies demonstrated that young children are not only motivated to help, but display some sophistication in doing so. Starting at around 18 months of age, children help others across a variety of contexts with different kinds of goals, including novel situations (Warneken & Tomasello, 2006), take into account whether a helpee is ignorant of the location of a desired object (Buttelmann, Carpenter, & Tomasello, 2009), increase their helping when primed with pictures depicting coalition (Over & Carpenter, 2009), and differentiate between potential recipients by preferentially helping a nice person over a mean person (Dunfield & Kuhlmeier, 2010). Thus, young children appear to have both the motivation and the cognitive capacity to instrumentally help others.

However, one problem of all cited studies is that children helped in an experimental situation in which a parent was present and observed the child's helping act (or lack thereof). What these studies can thus not rule out is that children helped because they were indirectly influenced by the parent, for reasons such as pleasing the parent, showing off, obedience to authority, avoidance of punishment or reputational concerns more generally. Moreover, even though the experimental protocols and instructions for parents try to avoid the occurrence of cues that could guide the child's behavior, subtle cues might still go unnoticed by the researchers and thus the possibility that children's behaviors were in part directly influenced by cues from the parent cannot be ruled out completely. These concerns apply not only to studies on instrumental helping in toddlers, but also to studies on other prosocial behaviors such as sharing, informative pointing, and comforting. Thus, to our knowledge, all previous studies on prosocial behavior in infants and toddlers involved the presence of parents during the testing event. Therefore, the major goal of the current study was to determine whether young children would help even in the absence of any potential influences by their parent.

Second, what has not been addressed empirically is how parental instruction can influence young children's helping behaviors. Is parental instruction an important facilitator of children's helping? Children may display helping behaviors particularly in those situations in which parents, as young children's primary agents of socialization, express explicitly what they expect the child to do. As a matter of fact, surprisingly little empirical research has been conducted on the relationship of parental practices and the prosocial behaviors of young children when these behaviors are first to emerge in toddlerhood (for studies with older children, see e.g., Grusec, 1991; and for an overview, see Eisenberg et al., 2006). With regard to young children, we know of only one correlational study by Eisenberg, Wolchik, Goldberg, and Engel (1992), which investigated spontaneous and requested prosocial behavior in relation to parental reinforcement in a naturalistic setting at home. Interestingly, the frequency of parental reinforcement of children's compliance with requested prosocial behaviors at 19–27 months of age correlated *negatively* with children's prosocial behaviors toward peers two years later. This effect could be due to an overjustification effect, in which the request to comply with the parent undermines children's intrinsic motivation to act prosocially, similarly to the provision of tangible rewards for helping in toddlers (see Warneken & Tomasello, 2008; and Fabes, Fultz, Eisenberg, May-Plumlee, & Christopher, 1989; for school-aged children). Alternatively, it is likely that some parents requested and reinforced compliant prosocial acts more often because their children were less prosocial, and these individual differences persisted until preschool age. Thus, individual differences among children might explain both parents' higher level of reinforcement in toddlerhood and the lower level of prosociality two years later. An observational study with 4-year-old children converged on the finding by Eisenberg and colleagues, as there was again a trend for children who received *less* acknowledgment, social approval, and praise from their parents for prosocial behavior to be more prosocial overall (Grusec, 1991). Taken together, these observational studies indicate that parental instruction and reinforcement are not necessary as facilitators of prosocial behavior in young children. As a matter of fact, under some circumstances they may even have a negative long-term effect, especially when children's prosocial behavior is in reaction to a request from the parent. However, owing to the correlational nature of these studies, it remains unclear whether parents' external reinforcement was actually the causal factor. Experimental manipulations are needed to address this.

There are few experimental studies looking at adult instruction and prosocial behavior, especially concerning young children. In a semi-structured experiment with 4- to 5-year-olds, children were more likely to share after receiving a treatment in which an adult trained the children to share with

peers. This included another adult model who was praised for sharing and a rehearsal period by the children in which the trainer praised the children for compliant sharing (Barton, Olszewski, & Madsen, 1979). Sharing increased in subsequent free play periods, but only when the trainer was present, and it returned to baseline levels if the trainer was absent. Thus, explicit instruction did not result in spontaneous sharing behaviors across contexts. Similarly, an experiment by Grusec and Redler (1980) found that praise had a positive effect on donation rates of 5- and 7-year-old children in the immediate context, but did not affect donations in a different task or on future occasions (only dispositional praise had long-term effects on 8- to 10-year-olds; see also Rushton (1975) for long-term effects in school-aged children). Most strikingly, in a study by Fabes et al. (1989) with 6- to 11-year-olds, external rewards from the experimenter increased helping in the immediate context, but *decreased* helping in future situations, particularly in children whose mothers reported to rely on rewards to induce prosocial behaviors. This has been taken as evidence for the potentially undermining effect of intrinsically motivated behavior when more salient external rewards are provided (e.g., Lepper & Greene, 1975; Lepper, Greene, & Nisbett, 1973; Pittman, Davey, Alafat, Wetherill, & Kramer, 1980). Taken together, experimental research shows that even in older children, there is no straightforward positive effect of various external factors aimed at facilitating prosociality, including praise and direct instruction. It is possible that external factors such as requests and surveillance can even negatively impact intrinsically motivated behavior (e.g., Lepper & Greene, 1975), although this has not been investigated experimentally in the domain of prosocial behavior with young children. The youngest age group tested experimentally has been 4-year-olds, representing an age more than 2 years older than when the first prosocial behaviors are known to emerge in ontogeny. It thus appears vital to also assess young children's prosocial behavior in relation to different forms of instruction by adults, and parents in particular.

