ORIGINAL ARTICLE

WILEY

What you really want: Two-year-olds prioritise ultimate goals when helping

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Abstract

Toddlers are motivated to help others achieve their goals, but providing effective help also requires toddlers to consider what will be most helpful to another individual. Sometimes, helping requests provide conflicting information about an individual's goals, so we need to decide which information to prioritise in order to decide how is best to help. The current studies investigate how toddlers prioritise conflicting information about immediate and ultimate goals when helping. In Study 1, 2-year-olds were shown an opaque container of blocks (hidden blocks), a transparent container of blocks (visible blocks), and a colourful tube that plays music when a block is dropped inside. For half of the participants, both hidden and visible blocks played music but, for the other half, only the hidden blocks worked. A naïve experimenter asked for a block (immediate goal) to play music with (ultimate goal), and when both blocks were equally functional, we found that toddlers prioritised fulfilling the immediate request by providing a visible block; but when only the hidden block was functional, toddlers prioritising fulfilling the ultimate goal and helped by providing the functional but hidden block. Study 2 demonstrated that toddlers considered the experimenter's goal when helping, and not just their own attraction to the musical toy. This work adds to a

growing body of literature investigating not only whether young children help, but also how young children reason when engaging in helping behaviour.

1 | INTRODUCTION

There is no single act of helping. Behaviours that will be helpful to an individual differ depending on the context and reason that the individual requires help (Dunfield, 2014; Dunfield et al., 2011; Paulus, 2014). Thus, in order to help, we first must decide what is going to be helpful (Bridgers & Gweon, 2018). Though there is evidence that even toddlers can pay attention to individual pieces of information to determine what someone else wants (e.g., pointing, observable behaviour, verbal communication; Buttelmann et al., 2009; Paulus, 2014; Svetlova et al., 2010; Warneken & Tomasello, 2006, 2007), requests for help are not always clear. If your partner asked you for forks to set the table with, but you had made soup for dinner, you first need to decide between fulfilling their immediate request (to give your partner some forks) and their ultimate goal (to have the appropriate cutlery for dinner) in order to help them effectively. Though toddlers especially are motivated to help others from early in life (e.g., Callaghan & Corbit, 2018; Hepach & Warneken, 2018; Hepach et al., 2012, 2019; Warneken & Tomasello, 2006, 2007), how do toddlers decide on the best helping actions when faced with conflicting information about someone's goals?

From early in life, infants are attentive to others' goals. At only 3 months of age, infants infer that a reach toward an object is driven by a goal to grasp that particular object rather than to end up in a particular location (Sommerville & Woodward, 2005; Woodward, 1998). Later in the first year, infants become sensitive to the causes and consequences of goal pursuit, with 10-month-olds using contextual information about an agent's prior behaviour to predict their current goals (Sommerville & Crane, 2009) and finding it unexpected when an agent displays negative affect upon achieving their goal (Skerry & Spelke, 2014). Between 10 and 12 months, infants can construe an action as a means to an end, recognising for instance that an agent who pulls a cloth toward them and grasps the toy on top had the goal of obtaining the toy and not the cloth (Sommerville & Crane, 2009; Sommerville & Woodward, 2005; Woodward & Sommerville, 2000). Toddlers in the second year of life increasingly become able to use information about an individual's perspective, knowledge, and prior goals to encode the goal of an ambiguous request (Ganea & Saylor, 2007; Liebal et al., 2009; Moll & Tomasello, 2006), and use this information to help others achieve the previously ambiguous goal (e.g., by retrieving an object). By age 2, toddlers use much more subtle cues to identify others' goals (e.g., using "I'm cold!" to infer the need for a blanket) instead of relying on overt cues or direct reference (e.g., pointing to the blanket; Svetlova et al., 2010). Goal attribution is thus an early-emerging socio-cognitive capacity that becomes more sophisticated and nuanced during the first two years of life.

Not only do toddlers attribute goals to others, but they themselves regularly help others to achieve their goals. Though the underlying motivations behind early helping behaviour are debated (Carpendale et al., 2015; Dahl & Brownell, 2019; Hepach et al., 2012; Paulus, 2014; Rheingold, 1982; Warneken & Tomasello, 2006, 2007), there is a consensus that prosocial behaviours are prevalent from early in life. Twelve-month-old infants helpfully point out the location of a lost object for an experimenter (Liszkowski et al., 2008, 2009), and by 14 months toddlers retrieve out-of-reach objects for others and help them with basic tasks (Warneken & Tomasello, 2006, 2007). Toddlers' motivation to see others helped with their goals appears pervasive: they will provide instrumental help at a cost to themselves and without request or acknowledgement (Warneken, 2013; Warneken & Tomasello, 2009, 2013), and they display positive emotions when others' goals are completed, whether toddlers provided help themselves or watched someone else

provide help (Hepach & Tomasello, 2020; Hepach et al., 2012). Toddlers and young children sometimes can help in the absence of an explicit request for help, using more indirect cues (e.g., Svetlova et al., 2010) or even a goal-related event occurring without an individual's knowledge (e.g., an item falling from a table; Warneken, 2013), as a basis to infer that help is needed and to provide it. Naturalistic observational studies also suggest that instrumental helping is present within preschool sibling interactions within the home (Dahl, 2015; Tavassoli et al., 2019), both in US samples and samples from smaller scale societies (e.g., Tzotzil Maya; Tavassoli et al., 2022), and that helpful behaviours within the home increase with age (Hammond & Brownell, 2018). These findings highlight that goal understanding and motivation to help are intertwined, with young toddlers willing to help when they understand an agent's instrumental goal and are motivated to see it completed.

How then do toddlers help in the face of conflicting information about an individual's goal? Conflicting information is common in real-life helping situations, and often there are multiple possible actions a helper needs to decide between—some more helpful than others. Empirical evidence demonstrates that toddlers sometimes try to help in ways which are unhelpful for adults, perhaps highlighting the tension between being motivated to help, yet still figuring out the most appropriate helping actions (Dahl, 2015; Hammond & Brownell, 2018; Rheingold, 1982). This idea is amplified by the notion that goals tend to exist in a hierarchy; we often have immediate sub-goals (e.g., picking up a pen) which serve broader ultimate goals (e.g., taking notes on a lecture), which could in turn serve even more distal goals or produce long-term benefits (e.g., passing a first-year biology course, eventually applying to medical school). However, the immediate goals of an individual may be in apparent or actual conflict with their ultimate goals or best interests. This could happen if an individual has incomplete knowledge of a situation (e.g., asking for a colouring pen without realising it is out of ink), or if an individual is compelled by an immediate goal whose fulfilment will have negative consequences (e.g., a child wanting to stay up past their bedtime without considering how they will feel at school the following day). Understanding how children respond in these types of situations can yield insight into how children represent an act of helping: do they think of helping as fulfilling the recipient's immediate goal in that moment, or do they prioritise helping with others' ultimate goals instead?

