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Young Children's Help-Seeking in Mastery-Oriented Contexts

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In the present study changes were explored in the frequency and style of very young children's help-seeking in mastery-oriented contexts. Dyads of 36 18-month-old and 36 24-month-old children were observed in free play and problem-solving contexts. Although younger toddlers sought less help than older toddlers, both groups of children sought more help in the problem-solving context than in the free-play context. Older toddlers dramatically increased their rate of vocal help-seeking in the problem-solving context, whereas younger toddlers sought help through vocal and gestural means. Findings are discussed with respect to social and social-cognitive development of toddlers and the origins of help-seeking as a problem-solving strategy.

White (1959) proposed that all individuals possess an innate motivation, termed "effectance motivation," to master their physical and social environments (see also Harter, 1978). Effectance motivation serves to facilitate the acquisition of knowledge about the world, as well as the acquisition of problem-solving skills necessary for functioning in a variety of contexts (Frodi, Bridges, & Grolnick, 1985).

During the latter half of the second year, many children begin to exhibit a desire to be instrumentally effective, as shown in their improved performance on tasks set by adults (Heckhausen, 1984; Kagan, 1981), as well as in their attempts to master increasingly challenging tasks on their own (Geppert & Kuster, 1983; Lutkenhaus, 1984). Young children become more sensitive to behavioral and mastery standards and to their ability to meet self- and other-generated goals based on these standards

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(Bullock & Lutkenhaus, 1990; H. Heckhausen, 1984; J. Heckhausen, 1988; Kagan, 1981; Kopp, 1982; Stipek, Recchia, & McClintic, 1992; Vaughn, Kopp, & Krackow, 1984). That young children can represent these goals is evidenced by mastery smiles when they achieve their goals, and by distress or avoidance when tasks appear too difficult to accomplish alone (Brownell & Gifford-Smith, 1992; Kagan, 1981; Lewis, Allessandri, & Sullivan, 1992; Stipek et al., 1992). Hence, by the end of the second year, children have begun to exhibit self-evaluative awareness, or awareness of their abilities and competencies in relation to particular goals.

Because young children are relatively limited in both cognitive and social capabilities as well as in their experience with the world, they are likely to encounter difficulty in attaining many of their goals. One option for children when they experience task difficulty is to request assistance from more competent others. Indeed, recent research within the Vygotskian tradition stresses the active role played by children in shaping their learning activities, including their efforts to master the environment by seeking assistance or support from more competent social partners (Brown & Ferrara, 1986; J. Heckhausen, 1987a,b; Rogoff, 1990; Rogoff, Malkin, & Gilbride, 1984; Rogoff & Wertsch, 1984; Wertsch, 1979, 1985). According to Vygotsky (1978), all higher psychological processes are initially social or shared between people. Adults or more skilled peers structure and support young children's learning efforts. Subsequently, children take more of the initiative as they acquire the knowledge and skills necessary to function independently. During the transition from other-regulation to self-regulation, children may request the supportive assistance of their partners through help-seeking (Nelson-Le Gall, 1981). That is, when children encounter difficulty in achieving their goals, they may supplement their efforts with the assistance of more competent peers or adults.

In research with school-aged children, Nelson-Le Gall (1981, 1985; Nelson-Le Gall, De Cooke, & Jones, 1989) has documented the multifaceted nature of help-seeking as a problem-solving strategy and suggests that the skilled use of this strategy reflects several types of competence important to mastery efforts. In seeking help, children must recognize that their resources are insufficient to complete the task at hand, demonstrate their ability to identify appropriate helpers (i.e., those whose skills match their current needs), and successfully solicit and obtain help from their chosen helpers. Thus, the origins of help-seeking as a problem-solving strategy would be expected to lie in the second year, when important social-cognitive abilities emerge, including changes in children's representational abilities (e.g., Mandler, 1983), self-other differentiation

(Piaget, 1954) complex interactional skills (Bronson, 1981; Brownell, 1986, 1990), and self-evaluative awareness in relation to goals (Stipek et al., 1992).

