

Young Children Show the Bystander Effect in Helping Situations

Maria Plötner¹, Harriet Over², Malinda Carpenter^{1,3}, and Michael Tomasello¹

¹Department of Developmental and Comparative Psychology, Max Planck Institute for Evolutionary Anthropology, Leipzig, Germany; ²Department of Psychology, University of York; and ³School of Psychology & Neuroscience, University of St Andrews

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Abstract

Much research in social psychology has shown that otherwise helpful people often fail to help when bystanders are present. Research in developmental psychology has shown that even very young children help and that the presence of others can actually increase helping in some cases. In the current study, in contrast, 5-year-old children helped an experimenter at very high levels when they were alone but helped significantly less often in the presence of bystanders who were potentially available to help. In another condition designed to elucidate the mechanism underlying the effect, children's helping was not reduced when bystanders were present but confined behind a barrier and thus unable to help (a condition that has not been run in previous studies with adults). Young children thus show the bystander effect, and it is due not to social referencing or shyness to act in front of others but, rather, to a sense of a diffusion of responsibility.

Keywords

bystander effect, helping, children, diffusion of responsibility, prosociality, developmental psychology

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Humans are inordinately helpful. Not only do we help our kin and friends, we sometimes even help complete strangers. There are good reasons for this. First, by helping someone, we increase the chances that we will be helped later, either by that person (direct reciprocity; Fehr, Gächter, & Kirchsteiger, 1997) or by others (indirect reciprocity; Seinen & Schram, 2006). Thus, helping can enhance our reputations (Milinski, Semmann, & Krambeck, 2002). Second, helping social partners we are dependent on benefits us in the long run, as it means that they are more likely to be available as cooperative partners in the future (a phenomenon known as mutualism; Tomasello, Melis, Tennie, Wyman, & Herrmann, 2012).

However, striking findings from social psychology have demonstrated that sometimes we fail to help, particularly in the presence of others. Darley and Latané (1968, 1970; Latané & Darley, 1968) were the first to assess the so-called bystander effect experimentally. They found that the presence of other potential helpers decreased participants' likelihood of helping. From a game-theoretical perspective, the bystander situation has

been described as a "volunteer's dilemma": Since helping is costly, an individual's likelihood of helping approaches zero as the number of other potential helpers increases (Diekmann, 1985).

As a psychological explanation for the bystander effect, Darley and Latané (1970) suggested a five-step model of intervention in an emergency: An actor has to notice the event (Step 1), interpret it as an emergency (Step 2), take responsibility for helping (Step 3), and know how to help (Step 4) before he or she can provide help (Step 5). They proposed that the presence of bystanders interferes with the successful completion of these steps through three processes we will refer to as *social referencing*, *diffusion of responsibility*, and *shyness to act in front of others*. Social referencing, or noting

Corresponding Author:

Maria Plötner, Department of Developmental and Comparative Psychology, Max Planck Institute for Evolutionary Anthropology, Leipzig, Germany 04103
E-mail: maria_ploetner@eva.mpg.de

bystanders' passivity, interferes with Step 2; diffusion of responsibility interferes with Step 3; and shyness is most likely to interfere with Step 5 (Darley & Latané, 1970; Fischer et al., 2011; Latané & Nida, 1981). Meta-analyses have shown that the likelihood of helping decreases as a function of the number of bystanders present, and it also decreases when the need for help is ambiguous, when bystanders remain passive and act unaffected by the situation, and when bystanders are strangers (Fischer et al., 2011; Latané & Nida, 1981).

Human prosocial tendencies are deeply rooted in ontogeny. Developmental research on helping in children has focused mainly on how helpful young children are (Warneken & Tomasello, 2009) rather than on the limits to their helpfulness. Children start helping others around 1 year of age (Warneken & Tomasello, 2007) and do so in a variety of contexts, including instrumental need (Rheingold, 1982; Svetlova, Nichols, & Brownell, 2010; Warneken & Tomasello, 2006), sharing (Hay, Castle, Davies, Demetriou, & Stimson, 1999), comforting (Svetlova et al., 2010; Zahn-Waxler, Radke-Yarrow, Wagner, & Chapman, 1992), and providing useful information (Liszkowski, Carpenter, Striano, & Tomasello, 2006). Crucially, young children help with no regard for direct rewards or praise (Warneken & Tomasello, 2008) and, sometimes, even at a cost to themselves (Warneken, Hare, Melis, Hanus, & Tomasello, 2007).