To the best of our knowledge, three previous studies have investigated this question and only with older preschoolers. This research has found that 3-year-olds prioritise information about ultimate goals over immediate goals when the two are in conflict. For example, 3-year-olds override a direct request for a specific object if it is dysfunctional for the requester's stated task and provide a functional object that will fulfil the ultimate goal instead (e.g., if the requester wants to pour water and asks for a cup that the child previously learned is broken; Martin & Olson, 2013; see also Hepach et al., 2019). By age 5, children sometimes prioritise a recipient's ultimate welfare against their immediate goal when helping, overriding a request for chocolate in favour of an alternative snack when they have learned that chocolate makes the recipient sick. However, children were more likely to fulfil the immediate goal despite the negative consequences in a case where there was not an attractive alternative to provide (Martin et al., 2016). These studies highlight some of the conflicting factors that influence children's helping choices and suggest that preschool-age children do weigh immediate goals against ultimate goals and potential outcomes when making helping decisions.

Despite the evidence that toddlers use contextual information to infer others' goals and respond by helping with others' requests appropriately (Ganea & Saylor, 2007; Liebal et al., 2009; Moll & Tomasello, 2006; Svetlova et al., 2010), we do not know whether toddlers already prioritise fulfilling others' ultimate goals when faced with conflicting requests, as older preschoolers do (Hepach et al., 2019; Martin & Olson, 2013; Martin et al., 2016). One possibility is that toddlers simply infer an immediate goal based on individual cues, such as direct reference (e.g., pointing, language) or information about perspective or prior goals (e.g., what someone can see or what they did previously; Ganea & Saylor, 2007; Liebal et al., 2009; Moll & Tomasello, 2006) and provide help, without considering how the immediate goal relates to the individual's ultimate goal. Another possibility is that when faced with a conflict in cues, toddlers weigh different pieces of information (as older children do; Hepach et al., 2019; Martin & Olson, 2013; Martin et al., 2016) and prioritise fulfilling the individual's ultimate goal when helping. We know that infants can interpret a simple action as a means to achieve an ultimate goal by their first birthday (e.g., Woodward & Sommerville, 2000), but whether toddlers can apply their representation of a goal hierarchy in a helping context remains unclear.

In the current studies, we investigated how 2-year-olds responded to a request for help when faced with conflicting information about the requester's immediate and ultimate goals. We aimed to examine *how* toddlers decided to help an experimenter, by examining whether the helping context influenced toddlers' tendency to help with an experimenter's immediate goal or their ultimate goal. In Study 1, toddlers participated either in a condition where there was straightforward contextual information available to infer an experimenter's immediate goal, or a condition where additional conflicting information was provided about the experimenter's ultimate goal. Study 2 examined whether toddlers would still prioritise the experimenter's ultimate goal when fulfilling this ultimate goal did not produce the same salient action effect as in Study 1. We recorded toddlers' helping choices to determine whether their tendency to fulfil the immediate and ultimate goals differed depending on the helping context.

2 | STUDY

Study 1 examined whether 2-year-olds would prioritise information about the referent of a request—the immediate goal—or information about the ultimate goal of the request, to help an experimenter. Toddlers were assigned randomly to either the baseline condition or the conflict condition. In both conditions, one experimenter showed toddlers two sets of coloured blocks, one set that was in a clear container (blocks were visible to anyone in the room), and one set in an opaque container with an opaque lid (blocks were hidden within the container). The experimenter then demonstrated how the blocks could be used with a novel toy—a long, colourful tube—to play music. In the baseline condition, any block from either set could be inserted into the tube to play music, but in the conflict condition, only the blocks from the opaque container could make the tube play music.

In both conditions, a second experimenter then entered the room and asked the toddler for help getting a block to play music with the tube. The immediate goal of the request for help could be inferred because the experimenter made reference to the block she could see, and in both conditions only the blocks in the transparent container were visible at the time of the request. We chose to use these cues to indicate the immediate goal rather than pointing (as in Martin & Olson, 2013) because younger children significantly struggle to inhibit a response to an unambiguous point relative to other cues of reference (Couillard & Woodward, 1999; Palmquist & Jaswal, 2012; Palmquist et al., 2012). Using such explicit cues thus could lead to a failure to prioritise the ultimate goal for performance reasons unrelated to the competency of interest. Because 2-year-olds can use visual common ground—that is, information about what they and another person can each see and know about—to infer the goal of a request (Ganea & Saylor, 2007; Moll & Tomasello, 2006; Tomasello & Haberl, 2003), toddlers should treat the visible blocks as the experimenter's immediate goal and provide a block from this set.

In the baseline condition the experimenter's immediate and ultimate goals were compatible because the visible blocks (immediate goal) were functional for playing music (ultimate goal). Thus, we predicted that toddlers would provide the experimenter with a visible block. In the conflict condition, the visible block (immediate goal) was not functional for playing music (ultimate goal). This meant that toddlers had to decide whether to provide the block the experimenter was asking for by selecting a visible but dysfunctional block, or to prioritise her ultimate goal by selecting a hidden but functional block. If toddlers, like older 3- and 5-year-olds (Hepach et al., 2019; Martin & Olson, 2013; Martin et al., 2016), prioritise the experimenter's ultimate goal, we predicted that toddlers would override the immediate request for a visible but non-functional block and provide the hidden but functional blocks instead.