What is the role of parental behavior on helping in young children? One can distinguish two different hypotheses that lead to different predictions about how children should behave in experimental helping situations. Under what we will call the *extrinsic motivation hypothesis*, children mainly help others because they are motivated to please their parent and comply with the internalized expectation to be helpful toward others. This leads to the prediction that children should be more likely to help when the parent is present, particularly when the parent has told the child what to do. Under the contrasting *intrinsic motivation hypothesis*, children mainly help because they are motivated by the other person's need for help. This leads to the prediction that children should be equally likely to help when the parent is present or absent. Also, parental instruction should have only a

minor positive effect, as parents in effect tell the child to do what they would do spontaneously anyway, echoing their motivation rather than eliciting it. In fact, certain types of parental instruction could potentially have a *negative* effect on children's tendency to help spontaneously, namely if the parental instruction is conveyed in a controlling manner, as this could undermine children's initially intrinsic motivation (Lepper & Greene, 1975; Pittman et al., 1980).

Therefore, we conducted two experimental studies to assess young children's helping in relation to adult surveillance and direct instruction. In Experiment 1, we tested children in one of three between-subject conditions, which differed in that the parent was either actively encouraging the child to help (*Active*), was watching passively (*Passive*), or was absent altogether (*Absent*). We measured how these treatment conditions influenced children's helping in the immediate context and how it transferred to a subsequent test phase in which the parent was absent throughout. This way we could address our two research questions: first, is parental presence necessary to directly or indirectly elicit helping in young children? Second, does parental instruction influence children's spontaneous helping tendencies and, if so, how? We tested 24-month-old children, as pilot testing showed that this was the youngest age group at which children felt comfortable to be tested in their parent's absence. Pilot testing also indicated that children's helping rates were fairly high, which we attempted to counter by including distracter toys during the test phase. Thus, the current study also provides insight into our third research question: are children willing to help when it interferes with the alternative to play an attractive game? In Experiment 2, we used the same setup and the same basic design, with the difference that instead of semi-structured instructions by parents, an adult experimenter instructed the children to help according to different standardized scripts. Specifically, during the treatment phase, the experimenter elicited children's helping in a controlling manner by instructing the child what to do (*Order condition*), asking the child to help by highlighting the problem (*Encouragement condition*), or was not in the room (*Absent condition*). With this design, we assessed whether certain types of instruction potentially facilitate or undermine children's helping tendencies.

EXPERIMENT 1

Participants

Our final sample consisted of 36 children at 24 months of age (M = 23.5; SD = .86; range, 22–25 months). Half of the participants were girls and half were boys, equally distributed between conditions. Seven additional

children could not be tested because they did not detach from their parent, and five children reached the criterion during the treatment phase, but did not detach from their parent during the test phase. Eleven additional children could be tested, but did not reach the criterion of helping five times during the treatment period (equal numbers from the three conditions). Children were recruited from the birth register of a medium-sized German city and came from mixed socioeconomic backgrounds with German-speaking parents.

Design

We employed a treatment–test design with the three conditions *Active*, *Passive*, or *Absent* as between-subject factors. The overall procedure was that a child was randomly assigned to one of these three conditions for the treatment phase. After children helped five times during the treatment phase, they moved on to the test phase in which they again had the opportunity to help over nine consecutive trials while the parent was absent. The main dependent measure was the number of trials with helping during the test phase.

Tasks and materials

We used the same helping tasks as in Warneken and Tomasello (2008). In all tasks, the first experimenter (henceforth E1) sat at a desk in front of the wall of the testing area (Figure 1), facing toward the center. Each task consisted of three identical trials. In each trial, after an object dropped on the floor, E1 bent over the desk and unsuccessfully reached for the object with an outstretched arm. If children helped, E1 continued the activity (such as drawing with the marker). If children did not help, E1 used another object of the same kind (e.g., E1 would have three markers available for the three trials).

Marker

E1 used a marker to draw pictures on a sheet of paper. Suddenly, the marker slipped out of her hand and dropped on the floor.

Paperballs

E1 picked up paperballs from a large tray and put them into a basket. About every second time, E1 accidentally missed the basket, causing the paperball to fall on the floor.