What little research has been done on how the presence of others can affect children's helping behavior has focused mainly on how others' presence can increase helping: Five-year-olds are more likely to behave prosocially when someone is watching them (Engelmann, Herrmann, & Tomasello, 2012; Leimgruber, Shaw, Santos, & Olson, 2012). Thus, even young children apparently recognize the reputational advantage of helping in some contexts.

Only one previous study has looked for the bystander effect in children. Staub (1970) had participants who were either alone or in pairs overhear a child in another room fall from a chair. Staub did not find a bystander effect until children reached the age of 9. In fact, children from the age of 5 years showed the opposite pattern of results: They helped more when in pairs than when alone. However, other evidence from naturalistic observations and interviews in daycare and school settings suggests that young children may show the bystander effect in some contexts. These studies have found that children seldom help or feel responsible for helping when witnessing a peer in distress (Caplan & Hay, 1989; Thornberg, 2007) or during bullying incidents (e.g., Craig & Pepler, 1998; Salmivalli, Lappalainen, & Lagerspetz, 1998). Although there were usually bystanders present in these naturalistic settings, none of the studies manipulated the presence of bystanders systematically. We

therefore do not know whether children's reluctance to help in these studies was due to bystander presence. The important question of whether young children take responsibility into account when deciding whether to help has also not yet been experimentally investigated.

In this study, we therefore investigated whether young children's tendency to help can be reduced by the presence of bystanders. Five-year-olds witnessed an experimenter who needed help when they were either alone (alone condition) or in the presence of two peer (confederate) bystanders who did not help (bystander condition), and we measured whether they helped the experimenter. An additional aim was to investigate the main processes underlying the bystander effect (i.e., shyness to act in front of others, social referencing, or diffusion of responsibility), assuming we observed it. We therefore included a third condition (one that is new to the bystander literature in general) in which the bystanders were positioned behind a low barrier, visible to the participant and watching the situation but unable to help (bystander-unavailable condition). This condition matched the bystander condition in that bystanders were present and could observe the situation, thus controlling for shyness to act. Furthermore, participants had the opportunity to socially reference the bystanders' passivity in both conditions. The only difference between the bystander and the bystander-unavailable conditions was whether the bystanders were available to help, and therefore potentially responsible for helping. Thus, this condition allowed us to test whether any bystander effect we found was driven by diffusion of responsibility.

We tested 5-year-olds because, although previous studies have found that the presence of others increased, rather than decreased, helping in 5-year-olds, methodological factors might explain these results (see the Discussion section below). If instead we found decreased helping in the presence of bystanders, this result would provide an important contrast to those findings and a much richer picture of the complexity of young children's helping behavior.

Method

Participants

Participants were sixty 5-year-olds (mean age: 5 years 7 months; age range: 5 years 0 months–5 years 11 months). The sample size was specified prior to data collection, based on typical sample sizes in this field. In each condition, half of the participants were female and half were male. Children were recruited through a database of parents who had agreed to participate in studies on child development. Children were randomly assigned to one of the three conditions. A total of 12 peer confederates



Fig. 1. A re-creation of the experimental setup in the alone condition (a), the bystander condition (b), and the bystander-unavailable condition (c). The participant is seated on the left in each picture.

(mean age: 5 years 10 months; age range: 4 years 11 months–6 years 11 months) were assigned to mixed-sex dyads on the basis of their availability to participate in testing and their reliability as confederates. These children were bystanders in the bystander and the bystander-unavailable conditions and were always strangers to the participant.

Four additional children were invited but not tested because they refused to participate. An additional 14 participants were tested but excluded from analyses for video-camera error ($n = 1$), experimenter error ($n = 3$), or confederate error ($n = 10$). Confederate error was coded if confederates deviated from their instructions in significant ways: if they gave hints to a participant that they knew what was going to happen next ($n = 3$), if they revealed that they had participated before ($n = 4$), if a participant noticed them looking toward him or her on more than two occasions during the test phase ($n = 1$), or if they talked excessively ($n = 2$). Interrater reliability on the decision to exclude participants because of confederate error was assessed for 12 randomly selected cases (including 6 of the 10 confederate errors) by a coder who was naive to the hypotheses of the study ($\kappa = .83$). The few disagreements were resolved by discussion.