Several studies mention young children's help-seeking in mastery-oriented contexts, thus confirming the early existence of this problem-solving strategy (J. Heckhausen, 1988; Kagan, 1981; Stipek et al., 1992; Wenar, 1976). However, help-seeking behavior has not been treated often as an independent, constructive problem-solving behavior that allows children to retain active control of the learning process. In most research, help-seeking is grouped within more molar categories of social or requesting behavior. For example, Wenar (1976) grouped "bidding for help" as a spontaneous social behavior, reporting that children engaged in more spontaneous social behavior and appeared to become less self-sufficient with age. Indeed, young children's help-seeking has been viewed often as a manifestation of dependency (Heathers, 1955a,b; MacCoby & Masters, 1970); however, although dependency declines with age, help-seeking increases. Stipek et al. (1992) coded children's help-seeking as a process-related reaction to failure experiences, reporting that children sought more help in a failure than in a success condition. This finding could be interpreted as evidence for very young children's ability to discriminate situations in which help-seeking is most likely to be useful. Finally, Kagan (1981) noted that directives to adults, comprised of attempts to alter an adult's behavior as well as requests for objects and task-related assistance, first appeared in the latter half of the second year. Young children's use of directives may depend on their recognition that appropriate adult intervention often facilitates goal attainment.

In contrast, J. Heckhausen (1988) explicitly examined young children's help-seeking in the context of mother-child task-centered interactions. Help-seeking requests were documented when children attempted to augment their problem-oriented behavior following failure. The first instances of help-seeking were observed at approximately 22 months of age. However, by viewing help-seeking as a "behavioral indicator" of negative competence evaluations, Heckhausen overlooked young children's active use of help-seeking to acquire information that they know they lack. Thus, instances in which young children used their mothers in a productive manner (prior to a failure event) to supplement their lack of task-relevant knowledge and skills were omitted from study.

In the present study, help-seeking is conceptualized as a problem-solving strategy that allows young children to remain involved with difficult tasks and that enhances their opportunities for learning (Nelson-Le Gall, 1981). Research has demonstrated that help-seeking promotes learning during the school years (Nelson-Le Gall, 1985), thus suggesting

that help-seeking may facilitate the young child's mastery of the physical and social environment. Therefore, the goal of this study was to investigate its earliest manifestations and, in particular, possible influences on its form and frequency. Several questions were addressed: (a) When can toddlers discriminate problem-solving situations that afford help-seeking? (b) What forms do early help-seeking behaviors take, and do they differ for 18- and 24-month-olds? (c) Do young children discriminate among potential helpers and, in particular, are adults versus peers of different ages differentially approached for help? (d) Is help-seeking influenced by individual difference factors, such as the child's temperament?

To address these questions, 18- and 24-month-olds were observed in dyads in free play and problem-solving settings. Because both children's mothers and an adult female experimenter were present with the children, four possible sources of help were available for each child. The social context was also manipulated by pairing children into same-age or mixed-age dyads.

In same-age dyads, Brownell (1986, 1990) reported that 18-month-olds were likely to initiate and maintain social encounters by using behaviors that were immediate, proximal, and object-centered. In contrast, social exchange among 24-month-olds was characterized by symbolic, distal interaction. Because 18-month-olds do not yet engage in this more mature form of communication and because help-seeking depends on it, it was expected that they would contact their age-mates for help less frequently than would 24-month-olds.

When paired with 24-month-olds in mixed-age dyads, Brownell (1986, 1990) found that younger children were more interactive, revealing skills in their social exchanges that were not apparent in the same-age pairings. Brownell (1990) proposed that interaction with a more skilled peer may elicit competencies the younger child possesses but does not spontaneously demonstrate. The older child also may serve as a model, facilitating the acquisition of more advanced forms of social behavior. Indeed, Brownell (1990) found that 18-month-olds imitated the behaviors of older partners more often than they did with age-mates. In contrast, 24-month-olds in mixed-age dyads were required to play a more directive role in order to accommodate their less-skilled partners (Brownell, 1990). These findings suggest that 18-month-olds will engage in more help-seeking and in more advanced forms of help-seeking in the mixed-age context. Whether they recognize that older peers may make better helpers remains an open question. For 24-month-olds, however, it was expected that they would engage in less help-seeking in the mixed-age setting than in same-age dyads.