2.1 | Method

2.1.1 | Participants

Forty 2-year-olds participated in Study 1 (range = 24.06 months–35.73 months); 20 children in the baseline condition (*M* = 30.36 months, *SD* = 3.29, 11 female) and 20 in the conflict condition (*M* = 30.47 months, *SD* = 3.41, 11 female). All
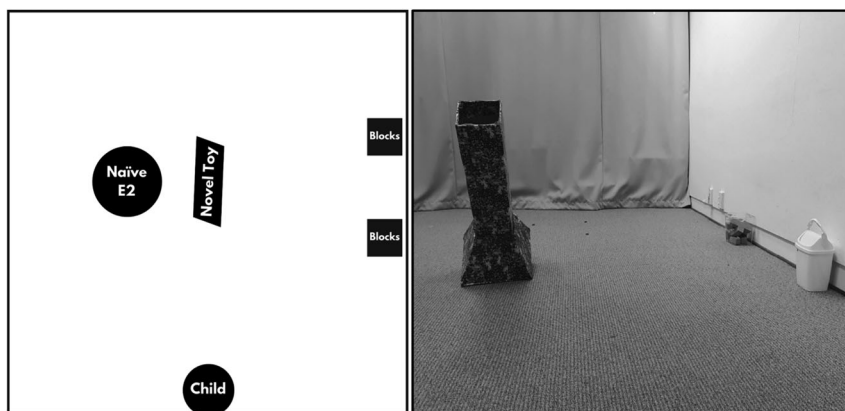
FIGURE 1 Testing room setup. Images of the testing room (bird's eye view; toddlers' perspective), including placement of the block containers, the novel toy, the child, and the location where the naïve experimenter stands when requesting help from the toddlers.

participants were typically developing toddlers living in a mid-size city in New Zealand, whose parent or guardian indicated interest in participating in research on child development. Ethics approval was obtained before data collection. Participants were tested in a university lab space, and were given a small toy (e.g., a rubber duck or a book) after their session. An additional 10 toddlers participated but were excluded for not participating in the task ($n = 8$) or parental interference ($n = 2$). This exclusion rate is consistent with other active helping paradigms conducted with toddlers (e.g., Allen et al., 2018; Buttelmann et al., 2009; Dunfield et al., 2011; Hepach, Kante et al., 2017; Hepach, Vaish et al., 2017; Svetlova et al., 2010; Warneken & Tomasello, 2006).

2.1.2 | Materials

In the helping task, two containers holding foam blocks were used; one container was opaque and had a lid, and one container was transparent and had no lid. The opaque container held green, foam blocks and the transparent container held matching red, foam blocks. The containers were placed against the side wall of the room approximately 70 cm apart, with the container that was closest to the participant counterbalanced. A multicoloured, cardboard tube (approximately 85 cm tall) was stuck to the floor in the centre of the room, with the two containers of blocks equidistant from the tube (see Figure 1).

2.1.3 | Procedure

Toddlers entered the testing room with their caregiver who was shown to a chair on the side of the room. Prior to the study beginning, caregivers were asked to keep their child on their lap until an experimenter requested help. The experimenter (E1) then brought the two containers of blocks over to the child who was sitting with their caregiver, to familiarise toddlers with the two different sets of blocks and where they are stored. E1 first tipped the hidden blocks onto the floor and asked toddlers for help putting them back into the container. Once toddlers had helped E1 place all of the blocks back into the opaque container, E1 showed toddlers the lid for this container and helped the toddlers to put the lid on. The same procedure was repeated for the transparent container containing the visible blocks, but instead of placing a lid on this container, toddlers were shown that this container had no lid.

E1 asked toddlers to sit with their caregiver, then placed the two containers of blocks in their locations on the side of the room (as mentioned in the Materials section; see Figure 1 for a diagram) and drew toddlers' attention to the colourful tube in the centre of the room. E1 told toddlers that this tube is special because it can play music when blocks are put inside. In the baseline condition, toddlers were shown that both the visible and hidden blocks were functional and made the tube play music. E1 demonstrated how to use the tube by putting a hidden block in the tube, and a short tune played. The song was a 3 s jingle, controlled by another experimenter who remained hidden behind a curtain for the duration of the study. E1 then encouraged toddlers to try putting a hidden block into the tube themselves; when the child placed each block inside the tube and the music played, E1 said, "Wow, you made the song play too!". This process was repeated for the visible blocks (i.e., E1 demonstrated putting a visible block into the tube and then asked toddlers to try for themselves). The familiarisation process was identical in the conflict condition, except that only the hidden blocks were functional and made the tube play music. When E1 placed a hidden block in the tube, she responded in the same way as in the baseline condition. However, when E1 placed a visible block into the tube for the first time, she noted that this type of block didn't work ("Oh no, the red blocks don't make the tube play a song") and repeated this statement when the child placed any visible blocks into the tube.

E1 then asked toddlers, "Can you get a block that makes the tube play a song?", and gave appropriate feedback based on condition (baseline: "That's right, the green blocks and the red blocks make the tube play a song!"; conflict: "That's right! The green blocks make the tube play a song, but the red blocks don't make the tube play a song."). If toddlers made an incorrect response (i.e., providing a hidden block in the conflict condition, $n = 6$), they were corrected to make sure they understood which blocks were functional before proceeding (i.e., "Oh no, the red blocks don't make the tube play a song"). All toddlers who initially made an incorrect response chose the correct response on the next memory check. E1 then asked toddlers to sit back with their caregiver and replaced the used blocks so that there were at least 2 blocks in each container.

At the end of the familiarisation phase, E1 said that she heard a knock at the door. A second experimenter (E2), who was blind to condition and who had not met participants or been present for the training phase, entered the room and asked E1 what she was playing with (i.e., "Hi, what are you playing in here?"). E1 explained, "We were making music with blocks," and then walked E2 to the colourful tube in the centre of the room. E1 then exclaimed that she had forgotten something and left behind a curtain to retrieve it for the duration of the helping phase. E2 looked around the room, looked to the centre between the two containers, and said, "Ah! I see a block. Can you give me the block so I can play a song please?" This request included reference to what E2 could see as well as the definite article "the", to indicate to the toddlers that E2 was making direct reference to the visible blocks and therefore that her immediate goal was to obtain a visible block. The caregiver had been instructed in advance to place their child on the ground in front of them after E2's request. The entire session was video recorded to allow coding of toddlers' responses in the helping phase.