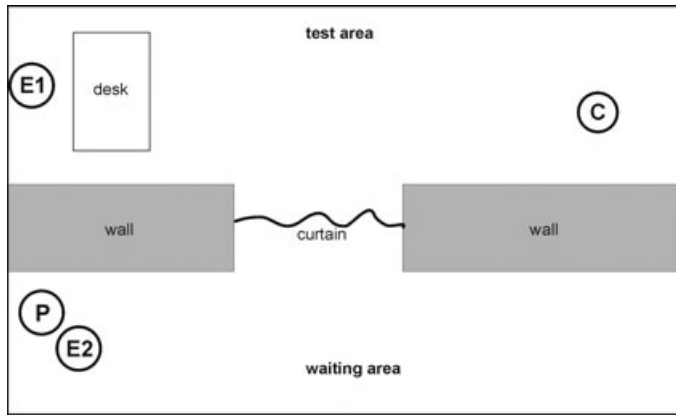

Figure 1 Experimental room with locations of child (C), experimenters 1 and 2 (E1, E2), and the parent (P).

Clips

E1 folded pieces of paper, attached paperclips to them, and placed them into a box. About every second time, the clip slipped out of her hand as she was trying to attach it to the paper and landed on the floor.

Pen

E1 used a pen to write a letter on a sheet of paper. Suddenly, the pen slipped out of her hand and dropped on the floor.

Plates

E1 picked up plastic plates from a large tray and stacked them together into a pile. About every second time, she accidentally missed the pile, causing the plate to fall on the floor.

Clothespins

E1 folded pieces of cloth, attached a clothespin to them, and placed them into a box. About every second time, the clothespin slipped out of her hand as she was trying to attach it to the cloth and landed on the floor.

Tasks were presented in two blocks of three tasks each, one block during the treatment phase and the other block during the test phase (block A: marker, paperballs, clips; block B: pen, plates, clothespins). The order of blocks and the order of tasks within a block were counterbalanced across subjects.

Testing room setup

The testing area is displayed in Figure 1. The experimental room was divided into two areas using large cabinets that almost reached the ceiling. The testing area was approximately 2.5 m wide and 4.5 m long, with distracter toys placed approximately 2.5 m away from the desk. Both warm-up and testing took place in the testing area, which connected to the waiting area via an exit covered with an opaque curtain. During the test phase, the parent was in the waiting area with the second experimenter and thus invisible to the child, watching the test session on a small video screen. If children felt uncomfortable, they could walk through the curtain into the waiting area.

Procedure

If a child was accompanied by their mother, the mother came into the test area and acted according to the condition to which their child was assigned. Any additional members of the child's entourage waited in the hallway. If only the father was present, he performed the behaviors instead of the mother. Altogether, 25 children were accompanied by their mother, 10 by their father only, and one by their grandmother only. These were almost equally distributed across conditions. Most importantly, in the *Active* condition, eight children were accompanied by their mother and four by their father, while in the *Passive* condition, nine were accompanied by their mother and three by their father. Testing was conducted by a female experimenter who remained in the testing area throughout the test session (E1). Another experimenter (E2) stayed with the parent in the waiting area and exchanged distracter toys between helping tasks.

Warm-up and treatment phase

After a short *warm-up phase* of approximately 5–10 min in which the parent was present until the child felt comfortable moving independently throughout the room and playing with toys, the actual experiment began. It started with a *treatment phase* in which we exposed children to one of three conditions. In the *Active* condition, the parent sat in the test area by the curtain and encouraged the child to help every time E1 needed help. We instructed parents that once E1 had dropped something on the floor and started to reach for it, they should tell their child to help E1 and continue to do so until the child actually provided help. In order to simulate how parents would usually encourage their child to engage in a certain behavior, we left it to the parents how exactly to phrase their instruction, with the only constraint that they encourage the child immediately and continue until the

Figure 2 Distracter toys used during treatment and test phase.

child either helped or the trial terminated after 30 sec, while using the word 'helping'. In the *Passive* condition, the parent sat in the same location, observing the child, but without interacting. In the *Absent* condition, the parents were seated in the waiting area.

We introduced a distracter toy that was placed approximately 2.5 m away from the desk at which E1 dropped the object. In the treatment phase, children engaged with a colorful box into which they could throw cubes that would then roll through and create a jingle because of a xylophone installed inside. The cubes then rolled out through one of two holes at the bottom of the box (see Figure 2).

We tested children until they reached the criterion of helping five times during the treatment phase. As in Warneken and Tomasello (2008), the treatment phase consisted of up to 12 trials in total. Once a child had helped in five trials, we proceeded to the test phase. We tested children in three different tasks, each administered in three consecutive trials, and repeated the first task if children had not reached criterion after three tasks (nine trials). If they had not helped at least once after nine trials or fewer than five times after 12 trials, the session was terminated. Thirty-six children reached criterion ($n = 12$ per condition). Eleven additional children could be tested, but did not reach criterion (three from *Parent Active*, three from *Parent Passive*, three from *Parent Absent*).