A final factor that may influence young children's help-seeking is temperament. Thomas and Chess (1977) defined temperament as reflect-

ing individual differences in behavioral style, or the manner in which an individual interacts with the environment. Temperamental differences appear early in infancy and may influence the child's social and cognitive transactions in myriad ways by modulating the child's appraisal of events, responses to novelty, and participation in social interactions (Frankel & Bates, 1990; Goldsmith & Campos, 1982; Keogh, 1986; Thompson, 1986). For example, toddlers who are very active, who approach new situations with interest, and who adapt easily may be more likely to seek help when they encounter task difficulty as compared with toddlers who are slow to adapt, easily distractible, less sociable, and very negativistic.

METHODS

Participants

The participants were 36 18-month-olds ($M = 18.75$ months, range = 17.07 – 22.43), 36 24-month-olds ($M = 24.89$, range = 23.03 – 28.06), and their mothers. Equal numbers of boys and girls were included at each age. Children were assigned to same-age dyads, composed of two 18-month-olds or two 24-month-olds, or to mixed-age dyads, composed of an 18-month-old and a 24-month-old. With two exceptions, the dyads were same-sex.¹ Children came from predominantly middle-class families. Mother's education level was as follows: high school graduate, 36%; some college, 18%; college degree, 25%; some graduate or professional school, 21%. All subjects were Caucasian with the exception of two Black children. Subjects were recruited from a standing file of names obtained from published birth announcements or from parents voluntarily mailing in a card indicating interest in child development research.

Materials

Problem-solving tasks. Children were presented with four problem-solving tasks/toys that varied in the type of skill required for successful execution in order to provide them with opportunities to demonstrate their help-seeking behaviors in a variety of age-appropriate domains. The first task was a "Keys of Learning" toy (Creative Playthings), where the child fits colored blocks into different shaped nests and then turns a key to release them (*key-fitting* task). The second task was a manipulation-retrieval toy, in which the child can depress a lever to raise a cup filled

¹As described later, sex differences were not apparent in children's help-seeking. Therefore, the two mixed-sex dyads were retained in the sample.

with small attractive animals to an opening in a box. The animals can then be removed from the box (*individual manipulation* task). The third task was a collaborative version of the individual manipulation task, requiring the child to request additional assistance to remove the animals. A plexiglass barrier stretched across the toy prevents the child from retrieving the animals while pushing the lever (*cooperative manipulation* task). Thus, a partner either needs to depress the lever or retrieve the animals. The task cannot be solved independently. For the final task (*motor/concept* task), half of the dyads were presented with a toy that is motorically challenging, and half of the dyads were presented with a toy that is conceptually challenging. Presentation was balanced across age, sex, and dyad composition. The motorically challenging task is a "Form Fitter" toy (Creative Playthings), requiring that the child push identical plastic forms onto a wheel in order to form a ball. The conceptually challenging task is a "Buzzer-Key" toy, requiring children to depress two buttons simultaneously to turn on play centers and sound a buzzer concealed within the toy.

Temperament scale. The Toddler Temperament Scale (TTS; Fullard, McDevitt, & Carey, 1984) is a standard parent-report measure of toddler temperament. The TTS assesses the nine temperament dimensions identified by Thomas and Chess (1977): activity level, rhythmicity, approach, adaptability, intensity, mood, persistence, distractibility, and sensory threshold. Category scores are derived from parents' responses to 97 behavioral descriptions. Alpha coefficients for the temperament scales in the current sample (mean alpha coefficient = .67; range = .51 – .85) are comparable to those reported by Fullard et al. (1984).