2.1.4 | Coding

Toddler's responses during the helping phase were coded offline by a coder blind to condition. Coders recorded which block toddlers selected, and any verbalisations the child made from the time E2 asked for help until the child had given a block to E2. We coded verbalisations as an exploratory measure, following Martin and Olson's (2013) finding that 3-year-olds were more likely to verbalise about their choice when overriding the experimenter's request in favour of her ultimate goal. We coded verbalisations as an exploratory measure because we thought that 2-year-olds would be less likely to verbalise at all than 3-year-olds. Still, we thought that toddlers might verbalise more in the conflict condition in which the context suggests that E2 lacks relevant knowledge (i.e., that the block she can see is not functional for playing music). As we expected 2-year-olds to be less verbal than 3-year-olds, but also wanted to ensure verbalisations were specific to E2's request, we counted verbalisations in which toddlers referred to a specific block (e.g., "These ones, the green ones,") but not verbalisations in general (e.g., "Yes, okay!"). A reliability coder who was blind to condition coded reaches and any verbalisations on 50% of trials and interrater reliability was perfect for both measures ($K = 1$).
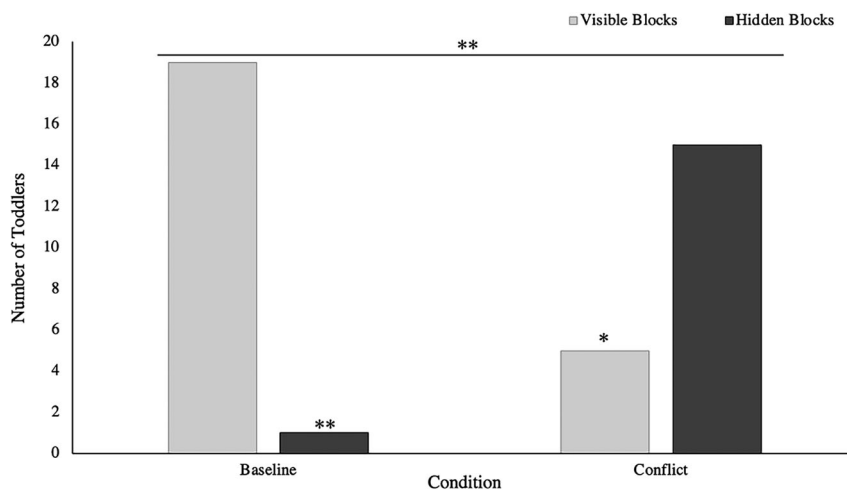
FIGURE 2 Number of toddlers who selected each block type in the Baseline and Conflict conditions. * denotes significance at $p < .05$, ** denotes significance at $p < .001$.

2.2 | Results

The dataset for both studies is available on Open Science Framework (https://osf.io/587vz/). We conducted a Fisher's exact test to assess whether toddlers' block choices differed in the baseline and conflict conditions. There was a significant difference in block choices between conditions ($Z = -4.46, p < .001$, two-tailed; see Figure 2). Follow-up binomial tests indicated that in the baseline condition where toddlers know that hidden and visible blocks were equally functional, but E2 could only see the visible blocks, toddlers gave a visible block ($n = 19$) significantly more often than expected by chance ($p < .001$). However, in the conflict condition where the visible blocks were not functional, toddlers gave the hidden but functional blocks ($n = 15$) significantly more often than expected by chance ($p = .04$). Container placement did not affect toddlers' block choice, as toddlers in both conditions were equally likely to select the closest set of blocks (conflict: $n = 11$, baseline: $n = 11$) and the farthest set of blocks (conflict: $n = 9$, baseline: $n = 9$; $p = .824$, two tailed).

We conducted a second Fisher's exact test to assess whether toddlers' block-related verbalisations differed between conditions. More toddlers referenced a specific block in the conflict condition ($n = 6$) than in the baseline condition ($n = 1$), however, the number of total verbalisations was low and thus this difference was marginal ($p = .09$, two-tailed). All 6 toddlers who verbalised in the conflict condition gave E2 the hidden block, and the toddler who verbalised in the baseline condition gave E2 the visible block.

2.3 | Discussion

The findings of Study 1 suggest that toddlers understood E2's immediate goal to obtain the block she could see, and almost all helped with this goal in the baseline condition when it was compatible with the ultimate goal of playing music with the tube. Yet, when the immediate goal and ultimate goal were in conflict because only the hidden blocks could be used to play music, toddlers were significantly more likely to give E2 a functional but hidden block over a visible but dysfunctional block. These results indicate that 2-year-olds, like older 3- and 5-year-olds (Hepach et al., 2019; Martin & Olson, 2013; Martin et al., 2016) prioritise fulfilling an individual's ultimate goal over their immediate goal when helping.

An alternate possibility for the difference in toddler's block choices between conditions is that toddlers were prioritising making the tube play music in the conflict condition when selecting a block. Study 1 used an exciting and novel tube that was functional with both blocks in the baseline condition, but only with the hidden but functional blocks in the conflict condition. Thus, it is still possible that toddlers themselves wanted the tube to play music and so selecting the hidden but functional blocks would complete the goal of playing music, instead of E2's goal. To address this explanation, we ask in Study 2 whether toddlers would still tend to choose the hidden functional blocks if the music-playing function of the blocks was irrelevant to E2's ultimate goal.

3 | STUDY 2

Study 2 examines whether toddlers in the conflict condition of Study 1 selected the hidden but functional blocks to fulfil E2's goal of playing music, or because toddlers themselves wanted the tube to play music or simply attached positive valence to the functional blocks. Study 2 was almost identical to the conflict condition of Study 1 with only the hidden blocks functional for playing music, but here E2 walked past the novel tube and stated that her ultimate goal was to build a block tower (for which both blocks are equally functional). Thus, the goal of Study 2 was to determine whether toddlers pay specific attention to E2's ultimate goal when hearing E2's request for help. Because both blocks were functional for building a block tower, we predicted a different pattern of block choices depend on whether toddlers' considered E2's ultimate goal, or whether they were responding based on their interest in playing music with the novel tube. If toddlers preferred to give the hidden functional block in the conflict condition of Study 1 in order to fulfil E2's ultimate goal, they should not show the same significant preference for the hidden but functional blocks in Study 2. If, on the other hand, toddlers were simply motivated by playing music with the novel tube, they should also show a preference here for selecting the hidden functional blocks in order to play the music.

3.1 | Method

3.1.1 | Participants

Twenty 2-year-olds participated in Study 2 (range = 24.27 months −34.97 months, $M = 29.79$, $SD = 3.58$, nine female). All participants were typically developing toddlers living in a mid-size city in New Zealand, whose parent or guardian indicated interest in participating in research on child development. Participants were given a small toy or book for their participation. Additional toddlers were excluded for not participating in the task ($n = 4$), parental interference ($n = 4$), or experimenter error ($n = 3$).