Test phase

This was the same for all children, as their parent was absent for the entire test phase. We presented children with three helping tasks of three trials each (nine trials in total). These tasks were equivalent to those of the treatment phase, but with different objects. For each helping task, we used one of three distracter toys, counterbalanced across subjects (see Figure 2). These consisted of a *tractor* (a large vehicle in which the children could sit or stand and play with an array of toys such as a push lamp or a toy cell phone, also the favorite device of these young drivers); a *pool* full of balls in which children could 'swim' and 'dive' for stickers attached to the bottom; and a rocking *car* with a horn and other toys attached. Children played with the toys in $M = 87\%$ of test trials before E1's problem occurred, indicating that children found these toys highly engaging. Thus, in order to help, children had to disengage from an attractive activity and walk over to the desk, pick up, and hand the dropped object to E1.

After the test, children received a toy for their participation and E1 asked them to bring it to their parent. All children immediately went through the curtain to the other room, indicating that they were not confused about the location of their parent.

Behavior experimenter

Each trial lasted up to 30 sec, starting with the object falling down, marked by E1's surprise ("Whoops!"), and ending either at the moment E1

touched the object that the child had given or after 30 sec passed without helping. This was timed by E1 who could look at a clock installed in view. During the first 15 sec of each trial, E1 reached for the dropped object, making sounds of effort and looking disapprovingly, without addressing the child verbally or through eye contact. If the child did not help during this phase, during the second half of the 30-sec trial, E1 continued to reach for the object and alternated gaze between the child and referring to the object verbally (''The pen.''; ''The plate'').

Coding and preliminary analyses

All sessions were videotaped and coded by the first author. The test phase was always coded first, with the coder being ignorant of the condition in which the child had been tested during the preceding treatment phase. A research assistant who was blind to conditions and the hypotheses of the study independently coded 4 randomly selected sessions. We coded whether children helped, which was defined as picking up the dropped object and handing it to E1 ($\kappa = 1$), as well as latencies of helping (from the moment E1 reached for the object until the moment in which the child put it in E1's hand; r ($n = 58$) = .99, $p < .001$ between coders), and whether children were engaged with the distracter toy ($\kappa = .96$).

Preliminary analyses showed no effect of gender, task block, task order, or distracter order on any of these measures. Analyses were thus collapsed across these factors.

Results

Our first research question was whether parental presence and encouragement was necessary to elicit helping in children. To assess this, we first analyzed whether there were differences in children's helping during the treatment phase. Children needed on average $M = 5.7$ trials ($SD = 1.4$) to reach the criterion of helping five times, with no difference between conditions (ANOVA with condition (*Active, Passive, Absent*) as independent variable and number of trials to reach criterion as dependent variable, $F(2, 33) = .71$, $p = .49$, $\eta_p^2 = .04$). Thus, children helped even when the parent was absent in the treatment phase. Moreover, there was no significant difference between conditions in which the parent was present or absent during the treatment phase. Last but not least, children helped at high rates during the test phase (in which the parent was absent in all three conditions), providing further evidence against the notion that parental presence is necessary for children to display helping behaviors.

TABLE 1
Experiment 1: Helping Rate and Latency during Test Phase as a Function of Treatment Condition

Condition	*Helping (mean percentage of trials)*	*Latency (in sec)*
Active	84 (26)	15.4 (6.5)
Passive	89 (22)	13.6 (7.3)
Absent	92 (19)	9.8 (5.2)

SD are in parentheses.

Our second research question was whether children's helping during the test phase was influenced by the previous treatment condition. As can be seen in Table 1, children helped in the vast majority of trials and did so irrespective of condition, $F(2, 33) = .33$, $p = .72$, $\eta_p^2 = .02$. There was also no difference in latency to help, $F(2, 33) = 2.36$, $p = .11$, $\eta_p^2 = .13$.

On an individual level, 36 children reached criterion during the treatment phase, whereas 11 additional children did not. This shows that with 77% of children, the vast majority showed robust helping. From the final sample of $n = 36$ children, all children continued to help in the test phase. In $M = 88\%$ ($SD = 20$) of test trials with helping, children helped during the first 15-sec phase in which the experimenter was focused on the object without addressing the child through eye contact or verbalizing her problem with no difference between conditions, $F(2, 33) = .04$, $p = .96$, $\eta_p^2 = .003$.

DISCUSSION OF EXPERIMENT 1

The first experiment had three major findings. First, children helped in the vast majority of trials, whether their parent was present or not. Second, there was no effect of parental encouragement on immediate or subsequent helping, neither positive nor negative. Third, children performed these spontaneous, unrewarded helping behaviors over repeated trials even though they had to discontinue to engage in highly attractive play activities in order to help the adult.

Children's strong tendency to help was a problem in terms of experimental methodology, as this near-ceiling effect and the corresponding lack of variability might have masked potential differences between conditions. Therefore, in a follow-up experiment, we attempted to lower the baseline rate in two ways. First, we made helping even more costly in that children had to not only disengage from the distracter activity, but also move around an obstacle to help. Second, the helpee provided fewer cues, as we reasoned

that the constant reaching for the dropped object (especially when accompanied by looks to the child and verbalization) could be regarded as a request in itself. Therefore, in Experiment 2, the helpee never looked at the child after dropping the object, focusing on the object alone and reaching for it only occasionally.

