Preschoolers' Prosocial Responding to Social Others' Distress

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Josephine Janice

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Josephine Janice

APPROVED:

Hung-Chu Lin, Chair Associate Professor of Psychology	Rick Perkins Associate Professor of Psychology
Brooke Breaux Assistant Professor of Psychology	Yang Yang Assistant Professor of Psychology
Mary Farmer-Kaiser Dean of the Graduate School	

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Introduction

It is a human tendency to minimalize others' suffering when witnessing others in plight (Trommdorff, Friedlmeier, & Mayer, 2007). Practically, such tendency can be manifested in many ways, one of which involves prosocial behavior—a voluntary action intended to benefit others (Eisenberg, Fabes, & Spinrad, 2006). Prosocial behavior emerges in early childhood and grows increasingly prominent in adolescence and ultimately becomes established in adulthood (Eisenberg, et al., 2006; Eisenberg, Guthrie, Murphy, Shepard, Cumberland, & Carlo, 1999; Hoffman, 2000).

Understanding correlates of prosocial behavior in children is important because prosocial disposition in childhood has been linked to greater socioemotional competence in adolescence and adulthood (Eisenberg, Pasternack, Cameron, & Tryon, 1984). Moreover, prosocial tendency serves as a key mechanism supporting one's social connection to others and elevating one's general wellness. Klein (2016), for example, points out that performing prosocial actions has an important function in our lives because it helps an individual achieve a better sense of meaning in life. Indeed, the act of helping other people is usually admired and valued by human societies (Klein, Grossman, Uskul, Kraus, & Epley, 2015). This kind of positive feedback from other people is one of the ways for a person to gain social acceptance and build positive reputation, which in turn increases one's social connection and social status in the community (Flynn, 2003; Flynn, Reagans, Amanatullah, & Ames, 2006; Grant & Gino, 2010). In this way, the prosocial person gains a sense of self-worth—an important element to the quest of meaning and purpose of life (Baumeister & Leary, 1995; Baumeister & Vohs, 2002; Debats, 1999; Stavrova & Luhmann, 2016). Furthermore, conducting prosocial behavior can increase positive emotions and decrease negative emotions for the

Individual. By seeing another person get helped, one may feel satisfied and somehow experience reduced sadness (Thoits & Hewitt, 2001; Wheeler, Gorey, & Greenblatt, 1998). For instance, spending money to benefit other people can increase happiness compared to spending money to benefit oneself (Dunn, Aknin, & Norton, 2008; Weinstein & Ryan, 2010; Zaki & Mitchell, 2011). Thus, the satisfaction of making other people's lives less miserable may benefit one's emotional well-being (Estrada-Hollenbeck & Heatherton, 1998).

Among correlates of children's prosocial behavior, dispositional empathy (Eisenberg & Miller, 1987) and temperament characteristics (Eisenberg, Fabes, & Spinrad, 2006) have been shown to be associated with the development of prosocial behavior. In addition, familiarity with social partners appears to play a role in how a child performs prosocial action (See Burger, Soroka, Gonzago, Murphy, & Somervell, 2001; Herba et al., 2008). In this study, all these correlates will be examined. The findings may add to our understanding of how social and personality factors relate to individual differences in young children's prosocial behavior. The findings may also contribute to the knowledge needed for parents, teachers, and other social partners who play important roles in the socialization process of young children's prosocial action.

Prosocial Behavior

According to Eisenberg and Mussen (1989), there are several forms of prosocial behavior, including helping, sharing, giving/generosity, and comforting. Helping involves providing physical assistance to others to alleviate others' difficulty. Sharing is defined as giving others a chance to experience and have a portion of what one has, such as sharing one's skills or offering solution based on one's knowledge. Giving/generosity is related to

inducement in the form of materials or money for others. Comforting is an action to calm others psychologically (e.g., giving a hug, a pat, or being a good listener).

Based on the nature of initiation, prosocial behavior can be differentiated into two types: spontaneous and requested prosocial behavior (Eisenberg, Cameron, & Tryon, 1984). Spontaneous prosocial behavior is defined as any voluntary behavior intended to help others that occurs without any prior request (Eisenberg, Pasternack, Cameron, & Tryon, 1984). Therefore, spontaneous prosocial behavior is self-initiated and triggered by situational cues that indicate another person's needs. In contrast, any prosocial behavior that is initiated by others' verbal and/or nonverbal requests is considered requested prosocial behavior. The differentiation of these two types of prosocial behavior is implicated with different configurations of costs and benefits (Eisenberg et al., 1984). Spontaneous prosocial behavior does not involve any explicit acquiescence. Hence, there is a very small chance for the child to get any negative sanctions or interpersonal reaction from others if he/she does not offer voluntary help or fails to provide such assistance to the recipient (Eisenberg, Cameron, Tryon, & Dodez, 1981). On the contrary, when a child refuses to provide assistance when the recipient asks for it, the refusal to act prosocially could be considered an act of noncompliance. In such a way, conducting requested prosocial behavior avoids any interpersonal conflict with the recipient and may even give the child a chance to get rewards from others (Eisenberg et al., 1981). Furthermore, the child might also be perceived as compliant and is likely to get help from others in the future (Eisenberg et al., 1981).

Children that show proclivities for spontaneous prosocial behaviors tend to develop into independent adults, who are more socially responsive to others and able to build positive peer interactions (Eisenberg et al., 1984). On the other hand, children that are prone to

conducting requested prosocial behaviors are more likely to develop external locus of control, grow into adults who are more submissive, and be more dependent on others. The tendency to act based upon external motivation is often associated with a decrease in sensitive and prosocial response to others' distress overtime (Eisenberg et al., 1981). .

The development of prosocial behavior. According to Hoffman (2000), affective and cognitive processes of young children take part in their development of prosocial behavior. Hoffman proposed four periods for the development of prosocial behavior. Those periods describe the development of prosocial behavior starting from the emergence of children's self-concern when acknowledging others' distress to fully developed empathic concern towards others, which oftentimes is associated with prosocial act.

In the newborn period, infants show *reactive newborn cry* as a response to other infants' crying sound (Hoffman, 2000). The reactive crying reflects emotional contagion that has been deemed as the result of infants' inability to differentiate between their own and others' emotional states. Infants' reactive response to other infants' crying show self-focused nature of their distress. Moreover, they are limited in their capability to regulate their own distress.

The next period, characterized by *egocentric empathic distress,* happens around the end of the first year of life. In this period, infants tend to seek comfort from others whenever they encounter others' distress. Those actions show that infants are developing the capability to help themselves reduce their own distress despite being very minimal. Hoffman (2000) believes that this period is also an important one for infants to develop a sense of self-other differentiation, although immature.

In the beginning of the second year of life, toddlers develop *quasi-egocentric empathic distress*. During this time, infants show significant cognitive development, including the development of self-recognition and the ability to fully differentiate between the self and others (Hoffman, 2000). These cognitive advancements are associated with the emergence of more complex prosocial behaviors. Toddlers who develop self-recognition tend to be more empathic and display prosocial behaviors more frequently compared to the infancy period (Zahn-Waxler, Schiro, Robinson, Emde, Schmitz, 2001). Unfortunately, toddlers still have limitations in terms of distinguishing between their own and others' internal distress. As a result, they tend to help others in ways that are limited to what would comfort themselves (e.g., patting, touching, or hugging). Despite the limitations, they are able to get more capable others to help rather than trying to provide help by themselves (Zahn-Waxler & Radke-Yarrow, 1982).

The last period, the *veridical empathic distress*, happens in the preschool years. Around this time, children are capable enough to put themselves in other people's perspectives and understand other people's feelings. They also develop the ability to differentiate between their own and others' feelings. In this way, their prosocial behaviors often reflect more empathic qualities of the intention to help others.

Numerous developmental events mark the preschool period as an important developmental window into the advancement of prosocial action. Preschool years may often be the first time children enter a new social setting that involves a non-familial care (e.g., their caretakers at the preschool setting are not from the immediate family) (Slaughter, Dennis, & Pritchard, 2002). It opens up opportunities for the child to explore and develop social relations with peers and social partners other than family members. Moreover, during

this period of time, preschoolers begin to master the ability to understand perspectives of others and attribute mental states to oneself and social partners (knowns as theory of mind) (Carlson, Moses, & Claxton, 2004; Slaughter et al., 2002; Zelazo, Muller, Frye, & Marcovitch, 2003). They also show rapid development of language (Chadney, 1992), working memory (Thorell, Lindqvist, Nutley, Bohlin, & Klingberg, 2009), and inhibitory control (Carlson et al., 2004). All these factors are potential correlates of preschoolers' significant advancement in prosocial behavior. Therefore, this current study examines prosocial behavior in children during preschool years when prosocial behavior becomes increasingly prominent and purportedly reflects the qualities of veridical empathic processes to others' distress.

The Effect of Familiarity with Social Partners on Prosocial Behavior

At a fundamental level, people's tendency to approach or become attracted to others are influenced by their familiarity with social partners (Berscheid & Reis, 1998). Generally, whenever one is confronted with a new unfamiliar situation, one would immediately evaluate the situation and appraise how safe or dangerous the situation can be (Planalp & Fitness, 1999). A person can determine whether a situation is safe or not based on a lot of factors, and familiarity is one of the initial factors for that appraisal (Berscheid & Reis, 1998). Therefore, a person's view of others in terms of familiarity is potentially adaptive (Berscheid & Reis, 1998).

In the context of prosocial behavior, several factors that are associated with familiarity with social partners may affect people's intention to help, including the mere-exposure effect (Herba, et al., 2008), situational ambiguity (Burger et al., 2001), and the perceived cost (Burger et al., 2001). The mere-exposure effect refers to a psychological

phenomenon in which someone tends to develop a preference for doing something merely because he/she is familiar with it. Familiarity can be built because of repeated sharing of experiences (e.g., a child shares with her caregiver many life experiences). Repeatedly sharing with the same social others over time not only enhances the levels of familiarity with the social others but also increases positive affect towards the familiar ones. Herba at al. (2008), for example, indicates that children are more compliant with helping requests from previously-exposed people compared to novel individuals. This happens because repeated interactions between children and familiar stimuli make familiar stimuli easier to perceive, encode, and process than unfamiliar ones (Burger et al., 2001). Additionally, mere exposure to a person increases children's positive affect (indicated by activation of the zygomaticus major, or smiling muscle) and reduces the negative affect toward the person (Harmon-Jones & Allen, 2001); while children's emotions of fear and disgust tend to decrease towards familiar people (e.g., parents, teachers) rather than strangers (Herba et al., 2008). Hence, mere exposure to a person can increase children's familiarity towards the person, which, in turn, increases children's liking for the person as well as willingness to comply with the person's helping requests (Burger et al., 2001). In contrast, an unfamiliar situation poses ambiguity and uncertainly, under which people tend to enter into a freezing mode for their own survival instead of investing their efforts in assisting others. Therefore, situational ambiguity may hinder willingness to help a social partner who is in distress. Lastly, people will be more likely to help others if they perceive the situation as having benefits (or not incurring costs) to themselves. For example, people are more likely to help someone that they believe will return the favor to them, rather than a person who doesn't appear appreciative (Burger et al., 2001).

Preschoolers and school-age children also show different prosocial actions based on their perception of others' characteristics (Zebrowitz & Montepare, 2010). For example, children's perception of someone's face determines their impression of the person, thus, their willingness to help and engage in helping behavior towards that person. Children prefer to help a person whose face resembles someone that had treated them positively, compared to those whose faces resemble someone that had treated them negatively (Zebrowitz & Montepare, 2010). Also, children tend to show more prosocial action towards a stranger whose facial expression indicates pain than a stranger who appears to be without pain (Zebrowitz, Fellous, Mignault, & Andreoletti, 2003). At the same time, the appearance qualities of strangers suggestive of their age can create children's different impressions towards the strangers, which in turn lead to different qualities of children's prosocial actions (Zebrowitz & Montepare, 2008). For example, children show faster approach and protective responses when encountering older strangers whom children perceive to be weaker and need more assistance (Zebrowitz et al., 2003). But if the stranger is a baby, children tend to show more approach responses (Zebrowitz & Montepare, 2008), longer protective responses (Zebrowitz & Montepare, 2008), and less avoidance and defensive responses (Marsh, Ambady, & Kleck, 2005) compared to an adult stranger. In this case, children tend to perceive babies as weak as and in need of more protection than adult strangers (Zebrowitz & Montepare, 2008). Taken together, children are more likely to help familiar social partners rather than unfamiliar social partners. When strangers differ in external characteristics, children tend to show prosocial action to strangers whom children perceive to be weak and need more assistance and protection.

The Relation between Dispositional Empathy and Prosocial Behavior

Empathy has been defined as a process involving understanding of another person's perspective and experiencing emotions that are either congruent with that person's emotions or focusing on a sympathetic concern for that person's well-being (Eisenberg & Miller, 1987; Batson & Coke, 1981). The ability to understand another's perspective in the process of empathy has been conceptualized as the cognitive component of empathy (Dadds et al., 2008); whereas, the ability to emotionally experience another's situations has been labeled as the affective aspect of empathy (Dadds et al., 2008).