Procedure

Each dyad and their mothers met for a play session in an attractive laboratory playroom (approximately 10' × 20') furnished with age-appropriate toys (e.g., stove and play food, sweeper, shopping cart, tools, trucks and cars, cash register and play money, blocks, stuffed animals, airplane with passengers, coloring materials). All sessions were conducted by a female experimenter. Chairs and a table for the mothers were placed diagonally in one corner of the room. Each session was videotaped with equipment located in a separate room through a one-way mirror and audio-recorded from a microphone in the playroom.

When the children were at ease with the situation, mothers placed their children on the floor and allowed them to interact and explore the available toys. Mothers took seats at the table, within easy access of their children (approximately 3'–6' away), if the children so desired. Mothers were instructed not to draw their children's attention to any specific toys

in the room, but to respond appropriately if their child brought them a toy or asked them for assistance with a toy. While their children played, mothers began to work on a series of questionnaires including the TTS and a demographic information sheet. After explaining the questionnaires to the mothers and answering any questions, the experimenter joined the children in their play to ensure their complete comfort with the situation and the experimenter. The free-play session lasted between 15 to 20 min.

Following the free-play period, children were presented with the four problem-solving tasks/toys. The experimenter first explained the tasks to the mothers and then presented the toys sequentially to the children in the following order: key-fitting, individual manipulation, cooperative manipulation, and motor/concept tasks. Each child in a dyad received their own toy for the key-fitting task and the motor/concept task, whereas children shared the two manipulation apparatuses.

After the presentation of each toy, the experimenter withdrew to a distance 2–3 ft from the children. Each toy was presented for approximately 8 min. Once again, mothers were instructed to let their children work on the problems independently, but to respond to any bids for help that the children made.

Children found the toys intrinsically interesting, and most began to explore and manipulate the toys almost immediately. However, in those rare instances in which a child did not make contact with a toy within 60 s, the experimenter called the child's attention to the toy by saying, "Look, what's this?", and by moving to the toy and manipulating the toy. The experimenter then moved back to her original location. In all instances, children then began to play with the problem-solving toy.

Although the female experimenter was aware of the general nature of this study, she was not informed as to the specific nature of the predictions or the anticipated forms that young children's help-seeking might take. As per instructions, the experimenter never spontaneously joined the children in play with the problem-solving toys nor offered the children assistance. However, she did respond appropriately and naturally to any bids for help that she detected. Responses typically consisted of providing the requested assistance or manipulating part of the toy for the child. After providing assistance, the experimenter moved back to her original location.

Help-Seeking Coding Variables

After careful consideration of the videotapes, four behaviors indicative of help-seeking were defined. For a behavior to be coded as help-seeking, the child had to be engaged with a toy/task, unable to complete

it, and had to alternate toy/task-oriented behaviors with behaviors directed towards the potential helper. The focus of analysis was always on the child's help-seeking behavior, and not on the potential helper's response or lack of response. Social bids such as showing, giving, sharing (see Rheingold, Hay, & West, 1976), comfort- and proximity-seeking, and simple play were not coded. Instances in which it was not clear whether a child's behavior constituted a help-seeking bid or a bid for social interaction were treated as instances of social behavior and omitted from consideration. Thus, conservative coding criteria were employed, ones similar to, and adapted from, those employed in earlier work on help-seeking and instrumental communication in infants and toddlers (See Bates, Camaioni, & Volterra, 1975; J. Heckhausen, 1987a,b). The following behaviors were coded:

1. Vocal requests: The child verbalizes a need for help. In older children, these often took the form of specific task-related comments ("You move it." "Get it out."). For younger children, questioning vocalizations were accompanied by looks to the helper, and by pointing to specific areas of the toy or by bringing the toy to the helper.

2. Direct gestural requests: The child uses part of the helper's body to assist in attaining a goal, as in taking the helper's finger and pushing it down on a button that was too difficult to push alone. Alternatively, the child shows the helper what to do and then takes the complementary role (e.g., the child may push the lever on the cooperative manipulation toy while looking at the helper and then go to the other side to retrieve the animals). Direct gestural requests were always directed to the helper and the helper's role.