Another concern was the lack of experimental standardization over the way in which parents encouraged their children in the *Parent Active* condition. The rationale for not providing parents with an exact template of how to instruct their children had been to keep it more natural and assess how they themselves usually encourage their children. In Experiment 1, parents instructed their children in a more authoritative way, asking them to help and describing the problem (e.g., "Look, she dropped it again. Do you want to help her?"), as compared to a more controlling and authoritarian parenting style (e.g., "Go! Pick that up!"). As a consequence, cases were rare in which parents instructed their children in a way that restricted their autonomy and thus potentially undermined intrinsic motivation (Deci, 1971; Lepper & Greene, 1975). Therefore, one further goal of Experiment 2 was to use a more structured and standardized procedure, contrasting a more lenient with a more controlling style. To achieve a high degree of standardization, a trained research assistant (and experienced mother) served as the authority figure rather than the actual parent. The other reason for letting an experimenter perform this role was that children might be irritated if their parent suddenly interacted with them in an unfamiliar way, whereas they had no such familiarity with the experimenter. Also, we tested a slightly larger sample to increase statistical power, with a power of $>.8$ based upon effects from Warneken and Tomasello (2008).

EXPERIMENT 2

Participants

We tested 24-month-old children who were recruited from the same database as those from the previous experiment ($M = 24.4$; $SD = 1.0$; range, 22–26 months). The final sample consisted of 48 children who had passed the criterion of helping five times during the treatment phase, with equal numbers of boys and girls per condition. Nine additional children could not be tested because they did not detach from the parent during the warm-up or the treatment phase; five children were tested in the treatment and reached the test criterion, but the session had to be terminated during the test phase because they wanted to return and stay with their parent in the other room (two from the *Order condition*, one from *Encourage*, two from *Control*). One child was

excluded because of experimenter error, and eight additional children participated, but did not reach the criterion of helping five times during the treatment phase.

Design

We used the same basic design with a treatment phase consisting of three different randomly assigned between-subject conditions (*Order, Encourage, Absent*), followed by the test phase in which no other person was present but the helpee.

Materials

These were the same as in Experiment 1, with the only difference being a barrier placed between the distracter toy and E1's desk. The barrier was approximately 2 m wide, stretching almost the width of the testing area. It had two child-sized chairs at each end and an approximately 20-cm-high transparent barrier in the center so that the children could easily see the dropped object lying on the ground, but had to walk around the barrier in order to help. The purpose of this additional barrier was to make the helping more costly and slow the children so that the experimenter had more time to instruct them in the *Order* and the *Encouragement* condition.

Procedure

The procedure was basically the same as that of Experiment 1, with two critical changes. First, instead of the parent, an experimenter (E2) performed a standardized script to either direct or encourage the child to help. The second critical change was that the experimenter provided less explicit cues during the test phase.

Specifically, after a warm-up phase of 5–10 min, children were tested in one of three treatment conditions. In the *Order* condition, E2 sat on a chair between the distracter toy and E1's desk and told the child to help every time E1 dropped an object by looking at the child, pointing to the object, and giving the following instruction (we use "Peter" to refer to the child, "Maria" to refer to E1, and a pen as the example of the dropped object): "Peter, guck mal, der Stift. Geh mal hin, heb das auf! Los, hilf mal Maria. Heb mal den Stift auf und gib ihn der Maria. Los, heb mal den Stift auf." ("Peter, look, the pen. Go there, pick it up! Go, help her. Pick up the pen and give it to Maria. Go, pick up the pen."). E1 repeated this procedure until the child helped or 30 sec had passed without helping.

In the *Encourage* condition, E2 did the same, but rather than telling the child what to do, E2 emphasized E1's problem and asked the child for help, again until the child provided help or the trial ended after 30 sec: "Peter, guck mal, da ist was runtergefallen. Maria kommt da gar nicht ran. Willst du mal Maria helfen? Maria kommt nicht an den Stift. Willst du ihr mal den Stift geben?" ("Peter, look, something fell down. Maria can't reach it. Do you want to help Maria? Maria cannot reach the pen. Do you want to give her the pen?").

In the *Absent* condition, only the child and E1 were in the testing area. After children had helped five times, they moved on to the test phase, again with three different helping tasks of three trials each (nine trials for the test phase in total) and the distracter toys from Experiment 1, with the additional barrier between the toy and E1's desk. Children were engaged with the distracter toys in $M = 93\%$ ($SD = 26\%$) of test trials, indicating that they found them attractive and disengaging from them to help presented an opportunity cost.

Behavior experimenter

After E1 dropped an object, she provided fewer cues than in Experiment 1. Specifically, after dropping the object, marked with "Whoops" and reaching for the object briefly, E1 just looked at the object with a disapproving look marked by "Hmmm.", never establishing eye contact nor addressing the child verbally, and reaching for the object after 10 and 20 sec for 1 sec. The maximum trial length was again 30 sec, timed by E1 with a clock installed in her view.