Setup and materials

Testing was conducted in a room containing four child-sized tables and chairs, one for the experimenter and three for the participant and the two bystanders. The children's tables stood next to each other (at a distance of 130 cm) in the back of the room, facing the experimenter's table, and were separated by 135 cm \times 80 cm barriers (which were opaque up to a height of 70 cm, i.e., approximately the shoulder height of the seated children). From the participant's sitting position, both bystanders were equally visible in the bystander and the bystander-unavailable conditions (see Fig. 1). There was a pile of paper towels on the floor between children's tables and the experimenter's table (175 cm from each of the children's tables). Other materials were a set of 10 different

pictures for coloring, colored pencils, a 300 cm \times 80 cm cardboard wall, a cup of green paint, and a cup containing colored water and paintbrushes.

Procedure

Introduction. Participants were told that they were going to color a picture. In the alone condition, participants were led to the testing room, where they were asked to choose a picture to color. In the bystander and bystander-unavailable conditions, participants met the two confederates in front of the testing room. They were introduced by name and said to be participating as well. All children and the experimenter then entered the testing room and chose a picture. Participants always were asked (seemingly randomly) to choose first, and then the confederates each chose different pictures.

Familiarization phase. In all conditions, the experimenter then noticed a puddle of water in the middle of the room, which she wiped up with some paper towels. She put the leftover paper towels on the floor, saying that she was doing so "in case something needs to be wiped up later."

Manipulation phase. The children were asked to sit down to color. The experimenter then said that while the children colored their pictures, she would paint her cardboard wall and, to do that more easily, she would place it in a certain way. In the bystander condition, she put it to the side (against the right wall of the room). In the bystander-unavailable condition, she attached the cardboard wall to the barriers separating the two tables on the right, such that the two confederates were fenced in and unable to leave their compartments (see Fig. 1c). In this condition, the experimenter then commented on the wall with apparent surprise, saying, "Oh, I've just realized, now you two can't get out of here. Well, you are fenced in now, briefly, but don't worry, you can get out as soon as we're finished here." In the alone condition, the wall was put to the side (as in the bystander condition) for half of

the participants and was attached to the barriers (as in the bystander-unavailable condition) for the other half. In all conditions, the participants were able to move freely. After this, all children were given pencils and were asked to start coloring while the experimenter painted her cardboard wall. After approximately a minute, the experimenter then said she needed to clean her paintbrushes and sat down at her table with the cup of water and the paintbrushes.

Test phase. After approximately half a minute, the experimenter “accidentally” knocked over the cup and spilled colored water all over her table. She tried to hold back the water with her forearms to prevent it from spilling onto the floor. During the first 15 s after spilling the water, the experimenter looked down at the water, said “Oops,” and groaned. She repeated this two more times. After those 15 s, if participants had not yet helped, she said, “My cup has fallen over.” After 30 s, the experimenter said, “The water is about to drip onto the floor.” After 45 s, she said “I need something to wipe it up” while looking back and forth between the water and the paper towels on the floor. After 60 s, she said, “I need the paper towels there,” looking at the paper towels, which were out of her reach. She then looked for the first time at the children, starting with the participant on the left and then moving her gaze to the right to each of the bystanders (or, in the alone condition, toward the empty tables), and did so twice. After 75 s, she said, “Could somebody give me the paper towels there?” while looking at the children again as described above. After 90 s, if the participant still had not brought her some paper towels, she appeared to realize that there were paper towels behind her that she could reach easily and used them to clean up the water herself.

Confederates had been instructed to be friendly throughout the study but not to talk, and especially to give no hints about being confederates of the experimenter, about having participated in the study before, or about what would happen later. In the test phase, they were instructed to look at the experimenter neutrally from time to time but to continue drawing, and not to look at the participant. Details about the coding and analyses of confederates’ behavior to check that it was equivalent in the two bystander conditions can be found in the Supplemental Material available online. Confederates were told that they were just playacting for the sake of the study and that normally one should help in these situations.

Interview. We also interviewed participants after the main test phase was complete. This interview was based on the first four steps of Darley and Latané’s (1970) five-step model and also included a manipulation check. An

assistant with whom participants had interacted briefly prior to the experiment interviewed them alone. She expressed her regret that she had missed the children’s drawing session, and to measure whether the children had noticed the accident, she asked what had happened and, in particular, whether there was anything that had happened to the experimenter (Step 1). To measure whether children had understood that the experimenter needed help, she asked whether the experimenter had really needed help in the situation (Step 2). To measure who children thought was responsible for helping, she asked whose job it was to help in the situation and how participants knew who should help (Step 3). To measure whether children knew appropriate means for helping, she asked if participants had known how to help the experimenter (Step 4). Finally, as a manipulation check to see whether the cardboard wall was a convincing barrier for participants in the bystander-unavailable condition, she asked if anybody else could have helped in the situation.