3.1.2 | Procedure

The materials and room setup were identical to those of Study 1. The procedure was identical to the conflict condition of Study 1; toddlers learned that only the hidden blocks made the tube play music, E2 entered and spoke with E1, E1 walked E2 beside the tube in the centre of the room, and then E1 left behind a curtain. However, in Study 2, E2 entered the room with a yellow block and a blue block in her hands and instead of asking for help playing with the tube, she knelt down, said "Look", and started making a block tower with the blue and yellow blocks. She then looked to the centre point between the two containers of blocks as in Study 1, and said, "Ah! I see a block. Can you give me the block so I can finish my tower please?". By giving E2 a goal that was unrelated to the tube and could be accomplished with a block from either set, we aimed to assess whether toddlers were considering E2's goal when choosing a block.
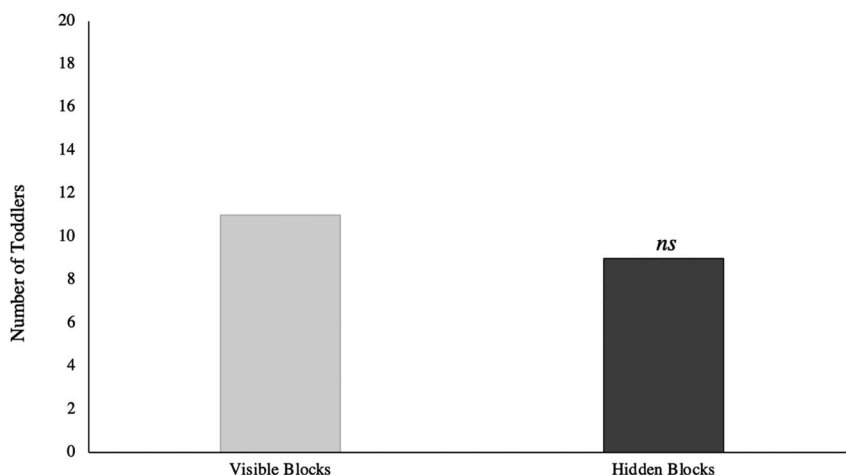
FIGURE 3   Number of toddlers who selected each block type in Study 2.

3.1.3 | Coding

A coder blind to the hypotheses of the study recorded which block the child chose in the helping task. We did not analyse verbalisations in the helping phase in this study because both blocks were equally functional for building a block tower and therefore, we had no reason to expect toddlers to try to explain their choices. However, because we were interested in whether toddlers were motivated to help E2 with her own ultimate goal, we also coded whether toddlers gave their chosen block to E2 for use building her tower or used it to play music with the tube as an exploratory variable. Providing E2 with a block would require toddlers to walk past the tube and hand the block to E2, lending support to the idea that they are motivated to help E2 with their goal. A second coder coded 50% of trials and intercoder reliability was perfect for both measures ($K = 1$).

3.2 | Results

We conducted a binomial test to analyse toddlers' block selections during the helping phase. Toddlers were equally likely to give E2 the hidden blocks ($n = 9$) and the visible blocks ($n = 11$; $p = .824$, two tailed; see Figure 3). We then conducted a binomial test to assess whether toddlers gave E2 their chosen block to build her tower or put the block into the tube themselves. Toddlers were significantly more likely to hand E2 a block ($n = 18$) than to put the block they had chosen in the tube ($n = 2$; $p < .001$, two tailed), indicating that the majority of toddlers chose to help E2 with her goal, even though they could have used that block to play music with the tube themselves. Of the toddlers who put a block in the tube, one child chose the functional block (i.e., the block that played music) and one child chose the non-functional block (i.e., the block that did not play music). Container placement did not affect toddlers' block choice, as toddlers were equally likely to select the closest set of blocks ($n = 11$) and the farthest set of blocks ($n = 9$, $p = .824$, two tailed).

3.3 | Discussion

The findings of Study 2 suggest that toddlers did not simply want to play with the novel toy (the tube), but instead that they considered E2's ultimate goals when deciding how to help. Toddlers had the same experience learning about the

properties of the blocks and the tube as in the Study 1 conflict condition, but they did not show a significant preference to select the functional blocks for playing music when E2 had stated that she wanted to build a block tower. This result argues against the idea that toddlers in Study 1 were overriding an immediate request to provide the functional block without considering E2's ultimate goal. Instead, it seems more likely that toddlers were paying attention to E2's goals and choosing a helping action accordingly.

Toddlers did not show a significant preference for hidden or visible blocks when choosing which to give to E2 to build a tower. Although this makes sense when viewed only from the standpoint of E2's ultimate goal (both blocks are equally functional for building a block tower), it raises the question of why toddlers were not more likely to provide a visible block as they were in Study 1. One possible reason for the lack of preference is that toddlers were pulled in different directions by conflicting cues. They may have attached positive valence to the hidden functional blocks during the training phase in which they produced an interesting effect (music) with the tube, and thus may have been swayed in the helping phase by this positive valence on one side and the visual access cue on the other. Another possibility is that toddlers have more difficulty determining how to prioritise information when they are presented with more than one possible ultimate goal as in Study 2 (building a block tower, playing music with the tube). Both of these possibilities have implications for our understanding of the factors that influence toddlers' goal reasoning in the context of helping, and we return to them in the General Discussion.

4 | GENERAL DISCUSSION

Two studies examined how 2-year-olds prioritise goal information when deciding how to help others. In Study 1, toddlers fulfilled E2's immediate goal when it was consistent with her ultimate goal: that is, they understood that E2's request for help referred to the blocks which E2 could see and gave her this block to play music with the tube. However, when provided with conflicting information relevant to E2's ultimate goal (only the hidden blocks could play music with the tube), toddlers prioritised the ultimate goal and provided a functional block. Results of Study 2 suggest that toddlers were considering E2's ultimate goal and not merely a goal of playing music with the tube: they did not prioritise the functional block for the tube if E2 wanted to build a block tower, for which either block could be used. Prior literature has examined how infants consider contextual information when deciding how to help another person (e.g., visual access, pointing, type of help requested; Dunfield et al., 2011; Liebel et al., 2009; Moll & Tomasello, 2006; Paulus, 2014; Svetlova et al., 2010) and how preschool-age children begin to prioritise others' ultimate goals and best interests when deciding how to help (Hepach et al., 2019; Martin & Olson, 2013; Martin et al., 2016). The current studies provide novel evidence that from 2 years, toddlers are beginning to weigh conflicting contextual information when responding to requests for help in real-time, and, like older children, prioritise fulfilling ultimate over immediate goals.

Why did toddlers decide to provide the visible block when both blocks were functional for the music goal, but the hidden block when only this block was functional for the goal? The finding in Study 1 that toddlers in the baseline condition helped by providing the block that the experimenter could see is consistent with previous research demonstrating that infants and children can encode others' goals and disambiguate requests based on relevant contextual information such as visual access (e.g., Ganea & Saylor, 2007; Moll & Tomasello, 2006; Tomasello & Haberl, 2003). Toddlers had just seen both sets of blocks themselves moments earlier, so toddlers may have considered which of the blocks E2 could see in response to E2 stating that they could see a block, and used this information when deciding which block to provide. Further, toddlers' preference to provide the block that could help to fulfil the ultimate goal in the Study 1 conflict condition suggests that they prioritised the goal of playing music over their preference in the baseline condition to provide the visible block as the referent of the request.