Coding and preliminary results

All sessions were videotaped and coded by a research assistant who was unaware of the hypotheses of the study. We used the same coding scheme and procedure, such that the test phase was always coded first, with the coder being ignorant of the condition in which the child had been tested during the preceding treatment phase. Six randomly selected sessions were independently coded by the first author blind to condition, resulting in perfect agreement: helping ($\kappa = 1.0$), latencies of helping ($r\ [n = 60] = 1.0$, $p < .001$ between coders), and engagement with the distracter toy ($\kappa = 1.0$).

Preliminary analyses showed that there was no effect of gender, task block, task order, or distracter order on any of these measures. Analyses were thus collapsed across these factors. In comparison with Experiment 1, the new procedure lowered the overall helping rate during the test phase, both when pooling across conditions, $t(82) = 3.06$, $p < .001$, and when

TABLE 2
Experiment 2: Helping Rate and Latency during Test Phase as a Function of Treatment Condition

Condition	*Helping (mean percentage of trials)*	*Latency (in sec)*
Order	65 (38)	12.8 (3.4)
Encourage	75 (22)	14.0 (3.3)
Absent	72 (23)	13.9 (4.0)

SD are in parentheses.

only looking at the baseline conditions in which no third party was present, $t(26) = 2.32$, $p < .05$.

Results

In the treatment phase, children needed on average 5.7 trials ($SD = 1.4$) to reach the criterion of helping five times. There was a trend for condition, $F(2, 45) = 2.59$, $p = .09$, $\eta_p^2 = .10$. Post-hoc tests (LSD) showed that this was because of children in the Order condition reaching criterion slightly earlier ($M = 5.1$, $SD = .3$) than children in the Absent condition ($M = 6.2$, $SD = 1.8$). There was no difference in latencies between conditions during the treatment phase ($M = 15.0$ sec, $SD = 4.5$, $F(2, 45) = .69$, $p = .51$, $\eta_p^2 = .03$).

The main interest was in how the treatment affected subsequent helping in the test phase. As can be seen in Table 2, there was no effect of condition, $F(2, 45) = .49$, $p = .61$, $\eta_p^2 = .022$. A repeated measurement analysis of variance with trial block (1–3) as within-subject factor showed that the helping rate was stable across the session, $F(2, 45) = .06$, $p = .81$, $\eta_p^2 = .001$) and did not interact with condition, $F(2, 45) = .41$, $p = .67$, $\eta_p^2 = .02$). There was also no difference between conditions for the latency to help during the test phase, $F(2, 42) = .53$, $p = .59$, $\eta_p^2 = .03$.

On an individual level, 48 children reached criterion during the treatment phase, whereas eight additional children did not. This provides further evidence that the vast majority of children at this age show robust helping (85%). Of the final sample of $n = 48$ children, only three did not help at all during the test phase, all from the sample tested in the Order condition.

DISCUSSION OF EXPERIMENT 2

Children helped at high rates, even though no parent was present at any point during the session. Children helped at similar rates regardless of

whether the adult experimenter had encouraged them to help by pointing out the problem or requesting them to help in a more controlling manner. Thus, direct instruction by an adult authority did not alter young children's helping in the immediate situation, nor did it have any transfer effects on a subsequent test phase in which neither the adult nor the parent was present. Again, children disengaged from a fun activity and helped in the majority of trials. Therefore, young children's helping appears to be driven mainly by the problem context of a person needing help, whereas adult guidance seems superfluous.

The modified experimental procedure (using a physical obstacle and fewer cues by the helpee) lowered the helping base rate, as compared to the near-ceiling performance from Experiment 1, allowing for better statistical comparisons between conditions. Thus, this experiment provides a statistically more persuasive case, confirming that children's helping is not affected by direct instruction from adults.

Concerning the behavior of the helpee, it is interesting to note that even though she provided more subtle cues, children helped at high rates (in over 70% of test trials across conditions overall). Specifically, the helpee never looked at the child after dropping the object and never verbalized the problem. Instead, she just looked at the object after the accident and briefly reached for it after it had dropped, repeating her reaching again after 10 and 20 sec, if necessary. On average, children completed the helping act by handing her the dropped object after $M = 14$ sec, thus having seen the reaching only once or twice in a given trial. Therefore, this shows that children help spontaneously, not only in response to overt communicative requests and not only in response to behaviors that can be regarded as imperative (such as a person constantly stretching out an arm and looking at the child).

GENERAL DISCUSSION

Young children's helping does not seem to depend on the direct or indirect effect of parents in the immediate situation. In two experiments, 24-month-old children helped at fairly high rates, including situations in which no parent was present to witness or guide the child's helping. Neither semi-structured encouragement by the parent nor standardized instructions from an adult experimenter (who either pointed out the problem or requested the child to help) influenced concurrent or subsequent helping, neither positively nor negatively.