At the very end of the test session, after the interview, the assistant emphasized to participants who had helped that it was good to help and to participants who had not helped that generally helping is good, but it was probably OK not to help in this case, since the experimenter was able to help herself eventually. Participants in the bystander condition were told that the bystanders had probably not helped because they had not noticed that the experimenter needed help.

Coding and reliability

Coding of helping. For the helping situation, the main measure was whether participants did or did not help the experimenter by bringing her at least one paper towel within the 90-s response phase. In addition, we coded how quickly participants helped, using a 7-point scale that indicated the phase in which children had helped (phases corresponded to each 15-s step described above, during which the experimenter made her need for help increasingly more explicit). Children received a score of 1 if they helped spontaneously in the first part of the test phase, a score of 2 if they helped in the second part of the test phase, and so on up to the sixth and final part of the test phase; if they did not help, they were not included in the analyses on latency to help.

Coding of social referencing. For the bystander and bystander-unavailable conditions, we also took a measure of social referencing by coding how often participants looked toward the bystanders. The number of looks was divided by the helping phase to correct for the time it took children to help. This resulted in a mean number of looks per helping phase for each child.

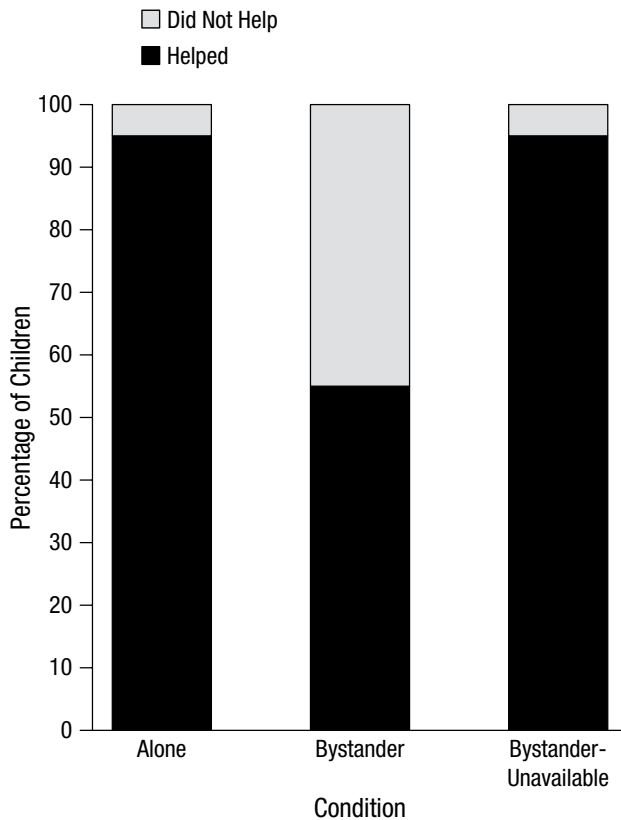


Fig. 2. Percentage of participants ($N = 60$) who helped and did not help the experimenter as a function of condition.

Coding of the interview. For Step 1, we coded for whether participants mentioned the water-spilling incident or not. For Step 2, we coded for whether participants answered “[experimenter’s name] needed help” or “[experimenter’s name] did not need help.” For Step 3, we asked children whose job it had been to help and coded for whether they said “mine” (vs. “everybody’s,” “nobody’s,” or another answer); we also asked how they knew who should help and coded for whether they said “because I had to do it” (vs. “everybody could do it,” “nobody could do it,” or another answer). For Step 4, we coded for whether children answered “I knew how to help” or “I did not know how to help.” Finally, for the manipulation check, we coded for whether children mentioned the cardboard wall as a reason why nobody else could have helped.

Reliability. Videos of the helping situation and the interview were coded by the first author. Reliability coding for the full sample by a naive coder who was unaware of the hypotheses of the study revealed perfect agreement on whether or not children helped ($\kappa = 1$) and the phase in which children helped ($r_s = 1$; no difference between coders, Mann-Whitney U test, $p = 1$) and

excellent agreement on the number of times participants looked toward the bystanders ($r = .95$; no difference between coders, Mann-Whitney U test, $p = .65$) and the interview responses (all κ s $> .82$). Disagreements were resolved through discussion.