When one witnesses another person in distress, one may experience discomfort that is congruent with what the other person appears to be experiencing—frequently deemed as contagion arousal (Roth-Hanania, Davidov, & Zahn-Waxler, 2011). Such empathic arousal can give rise to empathic concern for another (Eisenberg et al., 1999), which, in turn, may possibly motivate prosocial acts (Eisenberg & Miller, 1987). In fact, the relationship between empathy and prosocial behavior has been presumed to exist at the dispositional level (Eisenberg & Miller, 1987). Individuals who show high levels of dispositional empathy are more likely to assist a needy other than those who are generally less empathic in disposition (Batson & Coke, 1981).

Empathic arousal, on the other hand, may also lead to negative emotions that are organized around the empathizer's own benefits—a set of emotions reflecting *personal distress*. Personal distress may be a result of ill-defined self-other distinction in the process of responding to others' distress when the empathizer becomes enmeshed in and alarmed by the distress displayed by the other (Decety & Meyer, 2008). Rather than prompting motivations that are other-focused (altruistic), self-focused arousal frequently investigates motivations

that aim at diminishing one's own distress, sometimes even at the expense of the other's well-being (Decety & Meyer, 2008; Eisenberg et al., 2006). Although preschoolers are becoming better capable of taking others' perspectives, it is unclear if they still show behaviors indicative of personal distress while at the same time exhibiting behaviors revealing empathic concern.

The Relation between Temperamental Inhibition and Prosocial Behavior

Temperament has been considered as the inborn emotional substrate for an individual's personality (Eisenberg et al., 2006) that implicates the individual's response patterns to environmental stimuli. Conceivably, temperament may take part on an individual's characteristic of empathic responses to others' distress, which may subsequently affect the individual's tendency to perform prosocial behavior. For instance, one temperamental factor which likely associates with children's empathic responding is reactivity—the degree to which one physiologically responds to stimuli in the environment. Infants who showed low levels of motor and affective responses to novel sensory stimuli are less likely to respond to a distressed stranger (Young et al., 1999). Other aspects of temperament, such as sociability and shyness (social inhibition), are also likely to be correlated with prosocial behavior (Eisenberg et al., 2006). Previous research has shown that preschool children who are low in shyness, social anxiety, or social withdrawal are somewhat more likely to help than are other children (Diener & Kim, 2004). Also, shyness and fearfulness in preschoolers have been associated with lower empathy and prosocial behavior, especially in response to strangers (Young, Fox, & Zahn-Waxler, 1999). In contrast, children who are sociable tend to approach novel people or novel stimuli and easily engage in new activities with other people. Sociability, hence, makes children more likely to help unfamiliar

persons spontaneously even when they are in an unfamiliar setting (Eisenberg et al., 2006). Following the same of thinking, extroversion, which is often associated with ease of approaching others, is often related to children's tendency to social initiation and conducting help. Introverts, conversely, tend to help in ways that did not involve approaching the distressed individual (Eisenberg et al., 2006).

The Present Study

The purpose of the present study was twofold: (1) To examine the effect of familiarity with social partners on preschoolers' prosocial responses to others' distress and (2) to relate preschoolers' prosocial behaviors to dispositional empathy and temperamental inhibition. Moreover, this study examined whether these factors (including the familiarity with social partners, dispositional empathy, and temperamental inhibition) interacted to predict preschoolers' prosocial behaviors when they witnessed others' distress. The findings may add to our understanding of how social and personality factors relate to children's individual differences in prosocial behavior.

Extant data on 61 preschoolers collected at the Developmental Science Lab were used for the purpose of this study. The preschoolers were observed in a laboratory room equipped like a nursery with a bassinet, an infant bottle, toys, and a table and chairs. The preschoolers were exposed to three distress simulation conditions, in which distress was presented by the familiar social partner (i.e., parent or familiar caregiver), an adult stranger, and an infant stranger (a life-like infant manikin). Preschoolers' responses towards the distressed in each of the conditions will be coded into several categories of behaviors: (a) other-oriented behaviors, (b) personal distress, and (c) disengagement. Further, the category of other-oriented behaviors will be coded into four sub-categories: (1) concerned expression, (2)

cognitive inquiry, (3) approaching the distressed, and (4) helping actions. Additionally, caregivers reported their children's dispositional empathy by filling out the Griffith Empathy Measure (GEM, Dadds et al., 2008) as well as their children's social inhibition using the Behavioral Inhibition Questionnaire (BIQ, Bishop, Spence, & McDonald, 2003).

Based on the reviewed literature, three hypotheses were formulated as follows:

Hypothesis 1. When preschoolers were with familiar social partners, the mere exposure effect would tend to occur, the situation would be less ambiguous, and the perceived cost would be lower. Thus, we expected that the more familiar the preschooler was with the social partner, the easier it would be for the child to perform prosocial behavior, which would potentially be reflected in the amount of time spent engaging in prosocial behavior. It was expected that preschoolers would show more prosocial behaviors with the familiar social partner than the adult and infant strangers. In between the two stranger conditions, it was expected that preschoolers would perceive the infant stranger to need more assistance and protection; therefore, preschoolers would exhibit more prosocial actions towards the infant than the adult stranger.

Hypothesis 2. Research has indicated that preschoolers with a greater propensity to empathize with others in need tend to be show more other-oriented behaviors. Thus, we expected that scores on dispositional empathy (both affective and cognitive subscales) would positively predict preschoolers' prosocial responses to social partners in distress.

Hypothesis 3. Temperamental inhibition may also affect preschoolers' prosocial helping. When children are more socially inhibited, the more likely they are to refrain from social interaction. Therefore, we expected that temperamental inhibition would negatively relate to preschoolers' prosocial helping towards different social partners.

Method

Participants

This project will examine an extant data set of 61 preschoolers (38 boys, 23 girls). Families were recruited based on the age of the child ranging from 2 to 5 years old (*M* age = 44 months, *SD* = .94). Sixty-eight percent of the parents had at least a college degree. The majority of children were Caucasian (79%), with the remainder being African-American (11%), and others (10%). Children and their caregivers were recruited from local preschools and also from University students who were parents or regular caregivers of preschoolers. Children were excluded when there were diagnoses of any developmental disabilities or mental disorders. To be included in the experiment, non-parent caregivers had to spend at least 20 hours per week over the course of a year or more with the preschooler. The caregiver-child dyads were contacted by phone or email to schedule their experiments. The research was approved by the Institutional Review Board at the University. Parental consent was procured before the experiment. If the child came with the non-parent caregiver, the child's parents had to provide their consent before the scheduled experiment to allow the non-parent caregiver to bring the child to the experiment.

Setting

The experiment was conducted in a 2.4 m x 4.0 m room equipped with two digital video cameras and an omni-directional microphone mounted on the walls. The experimental room was equipped like a nursery with children's books and toys on top of a table, chairs for preschoolers, a rocking chair, a chair for the caregiver, a bassinet, and an infant bottle in the bassinet. The video recording was operated in a separate control room with a split-screen

monitor allowing viewing of the child and the adult at the same time. Trained operators manipulated cameras to focus on faces of the child and the adult at all times.

Materials

Infant manikin and cry stimuli. The infant manikin was the Waltraud Hanl Weighted Lifelike Baby Doll purchased through the Bradford Exchange. So Truly Real® baby dolls by artist Waltraud Hanl are weighted to feel like real newborns and are 19" long, with hand-painted features, and poseable arms.

The cry stimulus was constructed using a 4-week-old male infant's cry. The cry sample was obtained from the Audio-Video Archive of the Infancy Laboratory at the University of Connecticut. The infant was recorded at home prior to a scheduled feeding. The infant sat propped in a reclining position in a car seat during the recording, which lasted about 5 minutes. The digitization of the cry stimulus was conducted using a Kay Elemetrics CSL unit at 44.1 kHz with 16 bit sampling. The audio file of the cry was played via a JBL 4301 wireless speaker (hidden underneath the bassinet mattress pad), with peak amplitudes of approximately 82 dB (relative to 20 $\mu N/m^2$) at 1 m from the source, a typical volume of infants' cries (Ringel & Kluppel, 1964).

The demographic information form. The demographic form solicited participants' (including the caregiver and the child) age, gender, and ethnicity. The caregiver's information also included the relationship to the child, education level, occupation, and income. The child's information included birth order, number of siblings in the family, and language spoken at home (for the purpose of making sure that the child understood the experimenter).

The Griffith Empathy Measure. The Griffith Empathy Measure (GEM, Dadds, et al., 2008) is a 23 parent-rating items measuring the tendency of children's dispositional empathy based on the two subscales, including cognitive and affective empathy subscales. The caregiver indicates the degree to which he/she agrees with the statement on a nine-point Likert scale from strongly disagree (-4) to strongly agree (+4).

The cognitive empathy subscale quantifies a child's abilities to understand people's emotions, grasp contextual cues, and put himself in the perspective of others. There are 6 items that measure cognitive empathy. An example of an item on cognitive empathy is "My child rarely understands why other people cry." The affective empathy subscale quantifies children's responses that are congruent with someone's emotion when they are seeing him/her in a particular situation. There are 9 items that measure a child's affect. An example of a question on the affective empathy subscale in the GEM is "My child becomes sad when other children around him/here are sad." There are 8 items that measures both affective and cognitive empathy with Cronbach Alpha of .81. To calculate cognitive empathy, scores on all the 14 items are summed up; whereas, to calculate affective empathy, scores on all the 17 items are summed up. The overall scoring of GEM is by summing up all the scores on all the 23 items. Overall, the internal reliability for all the entire measure of 23 items is .81, the affective empathy subscale .83, and the Cognitive Empathy subscale .83. A higher score on the GEM indicates a higher level of dispositional empathy.

The Behavioral Inhibition Questionnaire. The Behavioral Inhibition Questionnaire (BIQ, Bishop et al., 2003) is a parent-report measure, which consists of 30 items assessing children's social inhibition in three different domains: social novelty, situational novelty, and novel physical activities. Each item solicits caregivers' ratings on a

seven-point Likert scale from *1* (hardly ever) to *7* (almost always) based on the frequency of the behavior occurrence in the child, based on the description from the item. The contexts that are included in the social novelty domain are unfamiliar adults context (4 items, Alpha = .91 for mothers' report and .89 for fathers' report), peer situations context (6 items, Alpha = .90 for mothers' report and .88 for fathers' report), and performance situations context (4 items, Alpha = .95 for mothers' report and .94 for fathers' report). An example of the items on the social novelty domain is "Tends to watch other children, rather than join in their games." Two contexts are included in the situational novelty domain: (1) Separation and preschool context (4 items, Alpha = .90, for mothers' report, and .86 for fathers' report), and (2) unfamiliar situations in general context (8 items, Alpha = .90 for mothers' report, and .88 for fathers' report). An example of the items on situational novelty domain is "Happily separates from parent(s) when left in new situations for the first time (e.g., kindergarten, preschool, child care)." There are 4 items which represent novel physical activities suggestive minor risk (e.g., "Happily explores new play equipment") with Cronbach Alpha of .80 for mothers' report and .72 for fathers' report. A composite score for each of the subscales is obtained by summing the scores of the items, with higher scores indicating higher levels of social inhibition.

Procedure and Conditions

All children went through three conditions of simulated distress by different social partners in the same order, beginning with their familiar social partner (either parent or caregiver), followed by an adult stranger, and a life-like infant manikin. The caregiver stayed with the child throughout the experiment (across the three conditions) while completing the demographic information sheet and the two questionnaires.

Upon arrival, an experimenter escorted the caregiver and the child to the experimental room. The caregiver was asked to sit in the corner of the room for the procurement of parental consent. If the child was accompanied by the caregiver who was not a parent, parental consent was procured prior to the arrival of the caregiver and the child at the laboratory. The caregiver was then asked to fill out the demographic information sheet, the Griffith Empathy Measure (GEM), and the Behavioral Inhibition Questionnaire (BIQ) attached to a paper clipboard while sitting in the corner of the room. After child assent was procured, the caregiver was given a script so that the caregiver knew exactly how to simulate the distress. The experimenter then left the room.

A few minutes after the experimenter left the room, the caregiver began simulating the distress by feigning that his/her index finger was snapped by the spring clip of the clipboard. The caregiver simulated the distress by showing painful expressions in the face and saying “ouch” several times. The caregiver was instructed not to look at or say anything to the child during the distress condition and allow the child to initiate spontaneous responses toward the distressed. The simulated distress lasted about 30 seconds, if the child does not provide any responses, the caregiver may inquire the child’s willingness to respond to the distressed. After that, the caregiver showed expressions of relief from the pain.

The Stranger condition began when a female experimenter (the confederate), whom the child never met before, came in with a life-like infant manikin wrapped in her arms. The stranger began building a rapport with the caregiver and the child, acting like she was the baby’s mother. Then the stranger sat down on the rocking chair in the other corner across where the caregiver was sitting. After a few minutes, the stranger began simulating a sudden onset of gastrointestinal distress with painful expressions in her face while verbalizing about

the discomfort. The child's responses were observed for as long as the child was responding to the confederate. If the child did not respond to the stranger's distress, the confederate waited at least 30 seconds before she stood up, stating that she needed to go to her car for medicine. The stranger asked the child to watch for her infant before she came back while placing the infant in the bassinet. The confederate left disregarding whether the child promised to watch the infant for her, ending the condition. The caregiver was instructed to remain silent and not to intervene with the situation throughout the entire session.