3. Indirect gestural requests: Gestures are directed to the problem-solving toy itself, such as making pushing motions on a lever, and accompanied by alternating looks to the toy and to the helper.

4. Imitation: The child selectively imitates a peer's or an adult's problem-related actions within 5 s of the actor's action. According to Kaye (1982), imitation is an active process in which the child selects, from the actor's stream of behavior, those actions that will result in more effective engagement with the environment. Thus, to be coded as an instance of imitation, the child had to be engaged in the task/toy and to then use information obtained from another's actions to more effectively complete the task. Simply watching an actor's behavior without action or copying an actor's behavior without engagement was not sufficient to warrant classification as imitation.

All videotapes were coded without knowledge of the subject's identifying characteristics. The behavior of each child within a dyad was also coded independently of the behavior of the second child. Interrater agreement was calculated between the principal investigator and

another person who was blind to the hypotheses of the study. Interrater agreement (calculated as number of agreements per sum of agreements and disagreements), based upon 10 randomly selected cases within each age group (a total of 20 cases), ranged between 87% and 100% for the coding categories with a mean agreement level of 94%. Disagreements were reviewed jointly and resolved by consensus.

RESULTS

Because the length of the free-play period ($M = 18.93$ min, range = 15.97 – 19.85) and the presentation times of the individual problem-solving tasks ($M = 8.34$ min, range = 6.98 – 9.88) varied somewhat from session to session, the frequency of children's help-seeking requests were converted to rates per minute. Children's frequency of help-seeking in each task condition (free-play, individual problem-solving tasks) was divided by the total number of seconds in that presentation period and then converted to time per 60 s. Children's individual help-seeking scores were then multiplied by 10 to convert to rates per 10-min interval for ease of presentation.

In all, 607 separate incidents of help-seeking were initiated by toddlers. Children directed the majority of their help-seeking behaviors to the experimenter (88%). Despite our intention that mothers be available to serve as helpers, most became so engrossed in completing the questionnaires that they gave only cursory attention to their children's activities and appeared unavailable for help. In fact, only 7% of children's help-seeking was directed towards mothers. Instances in which young children contacted their peers for any form of assistance were also rare (5%). Therefore, analyses involving the bids to sources of help were not feasible and were collapsed across sources.

Preliminary analyses revealed that dyad composition and sex of subject did not contribute significantly to the explained variation, so the data were combined for same-age and mixed-age dyads and for boys and girls. Of particular concern, however, was the interrelatedness of the two children's behaviors within each dyad. Correlations were calculated between the rate of help-seeking children within a dyad evidenced within each stylistic category. As shown in Table 1, more vocal help-seeking from one child was associated with more vocal help-seeking from the second child, $r(34) = .39$, $p < .05$. No other relationships obtained significance. This pattern of correlations suggests that the help-seeking behavior of an individual child in a dyad was not strongly affected by the help-seeking behavior of the partner. Therefore, the data for children in a dyad were treated as independent.

Table 1. Intercorrelations of Children’s Help-Seeking Behaviors Within Dyads

<i>Help-seeking: Child 2</i>	<i>Help-seeking: Child 1</i>			
	<i>Vocal</i>	<i>Direct Gestural</i>	<i>Indirect Gestural</i>	<i>Imitation</i>
Vocal	.39*	.10	.03	.08
Direct gestural	−.08	−.01	−.06	−.24
Indirect gestural	−.10	−.02	−.09	−.04
Imitation	.14	−.12	−.22	.25

* $p < .05$.

In addition, preliminary analyses did not reveal age, sex, or dyad composition differences in the rate or in the style of young children’s help-seeking as a function of problem-solving task (i.e., key fitting, individual manipulation, cooperative manipulation, both motor/concept tasks). Therefore, children’s help-seeking rates in the problem-solving condition were averaged across the four tasks.