Results

Helping

A preliminary analysis revealed no effect of gender on likelihood of helping (Fisher’s exact test, $p = .51$), so we collapsed across gender in the following analyses. The number of participants who helped the experimenter was significantly different across the three conditions (Fisher’s exact test, $p = .001$; Cramer’s $\Phi = .487$; see Fig. 2). Whereas the number of children who helped in the alone and bystander-unavailable conditions was identical, children were less likely to help in the bystander condition. A post hoc comparison revealed that the number of children who helped in the bystander condition differed significantly from that in the alone condition (Fisher’s exact test, $p = .008$; $\Phi = 0.404$) and the bystander-unavailable condition (Fisher’s exact test, $p = .008$; $\Phi = 0.404$); there was no significant difference between the alone and bystander-unavailable conditions (Fisher’s exact test, $p = 1$; $\Phi = 0$).

Latency to help

Considering only those children who had helped the experimenter, an analysis of how quickly children helped (i.e., in which helping phase they helped) revealed a significant difference between conditions, $\chi^2(2) = 6.50$, $p = .039$ (Kruskal-Wallis H test). Children helped significantly earlier in the alone condition ($Mdn = 4$, range = 1–6) than in the bystander ($Mdn = 5$, range = 1–6, Mann-Whitney $U(n_1 = 19, n_2 = 11) = 54.5$, $p = .027$, $r = -.40$) and bystander-unavailable conditions ($Mdn = 5$, range = 1–6, Mann-Whitney $U(n_1 = 19, n_2 = 19) = 109.5$, $p = .034$, $r = -.35$). There was no difference between the bystander and bystander-unavailable conditions (Mann-Whitney $U(n_1 = 11, n_2 = 19) = 106$, $p = 0.97$, $r = .07$). One possible explanation for this pattern of results is that the situation was more complex in the two bystander conditions and, as a consequence, it took children longer to process. Table S1 in the Supplemental Material provides a more detailed depiction of the latencies to help in each phase in each condition.

Social referencing

The mean number of looks to the bystanders per helping phase did not differ between the bystander ($Mdn = 0.29$,

range: 0–0.86) and the bystander-unavailable conditions ($Mdn = 0.33$, range = 0–1; Mann-Whitney $U(n_1 = 20, n_2 = 20) = 180.5$, $p = .61$, $r = -.08$). The behavior of the confederates during the test phase in the bystander and the bystander-unavailable conditions was comparable (see the Supplemental Material for details).

Interview

Step 1: noticing the event. All participants noticed the event and were able to describe what had happened to the interviewer in all three conditions.

Step 2: interpreting the need for help. The majority of children in all conditions judged that the experimenter had really needed help, with no difference across conditions (alone condition: 94.1%; bystander condition: 73.7%; bystander-unavailable condition: 94.4%; Fisher's exact test, $p = .19$; $\Phi = .293$).

Step 3: responsibility for helping. In response to the first question, 52.5% of children in both the alone condition and the bystander-unavailable condition said that it was their job to help, whereas only 11.8% said this in the bystander condition (Fisher's exact test, $p = .015$; $\Phi = .385$). Post hoc Fisher's exact tests also revealed significant differences between the bystander and alone conditions ($p = .014$; $\Phi = .374$) and the bystander and bystander-unavailable conditions ($p = .014$; $\Phi = .374$), but no significant difference between the alone and bystander-unavailable conditions ($p = 1$; $\Phi = 0$). In response to the second question, 52.9% of children in the alone condition and 57.9% of children in the bystander-unavailable condition said that they knew who should help because they were the ones who had to do it, whereas only 5.3% said this in the bystander condition (Fisher's exact test, $p < .001$; $\Phi = .494$). Post hoc Fisher's exact tests revealed significant differences between the bystander and alone conditions ($p = .002$; $\Phi = .469$) and the bystander and bystander-unavailable conditions ($p = .001$; $\Phi = .51$), but no significant difference between the alone and bystander-unavailable conditions ($p = 1$; $\Phi = 0$).