We suggest that toddlers prioritised the ultimate goal because they represented the immediate and ultimate goals in terms of a goal hierarchy. As early as 8 months, infants show some evidence of understanding basic goal hierarchies or sequences of actions which serve a higher-level goal. For example, infants understand that if an individual reaches for a cloth covering a toy, her goal is not to retrieve the cloth but rather retrieve the toy (Gerson et al., 2015;

Sommerville & Crane, 2009; Sommerville & Woodward, 2005). Toddlers in our study may have considered the immediate goal of the request (i.e., to get a visible block) as a sub-goal of E2's ultimate action goal (i.e., to use a block to make the tube play music) and prioritised the higher-level goal. If toddlers are representing the situation in this way, their prioritisation would suggest an understanding that fulfilling an intended sub-goal may not always help to achieve the ultimate goal successfully. Additionally, toddlers showed an increased tendency to verbalise about the blocks in the conflict condition in which they tended to prioritise E2's goal, and the toddlers who verbalised exclusively referenced the blocks that were hidden from E2. Although the overall rate of verbalisations was low, this finding supports the idea that if toddlers represent both the immediate and ultimate goal and are trying to arbitrate between them, they might make more effort to convey information about their prioritisation to the person they are trying to help (as 3-year-olds do; Martin & Olson, 2013).

Then, why did toddlers not revert back to providing visible blocks when both blocks were functional for fulfilling a second goal in Study 2? One reason for the lack of preference in this study could be that toddlers were pulled in one direction by their recognition of the immediate goal (the visible block) but in another direction by the salient action effect of the block that could be produced with the tube (the hidden block), even though this action effect was not relevant to the block tower goal. If so, the positive valence associated with one set of blocks may have bled into toddlers' reasoning about how to help with the second block tower task. It is also possible that toddlers who participated in Study 2 found the task more challenging to process because of the presentation of multiple ultimate goals. That is, toddlers were introduced to both the goal of playing music with the tube and the goal of building a block tower. Having to represent multiple separate goals—which are not in the same hierarchy—at the same time may have created a task demand for children that made it harder to act on the relevant information about the immediate goal (visual access). To test between these possibilities, future research could examine how toddlers respond when presented with two experimenters with two different goals as in Study 2, but all the blocks (visible and hidden) are functional for both goals. If toddlers have trouble paying attention to the immediate goal because they are overwhelmed by the presentation of two distinct ultimate goals, their choices should be at chance here too. If toddlers have no trouble holding the two distinct music-playing and tower-building goals in mind as long as neither set of blocks is more interesting or functional than the other, they should be more likely to choose a visible block when asked by either experimenter. Ultimately, the results of Study 2 provide an important control for Study 1 by showing that toddlers are not focused uniquely on the music goal but rather that they also prioritised information about E2's ultimate goal in a goal hierarchy; however, it seems likely that other demands may influence how toddlers prioritise some immediate contextual factors (e.g., visual access) when helping.

Two-year-olds' tendency to prioritise the ultimate goal over the visible referent of the request in our study is consistent with older children's willingness to engage in "paternalistic helping"—that is, overriding a request for help that is not in line with an individual's ultimate goal or best interests. It will be important for research to continue to probe the factors that modulate this kind of prioritisation in helping tasks across early development. One such factor is the strength of the immediate goal relative to the ultimate goal. In order to examine toddlers' prioritisation of the immediate and ultimate goals, we used a less explicit immediate request compared to similar studies with older children (for example, where the request included a point and the word "that [object]"; Martin & Olson, 2013) due to research suggesting toddlers often have difficulty overriding their spontaneous response to explicit verbal statements and pointing actions (Couillard & Woodward, 1999; Palmquist & Jaswal, 2012; Palmquist et al., 2012). Still, it would be interesting to find out whether these 2-year-olds similarly would be able to override a more direct request if it did not suit the ultimate goal, like older 3-year-olds do. This would suggest a strong understanding that a subgoal which cannot serve its ultimate goal should not be treated as a goal in and of itself (and an ability to act on this understanding). However, although 3-year-olds override a request for a subgoal that cannot fulfil the person's ultimate goal (Martin & Olson, 2013), there is only evidence in 5-year-olds of actually overriding a clear desire when it may not serve the person's best interests, and even then only under some conditions (Martin et al., 2016). Thus, there is still much to understand about how the certainty of the immediate and ultimate goals and the available alternatives impacts young children's helping choices. Both the ability to weigh relevant information and understand when there is a goal

hierarchy (subgoal that does not suit the ultimate goal) and when there are genuinely conflicting goals (desiring something that may harm you in the long run), as well as the behavioural tendency to behave paternalistically toward another person, are likely to develop over the course of childhood and to be subject to interesting individual and cultural differences.

Another factor that is likely to exert an important influence on children's decision-making in the face of conflicting goal information is the knowledge state of the individual they are trying to help. Toddlers and young children have been shown to consider the mental states of others in some helping contexts to determine the most appropriate response or helping action (Buttelmann et al., 2011; Liebal et al., 2009). Even for adults it is intuitively easier to deny someone their immediate goal if it is obvious that they are unaware of relevant information. If someone does not know that the pen they are requesting is out of ink, we can rationalise that they are only requesting this pen because they lack important information about it (i.e., that it is not functional) and thus may find it easier to override an immediate request for this object. However, if someone knows that the item that they are requesting will not fulfil one of their goals but requests it anyway (i.e., a child with lactose intolerance knows that eating ice cream will make them sick), children no longer can justify their helping via a lack of information on part of the person requesting help. There is some evidence that the knowledge state of the person requesting help influences how older children make helping decisions in the face of conflicting information in similar studies (Hepach et al., 2019; Martin & Olson, 2013; Martin et al., 2016) and that an individual's false beliefs may affect how toddlers choose to help them (Buttelmann et al., 2009). Though five-year-old children sometimes will override an immediate goal even when the requester does have a complete knowledge set (Martin et al., 2016), there is only evidence that younger children override an immediate request when the context suggests that their partner is lacking an important piece of knowledge about what they are requesting (e.g., that the item is broken; Hepach et al., 2019; Martin & Olson, 2013). Toddlers in our study reasonably could have assumed that the experimenter lacked knowledge of which blocks were functional for the tube and decided to override her goal for that reason. Because we know that toddlers can represent others' knowledge or ignorance (Ganea & Saylor, 2007; Liebal et al., 2009; Moll & Tomasello, 2006; Tomasello & Haberl, 2003), it would be interesting for future work to investigate more directly whether and how knowledge affects young children's prioritisation of ultimate goals and best interests over conflicting immediate goals, and how this may change between the ages of 2 and 5.