About 15 seconds after the confederate left, the cry stimulus was played through the wireless speaker hidden beneath the bassinet mattress pad. The child's responses were observed for at least 30 seconds. During that period, the caregiver was again instructed to remain silent and not to intervene. But if the child insisted the caregiver do something for the infant, the caregiver (following the instruction) would ask the child for what actions that the child could do to help the infant. The crying sound continued for another 15 seconds until the confederate came in and picked up the infant manikin, ending the condition. If the child displayed too high levels of distress (e.g., crying) in respond to the simulated infant crying, the condition ended instantly to prevent the child from experiencing more distress.

Children's responses to social partners' distress in the three conditions were video recorded using the two cameras and microphone that were mounted on the walls. The images of the cameras were sent to the operation room with associated hardware and software for later coding and analysis.

Behavioral Codes

Preschoolers' responses towards social others' distress (in the Caregiver, the Stranger, and the Infant conditions) were coded into three behavioral categories, including (1) other-

oriented behaviors, (2) personal distress, and (3) disengagement. Other-oriented behaviors were defined as any behaviors that suggested a focus on the well-being and benefits of another person. The category of other-oriented behaviors included four sub-categories of responses: (1) concerned expression, (2) cognitive inquiry/reasoning, (3) approaching the distressed, and (4) helping actions. Concerned expression was a facial expression that shows obvious concern for the victim (e.g., looking at the distressed with concern). Cognitive inquiry referred to any action taken by the child (verbally or visually) when investigating, reasoning, or assessing the situation of a distressed person (e.g., visually searching for cause and effect of the distress situation, asking when the distress will end, describing how the distressed feels). Approaching the distressed referred to locomotive movement that reduced the physical distance between the child and the distressed. A helping action referred to behavior that offered comfort to the distressed or assists in alleviating the distress of another person (e.g., patting the distressed gently, giving objects to the distressed in order to give comfort, verbally offering solutions).

Behaviors indicating personal distress were those that indicated self-focused affective or physical processes as a result of witnessing another's distress (e.g., crying, restlessness, covering ears, and asking to leave). Disengagement referred to any acts that indicated the child's aversion to the distress of another person or reluctance to engage with the person in distress (e.g., ignoring or looking away from the distressed, irrelevant speech, moving away from the distressed).

Five undergraduate students were trained to code using Observer XT 7 and the behavioral coding scheme. They were randomly assigned 21 percent of the videos to code for

the purpose of inter-observer reliability. Inter-observer reliability kappa value was ranging from .65 to .95.

Results

The Three Behavioral Categories

Behaviors of preschoolers in response to three different social partners were coded as other-oriented behaviors, behaviors indicating personal distress, and disengagement. The averaged proportion of time spent in each of the behavioral categories across conditions was used to provide an overall depiction of preschoolers' responses to social others' distress (Table 1). One-way repeated measures analysis of variance (ANOVA) was used to examine differences in the durations of other-oriented, personal distress, and disengagement behavior collapsing conditions. The results indicated differences in the durations of the behavioral categories, $F(2,59) = 58.48$, $p < .0001$. Planned contrast analyses indicated that there was a significant difference between other-oriented behavior ($M = 39.29$, $SD = 14.27$) and personal distress ($M = 21.32$, $SD = 31.78$), $F(1,60) = 363.72$, $p < .0001$. There was also a significant difference between personal distress ($M = 7.11$, $SD = 10.59$) and disengagement behavior ($M = 36.99$, $SD = 20.54$), $F(1,60) = 72.14$, $p < .0001$. However, there was no significant difference between other-oriented and disengagement behavior, $F(1,60) = .2948$, $p = .5892$ (Figure 1).

Table 1
Means (M) and Standard Deviations (SD) of the Percentages of Time Spent in Other-Oriented Behaviors, Personal Distress, and Disengagement Collapsing Conditions

	Duration *M (SD)*
Other-Oriented Behavior	39.29 (14.27)[a]
Personal Distress	7.11 (10.59)[b]
Disengagement	36.99 (20.54)[a]

Note. Means that share the same superscripts are not statistically different from each other.

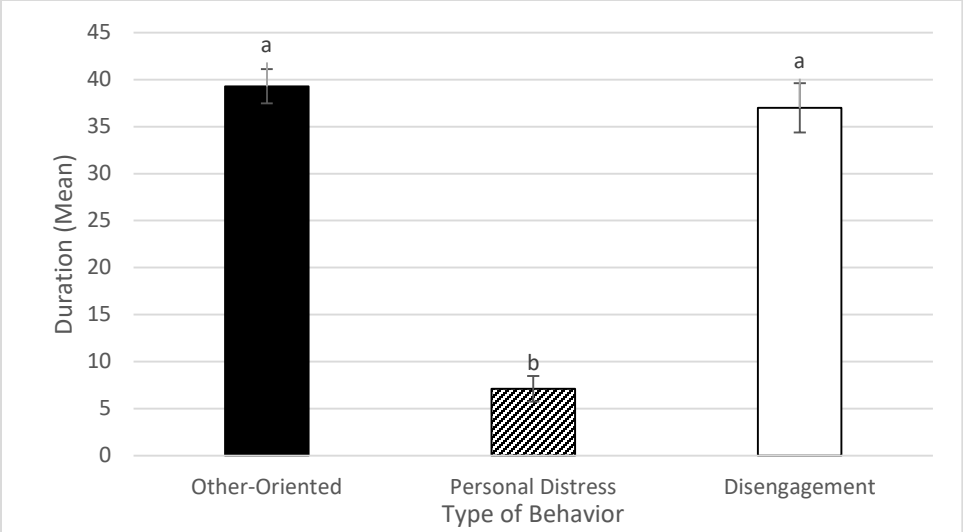

Figure 1. *Durations of (percentages of time spent in) other-oriented, personal distress and disengagement behavioral categories collapsing conditions.*

Gender differences were found in the distributions of time spent in the three behavioral categories (Figure 2 and Table 2). Specifically, male preschoolers spent the greatest amount of time in disengagement behavior (M = 41.37, SD = 19.44), followed by other-oriented behavior (M = 35.75, SD = 11.68) and personal distress (M = 6.51, SD = 11.99). In contrast, female preschoolers spent the greatest amount of time in other-oriented behavior (M = 43.74, SD = 16.12), followed by disengagement behavior (M = 31.48, SD = 20.92) and personal distress (M = 7.86, SD = 8.68). Compared to male preschoolers, females spent significantly more time in other-oriented behaviors, $t(60) = 2.16$, $p = .02$. The amount of time girls spent in disengaging behaviors was significantly less than boys, $t(60) = -1.89$, $p = .03$. But there was no significant difference in behavior showing personal distress between genders, $t(60) = -.51$, $p = .31$.

Table 2

Means (M) and Standard Deviations (SD) of the Percentages of Time Spent in Other-Oriented, Personal Distress, Disengagement Collapsing Conditions by Gender

	Duration *M (SD)* on Boys	Duration *M (SD)* on Girls	*t*-value
Other-Oriented Behavior	35.75 (11.68)	43.74 (16.12)	2.16*
Personal Distress	6.51 (11.99)	7.86 (8.68)	-.51
Disengagement	41.37 (19.44)	31.48 (20.92)	-1.89*

Note. $*p < .05$.

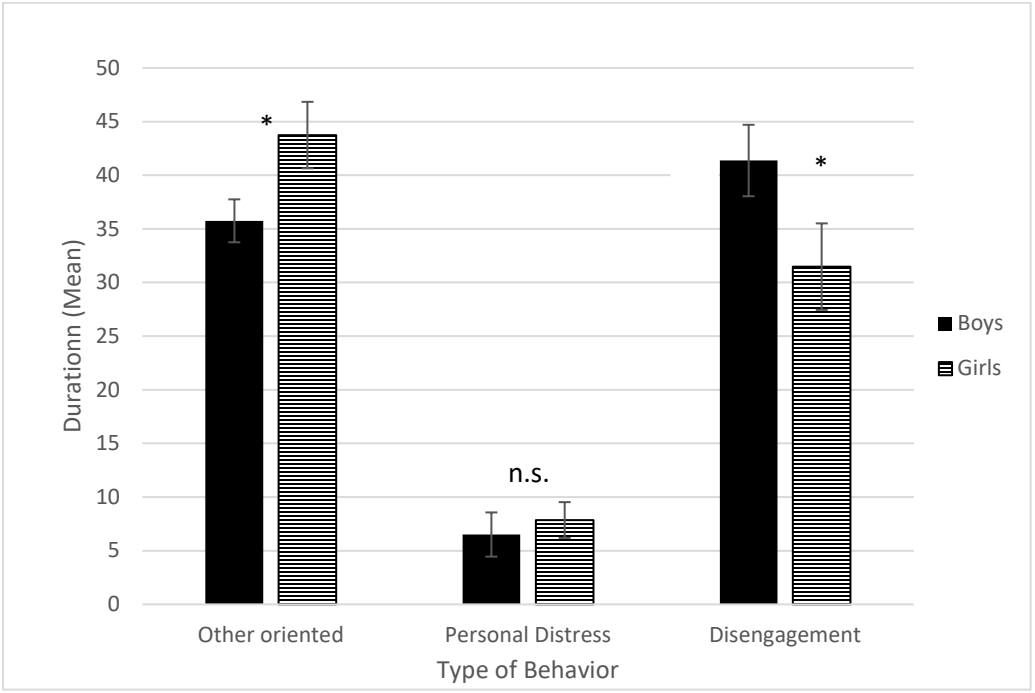

Figure 2. *Durations of (percentages of time spent in) other-oriented, personal distress and disengagement collapsing conditions by gender. "*"indicates significant gender difference; "n.s." indicates nonsignificant gender difference.*

Spontaneous versus Prompted Behaviors

The averaged proportion of time spent in spontaneous or prompted other-oriented behavior was used to provide an overall depiction of preschoolers' responses to social others' distress based on the spontaneity of behavior. A repeated *t*-test was performed to examine the difference. The results indicated that preschoolers spent more time in spontaneous (M = 33.64, SD = 13.74) than prompted (M = 6.74, SD = 5.41) other-oriented behavior, $t(60)$ = 19.12, $p < .0001$ (Figure 3).

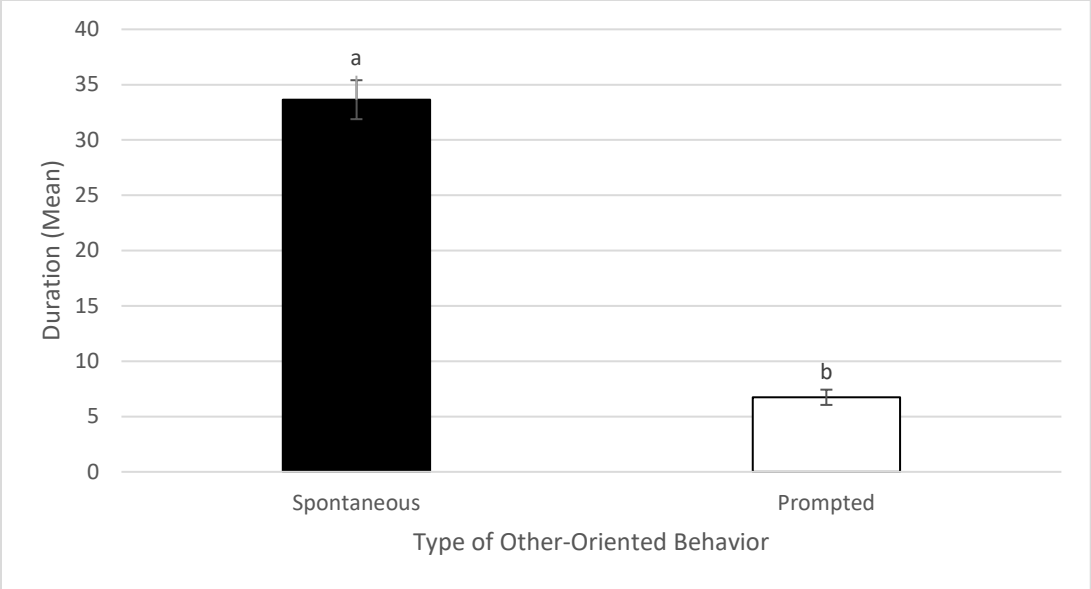

Figure 3. *Durations of (percentages of time spent in) spontaneous and prompted other-oriented behaviors collapsing conditions.*

Four Types of Other-oriented Behaviors

The averaged proportion of time in concerned expression, cognitive inquiry, approaching the distressed, and helping actions, in each of the conditions was used to provide an overview of preschoolers' responses to social others' distress based on these four subcategories of other-oriented behavior. One-way repeated measures ANOVA was conducted to examine differences in the durations of the four subcategories of other-oriented behavior. The overall *F* test indicated differences among the four subcategories of other-oriented behavior, $F(3,58) = 57.92$, $p < .0001$. Planned contrast analyses showed that preschoolers spent the greatest amount of time in concerned expression ($M = 19.78$, $SD = 11.40$), followed by cognitive inquiry ($M = 13.02$, $SD = 7.18$), helping action ($M = 6.40$, $SD = 6.34$), and approaching the distressed ($M = 3.18$, $SD = 3.52$), respectively (Table 3 & Figure 4).

Table 3

Means (M) and Standard Deviations (SD) of the Percentages of Time Spent in the Four Subcategories of Other-Oriented Behaviors Collapsing Conditions

	Duration *M (SD)*
Concerned Expression	19.78 (11.40)[a]
Cognitive Inquiry	13.02 (7.18)[b]
Approaching the Distressed	3.18 (3.52)[c]
Helping Actions	6.40 (6.34)[c]

Note. Means that share the same superscripts are not statistically different from each other.