Step 4: knowledge of how to help. In the bystander condition, 47.4% of children said that they had not known how to help the experimenter, in contrast to 10% in the alone condition and 0% in the bystander-unavailable condition (Fisher's exact test, $p < .001$; $\Phi = 0.519$). Post hoc Fisher's exact tests revealed significant differences between the bystander and alone conditions ($p = .014$; $\Phi = .358$) and the bystander and bystander-unavailable conditions ($p < .001$; $\Phi = .501$). There was no significant difference between the alone and bystander-unavailable conditions ($p = .487$; $\Phi = .115$). It was mainly the children

who did not help in the bystander condition who said that they had not known how to help (i.e., 88.9% of children who did not help vs. 10% of children who did help).

Manipulation check. The manipulation check revealed that the cardboard wall was a convincing barrier for the majority of participants in the bystander-unavailable condition, with 80% of them explicitly naming this as the reason why the bystanders could not have helped.

Discussion

Young children showed the bystander effect in this study: Five-year-olds were less likely to help someone in need when bystanders were present than when alone. The results from our control (bystander-unavailable) condition explain why. When bystanders were present but confined behind a barrier and therefore unavailable to help, children helped just as often as they did when they were alone. Thus, it was not simply the mere presence of bystanders that caused the effect (e.g., through shyness to act in front of others). Nor was it social referencing of the bystanders' passivity, as participants looked toward the bystanders equally often irrespective of their availability to help, and the bystanders' behavior was comparable in the two conditions (see the Supplemental Material for details). Rather, it appears that the effect was driven by the diffusion of responsibility, which existed only in the bystander condition. Children apparently recognized that they alone were responsible to help in the alone and bystander-unavailable conditions, whereas in the bystander condition, responsibility was diffused among three potential helpers. This conclusion is supported by the interview, in which children were more likely to report that it was their job to help in the alone and bystander-unavailable conditions than in the bystander condition. Children at this age therefore take responsibility into account when deciding whether to help.

It is interesting to consider why we found a bystander effect whereas three other studies have shown increased helping in the presence of others at this age (Engelmann et al., 2012; Leimgruber et al., 2012; Staub, 1970). The differences in results can be explained by differences in methods. Staub's study featured characteristics that meta-analyses have shown reduce bystander effects (e.g., bystanders were not strangers; the situation was dangerous rather than ambiguous; Fischer et al., 2011; Latané & Nida, 1981). Furthermore, participants might not have felt competent to help the injured victim, and thus the presence of a peer might have reduced participants' discomfort or helplessness and therefore facilitated helping (Latané & Nida, 1981). In the other two studies, the observers were onlookers, rather than bystanders,

because they were only watching and did not have the means to help (Engelmann et al., 2012), or they were the recipients of help themselves (Leimgruber et al., 2012). Thus, as in our bystander-unavailable condition, responsibility in those studies was clearly attributable to participants, since they were the only ones who were able to help.

An outstanding (and related) question is why the bystander-unavailable condition did not lead to enhanced helping due to participants' reputational concerns, given that in this condition the bystanders could potentially have held the participants accountable for failing to help. This would link with findings from studies with adults that the presence of accountability cues can enhance helping (van Bommel, van Prooijen, Elffers, & van Lange, 2012, 2014). The current study was not designed to investigate reputation effects on helping behavior directly, and the fact that children's level of helping was almost at ceiling in both the alone and the bystander-unavailable conditions makes it difficult to determine whether reputational effects might have increased helping in the bystander-unavailable condition. It is worth noting, however, that children helped more slowly in the bystander-unavailable condition than in the alone condition, which suggests that they were not more motivated to help in the bystander-unavailable condition. The relationship between bystander effects and reputation is an interesting question for future research, given that factors that could promote helping have often been neglected in the bystander literature (Levine & Cassidy, 2010; Levine & Crowther, 2008).

One interesting finding from the interviews was that almost half the children in the bystander condition (mainly those who had not helped during the test) said that they had not known how to help. This is actually unlikely to be the case, because the experimenter demonstrated how to use the paper towels before the test and directly asked for paper towels during the response phase. It could be that those children who had not helped gave post hoc rationalizations for not helping, potentially to save face or to make themselves feel better about not having helped.

It would be interesting to know whether a similar effect is seen in even younger children. However, practically speaking, the current method would not work with younger children because of the demands of the confederates' roles. Pilot testing revealed that 5 years is the youngest age at which children have the necessary inhibition and acting skills to be reliable confederates. Since it is important to use similar-age peers as bystanders, because older bystanders might be expected to be more competent to help, this limits the use of this method to children of at least 5 years. An appropriate method for testing younger children still needs to be developed.