Differences in Children’s Help-Seeking Rates and Styles

Children’s total help-seeking scores were calculated, based upon the sum of children’s help-seeking rates across both conditions and for all four coding categories. Simple age effects in children’s total rate of help-seeking were then assessed through one-way analysis of variance (ANOVA). Results demonstrated a significant difference in the amount of help-seeking by 18-month-olds ($M = 7.90$) and 24-month-olds ($M = 14.70$), $F(1, 70) = 11.93$, $p < .0009$, with the latter group engaging in significantly more help-seeking throughout the full play session than the former group.

Variations in young children’s help-seeking style were evaluated in a 2×2 multivariate analysis of variance (MANOVA). Age (18 months, 24 months) served as the between-subjects factor and condition (free-play, problem-solving) served as the within-subjects factor. Children’s mean help-seeking rates in the four coding categories (vocal, direct gestural, indirect gestural, imitation) were the dependent variables. Significant multivariate effects were explored through univariate ANOVAs.

A significant multivariate effect was obtained for age, $F(4, 67) = 11.96$, $p < .00$. Univariate tests indicated significant effects for both vocal requests, $F(1, 70) = 38.09$, $p < .00001$, and indirect gestural requests, $F(1, 70) = 5.75$, $p < .02$. Examination of the mean rates revealed that 24-month-olds ($M = 1.80$) engaged in more vocal help-seeking than did 18-month-olds ($M = 0.50$). In contrast, 18-month-olds ($M = 0.20$) requested help by indirect gestural means more than 24-month-olds ($M = 0.05$).

A significant multivariate effect for condition was obtained, $F(4, 67) = 14.34$, $p < .00001$, qualified by a significant Condition \times Age interaction, $F(4, 67) = 5.08$, $p < .001$ (see Table 2). Univariate tests following the main effect for condition revealed significance for all four help-seeking styles, $F_s(1, 70) > 7.36$, $p_s < .008$. All children in this sample engaged in higher rates of each of the four forms of help-seeking in the problem-solving condition as opposed to free-play condition.

Univariate tests following the Condition \times Age interaction indicated significant effects for both vocal requests, $F(1, 70) = 10.08$, $p < .002$, and indirect gestural requests, $F(1, 70) = 5.54$, $p < .02$ (see Table 2). Simple effects tests performed on the mean vocal request rates revealed that while both 18- and 24-month-olds demonstrated higher rates of vocal help-seeking in the problem-solving as compared to the free-play context, the 24-month-olds were more responsive to condition than were the 18-month-olds [18 months, $F(1, 70) = 4.19$, $p < .04$; 24 months, $F(1, 70) = 42.72$, $p < .00001$]. Simple effects tests for children's indirect gestural requests indicated that 24-month-olds did not differ significantly in their use of this help-seeking style across the two conditions, $F < 1$. However, 18-month-olds exhibited a higher rate of indirect gestural requests in the problem-solving context as compared to the free-play context, $F(1, 70) = 16.84$, $p < .0001$.

Temperament and Young Children's Help-Seeking

A correlational analysis was performed to assess relations between individual differences in temperament and children's help-seeking. Pearson product moment correlations, with age partialled out, were calculated between children's category scores for the nine temperament variables (activity level, rhythmicity, approach, adaptability, intensity, mood, persistence, distractibility, sensory threshold) and children's overall rate of help-seeking as well as the four help-seeking styles. A significant partial correlation was obtained between the temperament dimension of distractibility and total help-seeking, $r(69) = -.24$, $p < .05$, suggesting that more distractible children engaged in less help-seeking. In addition, significant partial correlations were obtained between distractibility and vocal help-seeking, $r(69) = -.24$, $p < .05$, and sensory threshold and indirect gestural help-seeking, $r(69) = .27$, $p < .05$. These findings indicate that more distractible children also sought less help through vocal means, and that children with low sensory thresholds engaged in less indirect gestural help-seeking. No other relationships attained significance.