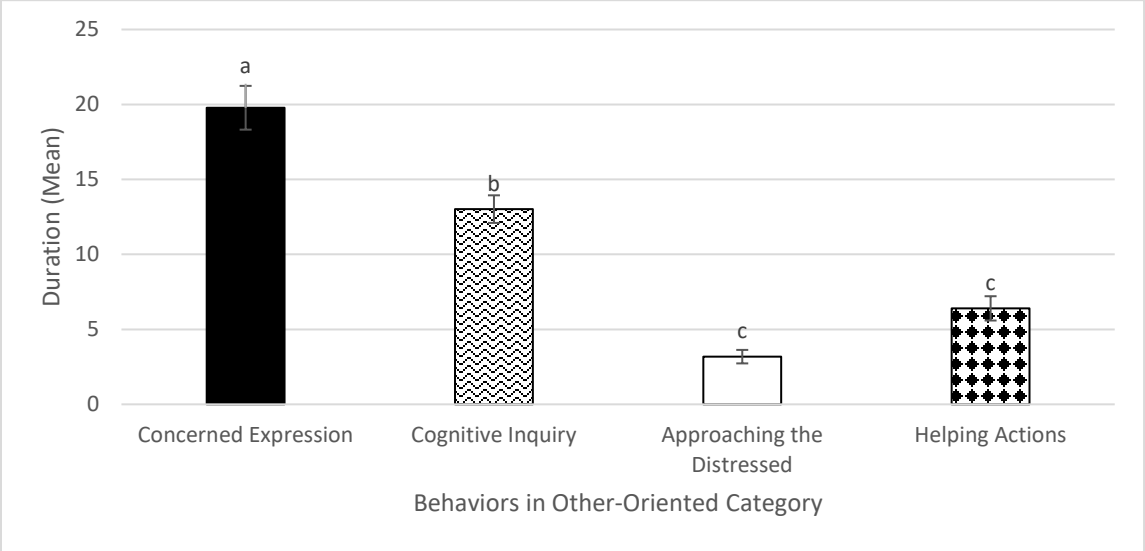

Figure 4. *Durations of (percentages of time spent in) four subcategories of other-oriented behaviors collapsing conditions.*

The Effects of Familiarity with Social Partners

Other-oriented behavior. One-way repeated measures ANOVA was used to examine the effects of familiarity with social partners on preschoolers' other-oriented behavior. Collapsing spontaneous and prompted behavior, the overall *F* test showed that there was a significant main effect of the familiarity with social partners on other-oriented behavior, $F(2,59) = 4.11$, $p = .02$. Planned contrast analyses showed that preschoolers significantly spent more time in other-oriented behavior in the Caregiver condition ($M = 44.33$, $SD = 21.31$) compared to the Infant condition ($M = 39.14$, $SD = 20.66$) and Adult Stranger condition ($M = 34.39$, $SD = 20.98$), $F(1,60) = 8.73$, $p = .005$ (Table 4 & Figure 5).

However, there was no significant difference in the durations of other-oriented behavior between the Adult Stranger and Infant conditions. Thus, Hypothesis 1 was in partially supported in that preschoolers showed differential responses to social others' distress by familiarity with social partners. However, overall, preschoolers did not spend a greater amount of time in infant-oriented behaviors than in behaviors oriented toward the well-being of the adult stranger.

Table 4
Means (M) and Standard Deviations (SD) of the Percentages of Time Spent in Other-Oriented Behaviors by Condition

	Duration *M (SD)*
Caregiver Condition	44.33 (21.31)[a]
Adult Stranger Condition	34.39 (20.98)[b]
Infant Condition	39.14 (20.66)[b]

Note. Means that share the same superscripts are not statistically different from each other.

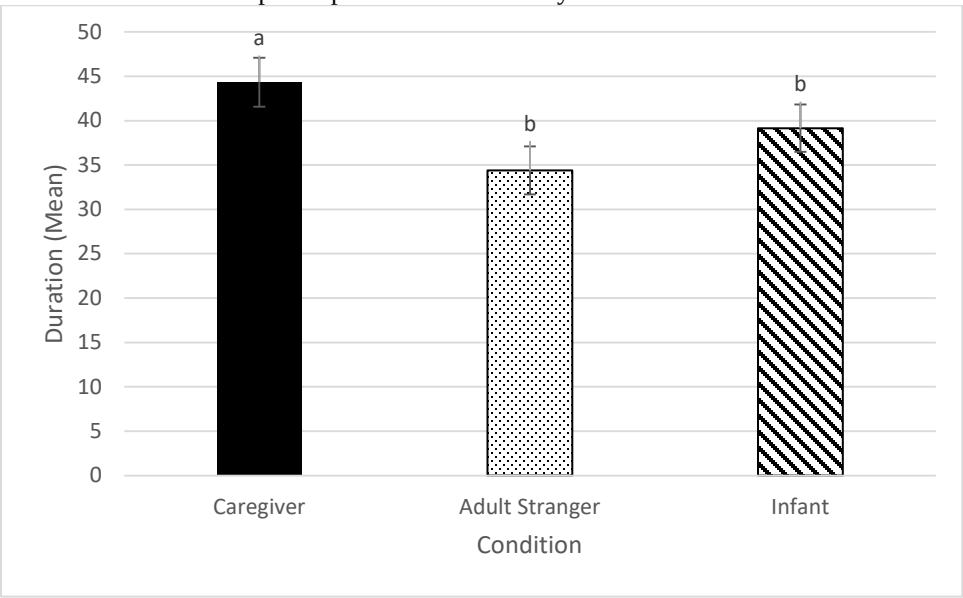

Figure 5. *Durations of (percentages of time spent in) other-oriented behaviors in the three conditions.*

When the spontaneity of other-oriented behavior is considered, preschoolers spent significantly more time in spontaneous cognitive inquiry, approaching the distressed, and helping action with the caregiver and the infant (there was no difference between the two conditions) than with the adult stranger (Table 5 & Figure 7, 8, 9). On the other hand, there

was a significant main effect of condition in prompted other-oriented behavior, $F(2,59) = 6.42$, $p = .0022$. Planned contrasts indicated that preschoolers spent more time engaging in prompted other-oriented in: (1) the Caregiver condition than the Adult Stranger condition, $F(1,60) = 9.58$, $p = .003$, and (2) the Infant condition than Adult Stranger condition, $F(1,60) = 9.98$, $p = .0025$ (Table 6 & Figure 10).

Table 5
Means (M) and Standard Deviations (SD) of the Percentages of Time Spent in Subcategories of Spontaneous Other-oriented by Condition

Condition	Duration *M (SD)*		
	Cognitive Inquiry	Approaching the Distressed	Helping Actions
Caregiver	12.52 (10.94)[a]	3.30 (4.21)[a]	7.77 (9.80)[a]
Adult Stranger	4.85 (7.98)[b]	.91 (2.47)[b]	.45 (1.42)[b]
Infant	14.89 (10.77)[a]	2.64 (3.67)[a]	5.21 (12.27)[a]

Note. Means that share the same superscripts are not statistically different from each other.

Table 6
Means (M) and Standard Deviations (SD) of the Percentages of Time Spent in Prompted Other-Oriented Behaviors by Condition

	Duration *M (SD)*
Caregiver Condition	7.55 (8.31)[a]
Adult Stranger Condition	3.62 (6.11)[b]
Infant Condition	9.05 (11.43)[a]

Note. Means that share the same superscripts are not statistically different from each other.

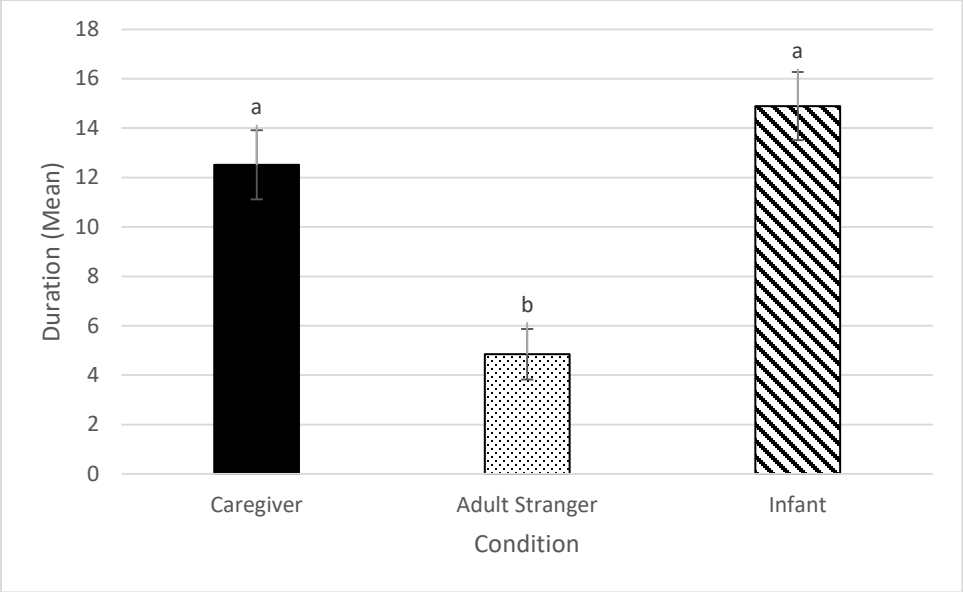

Figure 6. *Durations of (percentages of time spent in) spontaneous cognitive inquiry in the three conditions.*

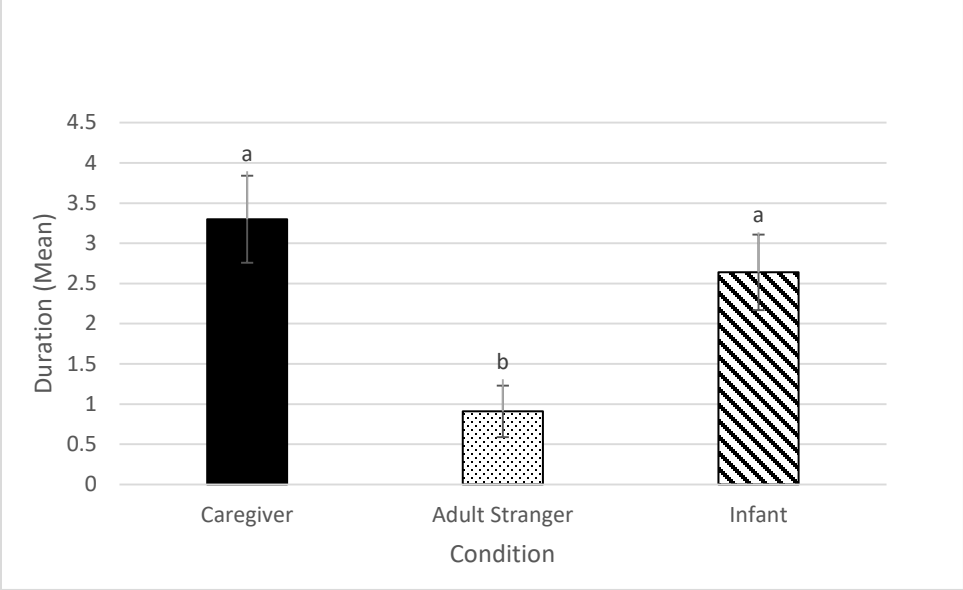

Figure 7. *Durations of (percentages of time spent in) spontaneous approaching the distressed in the three conditions.*

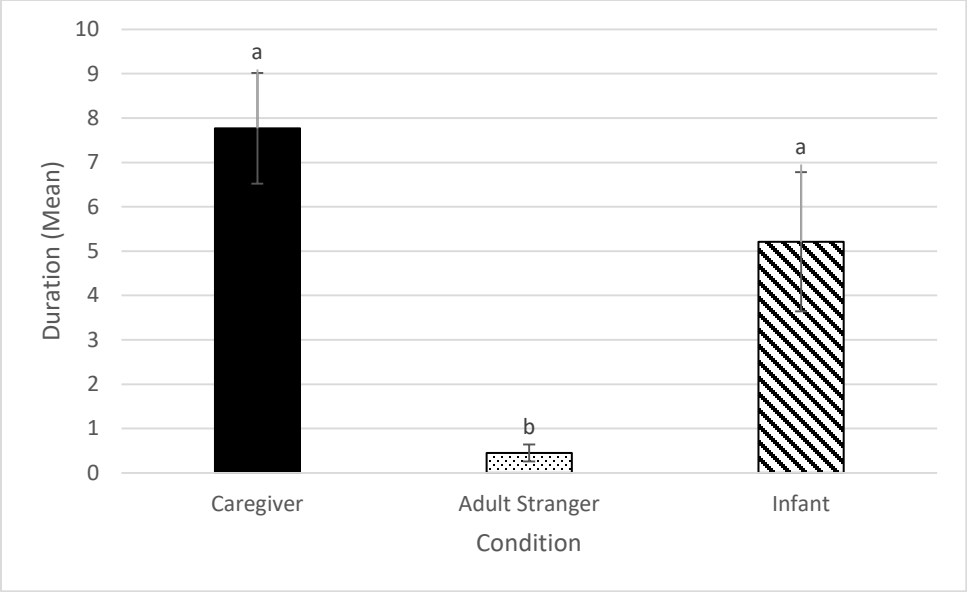

Figure 8. *Durations of (percentages of time spent in) spontaneous helping actions in the three conditions.*