These results speak against an extrinsic motivation hypothesis, according to which children help only because parents guide their behavior because it is instrumental in gaining parental approval, or because they attempt to

avoid punishment. Specifically, one major goal of the current study was to control for the possibility that in previous studies on helping the parent had directly or indirectly influenced their child. Children may have helped because the parent provided subtle cues or because they were being watched. This leads to the expectation that children would not help when the parent is absent. However, the current data show that children helped at a high rate even though parents were never present. We can thus reject the hypothesis that children's helping is due to parental influence during the experiment. Rather, these findings appear to be more congruent with an intrinsic motivation hypothesis, according to which children are motivated by the problem situation itself and find it rewarding to help the other person. This provides further evidence for the idea that children's helping (and altruistic behaviors in humans more generally) are not due to socialization practices alone, but may reflect a biological predisposition, including an intrinsic motivation to help others (Hoffman, 2000; Warneken & Tomasello, 2009a,b).

One potential methodological concern is that even though the parent was not actually present, children were confused about their presence or absence or they thought that the parents were watching anyway. We find this very unlikely for at least two reasons. First, when right after the helping test, children were given a toy in the test area and asked to show it to their parent, they did not hold it up, but immediately went through the curtain to the parent, indicating no confusion about where their parent resided. Second, studies show that by at least 18 months of age, children take into account whether a person can or cannot see them when they do things that adults disapprove of. Specifically, in Repacholi, Meltzoff, and Olsen (2008), children were less likely to perform an act that makes an adult angry when the adult was watching them than when the adult was not watching them.

Limitations and future directions

The current study provides insight into the relationship between parental behavior and helping in young children. However, the current design also has several limitations which constrain the conclusions that can be drawn about the emergence of prosocial behavior and socialization more generally.

First, our focus was on instrumental helping behaviors as one of the first and potentially most robust prosocial behaviors that young children engage in. However, it is possible that parental instruction and surveillance have different effects on other types of prosocial behaviors, especially those that involve higher costs such as sharing of resources (but see e.g., Rheingold, Hay, & West, 1976 and Hay & Murray, 1982, for evidence that young children hand objects to others spontaneously without explicit instruction or modeling). Moreover, in our study, adult instruction had no effect on spon-

taneously occurring behaviors that are not cognitively or behaviorally challenging for a two-year-old (i.e., picking up an object that someone dropped on the ground). However, adult instruction could be particularly beneficial when children have difficulty detecting the problem or have trouble understanding how to intervene. What the child would be lacking in these cases is not the motivation, but the skills required for helping. Thus, parental instruction might be facilitative because it provides the information that is needed to execute the prosocial tendency.

Second, one of our three conclusions is based upon accepting the statistical null hypothesis. Specifically, we did not find that parental or adult instruction decreased or increased subsequent helping behaviors. It is thus possible that our manipulation was not strong enough or the dependent variable was not sensitive enough to detect changes in children's helping. Future studies should assess whether other types of parental or adult influence might show different effects on helping, or other prosocial behaviors that were not the focus of our study. Moreover, it could also be argued that our sample size was not large enough to detect existing effects. However, this seems unlikely given the small effect sizes and the fact that a previous study showed an undermining effect of external rewards on children at a similar age and with a slightly smaller sample size (Warneken & Tomasello, 2008). It should be noted that the lack of significant differences between conditions does not affect our two other research questions. Children helped even if the parent was absent, which refutes the hypothesis that helping necessarily depends on direct or indirect parental effects (with the prediction that helping rates should be near zero, which was not the case). Moreover, we found positive evidence for helping in a situation that requires children to suffer both opportunity costs and effort in the absence of encouragement, praise, or material rewards.

Third, our manipulation tested the influence of third parties on children's helping, not the dyadic relationship between helper and helpee. Thus, the current study does not directly address how the helpee may influence the child's behavior. Previous research has shown that young children's helping is not driven by the expectation of tangible rewards, such as material rewards or praise (Warneken & Tomasello, 2008; Warneken et al., 2007), which provides evidence for the intrinsic motivation hypothesis. However, it is still possible that children are not only motivated by another person's goal, but also concerned about how their behavior could affect their reputation in front of the experimenter, or because they fear disapproval. Future research could attempt to address this issue. However, this would be rather difficult to rule out completely because the standard approach to exclude reputational concerns is full anonymity of actor and recipient (Camerer, 2003), something toddlers probably do not comprehend. It should be noted,

however, that it is unlikely that children helped because it was actively requested from the experimenter. Specifically, in Experiment 2, the helpee never looked at the child after the object dropped on the floor, nor verbally requested help. The main cue was the accident and subsequent brief attempts to reach for the object. Finally, the helpee never acknowledged the helping act afterward, but rather continued with the action, rendering it implausible that social approval was critical. Therefore, although the dyadic relationship between helper and helpee was not directly addressed with our experimental manipulation, our results nonetheless show that children helped spontaneously in the absence of any communication from the helpee and in response to behaviors that signaled the helpee's problem without overtly demanding the child to intervene.