This study contributes to the helping literature by showing that although children are typically extremely helpful (Warneken & Tomasello, 2009), this tendency to help can be overridden in certain circumstances: Five-year-olds help at very high levels only when responsibility is clearly attributable to them. They are less likely to help when the presence of other potential helpers causes a diffusion of responsibility.

Humans are inordinately helpful, and there are good reasons for this. Yet the potential benefits of being helpful are not always sufficient to outweigh the costs associated with it. When others are available, we often wait for them to help. The research we report here shows that young children do this as well. The findings that when others are present, children will help more in some circumstances and less in others illustrate the complexity of young children's helping behavior. These results also have practical applications: They suggest that interventions to promote helpfulness in bystander-type situations should address the issue of diffusion of responsibility early in development.

Author Contributions

All authors contributed to the idea of the study and its design. Testing and data collection were performed by M. Plötner. M. Plötner analyzed the data under the supervision of H. Over, M. Carpenter, and M. Tomasello. M. Plötner drafted the manuscript, and H. Over, M. Carpenter, and M. Tomasello provided critical revisions. All authors approved the final version of the manuscript for submission.

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Declaration of Conflicting Interests

The authors declared that they had no conflicts of interest with respect to their authorship or the publication of this article.

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Supplemental Material

Additional supporting information can be found at <http://pss.sagepub.com/content/by/supplemental-data>

References

- Caplan, M. Z., & Hay, D. F. (1989). Preschoolers' responses to peers' distress and beliefs about bystander intervention. *Journal of Child Psychology and Psychiatry and Allied Disciplines*, 30, 231–242. doi:10.1111/j.1469-7610.1989.tb00237.x