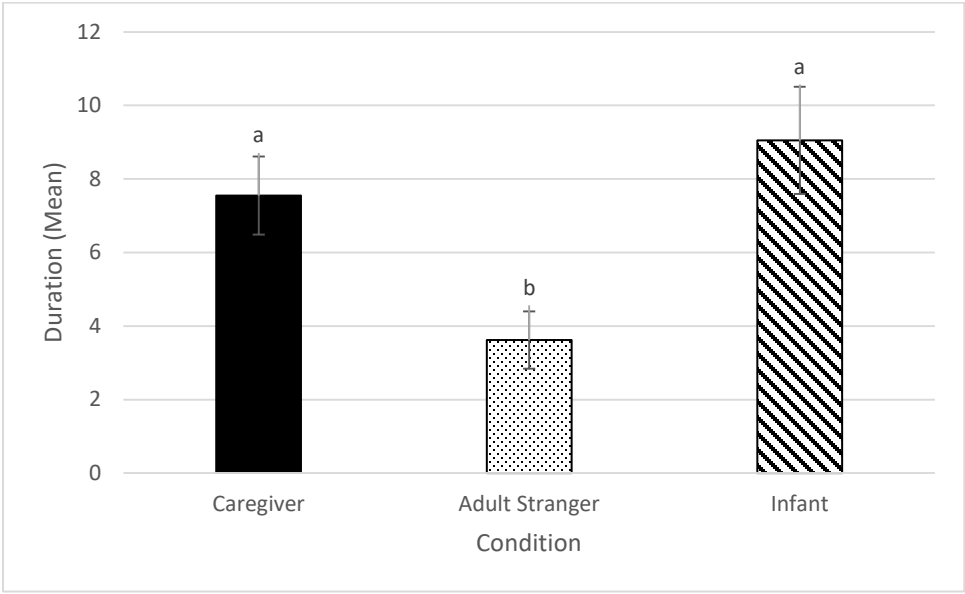

Figure 9. *Durations of (percentages of time spent in) prompted other-oriented behaviors in the three conditions.*

Personal distress and disengagement. One-way repeated measures ANOVAs were conducted to examine the effects of familiarity with social partners on personal distress and disengagement. The results indicated that there was no main effect of the familiarity with social partners on personal distress, $F(2,59) = 1.85$, $p = .1611$, but there was a significant

main effect of the familiarity with social partners on disengagement behavior, $F(2,59) = 6.99$, $p = .0013$. The planned contrast indicated that preschoolers spent the least amount of time in disengagement with the caregiver ($M = 29.11$, $SD = 25.56$) than with the adult stranger ($M = 42.37$, $SD = 25.95$) or infant ($M = 39.50$, $SD = 28.09$) (Table 7). The time spent in disengagement behavior with the adult stranger was not statistically different than that with the infant.

Table 7
Means (M) and Standard Deviations (SD) of the Percentages of Time Spent in Disengagement by Condition

Condition	Duration *M (SD)*
Caregiver Condition	29.11 (25.56)[a]
Adult Stranger Condition	42.37 (25.95)[b]
Infant Condition	39.50 (28.09)[b]

Note. Means that share the same superscripts are not statistically different from each other.

The Organizations of Behaviors

Relations between the three behavioral categories. Bivariate analysis was conducted to examine the relations between other-oriented behaviors, behaviors indicating personal distress, and disengagement behaviors across conditions. As might be expected, other-oriented behavior and disengagement were negatively correlated, $r = -.79$, n = 61, $p < .0001$. Notably, however, behaviors reflecting distress emotions that have an egoistic focus (personal distress) were not only positively correlated with other-oriented behavior, $r = .47$, $n = 61$, $p = .0001$, behaviors indicating personal distress were negatively related to disengagement, $r = -.51$, $n = 61$, $p < .0001$.

Similar patterns of the relations between the three behavioral categories held when preschoolers responded to distress with different social partners. Among the correlations (Tables 8-13), the ways behaviors reflecting personal distress related to other-oriented and

disengagement were particularly noteworthy. For example, when preschoolers responded to distress in the infant, behavioral cues indicating personal distress were positively related to other-oriented behavior, $r = .27$, n = 61, $p = .034$ (Table 12). When specific types of other-oriented behavior were concerned, preschoolers' personal distress in response to distress in the caregiver and the infant was positive correlated with spontaneous concerned expression, $r = .30$, $n = 61$, $p < .0132$ (Table 9), and $r = .47$, $n = 61$, $p = .0002$ (Table 13), respectively. Personal distress shown in reaction to the adult stranger's distress was positively related to prompted cognitive inquiry, $r = .29$, $n = 61$, $p = .03$.

Moreover, there was a negative correlation between personal distress and disengagement behavior in preschoolers' response to adult stranger's distress, $r = -.48$, n = 61, $p < .0001$ (Table 10). The same negative relation between personal distress and disengagement was found when preschoolers responded to distress in the infant, $r = -.27$, n = 61, $p = .04$ (Table 12).

Relations between subcategories of other-oriented behavior. Bivariate analyses were conducted to examine the relations between different types of other-oriented behavior. Collapsing conditions, there were no significant correlations found between any two of the four types of other-oriented behavior. However, there were significant relations between these four types of other-oriented behavior if they were examined by condition. Specifically, in the Caregiver condition (Table 9), there was a positive correlation between: (1) spontaneous concerned expression and spontaneous helping actions, $r = .35$, n = 61, $p = .01$, (2) spontaneous concerned expression and spontaneous approaching the distressed, $r = .30$, n = 61, $p = .02$, and (3) spontaneous approaching the distressed and spontaneous helping actions, $r = .26$, n = 61, $p = .05$. Moreover, in the Adult Stranger condition, spontaneous

approaching the distressed was positively correlated with spontaneous helping actions, r = .37, n = 61, p = .0034 (Table 11). In the Infant condition, prompted cognitive inquiry was positively correlate with prompted approaching the distressed, r = .27, n = 61, p = .04.

Table 8

Correlations between Behaviors in the Caregiver Condition Collapsing Spontaneous and Prompted Categories (*N* = 61)

	OO	CE	CI	ATD	HA	Personal Distress
Other-Oriented						
Concerned Expression	.80**					
Cognitive Inquiry	.43*	-.01				
Approaching the Distressed	.30*	.17	.13			
Helping Actions	.49**	.19	.05	.15		
Personal Distress	.25	.32*	-.01	-.19	-.11	
Disengagement	-.69**	**-.46***	**-.31***	**-30***	**-.47***	-.13

Note. OO = Other-Oriented Behavior; CE = Concerned Expression; CI = Cognitive Inquiry; ATD = Approaching the Distressed; HA = Helping Actions

Note. *p<.05. **p<.0001.

Table 9

Correlations between Spontaneous Other-Oriented Behaviors, Personal Distress, and Disengagement in the Caregiver Condition (*N* = 61)

	S-OO	S-CE	S-CI	S-ATD	S-HA	Personal Distress
S-OO						
S-CE	.86*					
S-CI	.43*	.03				
S-ATD	.45*	**.30***	.24			
S-HA	.53*	**.35***	.03	**.26***		
Personal Distress	.23	**.30***	.003	-.18	-.13	
Disengagement	**-.67***	**-.47****	**-.35***	**-.37***	**-.47****	-.13

Note. S-OO = Spontaneous Other-Oriented Behavior; S-CE = Spontaneous Concerned Expression; S-CI = Spontaneous Cognitive Inquiry; S-ATD = Spontaneous Approaching the Distressed; S-HA = Spontaneous Helping Actions.

Note. *p<.05. **p<.0001.

Table 10

Correlations between Behaviors in the Adult Stranger Condition Collapsing Spontaneous and Prompted Categories (*N* = 61)

	OO	CE	CI	ATD	HA	Personal Distress
Other-Oriented						
Concerned Expression	.92**					
Cognitive Inquiry	.25*	-.11				
Approaching the Distressed	.01	-.06	.00			
Helping Actions	.12	.03	.12	.31*		
Personal Distress	.23	.23	.02	-.15		
Disengagement	**-.72****	**-.69****	-.06	-.11	**-.29***	**-.48****

Note. OO = Other-Oriented Behavior; CE = Concerned Expression; CI = Cognitive Inquiry; ATD = Approaching the Distressed; HA = Helping Actions

Note. *p<.05. **p<.0001.

Table 11

Correlations between Spontaneous Other-Oriented Behaviors, Personal Distress, and Disengagement in the Adult Stranger Condition (*N* = 61)

	S-OO	S-CE	S-CI	S-ATD	S-HA	Personal Distress
S-OO						
S-CE	.92**					
S-CI	.20	-.18				
S-ATD	-.07	-.16	.04			
S-HA	.09	-.001	.10	**.37***		
Personal Distress	.24	.25	-.03	-.15	.05	
Disengagement	**-.71****	**-.69****	-.02	-.06	**-.25***	**-.48****

Note. S-OO = Spontaneous Other-Oriented Behavior; S-CE = Spontaneous Concerned Expression; S-CI = Spontaneous Cognitive Inquiry; S-ATD = Spontaneous Approaching the Distressed; S-HA = Spontaneous Helping Actions; PD = Personal Distress.

Note. *p<.05. **p <.0001.

Table 12

Correlations between Behaviors in the Infant Condition Collapsing Spontaneous and Prompted Categories (*N* = 61)

	OO	CE	CI	ATD	HA	Personal Distress
Other-Oriented						
Concerned Expression	.36*					
Cognitive Inquiry	.47**	.08				
Approaching the Distressed	.32*	-.17	.22			
Helping Actions	.24	.01	-.09	.02		
Personal Distress	**.27****	.21	.01	-.14	-.16	
Disengagement	**-.68****	-.21	**-.36***	-.08	**.34***	**-.27***

Note. OO = Other-Oriented Behavior; CE = Concerned Expression; CI = Cognitive Inquiry; ATD = Approaching the Distressed; HA = Helping Actions.
Note. *p<.05. **p<.0001.

Table 13

Correlations between Spontaneous Other-Oriented Behaviors, Personal Distress, and Disengagement in the Infant Condition (*N* = 61)

	S-OO	S-CE	S-CI	S-ATD	S-HA	Personal Distress
S-OO						
S-CE	.59**					
S-CI	.44	.11				
S-ATD	.29	.11	.13			
S-HA	.56**	.01	-.07	.10		
Personal Distress	**.34***	**.47***	.04	-.17	-.12	
Disengagement	**-.59****	**-.28***	**-.35***	**-.26***	**-.26***	**-.27***

Note. S-OO = Spontaneous Other-Oriented Behavior; S-CE = Spontaneous Concerned Expression; S-CI = Spontaneous Cognitive Inquiry; S-ATD = Spontaneous Approaching the Distressed; S-HA = Spontaneous Helping Actions; PD = Personal Distress.
Note. *p< .05. **p <.0001.

Relations between Dispositional Measures and Behaviors

Predictions for response behaviors from dispositional empathy. Collapsing across the conditions (Table 14), GEM total score (M = 24.67, SD = 20.26) positively predicted other-oriented behavior, r = .26, n = 61, p = .05. To be exact, the GEM total score positively predicted helping actions, r = .26, n = 61, p = .05, and it was the score on the GEM Cognitive subscale (M = 18.95, SD = 12.55) that positively predicted helping actions, r = .31, n = 61, p = .02.

If the relations between GEM scores and other-oriented behaviors were examined by condition (Table 15), GEM total score, the Affective subscale score (M = 19.56, SD = 17.30), and the Cognitive subscale score all positively predicted spontaneous infant-oriented behaviors when preschoolers responded to the infant's distress, r = .44, n = 61, p = .0004; r = .36, n = 61, p = .005; and r = .48, n = 61, p = .0001, respectively. Particularly, spontaneous concerned expression in response to the infant's distress were predicted by the GEM total, the Affective Empathy score, and the Cognitive Empathy score, r = .31, n = 61, p = .015, r = .27, n = 61, p = .04, and r = .30, n = 61, p = .02, respectively. In addition, spontaneous helping actions shown to the infant was predicted by the Affective Empathy score, r = .40, n = 61, p = .002. Moreover, all the three GEM scores (total, Affective, and Cognitive) also positively predicted prompted other-oriented behavior when preschoolers responded to distress shown by the adult stranger, r = .29, n = 61, p = .02, r = .29, n = 61, p = .02, and r = .29, n = 61, p = .02, respectively. In general, Hypothesis 2 was supported in that higher levels of dispositional empathy were related to more response behaviors with a focus on others' well-being.

Table 14

Correlations between Behaviors and Dispositional Empathy Collapsing Conditions (N = 61)

	GEM Score		
	Affective Subscale	Cognitive Subscale	Total
Other-oriented	.25	.17	**.26***
Concerned Expression	.14	.12	.14
Cognitive Inquiry	.19	.11	.16
Approaching the Distressed	-.01	-.08	-.02
Helping Actions	.22	**.31****	**.26***
Personal Distress	.14	.12	.15
Disengagement	-.24	-.14	-.25

Note. GEM = Griffith Empathy Measure.

*Note. *p=.05. **p=.02.*

Bivariate correlational analyses were also conducted to see whether personal distress or disengagement correlated with GEM scores. The results showed that GEM total score, the Affective subscale score, and the Cognitive subscale score significantly predicted disengagement behavior in the Infant condition, r = -.38, n = 61, p = .0028; r = -.35, n = 61, p = .006; and r = -.27, n = 61, p = .05, respectively (Table 15). None of the GEM scores predicted personal distress across conditions or by condition.