The current studies add to a recent body of literature examining how infants and young children think about the help they provide when engaging in prosocial behaviours (Bridgers & Gweon, 2018; Köster & Kärtner, 2019). Although toddlers are motivated and able to help others by fulfilling their goals from early in life (Aknin et al., 2018; Hepach et al., 2012, 2019; Warneken & Tomasello, 2006, 2007), growing evidence suggests that these toddlers and young children already consider the wider helping setting and reason about their helping choices accordingly (Bridgers et al., 2017; Hepach et al., 2019; Paulus, 2020; Sierksma & Shutts, 2021; Surian & Franchin, 2017). Our study provides new evidence that 2-year-olds can not only use contextual cues to consider an individual's immediate and ultimate goals, but can also prioritise helping an individual with their ultimate goal when presented with conflicting goal information.

CONFLICTS OF INTEREST STATEMENT

Authors declare no conflicts of interest.

DATA AVAILABILITY STATEMENT

The data is available in a repository on the Open Science Framework.

ETHICS APPROVAL STATEMENT

This research received ethical approval from the Victoria University of Wellington Human Ethics Committee (Application #0000023076).

REFERENCES

Aknin, L. B., Van de Vondervoort, J. W., & Hamlin, J. K. (2018). Positive feelings reward and promote prosocial behavior. *Current Opinion in Psychology*, 20, 55–59. https://doi.org/10.1016/j.copsyc.2017.08.017

Allen, M., Perry, C., & Kaufman, J. (2018). Toddlers prefer to help familiar people. *Journal of Experimental Child Psychology*, 174, 90–102. https://doi.org/10.1016/j.jecp.2018.05.009

Bridgers, S., Altman, S., & Gweon, H. (2017). How can I help? 24- to 48-month-olds provide help specific to the cause of others' failed actions. In(G. Gunzelmann, A. Howes, T. Tenbrink, & E. Davelaar (Eds.), *Proceedings of the 39th Annual Conference of the Cognitive Science Society* (pp. 162–167). Cognitive Science Society.

Bridgers, S., & Gweon, H. (2018). Means-Inference as a source of variability in early helping. *Frontiers in Psychology*, 9, 1–7, Article 1735. https://doi.org/10.3389/fpsyg.2018.01735

Buttelmann, D., Carpenter, M., & Tomasello, M. (2009). Eighteen-month-old infants show false belief understanding in an active helping paradigm. *Cognition*, 112(2), 337–342. https://doi.org/10.1016/j.cognition.2009.05.006

Callaghan, T., & Corbit, J. (2018). Early prosocial development across cultures. *Current Opinion in Psychology*, 20, 102–106. https://doi.org/10.1016/j.copsyc.2017.07.039

Carpendale, J. I., Kettner, V. A., & Audet, K. N. (2015). On the nature of toddlers' helping: Helping or interest in others' activity? *Social Development*, 24(2), 357–366. https://doi.org/10.1111/sode.12094

Couillard, N. L., & Woodward, A. L. (1999). Children's comprehension of deceptive points. *British Journal of Developmental Psychology*, 17(4), 515–521. https://doi.org/10.1348/026151099165447

Dahl, A. (2015). The developing social context of infant helping in two US samples. *Child Development*, 86(4), 1080–1093. https://doi.org/10.1111/cdev.12361

Dahl, A., & Brownell, C. A. (2019). The social origins of human prosociality. *Current Directions in Psychological Science*, 28(3), 274–279. https://doi.org/10.1177/0963721419830386

Dunfield, K. A. (2014). A construct divided: Prosocial behavior as helping, sharing, and comforting subtypes. *Frontiers in Psychology*, 5, 1–13, Article 958. https://doi.org/10.3389/fpsyg.2014.00958

Dunfield, K., Kuhlmeier, V. A., O'Connell, L., & Kelley, E. (2011). Examining the diversity of prosocial behavior: Helping, sharing, and comforting in infancy. *Infancy*, 16(3), 227–247. https://doi.org/10.1111/j.1532-7078.2010.00041.x

Ganea, P. A., & Saylor, M. M. (2007). Infants' use of shared linguistic information to clarify ambiguous requests. *Child Development*, 78(2), 493–502. https://doi.org/10.1111/j.1467-8624.2007.01011.x

Gerson, S. A., Mahajan, N., Sommerville, J. A., Matz, L., & Woodward, A. L. (2015). Shifting goals: Effects of active and observational experience on infants' understanding of higher order goals. *Frontiers in Psychology*, 6, 1–13, Article 310. https://doi.org/10.3389/fpsyg.2015.00310

Hammond, S. I., & Brownell, C. A. (2018). Happily unhelpful: Infants' everyday helping and its connections to early prosocial development. *Frontiers in Psychology*, 9, 1–8, Article 1770. https://doi.org/10.3389/fpsyg.2018.01770

Hepach, R., Kante, N., & Tomasello, M. (2017). Toddlers help a peer. *Child Development*, 88(5), 1642–1652. https://doi.org/10.1111/cdev.12686

Hepach, R., & Tomasello, M. (2020). Young children show positive emotions when seeing someone get the help they deserve. *Cognitive Development*, 56, 1–11, Article 100935. https://doi.org/10.1016/j.cogdev.2020.100935

Hepach, R., Vaish, A., & Tomasello, M. (2012). Young children are intrinsically motivated to see others helped. *Psychological Science*, 23(9), 967–972. https://doi.org/10.1177/0956797612440571

Hepach, R., Vaish, A., & Tomasello, M. (2017). Children's intrinsic motivation to provide help themselves after accidentally harming others. *Child Development*, 88(4), 1251–1264. https://doi.org/10.1111/cdev.12646

Hepach, R., Vaish, A., Müller, K., & Tomasello, M. (2019). Toddlers' intrinsic motivation to return help to their benefactor. *Journal of Experimental Child Psychology*, 188, 1–17, Article 104658. https://doi.org/10.1016/j.jecp.2019.06.011

Hepach, R., & Warneken, F. (2018). Editorial overview: Early development of prosocial behavior: Revealing the foundation of human prosociality. *Current Opinion in Psychology*, 20, iv–viii. https://doi.org/10.1016/j.copsyc.2018.02.001