Table 2. Children’s Help-Seeking Style as a Function of Condition and Age

Age	Condition	
	Free Play	Problem-Solving
18-month-olds		
Vocal requests	.20 (.06)	.80 (.20)
Direct gestural requests	.05 (.13)	.20 (.47)
Indirect gestural requests	.05 (.02)	.50 (.10)
Imitation	.19 (.34)	.25 (.45)
24-month-olds		
Vocal requests	.80 (.20)	2.70 (.40)
Direct gestural requests	.00 (.00)	.25 (.47)
Indirect gestural requests	.01 (.01)	.09 (.04)
Imitation	.08 (.18)	.32 (.41)

Note. Help-seeking rates in the problem-solving condition were averaged across the four tasks. Means are rates per 10-min interval; standard deviations are in parentheses.

DISCUSSION

The findings of this study suggest that by 18 months of age children engage in help-seeking when confronted with challenging problems. Although 18-month-olds sought less help than 24-month-olds, both groups of children sought more help in the problem-solving condition than in the free-play condition. This suggests that by the latter half of the second year, young children are able to discriminate situations that pose cognitive difficulties and to adopt strategies to surmount them. However, a more detailed examination of several aspects of young children’s help-seeking behaviors clarified the underlying patterns and suggests that this interpretation should be qualified.

More specifically, 18-month-olds demonstrated a modest increase in vocal help-seeking in the problem-solving condition relative to the free-play condition. However, their rate of indirect gestural help-seeking was almost as high. That is, in the problem-solving condition, 18-month-olds sought comparable amounts of help through vocal and indirect gestural means. This pattern suggests that, in some situations, even 18-month-olds are capable of adopting task-related goals and of monitoring and evaluating their performance and abilities in relation to these goals. However, 18-month-olds often were forced to depend on indirect physical gestures to communicate their needs to a potential helper. This form of appeal—looking back and forth between the troublesome task and the adult while manipulating the apparatus—is considered by some (e.g.,

Bates et al., 1975; Poulin-Dubois & Schultz, 1988) to be the hallmark of intentional communication in still younger children. Therefore, indirect gestural help-seeking may be considered one of the earliest forms of intentional attempt to influence another's behavior on one's own behalf. However, this form of help-seeking is not specific to either the child's particular difficulties with respect to the intended goal or to the helper's role in mediating the problem. Hence, indirect gestural help-seeking does not imply the sophistication of social-cognitive knowledge entailed in vocal help-seeking.

In contrast, 24-month-olds exhibited a dramatic increase in their rate of vocal help-seeking from the free-play to the problem-solving condition, whereas their rate of indirect gestural requests remained essentially unchanged. The 24-month-olds were able to communicate their difficulties and needs over a distance by using verbalizations. These findings suggest that help-seeking may evolve over the course of the second year in conjunction with developmental change in communicative and interactive skills (cf., Howes, 1987, 1988). Indeed, a comparison of the help-seeking styles of the two age groups suggests a transition from one form of intentional communication to another: from a proximal, object-centered style of requesting behavior among the 18-month-olds to a more distal and symbolic form of requesting behavior among the 24-month-olds (see Brownell, 1990, for documentation of a similar developmental pattern in young children's social exchanges). This proposition could be explored in future research by documenting developmental change in young children's help-seeking over the full course of the second year.

Young children also engaged in more direct gestural help-seeking and imitation in the problem-solving context than in the free-play context. Direct gestural help-seeking (i.e., using part of the helper's body to assist in goal attainment) provided an immediate means of physical assistance. In a similar fashion, selective imitation involved the deliberate choice of those actions (from the ongoing stream of another's problem-related behaviors) that enabled the child to perform more competently with respect to the task at hand. (See Kaye, 1982, for a comprehensive discussion of the developmental benefits accruing from active imitation.) Although these forms of instrumental behavior are not based upon the verbal communication of need to the helper, both behaviors suggest that children were able to use the actions of an independent agent in the service of their problem-solving goals. Thus, these behaviors may qualify as early forms of help-seeking.