Table 15

Correlations between Behaviors and Dispositional Empathy by Condition (N = 61)

		GEM Score		
		Affective Subscale	Cognitive Subscale	Total
Caregiver Condition	Spontaneous Other-oriented	.13	.06	.13
	Spontaneous Concerned Expression	.21	.12	.20
	Spontaneous Cognitive Inquiry	-.05	-.02	-.02
	Spontaneous Approaching the Distressed	.03	.09	.06
	Spontaneous Helping Actions	.18	.09	.17
	Prompted Other-oriented	.04	.08	06
	Prompted Concerned Expression	.06	.06	.10
	Prompted Cognitive Inquiry	.09	.22	.11
	Prompted Approaching the Distressed	.03	-.11	-.02
	Prompted Helping Actions	-.03	-.00	-.03
	Personal Distress	.06	.04	.04
	Disengagement	-.21	-.05	-.18
Adult Stranger Condition	Spontaneous Other-oriented	-.04	-.08	-.08
	Spontaneous Concerned Expression	-.0	-.06	-.10
	Spontaneous Cognitive Inquiry	.14	-.05	.05
	Spontaneous Approaching the Distressed	.00	-.02	.01
	Spontaneous Helping Actions	.05	.01	.05
	Prompted Other-oriented	**.29***	**.29***	**.29***
	Prompted Concerned Expression	.30	.30	.31
	Prompted Cognitive Inquiry	.02	.13	.06
	Prompted Approaching the Distressed	.00	-.07	-.04
	Prompted Helping Actions	-.11	-.15	-.11
	Personal Distress	.04	.03	.06
	Disengagement	.00	.02	-.00
Infant Condition	Spontaneous Other-oriented	**.36***	**.48****	**.44***
	Spontaneous Concerned Expression	**.27***	**.30***	**.31***
	Spontaneous Cognitive Inquiry	.24	.16	.22
	Spontaneous Approaching the Distressed	.21	.18	.23
	Spontaneous Helping Actions	.15	**.40***	.24
	Prompted Other-oriented	.02	-.07	-.01
	Prompted Concerned Expression	-.02	-.01	.02
	Prompted Cognitive Inquiry	.12	.07	.10
	Prompted Approaching the Distressed	-.13	-.18	-.15
	Prompted Helping Actions	.12	.04	.08
	Personal Distress	.22	.19	.23
	Disengagement	**-.35***	**-.27***	**-.38***

Note. GEM = Griffith Empathy Measure.

Note. $*p < .05$. $**p < .0005$.

Predictions for response behaviors from social inhibition. Bivariate correlational analyses were conducted to examine the predictive values of social inhibition for response behaviors across conditions and by condition. Collapsing across conditions, none of the BIQ

scores predicted any of the response behaviors. None of the BIQ scores predicted personal distress or disengagement in any of the conditions, either. However, there were significant relations between the BIQ scores and other-oriented behaviors, which varied by condition (Table 16).

In the Caregiver condition, the BIQ total score and the Social Novelty Inhibition subscale score significantly predicted preschoolers' approaching the distressed caregiver, r = -.29, n = 61, p = .02; r = -.30, n = 61, p = .02, respectively. In the Infant condition, the BIQ total score, the Social Novelty Inhibition subscale score, and the Situational Novelty Inhibition subscale score negatively predicted helping actions performed in respond to the distressed infant, r = -.31, n = 61, p = .02; r = -.30, n = 61, p = .02; r = -.30, n = 61, p = .02, respectively. The BIQ total score and the Situational Novelty Inhibition subscale score also significantly predicted spontaneous concerned expression (r = -.28, n = 61, p = .03 and r = -.29, n = 61, p = .03) and spontaneous helping actions (r = -.28, n = 61, p = .03 and r = -.28, n = 61, p = .03) shown in the Infant condition (Table 17). In the Adult Stranger condition, the Performance Social Novelty Situation score (the sub-dimension of Social Novelty Inhibition) negatively predicted other-oriented behavior, r = -.30, n = 61, p = .02, as well as cognitive inquiry about the adult stranger's distress, r = -.25, n = 61, p = .05 (Table 17). Overall, Hypothesis 3 was supported when the relations of preschoolers' social inhibition and response behaviors were examined by condition.

Taken together, dispositions in both empathy and social inhibition appeared to be associated with behaviors preschoolers showed in response to distress in social others. Although varying by the type of behavior or condition, both dispositions predicted certain other-oriented behaviors. Both dispositions, however, did not show predictive value for

personal distress. It was dispositional empathy, rather than social inhibition, that exhibited predictive value for disengaging behaviors from a condition that simulated an infant's distress.

Table 16
Correlations between Behaviors and Disposition of Social Inhibition by Condition Collapsing Spontaneous and Prompted Behaviors (N = 61)

		BIQ Score		
		Situational Novel Inhibition	Social Novelty Inhibition	Total
Caregiver Condition	Other-oriented	-.17	.00	-.08
	Concerned Expression	-.10	.06	-.01
	Cognitive Inquiry	.02	-.04	-.01
	Approaching the Distressed	-.25	**-.30***	**-.29***
	Helping Actions	-.20	.00	-.10
	Personal Distress	-.12	-.14	-.13
	Disengagement	.11	.03	.07
Adult Stranger Condition	Other-oriented	-.18	.00	-.09
	Concerned Expression	-.07	.01	-.03
	Cognitive Inquiry	-.23	.00	-.12
	Approaching the Distressed	-.21	-.20	-.22
	Helping Actions	-.22	-.11	-.17
	Personal Distress	.05	.05	.05
	Disengagement	.10	-.01	.04
Infant Condition	Other-oriented	.14	.04	.10
	Concerned Expression	.22	.21	.23
	Cognitive Inquiry	.09	.07	.09
	Approaching the Distressed	.17	.07	.13
	Helping Actions	**-.30***	**-.30***	**-.31***
	Personal Distress	.17	.17	.18
	Disengagement	.13	.09	.11

Note. BIQ = Behavioral Inhibition Questionnaire.
Note. $*p < .05$.

Table 17

Correlations between Behaviors and Disposition of Social Inhibition by Condition (N = 61)

		BIQ Score		
		Situational Novelty Inhibition	Social Novelty Inhibition	Total
Caregiver Condition	Spontaneous Other-oriented	.01	-.15	-.07
	Spontaneous Concerned Expression	.06	-.13	-.03
	Spontaneous Cognitive Inquiry	-.09	.02	-.04
	Spontaneous Approaching the Distressed	.16	-.13	-.15
	Spontaneous Helping Actions	.08	-.13	-.02
	Prompted Other-oriented	-.09	-.15	-.13
	Prompted Concerned Expression	.04	.11	.08
	Prompted Cognitive Inquiry	.15	.01	.09
	Prompted Approaching the Distressed	-.30	-.23	-.28
	Prompted Helping Actions	-.14	-.18	-.17
	Personal Distress	-.14	-.12	-.13
	Disengagement	.03	.11	.07
Adult Stranger Condition	Spontaneous Other-oriented	.03	-.16	-.06
	Spontaneous Concerned Expression	.03	-.06	-.01
	Spontaneous Cognitive Inquiry	.00	-.24	-.12
	Spontaneous Approaching the Distressed	-.16	-.14	-.16
	Spontaneous Helping Actions	-.08	-.20	-.15
	Prompted Other-oriented	-.11	-.11	-.12
	Prompted Concerned Expression	-.07	-.07	-.08
	Prompted Cognitive Inquiry	-.03	.02	-.01
	Prompted Approaching the Distressed	-.14	-.18	-.17
	Prompted Helping Actions	-.13	-.09	-.12
	Personal Distress	.05	.05	.05
	Disengagement	-.01	.10	.04
Infant Condition	Spontaneous Other-oriented	-.00	.06	.03
	Spontaneous Concerned Expression	**-.29***	-.25	**-.28***
	Spontaneous Cognitive Inquiry	.06	.04	.05
	Spontaneous Approaching the Distressed	.09	.19	.15
	Spontaneous Helping Actions	**-.28***	-.24	**-28***
	Prompted Other-oriented	-.03	.01	-.01
	Prompted Concerned Expression	.06	.10	.08
	Prompted Cognitive Inquiry	.04	.14	.10
	Prompted Approaching the Distressed	.04	.09	.07
	Prompted Helping Actions	-.17	-.25	-.22
	Personal Distress	.17	.17	.18
	Disengagement	.09	.13	.11

Note. BIQ = Behavioral Inhibition Questionnaire.

Note. *p <.05.

Discussion

The purpose of this study was to examine the effect of familiarity with social partners on preschoolers' prosocial responses to distress in social others. This study also related observed behavioral responses to dispositional factors, including dispositional empathy and temperamental inhibition. Overall, the hypotheses were supported in that preschoolers' responses to social others' distress varied by social partners and both dispositional empathy and temperamental inhibition predicted various aspects of empathy-related responding.

Preschoolers Exhibited Regulatory Competence in Response

The findings indicated that, although egoistic distress and disengagement were evident in preschoolers' response to social others' distress, they nevertheless exhibited behaviors organized around the well-being of social partners. In fact, the proportion of time spent in other-oriented behaviors across different social partners was more than five times than the time spent in behaviors indicating personal distress. Children at preschool age clearly demonstrated proficiency in moving beyond reaction that was contagious and self-focused in nature and investing in response that was altruistic and prosocial, revealing regulatory competence in an empathy arousing context.

As Hoffman (2000) notes, preschoolers are capable enough to fully differentiate between the self and others and to put themselves in other people's perspective and understand others' feelings. The ability to comprehend others' internal states and to respond with emotional attunement supports empathic concern, which is an important motivator for the occurrence of prosocial behaviors (Eisenberg et al., 2006). Both cognitive and affective advancements during preschool years likely facilitated children in the current sample to

engage themselves predominantly in other-oriented prosocial actions rather than affective processes that centered on the self.

The competence in preschoolers' other-oriented responding to social others' distress was further demonstrated by the spontaneous quality of their responses. Rather than acting as a form of compliance to the caregiver's request, children largely self-initiated actions that were organized around others' welfare. Indeed, the amount of time spent in spontaneous other-oriented behaviors was approximately five times the amount of time spent in prompted other-oriented behaviors. The spontaneity in preschoolers' prosocial responses denoted an active role children assumed in these distress scenarios, clearly revealing young children's full-fledged sense of agency at preschool years. It is also likely that, for preschoolers, spontaneously responding to distressed others is already a justified and natural act that does not require much conscious consideration of what one should or should not assist (Eisenberg & Neal, 1979; Eisenberg et al., 1984). Thus, a propensity has been formed during preschool years for spontaneously attending to and performing assistance when seeing someone in distress.

Gender Differences in Response

Gender differences were found that female preschoolers significantly spent more time in other-oriented behaviors compared to males, while males showed more disengagement from the distressed than females. The findings were consistent with prior findings that females generally exhibited more prosocial actions than males (See Eisenberg & Fabes, 1998; Eisenberg et al., 2006). Such gender differences are generally considered as a result of socialization process, in which females tend to internalize social roles and identities as caring, nurturing, and attentive to others' social emotional needs (Eagle, 2013). The

internalized social scripts are translated to roles females play in daily social situations, in which they respond to other people in need with more concern and care, leading to more other-oriented behaviors.

Personal Distress

In addition to other-oriented behaviors when responding to others in distress, preschoolers also showed behaviors that indicated personal distress, such as nervous laughing, covering ears, hiding face, facial grimace, etc. This phenomenon is in alignment with previous findings that empathic arousal may also lead to negative emotions (See Decety & Meyer, 2008; Eisenberg et al., 2006). In the present sample, preschoolers might become enmeshed in and alarmed by distress owned by others, thus experiencing unease and discomfort.

It was noteworthy that the amount of time spent in behaviors suggestive of personal distress was positively related to that spent in other-oriented behaviors. At a first glance, the positive relation between behaviors reflecting self-focused goals and those reflecting other-focused concerns appeared counterintuitive. However, it was likely that conducting comforting and helping actions might have served as one of the ways for preschoolers to reduce their distress arousal upon witnessing others' distress because helping often leads to positive affect and feeling good about the self (Aknin, Hamlin, & Dunn, 2012; Hoffman, 1975; Zahn-Waxler, Friedman, & Cummings, 1983).

Another possible account for the positive relation between personal distress and other-oriented behavior involves viewing the two constructs from a developmental perspective—an account postulating that empathy originates during toddlerhood on the basis of personal distress (Hoffman, 1975, 2000; Zahn-Waxler & Radke-Yarrow, 1990). As

discussed previously, infants' early reflexive crying in reaction to other infants' crying (Martin & Clark, 1982; Sagi & Hoffman, 1976) has been regarded as a primitive antecedent of empathic arousal, in which distress is experienced with no differentiation between self and other. During toddlerhood, with cognitive advancement in self-awareness, children gain a better understanding of the self/other distinction and become capable of processing others' experiences with clear ownership of affect. In this way, children's distress arousal becomes increasingly modulated into a more mature form of empathy. Following this proposition, if the course of responding to someone in distress can be likened to a microcosm of development, it is plausible that the elicited distress arousal may precede in time, and subsequently become regulated into emotions of processes centered on the well-being of the distressed. Therefore, certain levels of distress arousal were needed to evoke empathic processes, which often result in prosocial actions.