- Craig, W. M., & Pepler, D. J. (1998). Observations of bullying and victimization in the school yard. *Canadian Journal of School Psychology, 13*, 41–59. doi:10.1177/082957359801300205
- Darley, J. M., & Latané, B. (1968). Bystander intervention in emergencies: Diffusion of responsibility. *Journal of Personality and Social Psychology, 8*, 377–383. doi:10.1037/H0025589
- Darley, J. M., & Latané, B. (1970). *The unresponsive bystander: Why doesn't he help?* New York, NY: Appleton-Century-Crofts.
- Diekmann, A. (1985). Volunteer's dilemma. *Journal of Conflict Resolution, 29*, 605–610. doi:10.1177/0022002785029004003
- Engelmann, J. M., Herrmann, E., & Tomasello, M. (2012). Five-year olds, but not chimpanzees, attempt to manage their reputations. *PLoS ONE, 7*(10), Article 48433. Retrieved from <http://journals.plos.org/plosone/article?id=10.1371/journal.pone.0048433>
- Fehr, E., Gächter, S., & Kirchsteiger, G. (1997). Reciprocity as a contract enforcement device: Experimental evidence. *Econometrica, 65*, 833–860. doi:10.2307/2171941
- Fischer, P., Krueger, J. I., Greitemeyer, T., Vogrincic, C., Kastenmuller, A., Frey, D., . . . Kainbacher, M. (2011). The bystander-effect: A meta-analytic review on bystander intervention in dangerous and non-dangerous emergencies. *Psychological Bulletin, 137*, 517–537. doi:10.1037/A0023304
- Hay, D. F., Castle, J., Davies, L., Demetriou, H., & Stimson, C. A. (1999). Prosocial action in very early childhood. *Journal of Child Psychology and Psychiatry, 40*, 905–916. doi:10.1111/1469-7610.00508
- Latané, B., & Darley, J. M. (1968). Group inhibition of bystander intervention in emergencies. *Journal of Personality and Social Psychology, 10*, 215–221. doi:10.1037/H0026570
- Latané, B., & Nida, S. (1981). Ten years of research on group size and helping. *Psychological Bulletin, 89*, 308–324. doi:10.1037//0033-2909.89.2.308
- Leimgruber, K. L., Shaw, A., Santos, L. R., & Olson, K. R. (2012). Young children are more generous when others are aware of their actions. *PLoS ONE, 7*(10), Article 48292. Retrieved from <http://journals.plos.org/plosone/article?id=10.1371/journal.pone.0048292>
- Levine, M., & Cassidy, C. (2010). Groups, identities, and bystander behavior: How group processes can be used to promote helping. In S. Stürmer & M. Snyder (Eds.), *The psychology of prosocial behavior: Group processes, intergroup relations, and helping* (pp. 209–222). Oxford, England: Wiley-Blackwell.
- Levine, M., & Crowther, S. (2008). The responsive bystander: How social group membership and group size can encourage as well as inhibit bystander intervention. *Journal of Personality and Social Psychology, 95*, 1429–1439. doi:10.1037/a0012634 19025293
- Liszkowski, U., Carpenter, M., Striano, T., & Tomasello, M. (2006). 12- and 18-month-olds point to provide information for others. *Journal of Cognition and Development, 7*, 173–187. doi:10.1207/s15327647jcd0702_2
- Milinski, M., Semmann, D., & Krambeck, H. J. (2002). Donors to charity gain in both indirect reciprocity and political reputation. *Proceedings of the Royal Society B: Biological Sciences, 269*, 881–883. doi:10.1098/rspb.2002.1964
- Rheingold, H. L. (1982). Little children's participation in the work of adults, a nascent prosocial behavior. *Child Development, 53*, 114–125. doi:10.2307/1129643
- Salmivalli, C., Lappalainen, M., & Lagerspetz, K. M. (1998). Stability and change of behavior in connection with bullying in schools: A two-year follow-up. *Aggressive Behavior, 24*, 205–218. doi:10.1002/(SICI)1098-2337(1998)24:3<205::AID-AB5>3.0.CO;2-J
- Seinen, I., & Schram, A. (2006). Social status and group norms: Indirect reciprocity in a repeated helping experiment. *European Economic Review, 50*, 581–602. doi:10.1016/j.eurocorev.2004.10.005
- Staub, E. (1970). A child in distress: The influence of age and number of witnesses on children's attempts to help. *Journal of Personality and Social Psychology, 14*, 130–140. doi:10.1037/h0028752
- Svetlova, M., Nichols, S. R., & Brownell, C. A. (2010). Toddlers' prosocial behavior: From instrumental to empathic to altruistic helping. *Child Development, 81*, 1814–1827. doi:10.1111/j.1467-8624.2010.01512.x
- Thornberg, R. (2007). A classmate in distress: Schoolchildren as bystanders and their reasons for how they act. *Social Psychology of Education, 10*, 5–28. doi:10.1007/s11218-006-9009-4
- Tomasello, M., Melis, A. P., Tennie, C., Wyman, E., & Herrmann, E. (2012). Two key steps in the evolution of human cooperation. *Current Anthropology, 53*, 673–692. doi:10.1086/668207
- van Bommel, M., van Prooijen, J.-W., Elffers, H., & van Lange, P. A. (2012). Be aware to care: Public self-awareness leads to a reversal of the bystander effect. *Journal of Experimental Social Psychology, 48*, 926–930. doi:10.1016/j.jesp.2012.02.011
- van Bommel, M., van Prooijen, J.-W., Elffers, H., & van Lange, P. A. (2014). Intervene to be seen: The power of a camera in attenuating the bystander effect. *Social Psychological & Personality Science, 5*, 459–466. doi:10.1177/1948550613507958
- Warneken, F., Hare, B., Melis, A. P., Hanus, D., & Tomasello, M. (2007). Spontaneous altruism by chimpanzees and young children. *PLoS Biology, 5*(7), Article 184. Retrieved from <http://journals.plos.org/plosbiology/article?id=10.1371/journal.pbio.0050184>
- Warneken, F., & Tomasello, M. (2006). Altruistic helping in human infants and young chimpanzees. *Science, 311*, 1301–1303. doi:10.1126/science.1121448 16513986
- Warneken, F., & Tomasello, M. (2007). Helping and cooperation at 14 months of age. *Infancy, 11*, 271–294. doi:10.1080/15250000701310389
- Warneken, F., & Tomasello, M. (2008). Extrinsic rewards undermine altruistic tendencies in 20-month-olds. *Developmental Psychology, 44*, 1785–1788. doi:10.1037/a0013860 18999339
- Warneken, F., & Tomasello, M. (2009). The roots of human altruism. *British Journal of Psychology, 100*, 455–471. doi:10.1348/000712608X379061
- Zahn-Waxler, C., Radke-Yarrow, M., Wagner, E., & Chapman, M. (1992). Development of concern for others. *Developmental Psychology, 28*, 126–136. doi:10.1037/0012-1649.28.1.126