Köster, M., & Kärtner, J. (2019). Why do infants help? A simple action reveals a complex phenomenon. *Developmental Review*, 51, 175–187. https://doi.org/10.1016/j.dr.2018.11.004

Liebal, K., Behne, T., Carpenter, M., & Tomasello, M. (2009). Infants use shared experience to interpret pointing gestures. *Developmental Science*, 12(2), 264–271. https://doi.org/10.1111/j.1467-7687.2008.00758.x

Liszkowski, U., Carpenter, M., & Tomasello, M. (2008). Twelve-month-olds communicate helpfully and appropriately for knowledgeable and ignorant partners. *Cognition*, 108(3), 732–739. https://doi.org/10.1016/j.cognition.2008.06.013

Liszkowski, U., Schäfer, M., Carpenter, M., & Tomasello, M. (2009). Prelinguistic infants, but not chimpanzees, communicate about absent entities. *Psychological Science*, 20(5), 654–660. https://doi.org/10.1111/j.1467-9280.2009.02346.x

Martin, A., Lin, K., & Olson, K. R. (2016). What you want versus what's good for you: Paternalistic motivation in children's helping behavior. *Child Development*, *87*(6), 1739–1746. https://doi.org/10.1111/cdev.12637

Martin, A., & Olson, K. R. (2013). When kids know better: Paternalistic helping in 3-year-old children. *Developmental Psychology*, *49*(11), 2071–2081. https://doi.org/10.1037/a0031715

Moll, H., & Tomasello, M. (2006). Level 1 perspective-taking at 24 months of age. *British Journal of Developmental Psychology*, *24*(3), 603–613. https://doi.org/10.1348/026151005X55370

Palmquist, C. M., Burns, H. E., & Jaswal, V. K. (2012). Pointing disrupts preschoolers' ability to discriminate between knowledgeable and ignorant informants. *Cognitive Development*, *27*(1), 54–63. https://doi.org/10.1016/j.cogdev.2011.07.002

Palmquist, C. M., & Jaswal, V. K. (2012). Preschoolers expect pointers (even ignorant ones) to be knowledgeable. *Psychological Science*, *23*(3), 230–231. https://doi.org/10.1177/0956797611427043

Paulus, M. (2014). The emergence of prosocial behavior: Why do infants and toddlers help, comfort, and share? *Child Development Perspectives*, *8*(2), 77–81. https://doi.org/10.1111/cdep.12066

Paulus, M. (2020). Is young children's helping affected by helpees' need? Preschoolers, but not infants selectively help needy others. *Psychological Research*, *84*(5), 1440–1450. https://doi.org/10.1007/s00426-019-01148-8

Rheingold, H. L. (1982). Little children's participation in the work of adults, a nascent prosocial behavior. *Child Development*, *53*(1), 114–125. https://doi.org/10.2307/1129643

Sierksma, J., & Shutts, K. (2021). Competence-based helping: Children's consideration of need when providing others with help. *Journal of Experimental Child Psychology*, *210*, 1–18, Article 105206. https://doi.org/10.1016/j.jecp.2021.105206

Skerry, A. E., & Spelke, E. S. (2014). Preverbal infants identify emotional reactions that are incongruent with goal outcomes. *Cognition*, *130*(2), 204–216. https://doi.org/10.1016/j.cognition.2013.11.002

Sommerville, J. A., & Crane, C. C. (2009). Ten-month-old infants use prior information to identify an actor's goal. *Developmental Science*, *12*(2), 314–325. https://doi.org/10.1111/j.1467-7687.2008.00787.x

Sommerville, J. A., & Woodward, A. L. (2005). Pulling out the intentional structure of action: The relation between action processing and action production in infancy. *Cognition*, *95*(1), 1–30. https://doi.org/10.1016/j.cognition.2003.12.004

Surian, L., & Franchin, L. (2017). Toddlers selectively help fair agents. *Frontiers in Psychology*, *8*, 1–5, Article 944. https://doi.org/10.3389/fpsyg.2017.00944

Svetlova, M., Nichols, S. R., & Brownell, C. A. (2010). Toddlers' prosocial behavior: From instrumental to empathic to altruistic helping. *Child Development*, *81*(6), 1814–1827. https://doi.org/10.1111/j.1467-8624.2010.01512.x

Tavassoli, N., Dunfield, K., Kleis, A., Recchia, H., & Conto, L. P. (2022). Preschoolers' responses to prosocial opportunities during naturalistic interactions with peers: A cross-cultural comparison. *Social Development*, *32*(1), 204–222. https://doi.org/10.1111/sode.12620

Tavassoli, N., Recchia, H., & Ross, H. (2019). Preschool children's prosocial responsiveness to their siblings' needs in naturalistic interactions: A longitudinal study. *Early Education and Development*, *30*(6), 724–742. https://doi.org/10.1080/10409289.2019.1599095

Tomasello, M., & Haberl, K. (2003). Understanding attention: 12- and 18-month-olds know what is new for other persons. *Developmental Psychology*, *39*(5), 906–912. https://doi.org/10.1037/0012-1649.39.5.906

Warneken, F. (2013). The development of altruistic behavior: Helping in children and chimpanzees. *Social Research: An International Quarterly*, *80*(2), 431–442. https://doi.org/10.1353/sor.2013.0033

Warneken, F., & Tomasello, M. (2006). Altruistic helping in human infants and young chimpanzees. *Science*, *311*(5765), 1301–1303. https://doi.org/10.1126/science.1121448

Warneken, F., & Tomasello, M. (2007). Helping and cooperation at 14 months of age. *Infancy*, *11*(3), 271–294. https://doi.org/10.1111/j.1532-7078.2007.tb00227.x

Warneken, F., & Tomasello, M. (2009). The roots of human altruism. *British Journal of Psychology*, *100*(3), 455–471. https://doi.org/10.1348/000712608X379061

Warneken, F., & Tomasello, M. (2013). Parental presence and encouragement do not influence helping in young children. *Infancy*, *18*(3), 345–368. https://doi.org/10.1111/j.1532-7078.2012.00120.x

Woodward, A. L. (1998). Infants selectively encode the goal object of an actor's reach. *Cognition*, *69*(1), 1–34. https://doi.org/10.1016/S0010-0277(98)00058-4

Woodward, A. L., & Sommerville, J. A. (2000). Twelve-month-old infants interpret action in context. *Psychological Science*, *11*(1), 73–77. https://doi.org/10.1111/1467-9280.00218