Disengagement

Frodi et al. (1978) found that personal distress that was experienced by children when observing another person in distress could bring about avoidant behaviors. Frodi attributed avoidant behaviors to feelings of anger and/or fear in children which can be evoked by the distress situation, suggesting a positive link between distress arousal and avoidant behaviors. In the present study, preschoolers did display avoidant behaviors when witnessing others in distress. In fact, the amount of time spent in disengagement was similar to the time spent in other-oriented behaviors. However, contrary to Frodi's reasoning, the present study showed that preschoolers' disengagement behavior was inversely related to personal distress.

One possible explanation for the inverse relation between personal distress and disengagement involves viewing self-focused arousal as an antecedent process that forms a

basis for one to engage or disengage when seeing someone in need. In a similar manner, in which personal arousal potentially propels one to experience empathic concern, and in turn, conduct prosocial action, certain levels of distress arousal are needed for one to become engaged in an empathy arousing situation. Put another way, disengagement could have been a projection of uninfluenced arousal even witnessing clear signs of distress in social partners—one of the possible characteristics of emotional indifference and callousness. On the other hand, if arousal is at sufficient levels, not only is disengaging from the distress less likely to occur, but also other-oriented behaviors are more likely to happen. However, if the level of personal distress surges to one that may surpass an individual's threshold, it is likely that one of the regulatory mechanisms may involve disengagement. In the empathy literature, processes involved with positive valence, such as empathic concern, comforting, sharing, and helping, have received the majority of attention. Processes displaying egoistic orientation such as personal distress, indifference, and disengagement have been largely overlooked; even more so are the variations in the relations between different self-focused affective processes and disengaging actions. To provide a better picture of how different empathy-related processes coordinate, it is fruitful to examine their relations at a moment-by-moment basis and at a micro-analytic level.

The Effects of Familiarity with Social Partners

While preschoolers' behaviors indicating distress arousal did not vary by social partner, other-oriented and disengaging behaviors did show the effects of familiarity with social partners. Children displayed more other-oriented behaviors and less disengagement when responding to distress in their caregivers as compared to when responding to distress in their strangers (both adult and infant). The findings were in agreement with previous findings

that children's tendency and willingness to approach and help others are influenced by the familiarity with social partners (Berscheid & Reis, 1998; Herba et al., 2008). The finding supported the notion of situational ambiguity (Burger et al., 2001) in that children's willingness to help others in distress was hindered if they were involved in unfamiliar situations. In the current study, the presence of unfamiliar people (both the adult stranger and the infant) could have made the situation ambiguous and uncertain, preventing preschoolers from feeling comfortable for social engagement. Following the same line, the greater amount of time preschoolers spent in other-oriented actions and the less amount of time they spent in disengagement when responding to distress in the caregiver might likely be a reflection of children's greater sense of certainty and security while being with a familiar social partner. Repeated interactions, shared experiences, and the emotional bond with their caregivers likely made it easier for preschoolers to recognize and encode caregivers' distress (Burger et al., 2001) and less likely for them to disengage from the caregivers' plight.

Differential effects between the adult stranger and infant stranger were found in spontaneous other-oriented behaviors. Preschoolers spent more time in spontaneous cognitive inquiry, approaching the distressed, and helping action in the Infant condition than the Adult Stranger condition. The result aligns with the notion that infants often exhibit appearance qualities that often would be perceived as weaker and more in need of assistance than an adult. As a result, preschoolers tended to show more cognitive intent to make sense of the infant's situation, literally approach the infant, and showed helping actions trying to ameliorate the infant's distress.

The effects of familiarity with social partners were further revealed by preschoolers' organizations of various forms of other-oriented responding. Particularly in the Caregiver

condition, three forms of spontaneous caregiver-oriented behaviors, including concerned expression, approaching the caregiver, and helping actions were mutually correlated—a result consistent with previous findings (e.g., Eisenberg, McCreath, & Ahn, 1988; Eisenberg et al., 1990). Less prevalent but just as illuminating was the differential organization of other-oriented behaviors that occurred in the two stranger conditions. Children's spontaneous approaching was associated with helping with the adult stranger. When children were with the infant, the association found was between prompted cognitive inquiry and prompted approaching the infant. It was evident that, at preschool age, children showed sensitivity to familiarity with social others and differentially organize various other-oriented behaviors in response to distress in others.

Relations between Dispositional Measures and Behaviors

Dispositional empathy. The findings that both cognitive and affective dispositional empathy predicted various aspects of other-oriented behavior were consistent with the argument that the relation between empathy and prosocial behavior existed at the dispositional level (Eisenberg & Miller, 1987). Dispositional empathy also inversely related to disengagement, which converged with the notion that a person with high level of dispositional empathy tended to be more sensitive to demand for help (Archer et al., 1981; Coke, Batson, & McDavis, 1978; Davis, 1983) and more likely to experience state empathy. The propensity for state empathy often leads to motivation to conduct prosocial helping and, thus, is less likely to result in disengagement when exposed to others' distress (Coke et al., 1978). Both preschoolers' ability to understand another's perspective (cognitive component of empathy) and their tendency to emotionally experience other's situations (affective

component of empathy) likely not only supported their prosocial actions aiming at benefiting others but also negatively predicted disengagement behaviors.

Social inhibition. Among all the behaviors in the current sample, other-oriented behaviors were ones that were predicted by preschoolers' temperamental inhibition; and the relations between social inhibition and prosocial actions varied by condition. The more socially inhibited, the less likely preschoolers would approach the distressed caregiver, cognitively reason about the adult stranger's pain and show actions that benefited the adult stranger. The more temperamentally inhibited, the less likely preschoolers would spontaneously show empathic concern towards the crying infant and conduct actions that would ameliorate the infant's distress. According to Young et al. (1999), when children are socially inhibited, they tend to restrain responses to social others when there is novelty in situation and people. Similarly, other researchers (e.g., Eisenberg & Fabes, 1990; Wichmann, Coplan, & Daniels, 2004) also reported that shy, inhibited, and/or withdrawn children were less likely to show behaviors indicating empathy and engage in prosocial behaviors. In light of this, young children's temperamental characteristics need to be taken into account when there is lack of behaviors explicitly indicating empathic concern or altruistic motivations. Absence of behaviors suggesting altruistic motivation should not be taken as evidence of deficits in empathy. It is plausible that even though young children experience emotional contagion and affective concern in response to distress in others, they are nevertheless too socially inhibited to exhibit outward actions in approach and helping (Asendorpf, 1990; Findlay, Girardi, & Coplan, 2006).

Limitations and Future Directions

The present study has several limitations. First, the present study simulated distress in different social partners and observed preschoolers' prosocial behaviors in a controlled laboratory setting. Therefore, caution is needed when generalizing the current findings to preschoolers' behaviors in real-life situations. Factors such as presence of other parent, siblings, available tools to be used to help, other onlookers, etc. in complex real-life setting may potentially influence children's responses to others in need. One of the approaches to addressing issues associated with generalizing findings derived from a laboratory setting (Levitt & List, 2007) is to conduct observations in naturalistic environment in which the child is growing, including home, school, and neighborhood.

Second, the present study relied merely on parental reports for the measures of children's dispositions in empathy and social inhibition. Although parents can provide valuable information about their children, they may be constrained by their perspectives and possibly affected by social desirability. Combining parental reports, third-party reports (e.g., teacher reports), and naturalistic observation may provide a more comprehensive description of children's dispositional characteristics across times and contexts.

Third, although an experimental design was used to examine the effects of familiarity of social partners on response behaviors, the organizations of behaviors were examined mainly in terms of correlations. It is unclear, for example, if vicarious distress arousal preceded the occurrence of helping actions or if empathic concern was followed by cognitive inquiry or approaching the distressed. To address this issue, analysis for temporal relations between the behaviors may provide a better depiction of how behaviors sequence in time and

become coalesced in organized patterns to support behaviors in response to social others' distress.

Fourth, there was lack of information regarding preschoolers' cognitive competency that could potentially support prosocial behaviors towards others. In particular, preschoolers' ability to attribute mental states to social others, known as theory of mind, may be one important predictor for individual variance in prosocial action (Sabbagh, Xu, Carlson, Moses, & Lee, 2006). Future research may benefit from incorporating data informing children's perspective taking and metacognitive skills for a better prediction for children's empathy-related responding.

Despite the limitations, this study extended prior research on young children's prosocial behavior by documenting how different aspects of preschoolers' empathy-related responding related to one another across different social contexts. Instead of focusing merely actions that are perceived to be prosocial and with positive qualities, the current study documented behaviors suggestive of egoistic concern and disengagement. Notably, the findings highlighted counter-intuitively positive associations between other-oriented and self-oriented processes that have been conceptualized as qualitatively paradoxical and serving for distinct motivational goals. Further, the present study included two dispositional measures—empathy and social inhibition, that have rarely been jointly considered in previous research. Although no interaction between dispositional empathy and temperamental inhibition was found, taking both dispositional factors into account should prove to be conducive to a better understanding of individual differences in young children's prosocial propensity. Systematic knowledge regarding children's personality characteristics as well as their differential

reactions towards social others' distress may inform caregivers or teachers during the socialization process of prosocial behavior

Conclusion

Using a simulated distress paradigm, this study documented preschoolers' differential responses to distress in three different social partners. The findings indicated both social and personality factors had relevance in the occurrence of preschoolers' prosocial behavior towards different social others. Importantly, the study underlined associations between other- and self-oriented empathic processes that have been largely overlooked in the literature. Unraveling basic behavioral processes underlying variations in young children's empathy-related responding carries important implications for individualized approaches to instilling progression in prosocial competence.

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Appendix A - Operational Definitions for Behavior Codes

Behavioral Categories Appendix

Table 1

Type of Behaviors in the Other-Oriented Behavioral Constellation

Type of Behavior	Operational Definition
Concerned Expression	Facial expression of concern and/or sadness for the distressed person (e.g., bow furrow, sympathetic face in which eyebrows are drawn down and brow drawn up over the nose, or a sad expression with corners of the mouth drawn downward)
Concerned expression with looking	Eyes focusing on the distressed person with facial expression of concern
Concerned expression without looking	Facial expression of concern and/or sadness without eyes focusing on the distressed person
Cognitive Inquiry	Any action (verbal or physical) that indicates the child's attempt to comprehend cognitively about the distressed or what happens to the distressed person
Visual check with the caregiver (inquiring what happened) **(in Infant & Adult Stranger Conditions)**	Eyes focusing on caregiver, typically co-occurring with non-verbal or verbal communication
Visually searching for cause and effect	Child looks around the environment or the distressed person for the cause of the person's distress

Describing the situation	The child (verbally) shows clear sign of attention without clear sign of cognitive reasoning (e.g., describes what the distressed person is doing, describes what happened to the distressed person)
Describing how the distressed feels	The child actively describes the person's interpretation of her/his distress
Repeating the distressed person's dialogue	The child repeats the distressed person's dialogue in an attempt to understand what is happening
Reasoning about the self	The child utters statements and/or phrases reasoning about what the child himself/herself can do for the distressed (e.g., "I can't do anything," "I don't know what to do," "I can help with the baby.")
Reasoning about the situation	The child (verbally) shows clear signs of curiosity and cognitive reasoning about the situation (e.g., "There is something with the music.", "The sound makes the baby go to sleep.")
Reasoning about the distressed	The child (verbally) shows clear signs of curiosity (including asking about what happened, asking when the distress will end, asking how the distressed feel), reasoning about cause & effect, and cognitive reasoning about the distressed (e.g., "Is that a real baby?"; "I don't think it's a real baby because the sound comes from somewhere else"; "What happened to you, Mom?"; "Are you okay, Mom?"; "When will the baby stop crying?")