Fourth, the focus of our experiments was on the contemporaneous influence of parents and adults in an experimental situation as well as whether this influence may transfer to subsequent helping tests. Thus, our experiments do not speak to the effect of parental instruction or other socialization factors that may have influenced the child subjects prior to the experimental session. Empirically, it cannot be ruled out that these young children had already internalized a social norm to help others and, because it is internalized, it operates independently of the parent's presence or instruction. Specifically, some theories explain prosocial behavior in terms of internalization and the self-rewarding properties of following internalized norms. However, these models typically propose a developmental process that operates over a much longer developmental timeframe, with an emergence of internalized prosocial behaviors not before adolescence (e.g., Bar-Tal, 1982; Cialdini, Kenrick, & Baumann, 1982). Thus, given that young infants help, either a different process is operative here or one has to make major adjustments in the time of onset of internalizing prosocial norms.

Fifth, socialization factors other than direct instruction and teaching may have played a role in the emergence of young children's helping, namely social learning through imitation and parental reinforcement through rewards and praise. Unfortunately, very few observational studies exist that speak to the role of these factors in the emergence of prosocial behaviors in early childhood (Caplan, 1993). As described in the introduction, one exception is the study by Eisenberg et al. (1992), which indicates that parental reinforcement does correlate with future prosocial behavior – in the negative direction. Zahn-Waxler, Radke-Yarrow, Wagner, and Chapman (1992) observed increases in prosocial behavior toward the second year of life, although parental modeling or reinforcement was not assessed. An extensive observational study with 4-year-old children (and thus only of limited use concerning maternal behavior with infants) indicates that tangible rewards in response to a child's prosocial behavior are almost nonexistent (Grusec,

1991). Social reinforcement (verbal or physical) was recorded for around 10% of instances of prosocial behavior, yet one-third of instances resulted in either no response from the mother or mere acknowledgment of the prosocial act. In fact, 4-year-olds whose prosocial behavior was not followed by a response from an adult tended to be more prosocial, and thus congruent with the findings by Eisenberg et al. (1992) with younger children. On the flipside, no failures to perform spontaneous prosocial behavior were followed by punishment, replicating the observations from an earlier study by Grusec, Dix, and Mills (1982). Thus, by at least four years old, children appear to perform prosocial behaviors at home spontaneously, without tangible rewards and with limited parental control or reinforcement.

Concerning social learning through modeling and imitation, there is evidence that this is effective in older children. However, it remains an open question to what extent it influences prosocial behavior in young children. Specifically, in an observational study by Zahn-Waxler, Radke-Yarrow, and King (1979), in which 1.5- to 2.5-year-olds witnessed a bystander in distress, parental encouragement to intervene toward the person was rather infrequent (13%). Mothers themselves comforted the bystander in 21% of cases, thus potentially modeling the behavior to the child. However, in 56% of distress cases, mothers did not respond at all, and in 36% of cases, they told their child not to worry. This shows that children are confronted with a variety of social information, and it is not obvious what exactly to imitate. If the main mechanism behind prosocial behavior was to just imitate the adult's most frequently expressed behavior, children would fail to acquire prosocial behaviors. It seems far more plausible that social learning operates in concert with a predisposition to be affected by, and care about, the plights of other people (Hoffman, 2000). This is also highlighted by the fact that the most effective way of facilitating prosocial behaviors is inductive parenting, in which the focus is placed on the effect of children's behaviors on others, which presupposes a prosocial motivation (Hoffman, 2000). From our theoretical perspective, social learning *per se* does not create prosocial beings; it works only because it is fueled with a prosocial motivation to care about others (Warneken & Tomasello, 2009a). Obviously, there is no question of the necessity to grow up in a social environment in order to develop these behaviors. The claim that specific socialization practices are not the only source of prosocial behaviors is not in conflict with the fact that growing up in a "normal" social environment contributes positively to children's behavioral development more generally, as prosocial behaviors are one of the various behaviors that may be affected if children's social interactions are disrupted. Taken together, at this point, there is no strong empirical evidence that socialization practices in which children are instructed to help or in which they receive rewards are the driving force behind the emergence of

prosocial behavior. However, the empirical evidence for the emergence of prosocial behaviors in toddlers is far too sparse to draw firm conclusions about how exactly certain socialization practices interact with children's biological predispositions in the emergence of prosocial behavior. More experimental and observational studies are needed to address these issues.

A quite different source of evidence speaking in favor of the idea that socialization practices such as teaching, rewards, or imitation are not the only source of prosocial behaviors come from studies with chimpanzees. Observational studies and experiments have shown that chimpanzees on occasion help others, indicating that they have similar cognitive and motivational capacities as young children (e.g., de Waal, 1996; Warneken & Tomasello, 2009a). There is no evidence that chimpanzee mothers reward their children for helping, let alone teach social norms (Tomasello, 2009). Although somewhat controversial, chimpanzees are not usually regarded to be sophisticated imitators, even concerning skills from which they benefit immediately and selfishly such as tool use. Thus, chimpanzees, as one of our closest evolutionary relatives, perform these prosocial behaviors in the absence of socialization practices that are purported to explain prosociality in humans. This indicates that prosocial behaviors such as helping pre-date the emergence of these socialization practices.

We thus propose that human children are equipped with prosocial tendencies that have deep evolutionary roots, and socialization builds upon these tendencies rather than creates them in the first place. Mothers and others may contribute to the development of prosocial behaviors in young children – but so does Mother Nature.

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