The pairing of children in same-age versus mixed-age dyads proved uninformative, in all probability because peer interactions are still too

infrequent in this age range to enable the reliable detection of help-seeking among peers (see Bronson, 1981). Another possibility, however, is that young children recognize the expertise differences in potential help-givers. To directly assess this possibility requires conditions in which a peer helper is more appropriate than an adult helper, conditions not manipulated in the present study.

Children did not seek help from their mothers either, instead directing their help-seeking to the female experimenter. It is possible that children's preference for the experimenter as a helper was based on their understanding of her greater availability and interest relative to their mothers, as well as competence relative to peers. That is, because mothers were "busy" and because peers are less competent to help than adults, the children chose the most appropriate helper under the circumstances. However, another viable explanation for children's helper preference concerns the experimenter's responses to children's help-seeking. She may have reinforced their help-seeking by providing requested assistance. Two considerations argue against this alternative. First, although the experimenter was actively involved in children's free play, she changed roles in the problem-solving condition, assuming the role of interested bystander and responding only when contacted by one of the children. The experimenter's behavior, therefore, as at odds with the increased incidence of help-seeking demonstrated by children in the problem-solving condition.² Second, children did not appear to seek the experimenter's attention, seeming instead to confine their help-seeking to the acquisition of assistance necessary for them to maintain involvement in their task-related efforts (J. Heckhausen, 1988; Nelson-Le Gall, 1981). Nevertheless, an adequate test of young children's helper preferences would require explicit manipulation of helper, helper competence, and helper availability.

On the whole, few relations emerged between help-seeking and temperament. The best predictor was the dimension of distractibility. More distractible children engaged in less help-seeking overall and less vocal help-seeking in particular than children rated more optimally on this dimension. Further, children with a low sensory threshold sought less indirect gestural help. Although one must be cautious in interpreting

²Help-seeking, even among school-aged children, is generally a low-density behavior (Nelson-Le Gall & Glor-Scheib, 1985). Situations in which a child requested help from the experimenter while the experimenter was engaged in providing help to the second child did not arise. Therefore, the experimenter did not ignore or "punish" children's help-seeking either.

correlations, particularly when they are generated from a larger pool of potential relations, these may warrant further exploration. Perhaps distractible children are less task involved and less goal oriented and, therefore, less likely to seek help. If help-seeking is conceptualized as an important task-oriented strategy (e.g., Nelson-Le Gall, 1981), such children may be under-utilizing this resource during problem-solving. These are intriguing possibilities, particularly if temperament affects multiple dimensions of functioning (e.g., Frankel & Bates, 1990; Keogh, 1986).

In conclusion, these findings illustrate the emergence of several important social-cognitive skills during the latter half of the second year. The young child's ability to make strategic, instrumental use of social resources to assist in achieving goals suggests awareness not only of one's own agency (i.e., the ability to effect outcomes intentionally and autonomously) but awareness of others' agency as well. Existing research has shown that the latter understanding emerges between 18 and 24 months of age (Poulin-Dubois & Schultz, 1988). The present research confirms the existence of this global understanding that others can act as independent agents and it further indicates that the very young child understands when and where another might appropriately exercise agency in order to be of assistance.

In addition, the constructive use of help-seeking behavior indicates the ability to monitor one's own performance and ability relative to an externally imposed goal or outcome; children's performance is motivated by a goal established by someone other than themselves. They must be able to represent the goal as well as their own efforts to achieve it. Moreover, they must be able to evaluate their performance in terms of success or failure to achieve the goal, and to plan alternative strategies, such as help-seeking, when they judge their attempts unsuccessful. The ability to successfully execute the components proposed in this analysis suggests a quite sophisticated representation of the self (Bullock & Lutkenhaus, 1990; Kagan, 1981; Kopp, 1982; Stipek et al., 1992). Thus, the help-seeking paradigm may provide a unique and rich platform for exploring further the emergence and differentiation of very young children's understanding of self and other.

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