Reasoning (verbally) about what to do	The child utters questions about what he/she needs to do for the distressed person (e.g., “What should we do Mom?”, “Do you think we should rock the baby?”, “Shall we help her, Mom?”)
Approaching the distressed	Moving towards and ends near the distressed
Approaching the distressed before helping	The child moves towards and ends near the distressed person before conducting any helping action
Approaching the distressed without helping	The child moves towards and ends near the distressed person without doing any helping action
Helping actions	The attempts to help or comfort the distressed person
Verbally showing intention to help	The child verbally questions about options to help the distressed (e.g., “Do you think we should rock the baby?”; “Shall we help her, Mom?”; “Can we call the mom?”; “When will the mom comes back to help her baby?”) or verbally asks the parent to help them comfort the distressed (e.g., “Can you watch her, Mom?”; “Let’s check the baby with me, Mom!)
Verbally inviting or physically dragging (pulling) caregiver to help	The child asks or physically drags the parent to help them comfort the distressed individual
Offering solutions (physical or verbal)	The child offers a solution (e.g., verbally, giving bottle, trying to get the mobile to work)

Offering comfort (physical or verbal)	The child offers comforting or soothing dialogue or singing to make the distressed feel better
Using (giving or showing) objects to the distressed in order to comfort	The child gives the distressed person an object in order to comfort her/him
Hugging the distressed	The child hugs the distressed person in order to comfort them
Touching/patting/rubbing infant gently	Touching the area that was injured
Kissing the distressed person	Kissing the area that the distressed identified as being damaged
Picking up the baby	The child picks up the baby in an attempt to comfort
Rocking baby	Rocking the crib to sooth the baby
Bouncing baby	The child bounces or moves the baby in an up and down motion with an attempt to comfort or soothe

Table 2
Type of Behavior in the Personal Distress Behavioral Category

Type of Behavior	Operational Definition
Personal Distress	"Empathic distress that is self-focused" A self-focused emotional and/or physical reaction in response to distress stimuli
Approaching the caregiver with distress **(in Infant & Adult Stranger Conditions)**	Moves towards caregiver in need of comfort as displayed by one or more of the other behaviors of personal distress such as whimpering, facial grimace, etc. (a consensus between coders had to be reached in order for approaching the caregiver to be coded as with distress)

Looking at the caregiver with distress **(in Infant & Adult Stranger Conditions)**	The child looks toward the caregiver in need of comfort as displayed by one or more of the other behaviors of personal distress such as whimpering, facial grimace, etc. (a consensus between coders had to be reached in order for approaching the caregiver to be coded as with distress)
Nervous Laughing	Tense and nervous laughter caused by the other person's distress
Whimpering	Distress vocalization that is less intense than crying
Crying	Typical distress cry
Sobbing	Low intensity distress vocalization
Pouting	Pushing lips or bottom lip forward and making sounds of displeasure or disappointment
Fussing	To object or complain
Whining	The child makes a long, high-pitched, complaining sound
Screaming	Child utters a long loud piercing voice that is the result of pain or fear
Moving feet below table	The child moves the feet back and forth under the table while sitting in the chair and keeping their upper body still
Touching own area when the distressed is hurt	Places his/her hand on the self in the same place where the infant is hurt
Sucking fingers	The child sucks the fingers in order to self-comfort
Bodily tension	Tense body posture in response to distress

Freezing of action	The child stops performing any action as if stunned by the sudden vocalization from the distressed
Restlessness	The child is not able to rest, relax, or be still
Clasping of hands, hair, or face	The child clasps themselves in an attempt to self-comfort
Covering ears	Bringing hands up to cover ears to muffle sound
Hiding face	Covering face with a body part such as hands or a toy such as a stuffed animal
Uneasy smile	Unnaturally or acutely uneasy and apprehensive smiling in response to other person's distress
Facial grimace	A sharp contortion of face due to anxiety and an attempt to express pain
Frown	The child wrinkles the brow, as in thought or displeasure
Burying face in caregiver's lap	Burying face in caregiver's lap in search for comfort
Holding arms up to the mother to be held	Raises arms to motion to be picked up
Hugging caregiver	Hugging the caregiver in search for comfort
Touching caregiver arms, hands, and legs	Touching the caregiver in search for comfort
Asking to leave	The child asks to leave the room

Table 3
Type of Behavior in the Disengagement Behavioral Category

Type of Behavior	Operational Definition
Disengagement	Any kind of verbal or physical behavior that shows child's unwillingness to deal or engage with the distressed person
Irrelevant speech	The child speaks about topic(s) unrelated to distress situation or the distressed person
Remaining doing what child was doing before social other's show distress (also includes ignoring the distressed)	Child continues tasks before the distress condition has begun
Looking away from the distressed	Eyes are still; body is motionless, head is turned away from distress situation
Looking without focus	Looking around the room while thinking, no clear focus or target of looking
Looking at an object while others are showing distress	Eyes focusing on object such as building blocks instead of distressed
Moving away from the distressed person	The child moves away from the distressed person
Rejection	Saying "No" or showing any forms of refusal (verbal or nonverbal) to engage in helping behavior

Appendix B – Griffith Empathy Measure

Child's name:..... GEM-PR

Completed by: Mother Father Other .....

Please read each statement below and indicate the extent to which you agree or disagree. *Mark your answers by placing a cross on the appropriate point on the line.* Do not leave any statement unrated.

Example: If you somewhat agree with the statement, you would place a cross as indicated below.

Strongly disagree — Strongly agree

-4 -3 -2 -1 0 +1 +2 +3 +4

B 1. **It makes my child sad to see another child who can't find anyone to play with.**

Strongly disagree — Strongly agree

-4 -3 -2 -1 0 +1 +2 +3 +4

B 2. **My child treats dogs and cats as though they have feelings like people.**

Strongly disagree — Strongly agree

-4 -3 -2 -1 0 +1 +2 +3 +4

C 3. **My child reacts badly when he/she sees people kiss and hug in public.**

Strongly disagree — Strongly agree

-4 -3 -2 -1 0 +1 +2 +3 +4

B 4. **My child feels sorry for another child who is upset.**

Strongly disagree — Strongly agree

-4 -3 -2 -1 0 +1 +2 +3 +4

A 5. **My child becomes sad when other children around him/her are sad.**

Strongly disagree — Strongly agree

-4 -3 -2 -1 0 +1 +2 +3 +4

C 6. **My child doesn't understand why other people cry out of happiness.**

Strongly disagree — Strongly agree

-4 -3 -2 -1 0 +1 +2 +3 +4

A 7. **My child gets upset when he/she sees another child being punished for being naughty.**

Strongly disagree — Strongly agree

-4 -3 -2 -1 0 +1 +2 +3 +4

A 8. **My child seems to react to the moods of people around him/her.**

Strongly disagree — Strongly agree

-4 -3 -2 -1 0 +1 +2 +3 +4

A 9. **My child gets upset when another person is acting upset.**

Strongly disagree — Strongly agree

-4 -3 -2 -1 0 +1 +2 +3 +4

B 10. **My child likes to watch other people open presents, even when he/she doesn't get one themselves.**

Strongly disagree — Strongly agree

-4 -3 -2 -1 0 +1 +2 +3 +4

A 11. **Seeing another child who is crying makes my child cry or get upset.**

Strongly disagree — Strongly agree

-4 -3 -2 -1 0 +1 +2 +3 +4

Child's name:..... GEM-PR

Completed by: Mother Father Other .....

Please read each statement below and indicate the extent to which you agree or disagree. *Mark your answers by placing a cross on the appropriate point on the line.* **Do not leave any statement unrated.**

B 12. My child gets upset when he/she sees anther child being hurt.

Strongly disagree Strongly agree

-4 -3 -2 -1 0 +1 +2 +3 +4

C 13. When I get sad my child doesn't seem to notice.

Strongly disagree Strongly agree

-4 -3 -2 -1 0 +1 +2 +3 +4

B 14. Seeing another child laugh makes my child laugh.

Strongly disagree Strongly agree

-4 -3 -2 -1 0 +1 +2 +3 +4

A 15. Sad movies or TV shows make my child sad.

Strongly disagree Strongly agree

-4 -3 -2 -1 0 +1 +2 +3 +4

A 16. My child becomes nervous when other children around him/her are nervous.

Strongly disagree Strongly agree

-4 -3 -2 -1 0 +1 +2 +3 +4

C 17. It's hard for my child to understand why someone else gets upset.

Strongly disagree Strongly agree

-4 -3 -2 -1 0 +1 +2 +3 +4

B 18. My child gets upset when he/she sees an animal being hurt.

Strongly disagree Strongly agree

-4 -3 -2 -1 0 +1 +2 +3 +4

B 19. My child feels sad for other people who are physically disabled (e.g., in a wheelchair).

Strongly disagree Strongly agree

-4 -3 -2 -1 0 +1 +2 +3 +4

C 20. My child rarely understands why other people cry.

Strongly disagree Strongly agree

-4 -3 -2 -1 0 +1 +2 +3 +4

C 21. My child would eat the last cookie in the cookie jar, even when he/she knows that someone else wants it.

Strongly disagree Strongly agree

-4 -3 -2 -1 0 +1 +2 +3 +4

A 22. My child acts happy when another person is acting happy.

Strongly disagree Strongly agree

-4 -3 -2 -1 0 +1 +2 +3 +4

A 23. My child can continue to feel okay even if people around are upset.

Strongly disagree Strongly agree

-4 -3 -2 -1 0 +1 +2 +3 +4

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Appendix C – Behavioral Inhibition Questionnaire

Behavioural Inhibition Questionnaire (Parent Form)

The following statements describe children's behaviour in different situations. Each statement asks you to judge whether that behaviour occurs for your child "*hardly ever*", "*infrequently*", "*once in a while*", "*sometimes*", "*often*", "*very often*", or "*almost always*". Please circle the number "1" if the behaviour "*hardly ever*" occurs, the number "2" if it occurs "*infrequently*", etc. Try to make this judgement to the best of your ability, based on how you think your child compares with other children about the same age.

1□Hardly Ever	**2**□Infrequently	**3**□Once in a While	**4**□Sometimes	**5**□Often	**6**□Very Often	**7**□Almost Always

1.	Approaches new situations or activities very hesitantly	1	2	3	4	5	6	7
2.	Will happily approach a group of unfamiliar children to join in their play	1	2	3	4	5	6	7
3.	Is very quiet around new (adult) guests to our home	1	2	3	4	5	6	7
4.	Is cautious in activities that involve physical challenge (e.g., climbing, jumping from heights)	1	2	3	4	5	6	7
5.	Settles in quickly when we visit the homes of people we don't know well	1	2	3	4	5	6	7
6.	Enjoys being the centre of attention	1	2	3	4	5	6	7
7.	Is comfortable asking other children to play	1	2	3	4	5	6	7
8.	Is shy when first meeting new children	1	2	3	4	5	6	7
9.	Happily separates from parent(s) when left in new situations for the first time (e.g., kindergarten, preschool, childcare)	1	2	3	4	5	6	7
10.	Is happy to perform in front of others (e.g., singing, dancing)	1	2	3	4	5	6	7
11.	Quickly adjusts to new situations (e.g., kindergarten, preschool, childcare	1	2	3	4	5	6	7
12.	Is reluctant to approach a group of unfamiliar children to ask to join in	1	2	3	4	5	6	7

Continued next page

1□Hardly Ever	**2**□Infrequently	**3**□Once in a While	**4**□Sometimes	**5**□Often	**6**□Very Often	**7**□Almost Always

13. Is confident in activities that involve physical challenge (e.g., climbing, jumping from heights)	1	2	3	4	5	6	7
14. Is independent	1	2	3	4	5	6	7
15. Seems comfortable in new situations	1	2	3	4	5	6	7
16. Is very talkative to adult strangers	1	2	3	4	5	6	7
17. Is hesitant to explore new play equipment	1	2	3	4	5	6	7
18. Gets upset at being left in new situations for the first time (e.g., kindergarten, preschool, childcare)	1	2	3	4	5	6	7
19. Is very friendly with children he or she has just met	1	2	3	4	5	6	7
20. Tends to watch other children, rather than join in their games	1	2	3	4	5	6	7
21. Dislikes being the centre of attention	1	2	3	4	5	6	7
22. Is clingy when we visit the homes of people we don't know well	1	2	3	4	5	6	7
23. Happily approaches new situations or activities	1	2	3	4	5	6	7
24. Is outgoing	1	2	3	4	5	6	7
25. Seems nervous or uncomfortable in new situations	1	2	3	4	5	6	7
26. Happily chats to new (adult) visitors to our home	1	2	3	4	5	6	7
27. Takes many days to adjust to new situations (e.g., kindergarten, preschool, childcare)	1	2	3	4	5	6	7
28. Is reluctant to perform in front of others (e.g., singing, dancing)	1	2	3	4	5	6	7
29. Happily explores new play equipment	1	2	3	4	5	6	7
30. Is very quiet with adult strangers	1	2	3	4	5	6	7

Janice, Josephine. Bachelor of Arts, University of Indonesia, Spring 2014; Master of Science, University of Louisiana at Lafayette, Summer 2017
Major: Psychology
Title of Thesis: Preschoolers' Prosocial Responding to Social Others' Distress
Thesis Director: Dr. Hung-Chu Lin
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ABSTRACT

The present study examined the effect of familiarity with social partners on preschoolers' prosocial responses to social others' distress and related their responses to dispositional empathy and temperamental inhibition. Sixty-one preschoolers (38 boys, 23 girls, mean age: 44 months) were recruited from local preschools. Preschoolers went through three conditions of simulated distress in different social partners in the same order (the caregiver, an adult stranger, and an infant manikin). Parent-report Griffith Empathy Measure (GEM) and the Behavioral Inhibition Questionnaire (BIQ) were used to measure children's dispositional empathy and temperamental inhibition. The results indicated that preschoolers' behavioral responses to social others' distress varied by familiarity with social partners, with the greatest amount of time spent in showing caregiver-oriented actions followed by infant-oriented actions. Overall, higher levels of dispositional empathy were related to a greater amount of time spent in response behaviors with a focus on others' well-being. Temperamental inhibition also exhibited predictive values for prosocial behavior, with high inhibition related to less other-oriented behaviors. Together, the present study underscored the social and personality factors that are implicated with individual differences in preschool children's prosocial responses to social others' distress.

Keywords: preschoolers, prosocial behavior, familiarity, social partners, dispositional empathy, temperamental inhibition

Biographical Sketch

Josephine Janice is an international graduate student from Indonesia in the Psychology program at University of Louisiana at Lafayette. Before coming to the U.S., she received her Bachelor of Arts with honors in February 2014 from University of Indonesia. During her time as an undergraduate, she took interests in conducting quantitative and qualitative research on human's behavior under supervisions of her professors. In summer 2017, she finally earned her Master of Science and graduated Summa Cum Laude from the University of Louisiana at Lafayette. Her diversified skills include data analysis, proficiency in statistical programs (e.g., SPSS, SAS, and JMP), organizing data collection, statistical reports, and analytical summaries for quantitative analysis, and conducting clinical assessment for children & adults.